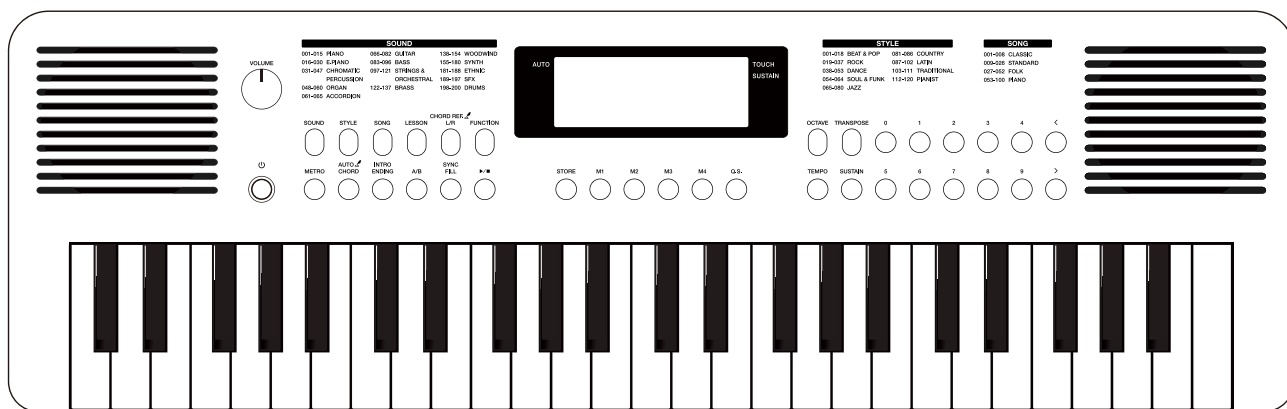# MINI KEYBOARD

Owner's Manual

INFORMATION FOR YOUR SAFETY!

THE FCC REGULATION WARNING (for USA)

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.
This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:
(1) this device may not cause harmful interference, and
(2) this device must accept any interference received, including interference that may cause undesired operation.

This equipment 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 installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation.
If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

■ Reorient or relocate the receiving antenna.
■ Increase the separation between the equipment and receiver.
■ Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
■ Consult the dealer or an experienced radio/TV technician for help.

Unauthorized changes or modification to this system can void the user's authority to operate this equipment.

CAUTION

The normal function of the product may be disturbed by Strong Electro Magnetic Interference. If so, simply reset the product to resume normal operation by following the owner's manual. In case the function could not resume, please use the product in other location.

PRECAUTIONS

PLEASE READ CAREFULLY BEFORE PROCEEDING

Please keep this manual in a safe place for future reference.

Power Supply
Please connect the designated USB power adapter to an AC outlet of the correct voltage.

Do not connect it to an AC outlet of voltage other than that for which your instrument is intended.

Unplug the USB power adapter when not using the instrument, or during electrical storms.

Connections
Before connecting the instrument to other devices, turn off the power to all units. This will help prevent malfunction and / or damage to other devices.

Location
Do not expose the instrument to the following conditions to avoid deformation, discoloration, or more serious damage:
■ Direct sunlight
■ Extreme temperature or humidity
■ Excessive dusty or dirty location
■ Strong vibrations or shocks
■ Close to magnetic fields

Interference with other electrical devices
Radios and televisions placed nearby may experience reception interference. Operate this unit at a suitable distance from radios and televisions.

Cleaning
Clean only with a soft, dry cloth.
Do not use paint thinners, solvents, cleaning fluids, or chemical-impregnated wiping cloths.

Handling
Do not apply excessive force to the switches or controls.

