

CME

Mobiltone USB MIDI Master Keyboard User's manual

U-Key

Mobiltone



Read "Precautions" on page 3 before use
Please read this manual carefully before use.

**Thank you for choosing CME U-Key Mobiltone
USB MIDI Master Keyboard**

Please keep all the important information here

Attach your invoice or receipt here



for reference

Purchase date _____	Serial (on the back of the keyboard) _____
Dealer's name and addr. _____	
Dealer's tel. _____	

Warning:

- Improper connection may cause damage to the device.

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Open the package

Please check all the items in your U-Key keyboard package:

- USB MIDI Master keyboard 1 pcs
- USB cable 1 pcs
- User's manual 1 pcs

● Special Message Section

This product utilizes batteries or an external power supply (adapter). Do NOT connect this product to any power supply or adapter other than one described in the manual, on the product, or specifically recommended by CME.

WARNING: Do not place this product in a position where anyone could walk on, trip over, or roll anything over power or connecting cords of any kind. The use of an extension cord is not recommended! If you must use an extension cord, make sure that the cord has the ability to handle maximum current needed by this product. Please consult a local electrician when possible.

This product should be used only with the components supplied or recommended by CME. When used with any components, please observe all safety markings and instructions that accompany the accessory product.

SPECIFICATIONS SUBJECT TO CHANGE:

The information contained in this manual is believed to be correct at the time of printing. However, CME reserves the right to change or modify any of the specifications without notice or obligation to update existing units.

This product, either alone or in combination with an amplifier and headphones or speaker(s), may be capable of producing sound levels that could cause permanent hearing loss. Do NOT operate for long periods of time at a high volume level or at a level that is uncomfortable. If you experience any hearing loss or ringing in the ears, you should consult an audiologist.

IMPORTANT: The louder the sound, the shorter the time period before damage occurs.

Some CME products may have stands and/or accessory mounting fixtures that are either supplied with the product or as optional accessories. Some of these items are designed to be dealer assembled or installed. Please make sure that stands are stable and any optional fixtures (where applicable) are well secured BEFORE using.

Stands supplied by CME are designed for the respect products only. No other uses are recommended.

NOTICE:

Service charges incurred due to a lack of

knowledge relating to how a function or effect works (when the unit is operating as designed) are not covered by the manufacturer's warranty, and are therefore the owners responsibility. Please study this manual carefully and consult your dealer before requesting service.

ENVIRONMENTAL ISSUES:

CME strives to produce products that are both user safe and environmentally friendly. We sincerely believe that our products and the production methods used to produce them, meet these goals. In keeping with both the letter and the spirit of the law, we want you to be aware of the following:

Battery Notice:

This product MAY contain a small non-rechargeable battery which (if applicable) is soldered in place. The average life span of this type of battery is approximately five years. When replacement becomes necessary, contact a qualified service representative to perform the replacement.

This product may also use "household" type batteries. Some of these may be rechargeable. Make sure that the battery being charged is a rechargeable type and that the charger is intended for the battery being charged.

When installing batteries, do not mix batteries with new, or with batteries of different type. Batteries MUST be installed correctly. Mismatches of incorrect installation may result in overheating and battery case rupture.

Warning:

Do not attempt to disassemble, or incinerate any battery. Keep all batteries away from children. Dispose of used batteries promptly and as regulated by the laws in your area. Note: Check with any retailer of household type batteries in your area for battery disposal information.

Disposal Notice:

Should this product become damaged beyond repair, or for some reason its useful life is considered to be at an end, please observe all local, state, and federal regulations that relate to the disposal of products that contain lead, batteries, plastics, etc. If your dealer is unable to assist you, please contact CME directly.

FCC INFORMATION (U.S.A)

1. **IMPORTANT NOTICE: DO NOT MODIFY THIS UNIT!**

This product, when installed as indicated in the instructions contained in this manual, meets FCC requirements. Modifications not expressly approved by CME may void your authority, granted by the FCC, to use the product.

2. **IMPORTANT:** When connecting this product to accessories and/or another product use only high quality shielded cables. Cable(s) supplied with this product **MUST** be used. Follow all installation instructions. Failure to follow instructions could void your FCC authorization to use this product in the USA.

3. **NOTE:** This product has been tested and found to comply with the limits for a Class B Digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential environment. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used according to the instructions found in the users manual, may cause interference harmful to the operation of other electronic devices. Compliance with FCC regulations does not guarantee that interference will not occur in all installations. If this product is found to be the source of interference, which can be determined by turning the unit "OFF" and "ON", please try to eliminate the problems by using one of the following measures:

Relocate either this product or the device that is being affected by the interference.

Utilize power outlets that are on different branch (circuit breaker or fuse) circuits or install AC line filter(s).

In the case of radio or TV interference, relocate/reorient the antenna. If the antenna lead-in is 300 ohm ribbon lead, change the lead-in to co-axial type cable.

If these corrective measures do not produce satisfactory results, please contact the local retailer authorized to distribute this type of product. If you cannot locate the appropriate retailer, please contact CME.

The above statements apply **ONLY** to those products distributed in the USA.

PRECAUTIONS

IMPORTANT

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

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, turps 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 pool in the kitchen or similar places.
5. Do not place the instrument in an unstable position 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 overload the outlet and the AC cable to avoid fire or electrical shock.
9. Do not insert anything in the instrument, which may cause fire or electrical shock. Do not splash any kind of liquid to the instrument.
10. Do not disassemble the instrument in case of accidental electrical shock.
11. Always take the instrument to a qualified service center in need of repair. You will cause yourself in danger if you open or remove the cover, and improper assembly may cause electrical shock in the future use.
12. Unplug all the connectors and take the instrument to a qualified service center if anything in the below listed happens:
 - A. The power cord or connector get hurt or worn out.
 - B. Any liquid get in the instrument.
 - C. The instrument gets rain or water splash.
 - D. The instrument dose not work properly after following all the instructions regarding to the troubleshooting.
 - E. The instrument falls down or gets broken.
 - F. The instrument functions poorly.
13. Do not use the instrument when thundering; otherwise the thundering may cause long-distance electrical shock.
14. Do not use the instrument when there is a gas leak nearby.

Keep this manual in safe place

CAUTION:

Do not connect the instrument when thundering.

Do not set up the cord or outlet to a moist place, except for that the outlet is specially designed for moist places.

When the power cord is connected to the AC outlet, do not touch the naked part of the cord or the connector.

Always follow the instructions carefully when setting up the instrument.

WARNING:

- Do not expose the instrument to rain or moisture, to avoid fire or electrical shock.

Other precautions:

- Keep the instrument away from electrical interface sources, such as fluorescent light and electrical motors.
- Keep the instrument away from dust, heat and vibration.
- Do not expose the instrument to sunlight.
- Do not place heavy objects on the instrument; do not place containers with liquid on the instrument.
- Do not touch the connectors with wet hands
- Central Music Co. is not responsible for any damage or data loss caused by improper operation to the instrument.
- All the pictures and the LED display in the manual are used for demonstration; they may be different from the real instrument.

Features

- 49 notes ultra thin full action semi-weighted keyboard, portable and beautiful
- 1 x Programmable Joystick
- 8 x programmable trigger pads, velocity sensitive
- 8 x programmable knob controllers (endless encoder) for any kinds of MIDI control
- 1 x endless encoder for data entry of fast data changes
- “PadStyle” MIDI song and style help you to play live music easily
- Interactive test mode and game to improve the skill of your performance
- Multi-scaled keys to fit more kinds of ethnic music
- U-CTRL function lets you work with music software perfectly
- Music software control templates
- Clear 3-digit LED display
- Firmware, data and songs upgradable via USB
- USB MIDI class-compliant with Windows XP and Mac OS X
- Universal pedal connector, full compatible with switch and continuous pedals
- 1 x stereo line output, 1/8” phone jack and 1 x stereo headphone output, 1/8” phone jack
- 1 x MIDI IN and MIDI OUT
- USB bus-powered and DC IN
- Built-in 64-polyphony tone generator and speakers
- Full MIDI functions including SEQ transport with fast operation access

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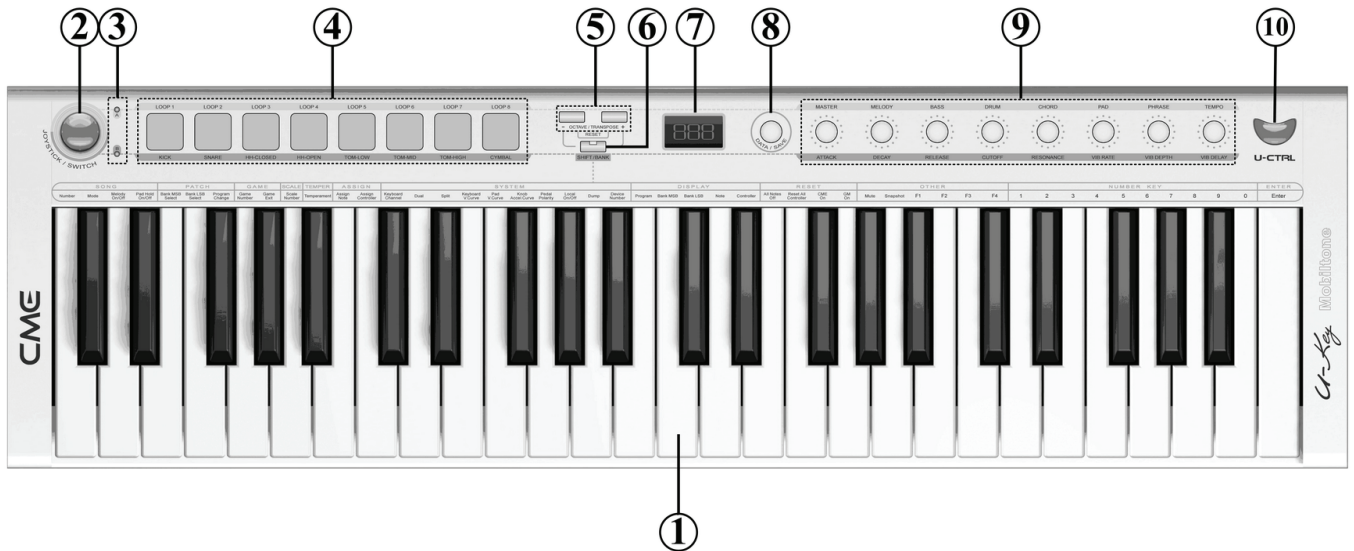
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1 General View

1.1 Front Panel



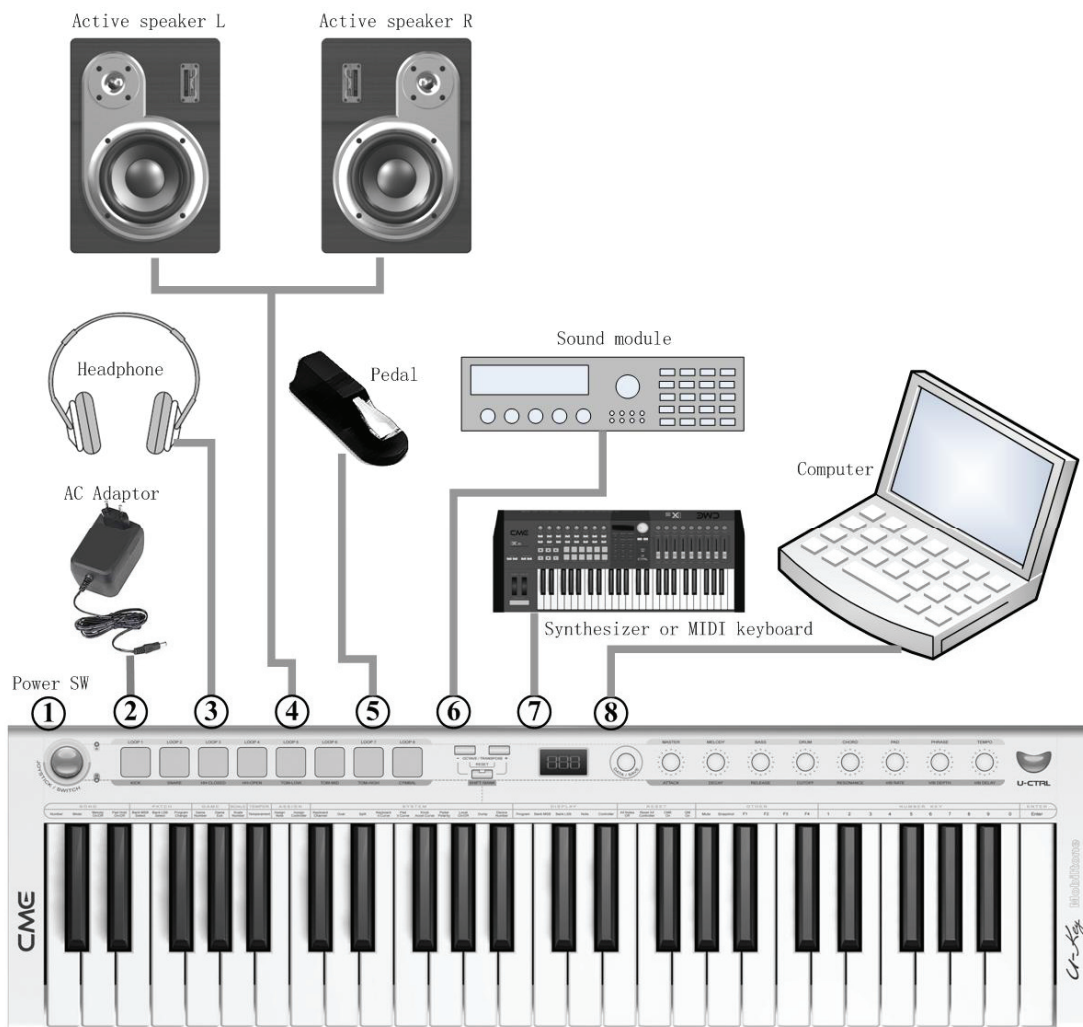
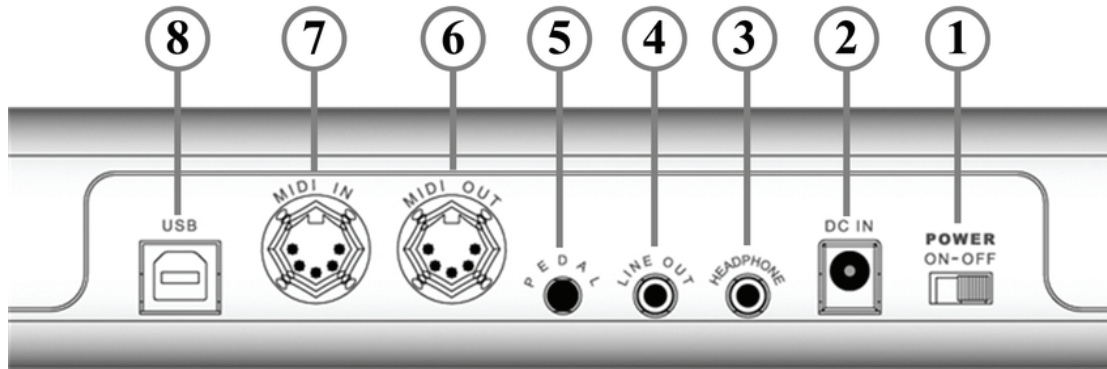
1. Keyboard
2. Joystick
3. 2 A & B status indicators
4. 8 drum pads
5. 2 buttons
6. SHIFT button
7. LED display
8. Data dial
9. 8 knobs
10. U-CTRL button

1.2 Rear Panel



1. Power switch(ON/OFF)
2. Power connector (DC IN)
3. Headphone jack (HEARDPHONE)
4. Line out jack (LINE OUT)
5. Pedal jack (PEDAL)
6. MIDI OUT port (MIDI OUT)
7. MIDI IN port (MIDI IN)
8. USB MIDI port (USB)

2 Connection



2.1 Power Switch

Use Power switch to turn U-Key ON or OFF, power can be supplied via USB or DC IN.

2.2 DC In

Use DC IN for power supply. You can connect an AC adaptor that meets the specifications of the U-Key.



Please be careful choosing an AC adaptor; make sure the adaptor meets the specifications of the U-Key.

2.3 Headphone Jack

The Headphone jack is used to connect a stereo headphone.

2.4 Line Out Jack

The Line out jack is used to connect a mixer, an amplifier or active speakers.

2.5 Pedal Jack

The pedal jack can be used to connect either a switch pedal such as a damper pedal or a continuous pedal such as a volume pedal.

2.6 MIDI Out Port

It is a standard MIDI Out port. All the MIDI data from the U-Key and from USB will be sent out from this port.

2.7 MIDI In Port

It is a standard MIDI In port. Via the MIDI In port, you can play the U-Key by another MIDI keyboard.

2.8 USB Port

You can make a bi-directional connection between the U-Key and your computer via the USB port.

If it is the first time you connect your U-Key to the computer via USB, the OS will automatically install the device driver, and show the U-Key as “USB Audio Device” and “USB Audio Device [2]”. If the same device name already exists, the U-Key will have a device name with increased number.



Please do not use any other USB cable than the one included with the U-Key, for perfect data transfer.

3 Basic Operation

3.1 Turn On The Power (Power)

- ◆ Please make sure you have the right connection before turning on the U-Key. Use the power switch on the rear panel to turn it on.
- ◆ To protect your ears and your speaker system, please set the speaker volume to a low level before you turn on the U-Key.
- ◆ After turning on the U-Key, you can set up your favorite volume while playing the U-Key.

3.2 Function Switch (Switch)



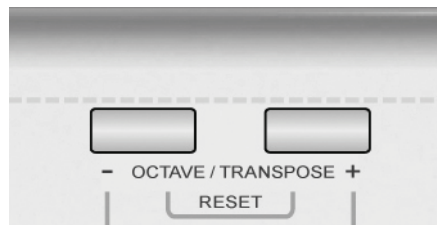
- ◆ The joystick can also work as a button. Press the joystick to switch the function of pads and buttons, each time you press the joystick, the function status will switch among status A(song), status B(master keyboard) and status A+B(remote). In different status, the pads and buttons will work with different functions.

3.3 Change Voice (Program Change)



- ◆ You can dial the **【DATA / SAVE】** knob to change the value on the LED.
- ◆ The **【DATA / SAVE】** knob can also work as a button to confirm or save data
- ◆ By default, the **【DATA / SAVE】** knob is used to change the voice number, and the changed number will blink until the knob is pressed to send the program change data.

3.4 Factory Setup (Reset)

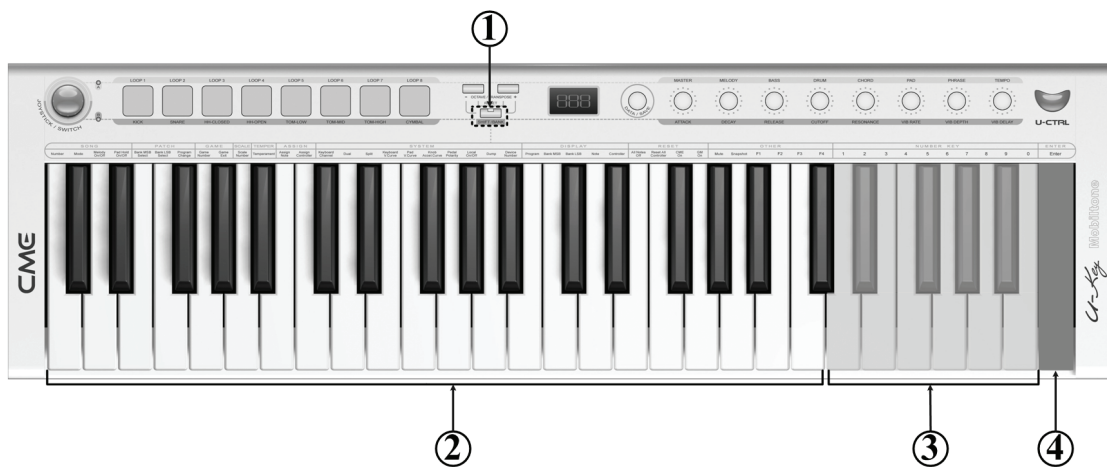


- ◆ Usually, the keyboard will automatically memorize its last settings and recover to that setting when turned on. However, you can use the reset function to turn all the U-Key setting to the factory setup.
- ◆ To change to the factory setup, please press **【OCTAVE -】** and **【OCTAVE +】** buttons while turning on the keyboard, then the keyboard will initialize to the factory setup. During this process, the LED will blink until the initializing is completed.



The reset process will clear everything that you have done to the keyboard, please be careful!

3.5 Key Function



- ◆ A lot of the U-Key functions are set by the keys.
 1. When the **SHIFT** button indicator is on, the keyboard enters the key function mode.
 2. In the key function mode, those keys work as the function keys.
 3. This is the number key region, use those keys to change values on the LED.
 4. The **Enter** button is used to confirm the operation and send data.



Some operation will work right away with out confirmed by **Enter** !

3.6 Joystick

The Joystick can be moved to the four directions, Up, Down, Left and Right. By default, the joystick will send the below data:

Direction	Function	MIDI data
Up	Modulation	CC#1
Down	Brightness	CC#74
Left	Pitch Bend Down	Pitch Bend Down
Right	Pitch Bend Up	Pitch Bend Up

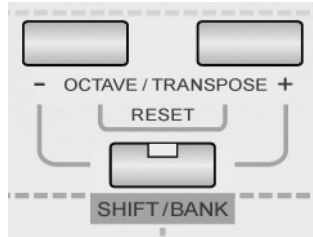
3.7 Pedal Jack

- ◆ You can connect either a switch pedal (Sustain pedal) or a continuous pedal

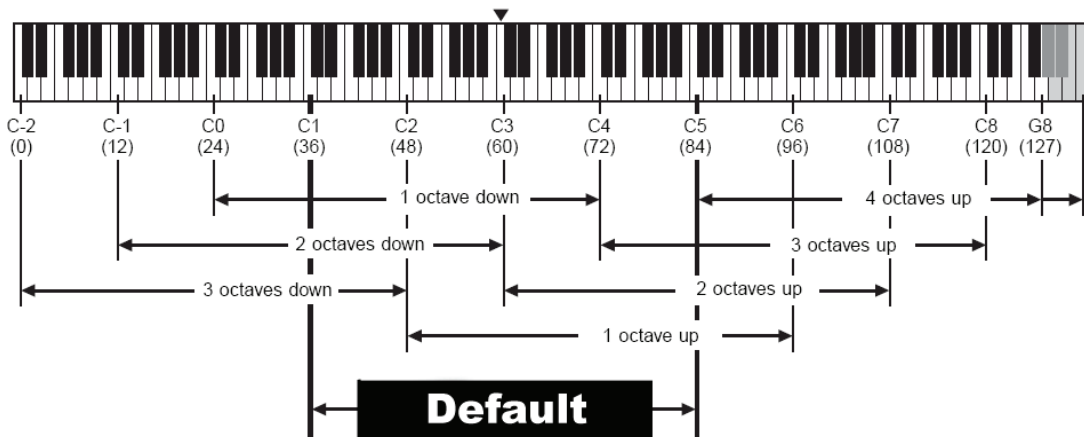
(Volume pedal).

- ◆ By default the pedal type is a sustain pedal (Switch mode), the related MIDI data is CC#64, 127 for ON and 0 for OFF.
- ◆ If you use a continuous pedal, please enter Key function, press F1 (Pedal setup), change “001” (Sustain) to “002” (Expression) .

3.8 Octave Shift / Transpose



- ◆ Using the **【Octave / Transpose】** button, you can change the octave shift for going up or down 3 octaves. To return to the default value, press the two buttons at the same time.
- ◆ Using the **【Octave / Transpose】** button while holding the SHFIT button, you can transpose the keyboard by semi notes for a maximum up or down of 12 semi notes. To return to the default value, press the two buttons at the same time.
- ◆ The fig below shows the default key range of the keyboard:



- ◆ MIDI note number and pitch name map:

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

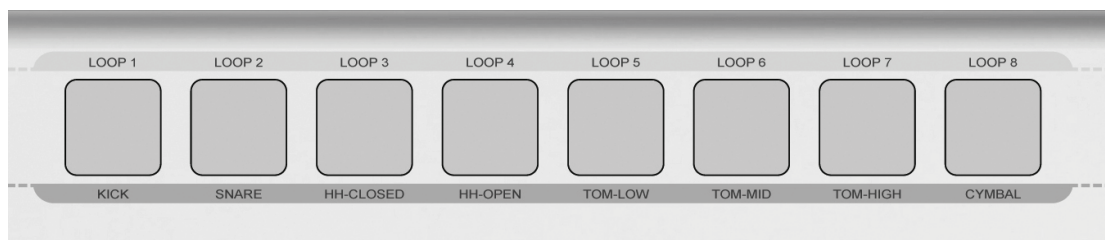
4 Song Mode

- ◆ Press the joystick until the indicator light A is on for Song mode.



In Song mode, the pads are used to play songs, and knobs are used to control the volume of each part.

4.1 Use Pads To Play Songs (Pad Style Songs)



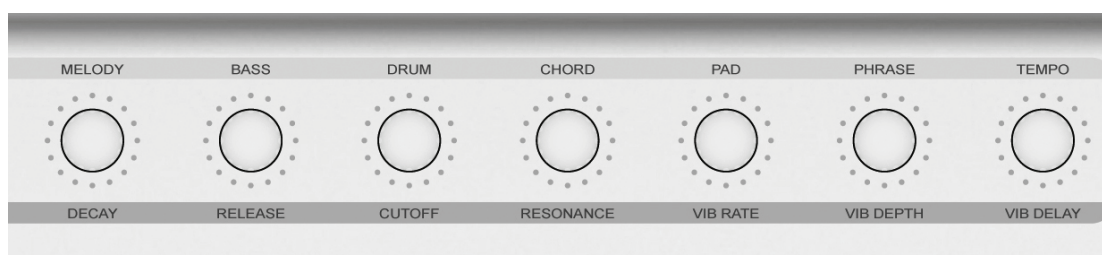
- ◆ There are 8 pads in the keyboard, including **【LOOP1】** to **【LOOP8】**, which matches 8 phrases of the U-Key Pad Style songs. By hitting a pad, you can play the internal MIDI songs from the respective phrase.
- ◆ You can play an U-Key Pad Style song in the below 3 modes:
 1. Single-loop play mode:
 - ◆ Hit any pad, the pad light is on, and the corresponded phrase is being played. Hit the same pad again to stop the playing.
 - ◆ When one pad is triggered and being played, if no other pad is triggered, the current pad will be played repeatedly.(Loop Mode)
 - ◆ If another pad is triggered, while the previous pad is being played, after finish one bar of the previous pad, the keyboard will continue playing the new pad.
 2. Multi-loop play mode:
 - ◆ Hit two pads at the same time, the two pads and all the pads between the two pads will light on, and the keyboard will play those pads one by one. The current pad being played will blink
 - ◆ Hit the blinking pad to stop playing.
 - ◆ Hit a non-blinking pad for single-loop play mode.
 3. Song play mode:

- ◆ Press pad **【LOOP1】** for three seconds, all the pads will light on to enter the song mode.
- ◆ In the song mode, all the pads will be played. The current pad being played will blink
- ◆ Hit the first pad again to stop playing.



You can find more information about pad style songs on www.cme-pro.com !

4.2 Use Knobs For Volume Control (Part Volume)



- ◆ In the song mode, you can use the eight knobs as below:

knob	Control	ID	MIDI data
knob1	Master volume	MASTER	F0 7F 7F 04 01 00 rr F7
knob2	Melody volume	MELODY	CH8,CC#7
knob3	Bass volume	BASS	CH9,CC#7
knob4	Drum volume	DRUM	CH10,CC#7
knob5	Chord volume	CHORD	CH11&12,CC#7
knob6	Pad volume	PAD	CH13&14,CC#7
knob7	Phrase volume	PHRASE	CH15&16,CC#7
knob8	Tempo	TEMPO	off, 20-250

4.3 Song Related Functions

4.3.1 Select A Song By Song Number

- ◆ Operation: **SHIFT** ⇒ **C1** **【Number】** ⇒ Value ⇒ **Enter**
- ◆ MIDI data: none
- ◆ Range: 1-15
- ◆ Default: 1



You can put standard MIDI files to the keyboard with a computer. The MIDI file size is limited to 56KB.

4.3.2 Select Performance Mode

- ◆ Operation: **SHIFT** ⇒ C#1 【Mode】 ⇒ Value ⇒ **Enter**
- ◆ MIDI data: none
- ◆ Range: Off, 1, 2
- ◆ Default: Off
- ◆ Below is the description of the performance modes:
Off. The normal performance mode.
 1. Easy performance mode: You can play anything along with the accompaniment, and the keyboard will play the right song melody as it is played by you.
 2. Karaoke performance mode: You can play anything along with the accompaniment, and the keyboard will play the right song melody in lower volume. When you stop playing, the keyboard will return to the normal volume.

4.3.3 Mute Melody (Melody On/Off)

- ◆ When playing a song you can mute the melody, so you can play the melody by yourself along with the accompaniment.
- ◆ Operation: **SHIFT** ⇒ D1 【Melody On/Off】 ⇒ **Enter**
- ◆ Default: on
- ◆ Range: {on}, {off}

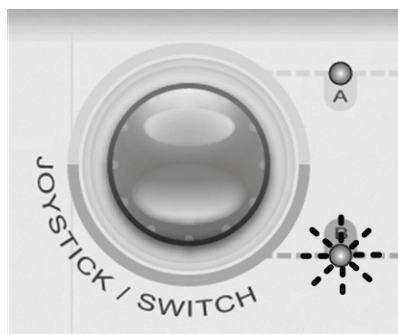
4.3.4 Pad Hold On/Off

- ◆ When you switch on the Pad Hold function, you need to press and hold a pad to keep it playing. If you release the pad, it will stop playing.
- ◆ Operation: **SHIFT** ⇒ D#1 【Pad Hold On/Off】 ⇒ **Enter**
- ◆ Default: Off
- ◆ Range: On, Off

5 MASTER Mode

5.1 Use Pads For Drum Kit

- ◆ Press the joystick until the indicator B is on for Master mode.



In the Master mode, you can use the pads to play a drum kit and use the knobs to edit a voice.

Default pads to drum kit map

pad	MIDI note number(H)	Pitch name	Percussion
pad1	24	C 2	KICK
pad2	28	E 2	SNARE
pad3	2A	F#2	HH-CLOSED
pad4	2E	A#2	HH-OPEN
pad5	2B	G 2	TOM-LOW
pad6	2D	A 2	TOM-MID
pad7	30	C 3	TOM-HIGH
pad8	31	C#3	CYMBAL

5.2 Use The Knobs To Select A Voice

- ◆ By default, you can select a voice by dialing the **【DATA / SAVE】** knob to change the voice number on the LED, then press **【DATA / SAVE】** to send voice Bank / Program change data to confirm the selected voice.