Do not let paper, metallic, or other objects into the instrument. If this happens, remove the electric plug from the outlet. Then have the instrument inspected by qualified service personnel.
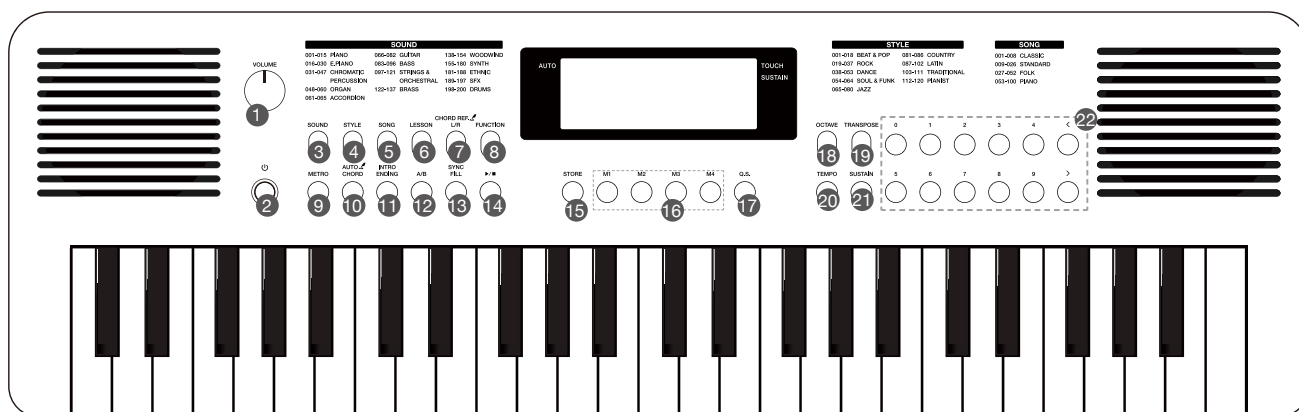
Disconnect all cables before moving the instrument.

Contents

Panel & Display Description

Front Panel

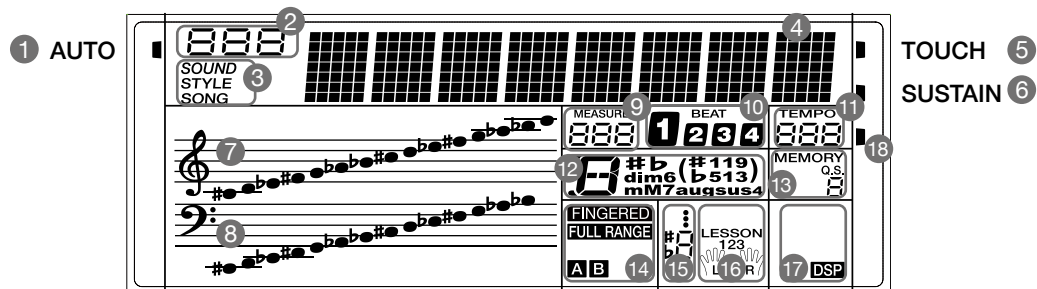**1. [VOLUME] Knob**
Adjust the master volume.

2. [POWER] Button
Turn the power on or off.

3. [SOUND] Button
Switch to Sound mode.

4. [STYLE] Button
Switch to Style mode.

5. [SONG] Button
Switch to Song mode.

6. [LESSON] Button
Enter the lesson mode.

7. [L/R] Button
Use to practice the left hand or right hand part.
[CHORD REF.] Button
Turn the Chord Reference function on or off.

8. [FUNCTION] Button
Enter the function menu.

9. [METRO] Button
Turn the metronome on or off.

10. [CHORD] Button
Enter the Chord Mode.
[AUTO] Button
Turn AutoChord on and off.

11. [INTRO/ENDING] Button
Play the Intro or Ending pattern.

12. [A/B] Button
Switch between Style section A and B.

13. [SYNC] Button
Turn the Sync Start function on or off.
[FILL] Button
Apply Fill during the Style playback.

14. [PLAY/STOP] Button
Start or stop playing the style or song.

15. [STORE] Button
Memorize the current panel settings.

16. [M1 – M4] Buttons
Recall the memorized panel settings.

17. [Q.S.] Button
Turn the Quick Setting function on and off.

18. [OCTAVE] Button
Adjust the Octave value.

19. [TRANSPOSE] Button
Adjust the Transpose value.

20. [TEMPO] Button
Adjust the current tempo value.

21. [SUSTAIN] Button
Turn sound Sustain on and off.

22. [<], [>] and number input buttons
Set parameter values or select the number.

Rear Panel
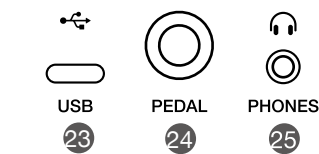
23. USB Power Input
For connecting an USB-C cable to power the keyboard or connecting to a computer.

24. SUSTAIN Jack
For connecting a sustain pedal.

25. PHONES/OUTPUT Jack
For connecting a pair of headphones or an audio equipment.

Display

1. AUTO	7. TREBLE CLEF	13. MEMORY/Q.S.
2. NUMBER	8. BASS CLEF	14. FINGERED/FULL RANGE/A/B
3. SOUND/STYLE/SONG	9. MEASURE	15. NOTE INDICATION
4. CHARACTER	10. BEAT	16. LESSON
5. TOUCH	11. TEMPO	17. DSP
6. SUSTAIN	12. CHORD	18. LOW BATTERY PROMPT

Setup

This section contains information about setting up your instrument and preparing to play. Please go through this section carefully before turning the power on.

Power Supply
You can power the instrument either by batteries or by USB power adapter. Follow the instructions described below.

Using Batteries
The instrument needs 4 pieces of AA (NO.5) or equivalent alkaline batteries for power supply.
1. Open the battery cabinet cover located on the bottom of the instrument.

2. Insert the batteries, carefully following the polarity markings on the cabinet.

3. Replace the cabinet cover. Make sure it locks firmly in place.

Notes:
1. Do not mix using any used and new batteries.
2. Always use the same types of batteries.
3. Remove the batteries when the instrument is not in use for a long period of time.

Using the USB Power Adapter
1. Turn down the volume before connecting to power supply.

2. Connect the USB line to the USB-C power jack of the instrument.

3. Plug the USB power adapter into an AC outlet. This will automatically cut off the battery power supply.

Notes:
1. In order to save energy, the instrument will automatically shut down after 30 minutes if it is not used. (Please refer to Auto Power Off).
2. For your safety, please unplug the instrument when it is not in use or during a thunderstorm.
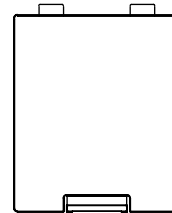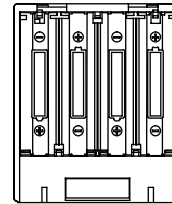
Connecting a pair of Headphones

A standard pair of stereo headphones can be connected to the PHONES/OUTPUT jack for private practice or late-night playing. The internal stereo speaker system is automatically shut off when a pair of head phones is plugged into this jack.

Note:

Do not listen with the headphones at high volume for long periods of time. Doing so may cause hearing loss.

Connecting a Sustain Pedal

An optional footswitch or a pedal can be plugged into the sustain jack and be used to switch sustain on or off.

Connecting a Computer

Use a standard USB cable to connect the USB jack of the instrument to the USB port of a computer. You can transmit MIDI messages between the instrument and the computer.

Notes:

1. Do not set the USB device to be input and output simultaneously when setting the software on the computer. Otherwise, the sound will be overlapped when playing the keyboard.
2. We recommend using a USB2.0 interface to connect the instrument to computer.