5.3 Use The Knobs To Edit A Voice

- ◆ In the Master mode, you can use the eight knobs to edit the voice parameters listed below:

Knob	Control	ID	MIDI data
Knob1	Attack time	ATTACK	CC#73
Knob2	Decay time	DECAY	CC#75

Knob3	Release time	RELEAS	CC#72
Knob4	Cutoff frequency	CUTOFF	CC#74
Knob5	Resonance	RESONANCE	CC#71
Knob6	Vibration rate	VIB RATE	CC#76
Knob7	Vibration depth	VIB DEPTH	CC#77
Knob8	Vibration delay	VIB DELAY	CC#78

5.4 Bank Number And Patch (Voice)

5.4.1 Bank MSB Select

- ◆ Operation: **SHIFT** ⇒ E1【Bank MSB Select】⇒【Select number】⇒ **Enter**
- ◆ MIDI data: **CC#0 + CC#32 + Program**
- ◆ Default: 0
- ◆ Range: 0-127

5.4.2 Bank LSB Select

- ◆ Operation: **SHIFT** ⇒ F1【Bank LSB Select】⇒【Select number】⇒ **Enter**
- ◆ MIDI data: **CC#0 + CC#32 + Program**
- ◆ Default: 0
- ◆ Range: 0-127

5.4.3 Select patch (Program Change)

- ◆ Operation: **SHIFT** ⇒ F#1【Program Change】⇒【Select number】
⇒ **Enter**
- ◆ MIDI data: **CC#0 + CC#32 + Program**
- ◆ Default: 1
- ◆ Range: 1-128



You can first select the three numbers then use the **Enter** only once to confirm and send out MIDI data.

6 REMOTE Mode

- ◆ Press the joystick until both indicator A and B are light for Remote mode.



6.1 Use The Pads To Control The Software

- ◆ In the Remote mode, you can assign pads to any MIDI note, any kind of MIDI controller or more, see the appendix 10.1 of this manual, so you can use the pads to control a lot of things in your software.

6.2 Use The Knobs To Control The Software

- ◆ In the Remote mode, you can assign knobs to any MIDI note, any kind of MIDI controller or more, see the appendix 10.1 of this manual, so you can use knobs to control a lot of things in your software.

6.3 Assign Notes & Channel

- ◆ Operation: **SHIFT** ⇒ **B1** 【Assign Note】 ⇒ 【Select part】 ⇒ 【Adjust parameter】
⇒ **Enter** ⇒ 【Assign Channel】 ⇒ 【Adjust parameter】 ⇒ **Enter**
- ◆ Here 【Select part】 means moving the part in the keyboard. In this mode you can select pads or pedals as the part to assign notes
- ◆ Note Range: 0-127
- ◆ Channel Range: 1-16
- ◆ Changing the keyboard channel will not affect the part channel assigned here.

6.4 Assign Controllers & Channel

- ◆ Operation: **SHIFT** ⇒ **C2** 【Assign Controller】 ⇒ 【Select part】 ⇒ 【Adjust

parameter】⇒ **Enter** ⇒ 【Assign Channel】 ⇒ 【Adjust parameter】⇒ **Enter**

- ◆ Here 【Select part】 means moving the part in the keyboard.. In this mode you can use any parts except for Octave and SHIFT buttons to assign controllers.
- ◆ Controller Range: 0-168
- ◆ Channel Range: 1-16

6.5 Save And Recall User Bank

- ◆ You can save your personal panel settings to one of the 8 user Banks, and recall your settings from them.
- ◆ To save the current settings, please press and hold the data dial, then press one of the eight pads.
- ◆ To recall settings from the user Bank, please press and hold the SHIFT button, then press one of the eight pads.



- ◆ When you recall settings from a user bank, the current settings will be replaced.
- ◆ You can use your computer with the U-KEY Brain software for unlimited numbers of user banks.

7 SYSTEM setup

7.1 Keyboard Channel

- ◆ Operation: **SHIFT** ⇒ C#2【Keyboard Channel】⇒【Adjust parameter】⇒ **Enter**
- ◆ Default: 1
- ◆ Range: 1-16



The keyboard channel only affects the channel of the keyboard, joystick and pedal. Pad channels and knob channels have their own settings; will not change by the keyboard channel. To change those channels, follow the assignment operation.

7.2 Dual

- ◆ When the Dual function is on, each note played on the keyboard will be sent out on two MIDI channels to make duplicated notes.

- ◆ When the Dual function is on, Transpose / Octave shift works only to the later part. However, the joystick and the pedal works on both parts.
- ◆ Operation: **SHIFT** ⇒ **D2** 【Dual】 ⇒ **Enter**
- ◆ Default: Off
- ◆ Range: Off, On



You cannot use both Dual and Split function at the same time.

7.3 Split

- ◆ When the split function is on, the keyboard is split to two regions, the left one and the right one. The two regions have separate settings including MIDI channel, patch, octave / transpose, etc. The basic settings works on the left region.
- ◆ When the split function is on, Transpose and Octave shift only works on the right region. However, the joystick and the pedal works on the both regions.
- ◆ Operation: **SHIFT** ⇒ **D#2** 【Split】 ⇒ 【Adjust parameter】 ⇒ **Enter**
- ◆ Default: off, 54
- ◆ Range: off, 36-84



You cannot use both Dual and Split function at the same time.

7.4 Keyboard Velocity Curve (Keyboard V.Curve)

- ◆ You can change the keyboard velocity curve to find your favorite touch response.
- ◆ Operation: **SHIFT** ⇒ **E2** 【Keyboard V.Curve】 ⇒ 【Adjust parameter】 ⇒ **Enter**
- ◆ Default: 1
- ◆ Range: 0-9

Code	Curve Name	Description
0	Normal	Straight line
1	Soft 1	Concave curve
2	Soft 2	Concave curve
3	Hard 1	Convex curve
4	Hard 2	Convex curve
5	Expand	Concave then convex
6	Compress	Convex then concave

7	Fixup 1	Fixed velocity 64
8	Fixup 2	Fixed velocity 100
9	Fixup 3	Fixed velocity 127



Please refer to appendix 10.5

7.5 Pad Velocity Curve (Pad V.Curve)

- ◆ Operation: **SHIFT** ⇒ **F2** **【Pad V.Curve】** ⇒ **【Adjust parameter】** ⇒ **Enter**
- ◆ Default: 1
- ◆ Range: 0-9



Please refer to appendix 10.5

7.6 Knob Acceleration Curve (Konb Accel.Curve)

- ◆ You can adjust the knob acceleration curve for faster or slower value changing rate of the knobs..
- ◆ Operation: **SHIFT** ⇒ **F#2** **【Konb Accel.Curve】** ⇒ **【Adjust parameter】** ⇒ **Enter**
- ◆ Default: 1
- ◆ Range: 0-3

7.7 Pedal Polarity

- ◆ You can change the pedal polarity to make your pedal work properly.
- ◆ Operation: **SHIFT** ⇒ **G2** **【Pedal Polarity】** ⇒ **【Adjust parameter】** ⇒ **Enter**
- ◆ Default: 0
- ◆ Range: 0-1

7.8 Local On / Off

- ◆ When Local is set to On, the keyboard will send MIDI data to both the internal

tone generator and the MIDI out port; when Local is set to Off, the keyboard will only send MIDI data to the MIDI out port.

- ◆ Operation: **SHIFT** ⇒ **G#2** 【Local On/Off】
- ◆ Default: On
- ◆ Range: {on}, {off}

7.9 Data Dump

- ◆ You can dump the keyboard settings by sysx data to other MIDI device, so you can save and restore the keyboard settings.
- ◆ Operation: **SHIFT** ⇒ **A2** 【Dump】 ⇒ **Enter**
MIDI data: F0 00 20 63.....F7

7.10 Device Number

- ◆ When you have several devices with the same model type conneted in your MIDI system, you can use the Device Number so only the device with the same device number will receive the corresponded sysx. Besides, the device number of the keyboard will also be included in all sysxes sent out.
- ◆ Operation: **SHIFT** ⇒ **A#2** 【Device Number】 ⇒ 【Adjust parameter】 ⇒ **Enter**
- ◆ Default: 0
- ◆ Range: 0-16

7.11 Select Information To DISPLAY

- ◆ The LED can display many informations, and you can select the needed information to to be shown on the display. When you click or move a part of the keyboard like knobs or pads, the part-related informations will be displayed.

7.11.1 Program Number

- ◆ You can display the current program number (patch or voice number)
- ◆ Operation: **SHIFT** ⇒ **B2** 【Program】 ⇒ **Enter**
- ◆ Range: 1-128

7.11.2 Bank MSB

- ◆ You can display the Bank MSB.
- ◆ Operation: **SHIFT** ⇒ C3 【Bank MSB】 ⇒ **Enter**
- ◆ Range: 0-127

7.11.3 Bank LSB

- ◆ You can display the Bank LSB.
- ◆ Operation: **SHIFT** ⇒ C#3 【Bank LSB】 ⇒ **Enter**
- ◆ Range: 0-127

7.11.4 Note Number

- ◆ You can display the note number.
- ◆ Operation: **SHIFT** ⇒ D3 【Note】
- ◆ Range: 0-127

7.11.5 Controller Number

- ◆ You can display the controller number.
- ◆ Operation: **SHIFT** ⇒ D#3 【Controller】
- ◆ Range: 0-127

7.12 Send RESET Message

7.12.1 All Notes Off

- ◆ If you hear continuous long note, you can use this operation to stop it.
- ◆ Operation: **SHIFT** ⇒ E3 【All Notes Off】

- ◆ MIDI data: CC#123

7.12.2 Reset All Control

- ◆ You can reset all the MIDI controllers to the default values.
- ◆ Operation: **SHIFT** ⇒ F3 【Reset All Control】
- ◆ MIDI data: CC#121

7.12.3 CME On

- ◆ You can send the CME On message to make other CME device ready to receive CME messages.
- ◆ Operation: **SHIFT** ⇒ F#3 【CME On】
- ◆ MIDI data: F0 00 20 63 00 01 00 00 7F F7

7.12.4 GM On

- ◆ You can send the GM On message to make GM initialization for General MIDI compatible devices.
- ◆ Operation: **SHIFT** ⇒ G3 【GM On】
- ◆ MIDI data: F0 7E 7F 09 01 F7

8 Feature Function

8.1 GAME Mode

- ◆ In the game mode, you can practice and test your keyboard performing skills.

8.1.1 Select A Game By Game Number

- ◆ Operation: **SHIFT** ⇒ **G1**【Game Number】⇒【Adjust parameter】⇒ **Enter**
- ◆ Default: 1
- ◆ Range: 1-56
- ◆ When a game is selected, the keyboard is waiting for the user to start the game. To start the game, just play any key, then the game will start and the LED will display the used time in 1/10 seconds steps. When you finish playing the song correctly , the LED stops the continuous time to show the final time.
- ◆ Please refer to appendix 10.3 for the song information.

8.1.2 Exit Game

- ◆ Operation: **SHIFT** ⇒ **G#1** 【Game Exit】
- ◆ Range: {off}

8.2 Select Scale

- ◆ You can select different scales for your music style.
- ◆ Operation: **SHIFT** ⇒ **A1** 【Scale】 ⇒ 【Adjust parameter】 ⇒ **Enter**
- ◆ Default: 0
- ◆ Range: 0-41
- ◆ To find the available scales list, please refer to appendix 10.2

8.3 Select Temperament

- ◆ You can select your favorite Temperament rather than the default equal temperament.
- ◆ Operation: **SHIFT** ⇒ **A#1** 【Temperament】 ⇒ 【Adjust parameter】 ⇒ **Enter**
- ◆ Default: 0
- ◆ Range: 0-12
- ◆ Please refer to appendix 10.4 for more information about available temperament

8.4 Mute Pads And Knobs

- ◆ You can mute pads and knobs by stop them from sending out MIDI data, and this operation will not affect the keyboard, the joystick or the pedal.
- ◆ Operation: **SHIFT** ⇒ **G#3** **【Mute】** ⇒ **Enter**
- ◆ Default: Off
- ◆ Range: On, Off

8.5 Send Out Snapshot

- ◆ You can send out the keyboard snapshot (settings), and the receiver device will quickly have the same settings.
- ◆ Operation: **SHIFT** ⇒ **A3** **【Snapshot】**

8.6 U-CTRL Mode



- ◆ You can control popular computer softwares in the U-CTRL mode. In this mode, Pads and knobs will send out preset control data along with the SHIFT button, while the keyboard, the pedal and the joystick work the same way like in the REMOTE mode.
- ◆ Operation:
 1. Press the right U-CTRL button on the front panel, and the button will light on.
 2. Launch your computer software, and follow the software's manual to load the MackieControl template.
 3. Set the remote control port in the template as "USB AUDIO DEVICE [2]" (Device name for U-Key).
- ◆ In the U-CTRL mode, pads and knobs together with the SHIFT button can be used to control the software either in mode A (Indicator A is on) or in mode B (Indicator B is on) or in mode A+B (Both indicator A and indicator B are on).
- ◆ In the U-CTRL mode, the keyboard, the pedal, the joystick and the Octave buttons work the same way like in the REMOTE mode.

◆ Please refer to the below list about the MackieControl function map:

U-KEY control part	MCU function (A)	MCU function (B)	MCU function (A+B)
Knob1	Fader1	Fader1	Fader1
Knob2	Fader2	Fader2	Fader2
Knob3	Fader3	Fader3	Fader3
Knob4	Fader4	Fader4	Fader4
Knob5	Fader5	Fader5	Fader5
Knob6	Fader6	Fader6	Fader6
Knob7	Fader7	Fader7	Fader7
Knob8	Fader8	Fader8	Fader8
Knob9	Fader9	Fader9	Fader9
SHIFT+Knob1	Data dial	Data dial	Data dial
SHIFT+Knob2	Knob1	Knob1	Knob1
SHIFT+Knob3	Knob2	Knob2	Knob2
SHIFT+Knob4	Knob3	Knob3	Knob3
SHIFT+Knob5	Knob4	Knob4	Knob4
SHIFT+Knob6	Knob5	Knob5	Knob5
SHIFT+Knob7	Knob6	Knob6	Knob6
SHIFT+Knob8	Knob7	Knob7	Knob7
SHIFT+Knob9	Knob8	Knob8	Knob8
Pad1	SOLO 1	REC/RDY 1	F1
Pad2	SOLO 2	REC/RDY 2	F2
Pad3	SOLO 3	REC/RDY 3	F3
Pad4	SOLO 4	REC/RDY 4	F4
Pad5	SOLO 5	REC/RDY 5	F5
Pad6	SOLO 6	REC/RDY 6	F6
Pad7	SOLO 7	REC/RDY 7	F7
Pad8	SOLO 8	REC/RDY 8	F8
SHIFT+Pad1	MUTE 1	SELECT 1	READ
SHIFT+Pad2	MUTE 2	SELECT 2	WRITE
SHIFT+Pad3	MUTE 3	SELECT 3	MIXER
SHIFT+Pad4	MUTE 4	SELECT 4	REW
SHIFT+Pad5	MUTE 5	SELECT 5	FF
SHIFT+Pad6	MUTE 6	SELECT 6	STOP
SHIFT+Pad7	MUTE 7	SELECT 7	PLAY
SHIFT+Pad8	MUTE 8	SELECT 8	REC

9 Update Program And Data

With the U-Key Brain program, you can update the program and data of the keyboard via USB connection. To get the newest U-Key Brain program, please visit www.cme-pro.com.