USB   PEDAL   PHONES
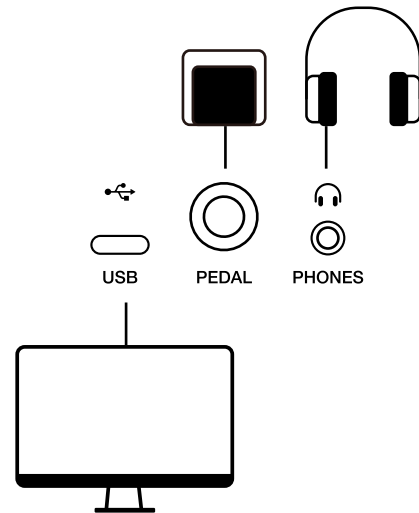
Power Switch and Master Volume

Power Switch

Before you switch your instrument on, please turn down the volume of instrument.

1. Make sure the instrument is properly connected to power supply.

2. Press POWER SWITCH, the LCD screen is lit, and displays "Loading!", indicating the instrument is powered on.

Master Volume

Rotate the [VOLUME] knob clockwise to increase the master volume or counter-clockwise to decrease it. You can use the knob to set the desired volume level.

Note:

If the speakers do not produce sound, please check if the master volume is set too low or if headphones are plugged into the PHONES jack.

Loading!

VOLUME
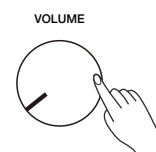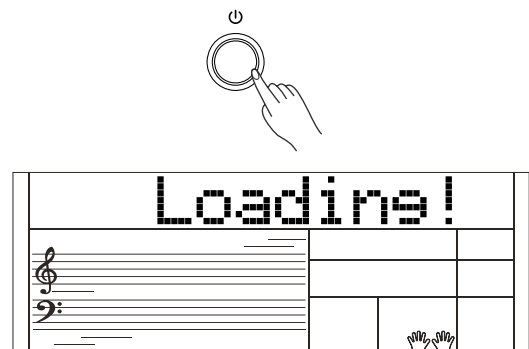
Playing the Sounds

The instrument features a variety of exceptionally realistic sounds. Please refer to Sound List.

Playing a Sound
1. Press the [SOUND] button.
Enter the SOUND mode. LCD shows "SOUND", the sound number and the sound name.

2. Select a sound.
Use the number keys, the [<] / [>] buttons to select the sound you want to play.

3. Play the sound.
Play the keyboard and enjoy the beautiful sound.

Touch
The keyboard is equipped with a touch response feature that lets you dynamically and expressively controls the level of the sound with your playing strength – just as on an acoustic instrument. Please refer to the function menu to adjust the touch level.

Sustain
When the Sustain feature is ON, all notes played on the keyboard will have a longer sustain. Press the [SUSTAIN] button to turn sustain on or off.

Note:
When using a sustain pedal, you can produce a much stronger and more natural sustain effect than by using the [SUSTAIN] button.

Transpose
Transpose function allows the overall pitch of the instrument to be transposed up or down by one octave in semitone steps.
1. Press the [TRANSPOSE] button to enter transpose menu. The LCD shows the current transpose value.

2. Use [<] / [>] buttons to adjust the transpose value.

3. Press the [<] and [>] buttons simultaneously to reset the transposition to 0.

Octave
The octave function will shift the pitch of the sound up or down in the step of an octave.
1. Press the [OCTAVE] button to enter octave adjustment menu. The LCD shows the current octave value.

2. Use [<] / [>] buttons to adjust the octave value.

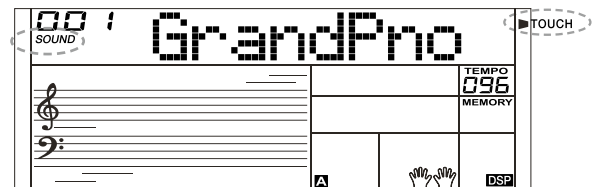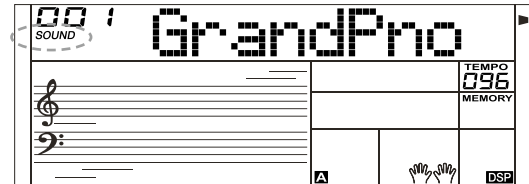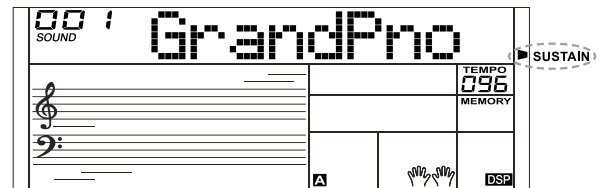**3.** Press the [<] and [>] buttons simultaneously to reset the octave setting to 0.