10 Appendix

10.1 Assignable Controllers List

Controller		Data Format	Data Range
No.	Name		
0	Bank Select	Controller	0-127
1	Modulation wheel	Controller	0-127
2	Breath control	Controller	0-127
3	Undefined	Controller	0-127
4	Foot controller	Controller	0-127
5	Portamento time	Controller	0-127
6	Data Entry	Controller	0-127
7	Channel Volume	Controller	0-127
8	Balance	Controller	0-127
9	Undefined	Controller	0-127
10	Pan	Controller	0-127
11	Expression	Controller	0-127
12	Effect control 1	Controller	0-127
13	Effect control 2	Controller	0-127
14	Undefined	Controller	0-127
15	Undefined	Controller	0-127
16	General Purpose #1	Controller	0-127
17	General Purpose #2	Controller	0-127
18	General Purpose #3	Controller	0-127
19	General Purpose #4	Controller	0-127
20	Undefined	Controller	0-127
21	Undefined	Controller	0-127
22	Undefined	Controller	0-127
23	Undefined	Controller	0-127
24	Undefined	Controller	0-127
25	Undefined	Controller	0-127
26	Undefined	Controller	0-127
27	Undefined	Controller	0-127
28	Undefined	Controller	0-127
29	Undefined	Controller	0-127
30	Undefined	Controller	0-127
31	Undefined	Controller	0-127
32	Bank Select	Controller	0-127
33	Modulation wheel	Controller	0-127
34	Breath control	Controller	0-127
35	Undefined	Controller	0-127
36	Foot controller	Controller	0-127
37	Portamento time	Controller	0-127
38	Data entry	Controller	0-127

39	Channel Volume	Controller	0-127
40	Balance	Controller	0-127
41	Undefined	Controller	0-127
42	Pan	Controller	0-127
43	Expression	Controller	0-127
44	Effect control 1	Controller	0-127
45	Effect control 2	Controller	0-127
46	Undefined	Controller	0-127
47	Undefined	Controller	0-127
48	General Purpose #1	Controller	0-127
49	General Purpose #2	Controller	0-127
50	General Purpose #3	Controller	0-127
51	General Purpose #4	Controller	0-127
52	Undefined	Controller	0-127
53	Undefined	Controller	0-127
54	Undefined	Controller	0-127
55	Undefined	Controller	0-127
56	Undefined	Controller	0-127
57	Undefined	Controller	0-127
58	Undefined	Controller	0-127
59	Undefined	Controller	0-127
60	Undefined	Controller	0-127
61	Undefined	Controller	0-127
62	Undefined	Controller	0-127
63	Undefined	Controller	0-127
64	Damper pedal	Controller	0-127
65	Portamento on/off	Controller	0-127
66	Sostenuto on/off	Controller	0-127
67	Soft pedal on/off	Controller	0-127
68	Legato Footswitch	Controller	0-127
69	Hold 2	Controller	0-127
70	Sound Variation	Controller	0-127
71	Timbre/Harmonic Intens.	Controller	0-127
72	Release Time	Controller	0-127
73	Attack Time	Controller	0-127
74	Brightness	Controller	0-127
75	Decay Time	Controller	0-127
76	Vibrato Rate)	Controller	0-127
77	Vibrato Depth	Controller	0-127
78	Vibrato Delay	Controller	0-127
79	Sound Cont.	Controller	0-127
80	General Purpose #5	Controller	0-127
81	General Purpose #6	Controller	0-127
82	General Purpose #7	Controller	0-127
83	General Purpose #8	Controller	0-127

84	Portamento Control	Controller	0-127
85	Undefined	Controller	0-127
86	Undefined	Controller	0-127
87	Undefined	Controller	0-127
88	Undefined	Controller	0-127
89	Undefined	Controller	0-127
90	Undefined	Controller	0-127
91	Reverb Send Level	Controller	0-127
92	Tremolo Depth	Controller	0-127
93	Chorus Send Level	Controller	0-127
94	Celeste/Detune Depth	Controller	0-127
95	Phaser Depth	Controller	0-127
96	Data entry +1	Controller	0-127
97	Data entry -1	Controller	0-127
98	NRPN LSB	Controller	0-127
99	NRPN MSB	Controller	0-127
100	RPN LSB	Controller	0-127
101	RPN MSB	Controller	0-127
102	Undefined	Controller	0-127
103	Undefined	Controller	0-127
104	Undefined	Controller	0-127
105	Undefined	Controller	0-127
106	Undefined	Controller	0-127
107	Undefined	Controller	0-127
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110	Undefined	Controller	0-127
111	Undefined	Controller	0-127
112	Undefined	Controller	0-127
113	Undefined	Controller	0-127
114	Undefined	Controller	0-127
115	Undefined	Controller	0-127
116	Undefined	Controller	0-127
117	Undefined	Controller	0-127
118	Undefined	Controller	0-127
119	Undefined	Controller	0-127
120	All Sound Off	Controller	0-127
121	Reset All Controllers	Controller	0-127
122	Local control on/off	Controller	0-127
123	All notes off	Controller	0-127
124	Omni mode off	Controller	0-127
125	Omni mode on	Controller	0-127
126	Poly mode off	Controller	0-127
127	Poly mode on	Controller	0-127

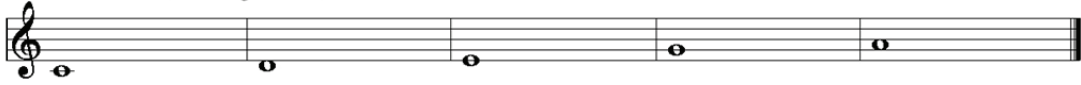
10.2 Scales List

Int ctrl No.	Scale No.	Pitch name	C	C#	D	D#	E	F	F#	G	G#	A	A#	B
			Note number:	1	2	3	4	5	6	7	8	9	10	11
128	001	Major Scale	C	C	D	D	E	F	F	G	G	A	A	B
129	002	Pentatonic Major Scale	C	C	D	D	E	E	E	G	G	A	A	A
130	003	Blues Major Scale	C	C	D#	D#	F	F	F#	G	G	A	A	A
131	004	Minor Scale	C	C	D	D#	D#	F	F	G	G#	G#	A#	A#
132	005	Melodic Minor Scale	C	C	D	D#	D#	F	F	G	G	A	A	B
133	006	Harmonic Minor Scale	C	C	D	D#	D#	F	F	G	G#	A	A	B
134	007	Pentatonic Minor Scale	C	C	D#	D#	D#	F	F	G	G	A#	A#	A#
135	008	Blues Minor Scale	C	C	D#	D#	D#	F	F#	G	G	A#	A#	A#
136	009	Augmented Scale	C	C	D#	D#	E	E	G	G	G#	G#	B	B
137	010	Be-Bop Scale	C	C	D	D	E	F	F	G	G	A	A#	B
138	011	Whole-Half Scale	C	C	D	D#	D#	F	F#	F#	G#	A	A	B
139	012	Half-Whole Scale	C	C#	C#	D#	E	E	F#	G	G	A	A#	A#
140	013	Whole Tone Scale	C	C	D	D	E	E	F#	F#	G#	G#	A#	A#
141	014	Augmented fifth Scale	C	C	D	D	E	F	F	G	G#	A	A	B
142	015	Algerian Scale	C	C	D	D#	D#	F#	F#	G	G#	G#	B	B
143	016	Arabian Scale	C	C	D	D	E	F	F#	F#	G#	G#	A#	A#
144	017	Balinese Scale	C	C#	C#	D#	D#	D#	G	G	G#	G#	G#	G#
145	018	Bartok Scale	C	C	D	D	E	E	F#	G	G	A	A#	A#
146	019	Byzantine Scale	C	C#	C#	E	E	F	F	G	G#	G#	B	B
147	020	Egyptian Scale	C	C	D	D	F	F	F	G	G	G	A#	A#
148	021	Enigmatic Scale	C	C#	C#	E	E	E	F#	F#	G#	G#	A#	B
149	022	Spanish Scale	C	C#	C#	E	E	F	F	G	G#	G#	A#	A#
150	023	Spanish 8 Tone Scale	C	C#	C#	D#	E	F	F#	F#	G#	G#	A#	A#
151	024	Gypsy Scale	C	C#	C#	E	E	F	F	G	G	A	A#	A#
152	025	Hungarian Gypsy Scale	C	C	D	D#	D#	F#	F#	G	G#	G#	A#	A#
153	026	Hindu Scale	C	C	D	D	E	F	F	G	G#	G#	A#	A#
154	027	Iwato Scale	C	C#	C#	C#	F	F	F#	F#	F#	A#	A#	A#
155	028	Japanese Scale	C	C#	C#	C#	F	F	F	G	G#	G#	G#	G#
156	029	Javanese Scale	C	C#	C#	D#	D#	F	F	G	G	A	A#	A#
157	030	Hawaiian Scale	C	C	D	D#	D#	F	F	G	G	A	A	B
158	031	Hirajoshi Scale	C	C	D	D#	D#	D#	G	G	G#	G#	G#	G#
159	032	Hungarian Minor Scale	C	C	D	D#	D#	F#	F#	G	G#	G#	B	B
160	033	Hungarian Major Scale	C	C	D#	D#	E	E	F#	G	G	A	A#	A#
161	034	Leading Whole Tone Scale	C	C	D	D	E	E	F#	F#	G#	G#	A#	B
162	035	Mohammedan Scale	C	C	D	D#	D#	F	F	G	G#	G#	B	B
163	036	Mongolian Scale	C	C	D	D	E	E	G	G	G	A#	A#	A#
164	037	Neapolitan Minor Scale	C	C#	C#	D#	D#	F	F	G	G#	G#	B	B
165	038	Neapolitan Major Scale	C	C#	C#	D#	D#	F	F	G	G	A	A	B
166	039	Oriental Scale	C	C#	C#	E	E	F	F#	F#	A	A	A#	A#
167	040	Pelog Scale	C	C#	C#	D#	D#	D#	G	G	G	A#	A#	A#
168	041	Persian Scale	C	C#	C#	E	E	F	F#	F#	G#	G#	B	B

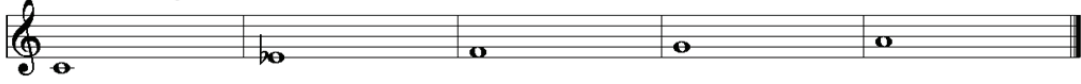
001-Major Scale



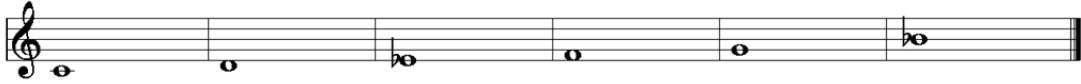
002-Pentatonic Major Scale



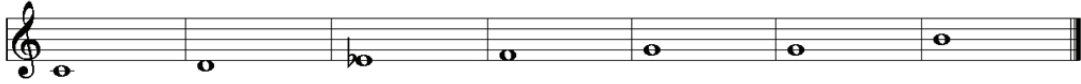
003-Blues Major Scale



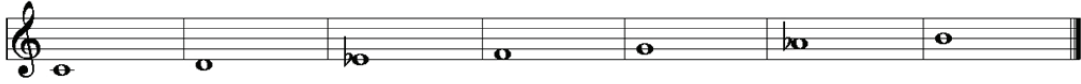
004-Minor Scale



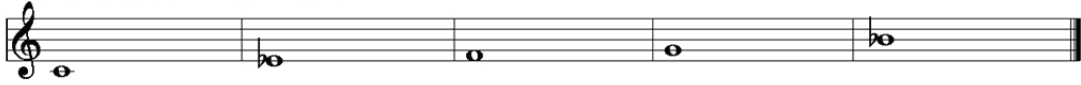
005-Melodic Minor Scale



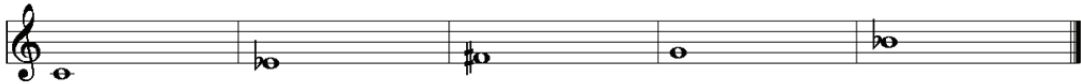
006-Harmonic Minor Scale



007-Pentatonic Minor Scale



008-Blues Minor Scale



009-Augmented Scale



010-Be-Bop Scale



011-Whole-Half Scale



012-Half-Whole Scale



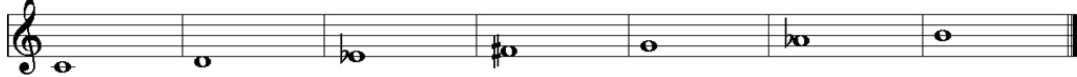
013-Whole Tone Scale



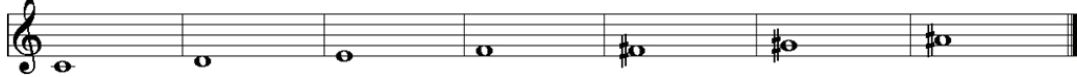
014-Augmented fifth Scale



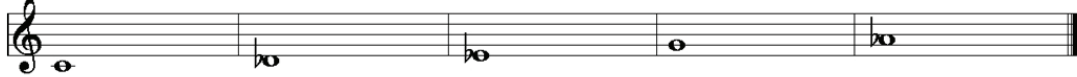
015-Algerian Scale



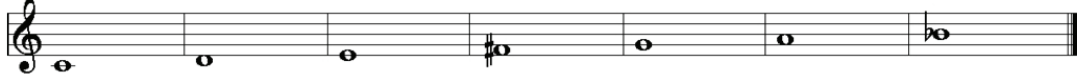
016-Arabian Scale



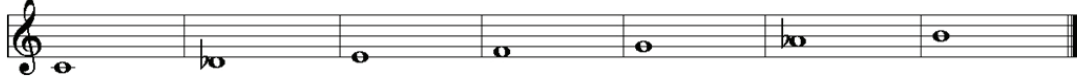
017-Balinese Scale



018-Bartok Scale



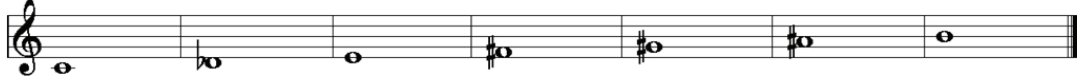
019-Byzantine Scale



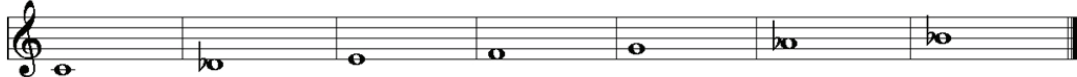
020-Egyptian Scale



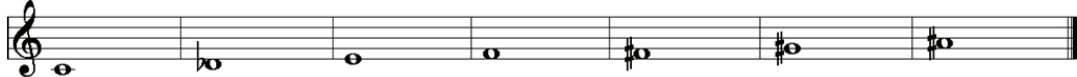
021-Enigmatic Scale



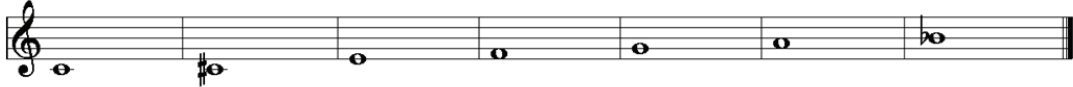
022-Spanish Scale



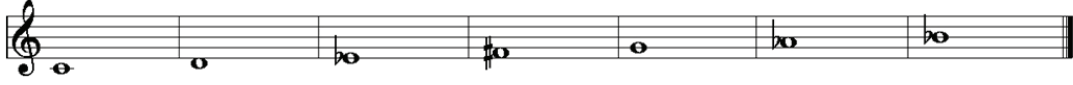
023-Spanish 8 Tone Scale



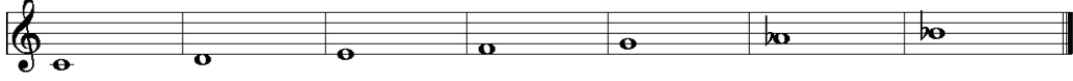
024-Gypsy Scale



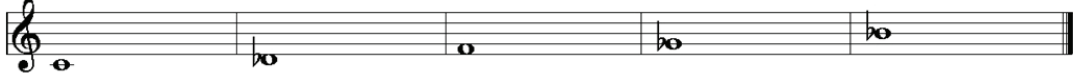
025-Hungarian Gypsy Scale



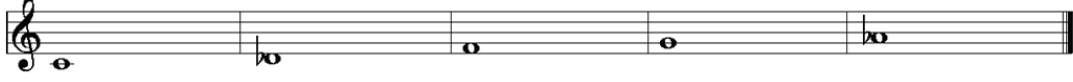
026-Hindu Scale



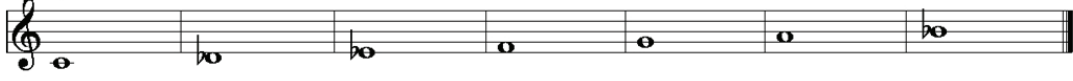
027-Iwato Scale



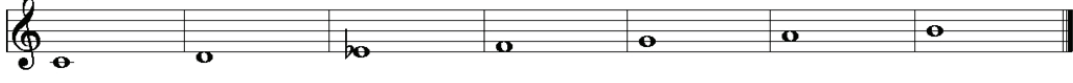
028-Japanese Scale



029-Javanese Scale



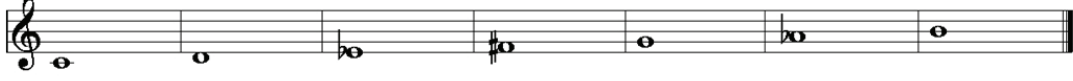
030-Hawaiian Scale



031-Hirajoshi Scale



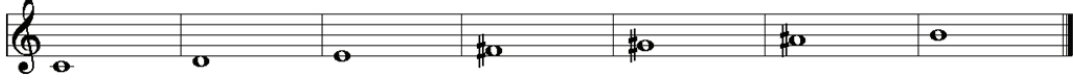
032-Hungarian Minor Scale



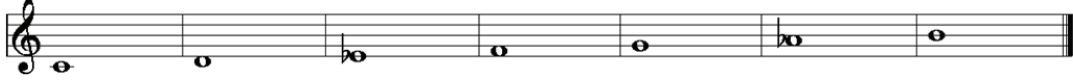
033-Hungarian Major Scale



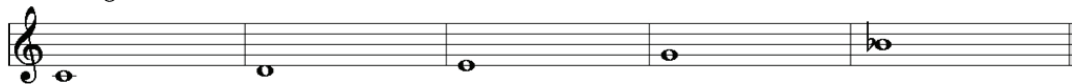
034-Leading Whole Tone Scale



035-Mohammedan Scale



036-Mongolian Scale



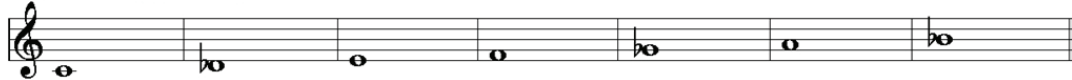
037-Neapolitan Minor Scale



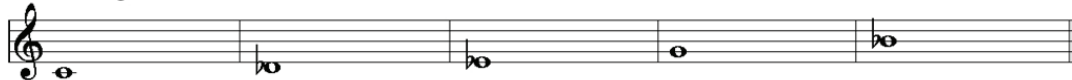
038-Neapolitan Major Scale



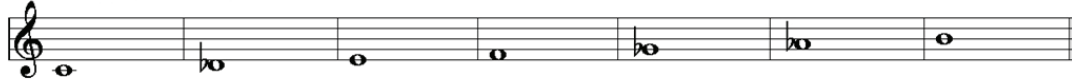
039-Oriental Scale



040-Pelog Scale



041-Persian Scale



10.3 Testing Songs List

No.	Song description	Key points
01	C major scale, one octave, up and down	C4→C5→C4
02	G major scale, one octave, up and down	G3→G4→G3
03	F major scale, one octave, up and down	F3→F4→F3
04	D major scale, one octave, up and down	D3→D4→D3
05	Bb major scale, one octave, up and down	Bb3→Bb4→Bb3
06	A major scale, one octave, up and down	A3→A4→A3
07	Eb major scale, one octave, up and down	Eb3→Eb4→Eb3
08	E major scale, one octave, up and down	E3→E4→E3
09	Ab major scale, one octave, up and down	Ab3→Ab4→Ab3
10	B major scale, one octave, up and down	B3→B4→B3
11	Db major scale, one octave, up and down	Db3→Db4→Db3
12	Gb major scale, one octave, up and down	Gb3→Gb4→Gb3
13	a harmonic minor scale, one octave, up and down	A3→A4→A3
14	e harmonic minor scale, one octave, up and down	E3→E4→E3
15	d harmonic minor scale, one octave, up and down	D3→D4→D3
16	b harmonic minor scale, one octave, up and down	B3→B4→B3
17	g harmonic minor scale, one octave, up and down	G3→G4→G3
18	f# harmonic minor scale, one octave, up and down	F#3→F#4→F#3
19	c harmonic minor scale, one octave, up and down	C4→C5→C4
20	c# harmonic minor scale, one octave, up and down	C#3→C#4→C#3
21	f harmonic minor scale, one octave, up and down	F3→F4→F3
22	g# harmonic minor scale, one octave, up and down	G#3→G#4→G#3
23	bb harmonic minor scale, one octave, up and down	Bb3→Bb4→Bb3
24	eb harmonic minor scale, one octave, up and down	Eb3→Eb4→Eb3
25	C major arpeggio, two octaves, up and down	C3→C5→C3
26	G major arpeggio, two octaves, up and down	G2→G4→G2
27	F major arpeggio, two octaves, up and down	F2→F4→F2
28	D major arpeggio, two octaves, up and down	D2→D4→D2
29	Bb major arpeggio, two octaves, up and down	Bb2→Bb4→Bb2
30	A major arpeggio, two octaves, up and down	A2→A4→A2
31	Eb major arpeggio, two octaves, up and down	Eb2→Eb4→Eb2
32	E major arpeggio, two octaves, up and down	E2→E4→E2
33	Ab major arpeggio, two octaves, up and down	Ab2→Ab4→Ab2
34	B major arpeggio, two octaves, up and down	B2→B4→B2
35	Db major arpeggio, two octaves, up and down	Db2→Db4→Db2
36	Gb major arpeggio, two octaves, up and down	Gb2→Gb4→Gb2
37	a harmonic minor arpeggio, two octaves, up and down	A2→A4→A2
38	e harmonic minor arpeggio, two octaves, up and down	E2→E4→E2
39	d harmonic minor arpeggio, two octaves, up and down	D2→D4→D2
40	b harmonic minor arpeggio, two octaves, up and down	B2→B4→B2
41	g harmonic minor arpeggio, two octaves, up and down	G2→G4→G2

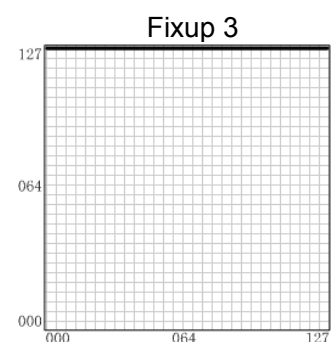
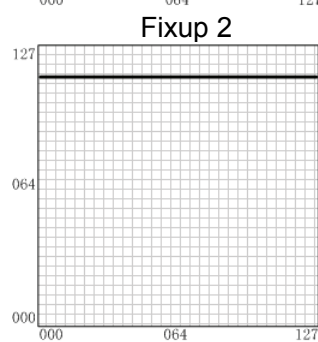
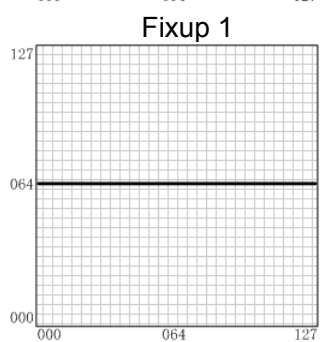
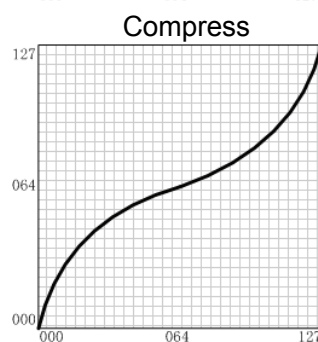
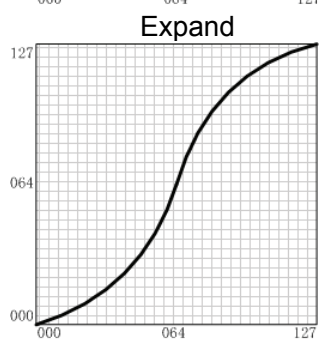
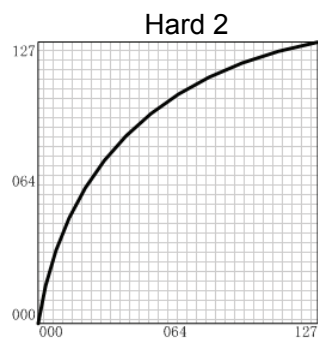
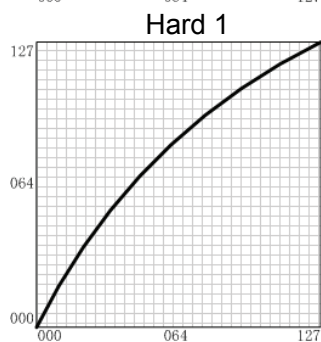
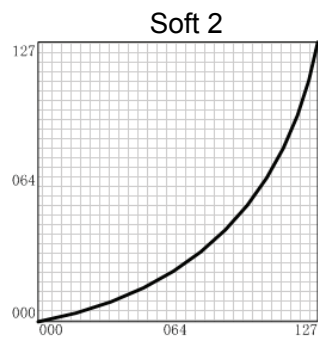
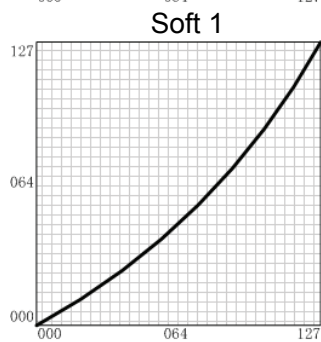
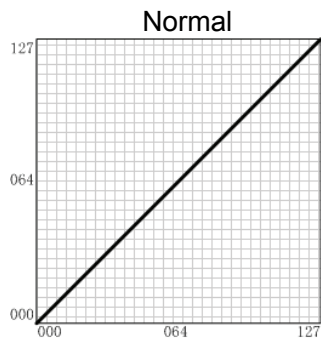
42	f# harmonic minor arpeggio, two octaves, up and down	F#2→F#4→F#2
43	c harmonic minor arpeggio, two octaves, up and down	C3→C5→C3
44	c# harmonic minor arpeggio, two octaves, up and down	C#2→C#4→C#2
45	f harmonic minor arpeggio, two octaves, up and down	F2→F4→F2
46	g# harmonic minor arpeggio, two octaves, up and down	G#2→G#4→G#2
47	bb harmonic minor arpeggio, two octaves, up and down	Bb2→Bb4→Bb2
48	eb harmonic minor arpeggio, two octaves, up and down	Eb2→Eb4→Eb2
49	chromatic scale, one octave, up and down	C2→C3→C2
50	chromatic scale, two octaves, up and down	C3→C5→C3
51	chromatic scale, three octaves, up and down	C2→C5→C2
52	chromatic scale, four octaves, up and down	C1→C5→C1
53	5 seconds of vibration (alternately play any two different note)	—
54	10 seconds of vibration (alternately play any two different note)	—
55	5 seconds of unison (repeatedly play any note)	—
56	10 seconds of unison (repeatedly play any note)	—

10.4 Temperament List

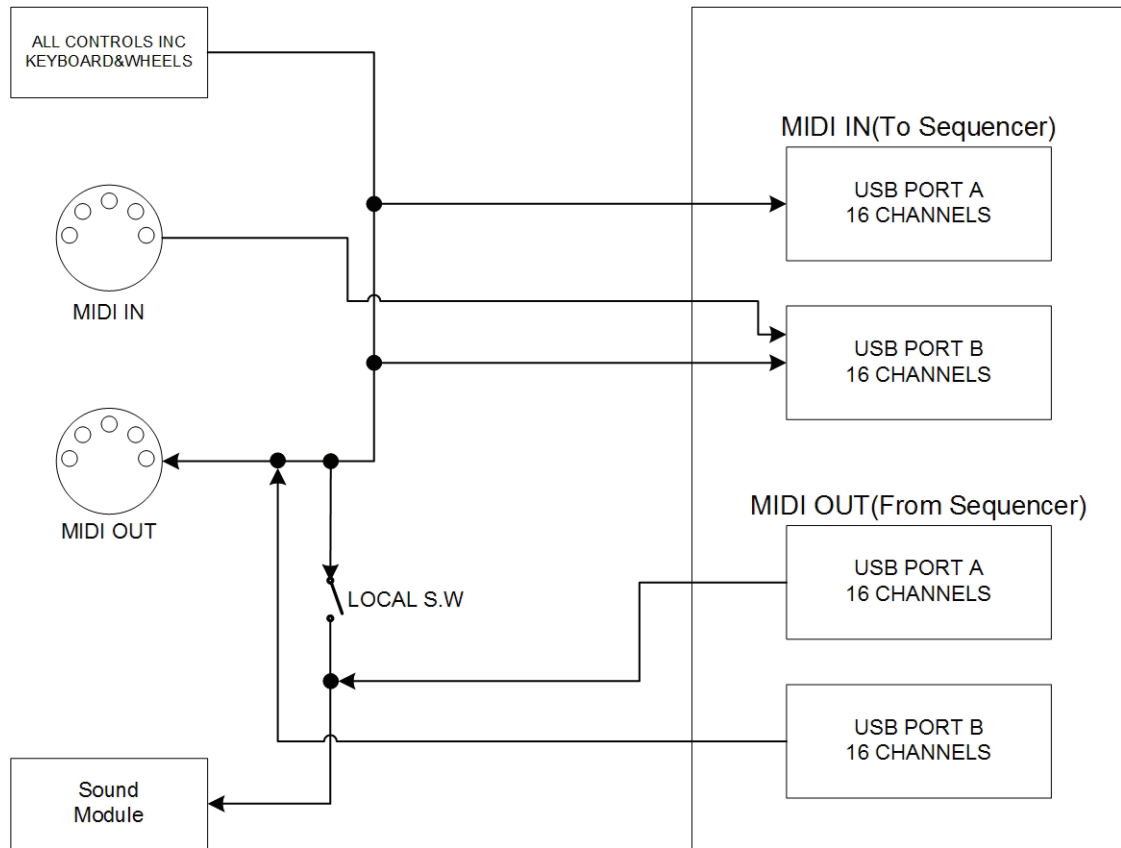
No.	Type	C	C#	D	D#	E	F	F#	G	G#	A	A#	B
0	EQUAL	△	△	△	△	△	△	△	△	△	△	△	△
1	ARABIC	△	△	△	△	▲	△	△	△	△	△	△	▲
2	ARABIC	△	▲	△	△	△	△	△	△	△	△	△	△
3	ARABIC	△	△	△	△	△	△	▲	△	△	△	△	▲
4	ARABIC	△	▲	△	△	△	△	▲	△	△	△	△	△
5	ARABIC	△	△	▲	△	△	△	△	▲	△	△	△	△
6	ARABIC	△	△	▲	△	△	△	△	△	△	▲	△	△
7	ARABIC	△	△	△	▲	△	△	△	△	▲	△	△	△
8	ARABIC	△	▲	△	△	△	△	△	△	▲	△	△	△
9	ARABIC	△	▲	△	△	△	△	△	△	△	△	▲	△
10	ARABIC	△	△	△	△	▲	△	△	△	△	△	△	△
11	ARABIC	△	△	△	△	△	△	△	△	△	▲	△	△
12	ARABIC	△	△	△	△	△	△	△	△	△	△	△	▲

Note: △=Normal pitch, ▲=Changed pitch

10.5 Velocity Curve List



10.6 MIDI Route



10.7 Troubleshooting

Trouble	Possible reasons and solution
After turning on the power switch, the keyboard is not powered on	<ol style="list-style-type: none"> 1. Make sure you have connected the keyboard to its AC adaptor with the proper AC supply 2. If the power is supplied via host USB, please check the USB connection, and make sure that the host computer is turned on.
No sound when playing the keyboard	<ol style="list-style-type: none"> 1. Check the volume settings of the tone generator and speaker system 2. Check the MIDI connection and the audio cable 3. Check Master Volume fader 4. Check Channel Volume knobs 5. Check Channel Expression Knobs 6. Check the attack time of the filter 7. Make sure you have the right settings in you music software 8. Check the MIDI route settings 9. Check the Controller Pedal position
Continuous long sound	<ol style="list-style-type: none"> 1. Check Sustain pedal (Damper pedal) 2. Check the release time of the filter 3. Use All notes off or Reset
Improper voice	Tone generator not set properly, please Initialize or Reset
Wrong pitch	Check Pitch bend, Transpose or Octave function of the keyboard
Tempo knob dose not work	Make sure your sequencer software support this function with the right settings(Refer to the Sync section of your software manual)
Some functions do not work	It is possible that your tone generator or music software dose not support those functions
You hear two sounds when playing one key	Check DUAL function of the keyboard
Cannot select voice	Read the data list of your tone generator for voice select detail, and properly set the tone BANK MSB and LSB

10.8 Specifications

- Keyboard
 - ✧ 49 keys (C1-C5), velocity sensitive
 - Functions
 - ✧ Basic functions: Octave Shift (-3 – +3 octaves), Programmable Joystick
 - ✧ MIDI Data: Sequencer control, MIDI clock, Bank Select, Program Change, GM System On, GS System on, XG System On, Control Change, All Notes Off, and others
 - ✧ Assignable Parameters: Transpose (± 12 semitones), MIDI Transmit Channel, Velocity Curve(Touch Sensitivity)
 - Panel Controls and Indicators
 - ✧ 8 Assignable knobs, Data dial, Function switch button, 2 LED indicators, 2 Transpose and Octave buttons
 - Display
 - ✧ 7 segments, 3 digits LED display
 - Input/Output Terminals
 - ✧ MIDI OUT, MIDI IN, assignable Pedal, USB port, DC IN, Power switch, LINE OUT, HEADPHONE jack
 - Power Supply
 - ✧ Power can be supplied via USB port (when connected to computer via USB)
 - ✧ Power can also be supplied via AC Power Adaptor (When used separately.)
 - ✧ AC Power Adaptor requirement: 9V 500mA
-
- Dimensions (W x D x H)
 - ✧ 726.5 x 210 x 58.3 mm
 - Weight
 - ✧ 3.320 kg

* Specifications and appearance are subject to change without notice.

10.9 U-Key Tone Generator Information

Special MIDI Controls

NRPN # (High/Low)	Description		Power-up Default
3700h	Low-band Equalizer (bass)	0 = -12 dB, 40h = 0 dB, 7Fh = +12 dB	60h
3701h	Medium-/Low-band Equalizer	0 = -12 dB, 40h = 0 dB, 7Fh = +12 dB	40h
3702h	Medium-/High-band Equalizer	0 = -12 dB, 40h = 0 dB, 7Fh = +12 dB	40h
3703h	High-band Equalizer (treble)	0 = -12dB, 40h = 0dB, 7Fh = +12 dB	60h
3707h	Master Volume	0 to 7Fh	7Fh
3708h	Low-cutoff Frequency Equalizer	0 = 0 Hz, 7Fh = 4.7 kHz	0Ch
3709h	Medium-/Low-cutoff Frequency Equalizer	0 = 0 Hz, 7Fh = 4.2 kHz	1Bh
370Ah	Medium-/High-cutoff Frequency Equalizer	0 = 0 Hz, 7Fh = 4.2 kHz	72h
370Bh	High-cutoff Frequency Equalizer	0 = 0 Hz, 7Fh = 18.75 kHz	40h
3713h	Clipping Mode Select	0 = soft clip, 7Fh = hard clip	00h
3715h	General MIDI Reverb Send	0 = no send, 40h = default send, 7Fh = max	40h
3716h	General MIDI Chorus Send	0 = no send, 40h = default send, 7Fh = max	40h
3718h	Post Effects Applied on GM	0 = Post effects not applied 7Fh = Post effects applied	7Fh
371Ah	Post Effects Applied on Reverb/Chorus	0 = Post effects not applied 7Fh = Post effects applied	7Fh
3720h	Spatial Effect Volume	0 = no effect, 7Fh = maximum effect	00h
3722h	General MIDI Volume	0 to 7Fh	7Fh
3723h	General MIDI Pan	0 = left, 40h = center, 7Fh = right	40h
372Ch	Spatial Effect Delay	0 = shortest to 7Fh = longest	1Dh
372Dh	Spatial Effect Input	0 = stereo, 7Fh = mono	00h
372Eh	Spatial Effect Output Mode	0 = 2 speaker mode, 7Fh = 4 speaker mode	00h
3751h	Auto-test	See Section 5	
3757h	System Exclusive Device ID	0 to 1Fh, 20h = all accepted	20h

Control Messages Overview

Ctrl #	Control Name	Action	Compatible NRPN/SYSEX
7h	MASTER_VOL	Master Volume	Nrpn 3707h
10h	EQ_LBL	Low-band Equalizer Left	Nrpn 3700h
11h	EQ_MLBL	Medium-/Low-band Equalizer Left	Nrpn 3701h
12h	EQ_MHBL	Medium-/High-band Equalizer Left	Nrpn 3702h
13h	EQ_HBL	High-band Equalizer Left	Nrpn 3703h
14h	EQ_LBR	Low-band Equalizer Right	Nrpn 3700h
15h	EQ_MLBR	Medium-/Low-band Equalizer Right	Nrpn 3701h
16h	EQ_MHBR	Medium-/High-band Equalizer Right	Nrpn 3702h
17h	EQ_HBR	High-band Equalizer Right	Nrpn 3703h
18h	EQF_LB	Low-band Equalizer Frequency	Nrpn 3708h
19h	EQF_MLB	Medium-/Low-band Equalizer Frequency	Nrpn 3709h
1Ah	EQF_MHB	Medium-/High-band Equalizer Frequency	Nrpn 370Ah
1Bh	EQF_HB	High-band Equalizer Frequency	Nrpn 370Bh
25h	GMREV_SEND	General MIDI Reverb Send	Nrpn 3715h
26h	GMCHR_SEND	General MIDI Chorus Send	Nrpn 3716h
30h	SUR_VOL	Spatial Effect Volume	Nrpn 3720h
31h	SUR_DEL	Spatial Effect Delay	Nrpn 372Ch
32h	SUR_INP	Input Mono/Stereo Select for Spatial Effect	Nrpn 372Dh
38h	GM_VOL	General MIDI Volume	SysEx 40h 00h 04h
39h	GM_PAN	General MIDI Pan	SysEx 40h 00h 06h
3Ah	REV_VOL	Reverb General Volume	SysEx 40h 01h 33h
3Bh	CHR_VOL	Chorus General Volume	SysEx 40h 01h 3Ah
3Fh	UART_MOD	Switch to UART Mode	
62h	GM_POST	Post Effects Applied on General MIDI (1)	Nrpn 3718h
66h	EFF_POST	Post Effects Applied on Reverb-chorus (1)	Nrpn 371Ah
69h	REV_TYPE	Reverb Program Select	SysEx 40h 01h 30h
6Ah	CHR_TYPE	Chorus Program Select	SysEx 40h 01h 38h
6Bh	EQU_TYPE	Equalizer On/Off	Nrpn 3755h
6Ch	REV_ONOFF	Reverb On/Off	Nrpn 3755h
6Dh	CHR_ONOFF	Chorus On/Off	Nrpn 3755h
6Eh	SUR_ONOFF	Spatial Effect On/Off	Nrpn 3755h
74h	CHR_DEL	Chorus Delay	SysEx 40h 01h 3Ch
75h	CHR_FEED	Chorus Feedback	SysEx 40h 01h 3Bh
76h	CHR_RATE	Chorus Rate	SysEx 40h 01h 3Dh
77h	CHR_DEPTH	Chorus Depth	SysEx 40h 01h 3Eh
78h	REV_TIME	Reverb Time	SysEx 40h 01h 34h
79h	REV_FEED	Reverb Feedback	SysEx 40h 01h 35h
7Eh	CLIP_MODE	Clipping Mode	Nrpn 3713h
BEh	EN_CONTROL	Enable Dream Control in Stand-alone Mode	
FFh	RESET	Reset UART Mode	

Note: Post effects are spatial effect + equalizer

System Messages

Ctrl #	Control Name	Parameters (Data)	Action	Answer
07h	MASTER_VOL	Data (byte 0–FFh, FFh)	Master Volume	
BEh	EN_CONTROL	None	Enable Dream Control in Stand-alone Mode	
FFh	RESET	None	Reset UART Mode	
3Fh	UART_MOD	None	Switch to UART Mode	Data = FEh

MASTER_VOL Master volume. Data range: 0–FFh. Default = FFh.

EN_CONTROL This control allows the user to send any control even in stand-alone mode. Only one control can be sent at a time, which means that each control sent in stand-alone mode should start with EN_CONTROL.

RESET Switch ATSAM2193 in stand-alone mode.

UART_MODE Switch ATSAM2193 in UART mode.

Spatial Effect Device The spatial effect must be set ON for using these four controls. Send SUR_ONOFF (control 6Eh) = 7Fh.

Spatial Effect Device

Ctrl #	Control Name	Parameters (Data)	Action	Answer
30h	SUR_VOL	-Data (byte 0–FFh, 0)	Spatial effect volume	
31h	SUR_DEL	-Data (byte 0–7Fh, 1Dh)	Spatial effect delay	
32h	SUR_INP	-Data (byte 0/7Fh, 0)	Input mono/stereo select for spatial effect	

SUR_VOL Spatial effect volume; default = 0.

SUR_DEL Delay time; default = 1Dh

SUR_INP Input type select:

0 Stereo (default), stereo wide Input to delay line is left – right.

7Fh Mono, pseudo stereo Input to delay line is left + right.

Routing Messages

Ctrl #	Control Name	Parameters (Data)	Action	Answer
62h	GM_POST	-Data (byte 0/7Fh, 7Fh)	Post effects applied on general MIDI	
66h	EFF_POST	-Data (byte 0/7Fh, 7Fh)	Post effects applied on reverb-chorus	

xxx_POST Post effects are spatial effect and equalizer.

Post effects can be separately applied on each module. However, general settings of post effects (EQ_XXX, EQF_XXX, EQU_TYPE, SUR_VOL, SUR_DEL, SUR_INP) are common for all modules.

Data = 0; post effects not applied on module.

Data = 7Fh; post effects applied on module.

Default value = 7Fh

MIDI Messages

Ctrl #	CONTROL NAME	Parameters (Data)	Action	Answer
38h	GM_VOL	-Data (byte 0–FFh, FFh)	General MIDI volume	
39h	GM_PAN	-Data (byte 0–7Fh, 40h)	General MIDI pan	

GM_VOL Range 0–FFh, linear scale.

Default value: GM_VOL = FFh

GM_PAN 0 = hard left, 40h = center, 7Fh = hard right

Pseudo logarithmic scale.

Same as GM system exclusive message “40h 00h 06h”.

Default value: GM_PAN = 40h

Reverb Device

Ctrl #	CONTROL NAME	Parameters (Data)	Action	Answer
69h	REV_TYPE	-Data (byte 0-7, 4)	Reverb program select	
3Ah	REV_VOL	-Data (byte 0-FFh)	Reverb general volume	
78h	REV_TIME	-Data (byte 0-7Fh)	Reverb time	
79h	REV_FEED	-Data (byte 0-7Fh)	Reverb feedback	
25h	GMREV_SEND	-Data(byte 0-FFh, 80h)	General MIDI reverb send	

REV_TYPE Reverb program. Same as GM system exclusive message "40h 01h 30h" or GM control 80.

room1	room2	room3	hall1	hall2	plate	delay	pan delay
0h	1h	2h	3h	4h	5h	6h	7h

Default = 4 (hall2)

REV_VOL Reverb volume; same as GM system exclusive message "40h 01h 33h".

Default values:

room1	room2	room3	hall1	hall2	plate	delay	pan delay
90h	90h	90h	C0h	90h	90h	FFh	FFh

REV_TIME Reverb time; same as GM system exclusive message "40h 01h 34h".

Default values:

room1	room2	room3	hall1	hall2	plate	delay	pan delay
7Fh	7Fh	7Fh	7Fh	7Fh	7Fh	18h	7Fh

REV_FEED Reverb delay feedback; only if reverb number = 6 or 7 (delays).

This control is same as GM system exclusive message "40h 01h 35h".

Default values:

delay	pan delay
22h	26h

GMREV_SEND Modify reverb send level for general MIDI.

80h: Original reverb send levels of MIDI sequence not modified.

0 to 7Fh: Original reverb send levels decreased.

81h to FFh: Original reverb send levels increased.

Default = 80h

Chorus Device

Ctrl #	Control Name	Parameters (Data)	Action	Answer
6Ah	CHR_TYPE	-Data (byte 0-7, 2)	Chorus program select	
3Bh	CHR_VOL	-Data (byte 0-FFh)	Chorus general volume	
74h	CHR_DEL	-Data (byte 0-7Fh)	Chorus delay	
75h	CHR_FEED	-Data (byte 0-7Fh)	Chorus feedback	
76h	CHR_RATE	-Data (byte 0-7Fh)	Chorus rate	
77h	CHR_DEPTH	-Data (byte 0-7Fh)	Chorus depth	
26h	GMCHR_SEND	-Data (byte 0-FFh, 80h)	General MIDI chorus send	

CHR_TYPE Chorus program; same as GM system exclusive message "40h 01h 38h" or GM control 81.

chorus1	chorus2	chorus3	chorus4	FB chorus	flanger	short del	FB delay
00h	01h	02h	03h	04h	05h	06h	07h

Default = 2 (chorus3)

CHR_VOL Chorus volume; same as GM system exclusive message "40h 01h 3Ah".

CHR_DEL Chorus delay; same as GM system exclusive message "40h 01h 3Ch".

CHR_FEED Chorus feedback; same as GM system exclusive message "40h 01h 3Bh".

CHR_RATE Chorus rate; same as GM system exclusive message "40h 01h 3Dh".

CHR_DEPTH Chorus depth; same as GM system exclusive message "40h 01h 3Eh".

GMCHR_SEND Modify chorus send level for General MIDI.

Data = 80h: original chorus send levels of MIDI sequence not modified.

Data = 0 to 7Fh: original chorus send levels decreased.

Data = 81h to FFh: original chorus send levels increased.

Default = 80h

Default values:

	chorus1	chorus2	chorus3	chorus4	FB chorus	flanger	short del	FB delay
CHR_VOL	90h	90h	90h	90h	90h	90h	FFh	FFh
CHR_DEL	4Bh	40h	40h	2Bh	7Fh	56h	7Fh	7Fh
CHR_FEED	00h	07h	09h	0Ch	48h	7Fh	00h	50h
CHR_RATE	03h	09h	03h	09h	02h	01h	00h	00h
CHR_DEPTH	05h	13h	13h	10h	0Ch	03h	00h	00h

Equalizer Device

Ctrl #	Control Name	Parameters (Data)	Action	Answer
10h	EQ_LBL	-Level (byte 0-7Fh, 60h)	Low-band Equalizer Left	
11h	EQ_MLBL	-Level (byte 0-7Fh, 40h)	Medium-/Low-band Equalizer Left	
12h	EQ_MHBL	-Level (byte 0-7Fh, 40h)	Medium-/High-band Equalizer Left	
13h	EQ_HBL	-Level (byte 0-7Fh, 60h)	High-band Equalizer Left	
14h	EQ_LBR	-Level (byte 0-7Fh, 60h)	Low-band Equalizer Right	
15h	EQ_MLBR	-Level (byte 0-7Fh, 40h)	Medium-/Low-band Equalizer Right	
16h	EQ_MHBR	-Level (byte 0-7Fh, 40h)	Medium-/High-band Equalizer Right	
17h	EQ_HBR	-Level (byte 0-7Fh, 60h)	High-band Equalizer Right	
18h	EQF_LB	-Data (byte 0-7Fh, 0Ch)	Low-band Equalizer Frequency	
19h	EQF_MLB	-Data (byte 0-7Fh, 1Bh)	Medium-/Low-band Equalizer Frequency	
1Ah	EQF_MHB	-Data (byte 0-7Fh, 72h)	Medium-/High-band Equalizer Frequency	
1Bh	EQF_HB	-Data (byte 0-7Fh, 40h)	High-band Equalizer Frequency	

EQ_xxx: Band level

00h	20h	40h	60h	7Fh
-12 dB	-6 dB	0 dB	+6 dB	+12 dB

Default = 60h (+6 dB) for LB-HB, = 40h (0 dB) for MLB-MHB

EQF_xxx: Band frequency (0-7Fh), linear scale

Band	Range	Default
LB	0-4.7 Khz	0Ch
MLB	0-4.2 Khz	1Bh
MHB	0-4.2 Khz	72h
HB	0-18.75 Khz	40h

Detailed MIDI Implementation

MIDI Message	HEX Code	Description	Compatibility
NOTE ON	9nH kk vv	MIDI channel n (0–15) note ON #kk (1–127), velocity vv (1–127). vv = 0 means "note off."	MIDI
NOTE OFF	8nH kk vv	MIDI channel n (0–15) note OFF #kk (1–127), vv is "don't care."	MIDI
PITCH BEND	EnH bl bh	Pitch bend as specified by bh bl (14 bits) Maximum swing is +/- 1 tone (power-up). Can be changed using "pitch bend sensitivity." Center position is 00H 40H.	GM
PROGRAM CHANGE	CnH pp	Program (patch) change. Specific action on channel 10 (n = 9): select drumset. Refer to sounds/drumset list. Drumsets can be assigned to other channels (see SYSEX MIDI channel to part assign and part to rhythm allocation)	GM/GS
CHANNEL AFTER-TOUCH	DnH vv	vv pressure value. Effect set using Sys. Ex. 40H 2nH 20H-26H	MIDI
MIDI RESET	FFH	Reset to power-up condition.	GS
CTRL 00	BnH 00H cc	Bank select. Refer to sounds list. No action on drumset.	
CTRL 01	BnH 01H cc	Modulation wheel. Rate and maximum depth can be set using SYSEX.	MIDI
CTRL 05	BnH 05H cc	Portamento time.	MIDI
CTRL 06	BnH 06H cc	Data entry: provides data to RPN and NRPN.	MIDI
CTRL 07	BnH 07H cc	Volume (default = 100)	MIDI
CTRL 10	BnH 0AH cc	Pan (default = 64 center)	MIDI
CTRL 11	BnH 0BH cc	Expression (default = 127)	MIDI/GM
CTRL 64	BnH 40H cc	Sustain (damper) pedal	MIDI

Detailed MIDI Implementation (Continued)

MIDI Message	HEX Code	Description	Compatibility
CTRL 65	BnH 41H cc	Portamento ON/OFF	MIDI
CTRL 66	BnH 42H cc	Sostenuto pedal	MIDI
CTRL 67	BnH 43H cc	Soft pedal	MIDI
CTRL 80	BnH 50H vv	Reverb program vv = 00H to 07H (default 04H) 00H: Room1 01H: Room2 02H: Room3 03H: Hall1 04H: Hall2 05H: Plate 06H: Delay 07H: Pan delay	DREAM
CTRL 81	BnH 51H vv	Chorus program vv = 00H to 07H (default 02H) 00H: Chorus1 01H: Chorus2 02H: Chorus3 03H: Chorus4 04H: Feedback 05H: Flanger 06H: Short delay 07H: FB delay	DREAM
CTRL 91	BnH 5BH vv	Reverb send level vv = 00h to 7Fh	GS
CTRL 93	BnH 5DH vv	Chorus send level vv = 00h to 7Fh	GS
CTRL 120	BnH 78H 00H	All sound off (abrupt stop of sound on channel n)	MIDI
CTRL 121	BnH 79H 00H	Reset all controllers	MIDI
CTRL 123	BnH 7BH 00H	All notes off	MIDI
CTRL 126	BnH 7EH 00H	Mono on	MIDI
CTRL 127	BnH 7FH 00H	Poly on (default power-up)	MIDI
CTRL CC1	BnH ccH vvH	Assignable Controller 1. cc = Controller number (0–5Fh), vv = Control value (0–7Fh). Control number (ccH) can be set on CC1 CONTROLLER NUMBER (Sys. Ex 40 1x 1F). The resulting effect is determined by CC1 controller function (Sys.Ex. 40 2x 40-4A)	GS
CTRL CC2	BnH ccH vvH	Assignable Controller 2. cc = Controller number (00h–5Fh), vv = control value (0–7Fh). Control number can be set on CC2 CONTROLLER NUMBER (Sys.Ex. 40 1x 20). The resulting effect is determined by CC2 controller function (Sys.Ex.40 2x 50-5A).	GS
RPN 0000H	BnH 65H 00H 64H 00H 06H vv	Pitch bend sensitivity in semitones (default = 2)	MIDI/GM
RPN 0001H	BnH 65H 00H 64H 01H 06H vv	Fine tuning in cents (vv = 00–100, vv = 40h 0, vv = 7Fh +100)	MIDI
RPN 0002H	BnH 65H 00H 64H 02H 06H vv	Coarse tuning in half-tones (vv = 00–64, vv = 40h 0, vv = 7Fh +64)	MIDI
NRPN 0108H	BnH 63H 01H 62H 08H 06H vv	Vibrate rate modify (vv = 40h → no modif)	GS
NRPN 0109H	BnH 63H 01H 62H 09H 06H vv	Vibrate depth modify (vv = 40h → no modif)	GS
NRPN 010AH	BnH 63H 01H 62H 0AH 06H vv	Vibrate delay modify (vv = 40h → no modif)	GS
NRPN 0120H	Bnh 63H 01H 62H 20H 06H vv	TVF cutoff freq modify(vv = 40h → no modif)	GS

Detailed MIDI Implementation (Continued)

MIDI Message	HEX Code	Description	Compatibility
NRPN 0121H	BnH 63H 01H 62H 21H 06H vv	TVF resonance modify (vv = 40h → no modif)	GS
NRPN 0163H	Bnh 63H 01H 62H 63H 06H vv	Env. attack time modify(vv = 40h → no modif)	GS
NRPN 0164H	BnH 63H 01H 62H 64H 06H vv	Env. decay time modify(vv = 40h → no modif)	GS
NRPN 0166H	BnH 63H 01H 62H 66H 06H vv	Env. release time modif(vv = 40h → no modif)	GS
NRPN 18rrH	BnH 63H 18H 62H rr 06H vv	Pitch coarse of drum instrument note rr in semitones (vv = 40h → no modif)	GS
NRPN 1ArrH	BnH 63H 1AH 62H rr 06H vv	Level of drum instrument note rr (vv = 00 to 7Fh)	GS
NRPN 1CrrH	BnH 63H 1CH 62H rr 06H vv	Pan of drum instrument note rr (40h = middle)	GS
NRPN 1DrrH	BnH 63H 1DH 62H rr 06H vv	Reverb send level of drum instrument note rr (vv = 00 to 7Fh)	GS
NRPN 1ErrH	BnH 63H 1EH 62H rr 06H vv	Chorus send level of drum instrument note rr (vv = 00 to 7Fh)	GS
NRPN 37xxH	BnH 63H 37H 62H xx 06H vv	Special synthesis features controls (see §2-2)	DREAM
Standard Sysex	F0H 7EH 7FH 09H 01H F7H	General MIDI reset	GM
Standard Sysex	F0H 7FH 7FH 04H 01H 00H 01H F7H	Master volume (ll = 0 to 127, default 127)	GM
SYSEX	F0H 41H 00H 42H 12H 40H 00H 00H dd dd dd dd xx F7H	Master tune (default dd = 00H 04H 00H 00H) -100.0 to +100.0 cents. Nibblized data should be used (always four bytes). For example, to tune to +100.0 cents, sent data should be 00H 07H 0EH 08H	GS
SYSEX	F0H 41H 00H 42H 12H 40H 00H 04H vv xx F7H	Master volume (default vv = 7Fh)	GS
SYSEX	F0H 41H 00H 42H 12H 40H 00H 05H vv xx F7H	Master key-shift (default vv = 40h, no transpose)	GS
SYSEX	F0H 41H 00H 42H 12H 40H 00H 06H vv xx F7H	Master pan (default vv = 40h, center)	
SYSEX	F0H 41H 00H 42H 12H 40H 00H 7FH 00H xx F7H	GS reset	GS
SYSEX	F0H 41H 00H 42H 12H 40 01H 10H vv1 vv2 vv3 vv4 vv5 vv6 vv7 vv8 vv9 vv10 vv11 vv12 vv13 vv14 vv15 vv16 xx F7h	Voice reserve: vv1 = Part 10 (Default vv = 2) vv2 to vv10 = Part 1 to 9 (Default vv = 2) vv11 to vv16 = Part 11 to 16 (Default vv = 0)	GS
SYSEX	F0H 41H 00H 42H 12H 40H 01H 30H vv xx F7H	Reverb type (vv = 0 to 7), default = 04H 00H: Room1 01H: Room2 02H: Room3 03H: Hall1 04H: Hall2 05H: Plate 06H: Delay 07H: Pan delay	GS
SYSEX	F0H 41H 00H 42H 12H 40H 01H 31H vv xx F7H	Reverb character, default 04h	GS

Detailed MIDI Implementation (Continued)

MIDI Message	HEX Code	Description	Compatibility
SYSEX	F0H 41H 00H 42H 12H 40H 01H 33H vv xx F7H	Reverb master level, default = 64	GS
SYSEX	F0H 41H 00H 42H 12H 40H 01H 34H vv xx F7H	Reverb time	GS
SYSEX	F0H 41H 00H 42H 12H 40H 01H 35H vv xx F7H	Reverb delay feedback. Only if reverb number = 6 or 7 (delays)	GS
SYSEX	F0H 41H 00H 42H 12H 40H 01H 38H vv xx F7H	Chorus type (vv = 0 to 7), default = 02H 00H: Chorus1 01H: Chorus2 02H: Chorus3 03H: Chorus4 04H: Feedback 05H: Flanger 06H: Short delay 07H: FB delay	GS
SYSEX	F0H 41H 00H 42H 12H 40H 01H 3AH vv xx F7H	Chorus master level, default = 64	GS
SYSEX	F0H 41H 00H 42H 12H 40H 01H 3BH vv xx F7H	Chorus feedback	GS
SYSEX	F0H 41H 00H 42H 12H 40H 01H 3CH vv xx F7H	Chorus delay	GS
SYSEX	F0H 41H 00H 42H 12H 40H 01H 3DH vv xx F7H	Chorus rate	GS
SYSEX	F0H 41H 00H 42H 12H 40H 01H 3EH vv xx F7H	Chorus depth	GS
SYSEX	F0H 41H 00H 42H 12H 40H 1pH 02H nn xx F7H	MIDI channel to part assign, p is part (0 to 15), nn is MIDI channel (0 to 15, 16 = OFF). This SYSEX allows to assign several parts to a single MIDI channel or to mute a part. Default assignment: Part MIDI channel 0 9 (DRUMS) 1-9 0-8 10-15 10-15	GS
SYSEX	F0H 41H 00H 42H 12H 40H 1pH 15H vv xx F7H	Part to rhythm allocation, p is part (0 to 15), vv is 00 (sound part) or 01 (rhythm part). This SYSEX allows a part to play sound or drumset. There is no limitation to the number of parts playing drumset. Default assignment: part 0 plays drums (default MIDI channel 9), all other parts play sound.	GS
SYSEX	F0H 41H 00H 42H 12H 40H 1nH 40H v1 v2 ... v12 xx F7H	Scale tuning, n is MIDI channel (0 to 15), v1 to v12 are 12 semi-tones tuning values (C, C#, D, ... A#, B), in the range -64 (00H) 0 (40H) +63(7FH) cents. This SYSEX allows nonchromatic tuning of the musical scale on a given MIDI channel. Default v1, v2, ... ,v12 = 40h, 40h,...,40h (chromatic tuning). Scale tuning has no effect if the part is assigned to a rhythm channel or if the sound played is not of chromatic type.	GS

Detailed MIDI Implementation (Continued)

MIDI Message	HEX Code	Description	Compatibility
SYSEX	F0H 41H 00H 42H 12H 40H 1nH 1AH vv xx F7H	Velocity slope from 00h to 7Fh (default = 40h)	GS
SYSEX	F0H 41H 00H 42H 12H 40H 1nH 1BH vv xx F7H	Velocity offset from 00h to 7Fh (default = 40h)	GS
SYSEX	F0H 41H 00H 42H 12H 40H 1nH 1FH vv xx F7H	CC1 Controller number (00-5Fh) (default = 10h)	GS
SYSEX	F0H 41H 00H 42H 12H 40H 1nH 20H vv xx F7H	CC2 Controller number (00-5Fh) (default = 11h)	GS
SYSEX	F0H 41H 00H 42H 12H 40H 2nH 00H vv xx F7H	Mod pitch control (-24, +24 semitone) (default = 40h)	GS
SYSEX	F0H 41H 00H 42H 12H 40H 2nH 01H vv xx F7H	Mod tvf cutoff control (default = 40h)	GS
SYSEX	F0H 41H 00H 42H 12H 40H 2nH 02H vv xx F7H	Mod Amplitude control (-100%--+100%) (default = 40h)	GS
SYSEX	F0H 41H 00H 42H 12H 40H 2nH 03H vv xx F7H	Mod lfo1 rate control (default = 40h). "n" is don't care. Rate is common on all channels	GS
SYSEX	F0H 41H 00H 42H 12H 40H 2nH 04H vv xx F7H	Mod lfo1 pitch depth (0-600 cents) (default = 0Ah)	
SYSEX	F0H 41H 00H 42H 12H 40H 2nH 05H vv xx F7H	Mod lfo1 tvf depth (default = 0h)	GS
SYSEX	F0H 41H 00H 42H 12H 40H 2nH 06H vv xx F7H	Mod lfo1 tva depth (0-100%) (default = 0h)	GS
SYSEX	F0H 41H 00H 42H 12H 40H 2nH 10H vv xx F7H	Bend pitch control (-24, +24 semitone) (default = 42h)	GS
SYSEX	F0H 41H 00H 42H 12H 40H 2nH 11H vv xx F7H	Bend tvf cutoff control (default = 40h)	GS
SYSEX	F0H 41H 00H 42H 12H 40H 2nH 12H vv xx F7H	Bend Amplitude control (-100%--+100%) (default = 40h)	GS
SYSEX	F0H 41H 00H 42H 12H 40H 2nH 14H vv xx F7H	Bend lfo1 pitch depth (0-600 cents) (default = 0Ah)	GS
SYSEX	F0H 41H 00H 42H 12H 40H 2nH 15H vv xx F7H	Bend lfo1 tvf depth (default = 0h)	GS
SYSEX	F0H 41H 00H 42H 12H 40H 2nH 16H vv xx F7H	Bend lfo1 tva depth (0-100%) (default = 0h)	GS
SYSEX	F0H 41H 00H 42H 12H 40H 2nH 20H vv xx F7H	CAF pitch control (-24, +24 semitone) (default = 40h)	GS
SYSEX	F0H 41H 00H 42H 12H 40H 2nH 21H vv xx F7H	CAF tvf cutoff control (default = 40h)	GS
SYSEX	F0H 41H 00H 42H 12H 40H 2nH 22H vv xx F7H	CAF Amplitude control (-100%--+100%) (default = 40h)	GS
SYSEX	F0H 41H 00H 42H 12H 40H 2nH 24H vv xx F7H	CAF lfo1 pitch depth (0-600 cents) (default = 0Ah)	GS
SYSEX	F0H 41H 00H 42H 12H 40H 2nH 25H vv xx F7H	CAF lfo1 tvf depth (default = 0h)	GS

Detailed MIDI Implementation (Continued)

MIDI Message	HEX Code	Description	Compatibility
SYSEX	F0H 41H 00H 42H 12H 40H 2nH 26H vv xx F7H	CAF lfo1 tva depth (0–100%) (default = 0h)	GS
SYSEX	F0H 41H 00H 42H 12H 40H 2nH 40H vv xx F7H	CC1 pitch control (–24,+24 semitone) (default = 40h)	GS
SYSEX	F0H 41H 00H 42H 12H 40H 2nH 41H vv xx F7H	CC1 tvf cutoff control (default = 40h)	GS
SYSEX	F0H 41H 00H 42H 12H 40H 2nH 42H vv xx F7H	CC1 Amplitude control (–100%–+100%) (default = 40H)	GS
SYSEX	F0H 41H 00H 42H 12H 40H 2nH 44H vv xx F7H	CC1 lfo1 pitch depth (0–600 cents) (default = 0Ah)	GS
SYSEX	F0H 41H 00H 42H 12H 40H 2nH 45H vv xx F7H	CC1 lfo1 tvf depth (default = 0h)	GS
SYSEX	F0H 41H 00H 42H 12H 40H 2nH 46H vv xx F7H	CC1 lfo1 tva depth (0–100%) (default = 0h)	GS
SYSEX	F0H 41H 00H 42H 12H 40H 2nH 50H vv xx F7H	CC2 pitch control (–24,+24 semitone) (default = 40h)	GS
SYSEX	F0H 41H 00H 42H 12H 40H 2nH 51H vv xx F7H	CC2 tvf cutoff control (default = 40h)	GS
SYSEX	F0H 41H 00H 42H 12H 40H 2nH 52H vv xx F7H	CC2 amplitude control (–100%–+100%) (default = 40h)	GS
SYSEX	F0H 41H 00H 42H 12H 40H 2nH 54H vv xx F7H	CC2 lfo1 pitch depth (0–600 cents) (default = 0Ah)	GS
SYSEX	F0H 41H 00H 42H 12H 40H 2nH 55H vv xx F7H	CC2 lfo1 tvf depth (default = 0h)	GS
SYSEX	F0H 41H 00H 42H 12H 40H 2nH 56H vv xx F7H	CC2 lfo1 tva depth (0–100%) (default = 0h)	GS

Notes: 1. NRPN sending method: CTRL#99 = high byte, CTRL#98 = low byte, CTRL#6 = vv.
 Example: NRPN 0108H = 40H → CTRL#99 = 1, CTRL#98 = 8, CTRL#6 = 64
 2. x or xx means "don't care."

Main Sounds: (all channels except 10)

General MIDI

Main Sounds

PC*	General MIDI	PC	General MIDI	PC	General MIDI	PC	General MIDI
1	(Grand) Piano 1	33	Acoustic Bass	65	Soprano Sax	97	FX 1 (rain)
2	(Bright) Piano 2	34	Finger Bass	66	Alto Sax	98	FX 2 (soundtrack)
3	(El. Grd) Piano 3	35	Picked Bass	67	Tenor Sax	99	FX 3 (crystal)
4	Honky-tonk Piano	36	Fretless Bass	68	Baritone Sax	100	FX4 (atmosphere)
5	El. Piano 1	37	Slap Bass 1	69	Oboe	101	FX 5 (brightness)
6	El. Piano 2	38	Slap Bass 2	70	English Horn	102	FX 6 (goblins)
7	Harpsichord	39	Synth Bass 1	71	Bassoon	103	FX 7 (echoes)
8	Clavi	40	Synth Bass 2	72	Clarinet	104	FX 8 (sci-fi)
9	Celesta	41	Violin	73	Piccolo	105	Sitar
10	Glockenspiel	42	Viola	74	Flute	106	Banjo
11	Music Box	43	Cello	75	Recorder	107	Shamisen
12	Vibraphone	44	Contrabass	76	Pan Flute	108	Koto
13	Marimba	45	Tremolo Strings	77	Blown Bottle	109	Kalimba
14	Xylophone	46	Pizzicato Strings	78	Shakuhachi	110	Bagpipe
15	Tubular Bells	47	Orchestral Harp	79	Whistle	111	Fiddle
16	Santur	48	Timpani	80	Ocarina	112	Shanai
17	Drawbar Organ	49	String Ensemble 1	81	Lead 1 (square)	113	Tinkle Bell
18	Percussive Organ	50	String Ensemble 2	82	Lead 2 (sawtooth)	114	Agogo
19	Rock Organ	51	Synth Strings 1	83	Lead 3 (calliope)	115	Steel Drums
20	Church Organ	52	Synth Strings 2	84	Lead 4 (chiff)	116	Woodblock
21	Reed Organ	53	Choir Aahs	85	Lead 5 (charang)	117	Taiko Drum
22	Accordion (French)	54	Voice Oohs	86	Lead 6 (voice)	118	Melodic Tom
23	Harmonica	55	Synth Voice	87	Lead 7 (fifths)	119	Synth Drum
24	Tango Accordion	56	Orchestra Hit	88	Lead 8 (bass+lead)	120	Reverse Cymbal
25	Accoustic Guitar (nylon)	57	Trumpet	89	Pad 1 (fantasia)	121	Guitar Fret Noise
26	Accoustic Guitar (steel)	58	Trombone	90	Pad 2 (warm)	122	Breath Noise
27	El. Guitar (jazz)	59	Tuba	91	Pad 3 (polysynth)	123	Seashore
28	El. Guitar (clean)	60	Muted Trumpet	92	Pad 4 (choir)	124	Bird Tweet
29	El. Guitar (muted)	61	French Horn	93	Pad 5 (bowed)	125	Teleph. Ring
30	Overdriven Guitar	62	Brass Section	94	Pad 6 (metallic)	126	Helicopter
31	Distortion Guitar	63	Synth Brass 1	95	Pad 7 (halo)	127	Applause
32	Guitar Harmonics	64	Synth Brass 2	96	Pad 8 (sweep)	128	Gunshot

Note: * Program Change

**MT-32 Sound
Variation #127**

(all channels except 10)

To select variation: send CTRL 0 = 127, then PC

PC: Program change

C0: controller 0 value (zero for General MIDI capital sounds)

MT-32 Sound Variation #127

PC#	Instrument name	PC#	Instrument name	PC#	Instrument name	PC#	Instrument name
1	Piano 1	2	Piano 2	3	Piano 3	4	Detuned EP1
5	E. Piano 1	6	E. Piano 2	7	Detuned EP2	8	Honky-Tonk
9	Organ 1	10	Organ 2	11	Organ 3	12	Detuned Or. 1
13	Church Org. 2	14	Church Org.	15	Church Org.	16	Accordion Fr.
17	Harpsichord	18	Coupled Hps.	19	Coupled Hps.	20	Clav.
21	Clav.	22	Clav.	23	Celesta	24	Celesta
25	Synth Brass 1	26	Synth Brass 2	27	Synth Brass 3	28	Synth Brass 4
29	Synth Bass 1	30	Synth Bass 2	31	Synth Bass 3	32	Synth Bass 4
33	Fantasia	34	Syn Calliope	35	Choir Aahs	36	Bowed Glass
37	Soundtrack	38	Atmosphere	39	Crystal	40	Bagpipe
41	Tinkle Bell	42	Ice Rain	43	Oboe	44	Pan Flute
45	Saw Wave	46	Charang	47	Tubular Bells	48	Square Wave
49	Strings	50	Tremolo Strings	51	Slow Strings	52	Pizzicato Strings
53	Violin	54	Viola	55	Cello	56	Cello
57	Contrabass	58	Harp	59	Harp	60	Nylon-str. Gt
61	Steel-String Guitar	62	Chorus Guitar	63	Funk Gt.	64	Sitar
65	Acoustic Bs.	66	Fingered Bs.	67	Picked Bs.	68	Fretless Bs.
69	Slap Bs. 1	70	Slap Bs. 2	71	Fretless Bs.	72	Fretless Bs.
73	Flute	74	Flute	75	Piccolo	76	Piccolo
77	Recorder	78	Pan Flute	79	Soprano Sax	80	Alto Sax
81	Tenor Sax	82	Baritone Sax	83	Clarinet	84	Clarinet
85	Oboe	86	English Horn	87	Bassoon	88	Harmonica
89	Trumpet	90	Muted Trumpet	91	Trombone	92	Trombone
93	French Horn	94	French Horn	95	Tuba	96	Brass
97	Brass 2	98	Vibraphone	99	Vibraphone	100	Kalimba
101	Tinkle Bell	102	Glockenspiel	103	Tubular Bell	104	Xylophone
105	Marimba	106	Koto	107	Taisho Koto	108	Shakuhachi
109	Whistle	110	Whistle	111	Bottle Blow	112	Pan Flute
113	Timpani	114	Melo Tom	115	Concert BD	116	Synth Drum
117	Melo. Tom	118	Taiko	119	Taiko	120	Reverse Cym.
121	Castanets	122	Tinkle Bell	123	Orchestra Hit	124	Telephone
125	Bird	126	Helicopter	127	Bowed Glass	128	Ice Rain

Drum Set Table (MIDI Channel 10)

	Prog 1: Standard Set	Prog 17: Power Set	Prog 41: Brush	Prog 49: Orchestra	Prog 127: CM-64/32 (Partial)
27 – D#1				Closed Hi-Hat	*
28 – E1				Pedal Hi-Hat	*
29 – F1				Open Hi-Hat	*
30 – F#1				Ride Cymbal	*
31 – G1					*
32 – G#1					*
33 – A1					*
34 – A#1					*
35 – B1	Kick Drum 2		Jazz BD 2		Kick Drum
36 – C2	Kick Drum 1		Jazz BD 1		Kick Drum
37 – C#2	Side Stick				Rim Shot
38 – D2	Snare Drum 1	Gated Snare	Brush Tap	Snare Drum 2	Snare Drum
39 – D#2	Hand Clap		Brush Slap	Castanets	Hand Clap
40 – E2	Snare Drum 2		Brush Swirl	Snare Drum 2	Elec. Snare Drum
41 – F2	Low Floor Tom			Timpani F	Acoustic Low Tom
42 – F#2	Closed Hi Hat [EXC1]			Timpani F#	Closed Hi-Hat [Exc1]
43 – G2	High Floor Tom			Timpani G	Acoustic Low Tom
44 – G#2	Pedal Hi-Hat [EXC1]			Timpani G#	Open Hi-Hat 2
45 – A2	Low Tom			Timpani A	Acoustic Middle Tom
46 – A#2	Open Hi-Hat [EXC1]			Timpani A#	Open Hi-Hat 1 [Exc1]
47 – B2	Low/Mid Tom			Timpani B	Acoustic Middle Tom
48 – C3	Hi/Mid Tom			Timpani C	Acoustic High Tom
49 – C#3	Crash Cymbal 1			Timpani C#	Crash Cymbal
50 – D3	High Tom			Timpani D	Acoustic High Tom
51 – D#3	Ride Cymbal 1			Timpani D#	Ride Cymbal
52 – E3	Chinese Cymbal			Timpani E	*
53 – F3	Ride Bell			Timpani F	*
54 – F#3	Tambourine				Tambourine
55 – G3	Splash Cymbal				*
56 – G#3	Cowbell				Cowbell
57 – A3	Crash Cymbal 2				*
58 – A#3	Vibraslap				*
59 – B3	Ride Cymbal 2				*
60 – C4	Hi Bongo				

Sounds

	Prog 1: Standard Set	Prog 17: Power Set	Prog 41: Brush	Prog 49: Orchestra	Prog 127: CM-64/32 (Partial)
61 – C#4	Low Bongo				
62 – D4	Mute Hi Conga				
63 – D#4	Open Hi Conga				
64 – E4	Low Conga				
65 – F4	High Timbale				
66 – F#4	Low Timbale				
67 – G4	High Agogo				
68 – G#4	Low Agogo				
69 – A4	Cabasa				
70 – A#4	Maracas				
71 – B4	Short Whistle [EXC2]				
72 – C5	Long Whistle [EXC2]				
73 – C#5	Short Guiro [EXC3]				Vibra Slap
74 – D5	Long Guiro [EXC3]				*
75 – D#5	Claves				Claves
76 – E5	Hi Wood Block				*
77 – F5	Low Wood Block				*
78 – F#5	Mute Cuica [EXC4]				*
79 – G5	Open Cuica [EXC4]				*
80 – G#5	Mute Triangle [EXC5]				*
81 – A5	Open Triangle [EXC5]				*
82 – A#5					Applauses
83 – B5					*
84 – C6					*
85 – C#6					*
86 – D6					*
87 – D#6					*
88 – E6				Applauses	*
89 – F6					*
90 – F#6					*
91 – G6					*
92 – G#6					*
93 – A6					*
94 – A#6					Helicopter
95 – B6					*
96 – C7					Gun Shot
97 – C#7					*

Sounds

	Prog 1: Standard Set	Prog 17: Power Set	Prog 41: Brush	Prog 49: Orchestra	Prog 127: CM-64/32 (Partial)
98 – D7					*
99 – D#7					*
100 – E7					*
101 – F7					*
102 – F#7					Birds
103 – G7					*
104 – G#7					*
105 – A7					*
106 – A#7					Seashore

Note: * = no sound
Blank: Same sound as "Standard Set"
[EXC]: Sounds with same EXC number are mutually exclusive

10.10 MIDI Implementation Chart

CME U-Key Mobiltone USB MIDI Master Keyboard
 Model: U-Key
 Version: 1.2

Function		Transmitted	Recognized
Basic Channel	Default	1	1~16
	Changed	1~16	1~16
Mode	Default Messages	X	GM,GS, MT-32
	Altered	*****	
Note Number:	True voice	0~127 *****	0~127
Velocity	Note ON	<input type="radio"/> v=0~127	<input type="radio"/> v=0~127
	Note OFF	<input type="radio"/> v=0~127	X
Aftertouch	Key's	X	X
	Ch's	X	X
Pitch Bend		<input type="radio"/>	<input type="radio"/>
Control Change		0~127	<input type="radio"/>
Prog Change:	True #	<input type="radio"/> *****	<input type="radio"/>
System Exclusive		<input type="radio"/>	<input type="radio"/>
System Real Time	Clock	<input type="radio"/>	X
	Commands	<input type="radio"/>	X
System command	Song position	<input type="radio"/>	<input type="radio"/>
Aux Messages	Active Sense	<input type="radio"/>	X

: Yes X: No

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