Note:
After adjusting the octave, notes in the highest and lowest keyboard range may not sound normally.
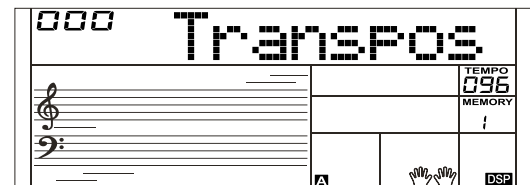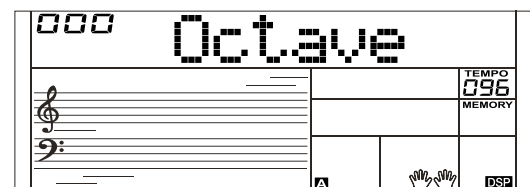
Auto Accompaniment

The auto accompaniment function puts a full backing band at your fingertips. All you have to do is to play chords with your left hand, and the accompaniment will automatically play along, instantly following the chords you play. With auto accompaniment, even a solo performer can enjoy playing with the backing of an entire band or orchestra.
The instrument features a variety of styles, please refer to the Style List. Try selecting the different styles and enjoy the auto accompaniment.

Selecting a Style
1. Press the [STYLE] button. Enter the STYLE mode. LCD shows "STYLE", the style number and the style name.

2. Use the number keys, the [<] / [>] buttons to select the style you want to play.

3. Press the [START/STOP] button to start the rhythm tracks of the auto accompaniment.

Sync/Fill
When style stops, press the [SYNC / FILL] button to turn on the function. The beats on LCD will flash along with the tempo.
1. In Sycn Start mode, if the CHORD function is turned off, you can press a key on the keyboard to start playing auto accompaniment of the rhythm track.

2. In Sycn Start mode, if the CHORD function is in use, you can press a key on the chord range of the keyboard to start playing auto accompaniment of all tracks.

When style starts, press the [SYNC / FILL] button to auto fill in function.It automatically adds a fill to your performance. When the fill-in is finished, accompaniment shifts to the Main section (A,B).

Note:
If you keep pressing [SYNC / FILL] buttons during style playback, the fill-in pattern will repeat playing until the button is released. Playback will then shift back to the current Main section.

Intro/Ending
The intro is an opening section of a song. When the intro pattern finished, the system will automatically shift to the main section.

Ending is the ending section of a song. When the ending is finished, accompaniment automatically stops.The length of the ending differs depending on the selected style.
1. Press the [STYLE] button.
2. Select a style.
3. Turn the Chord Mode on.
4. Turn SYNC START on.
5. Press the [INTRO/ENDING], the "A" flashes on LCD, the style is ready to play.
6. It will start the accompaniment as soon as you start playing in Chord section. When the playback of the intro is finished, it automatically switched to main A section.
7. Press the [INTRO/ENDING] again to play the ending section. When the ending is finished, the auto accompaniment automatically stops.

Note:
If you press [SYNC / FILL] before the ending is finished, it will play a fill-in then switch to main section section A.

STYLE

001 8Beat.1
STYLE
TEMPO 100
MEMORY

SYNC FILL

STYLE

001 8Beat.1
STYLE
TEMPO 100
MEMORY
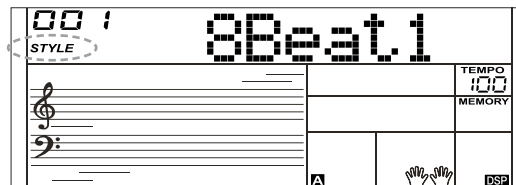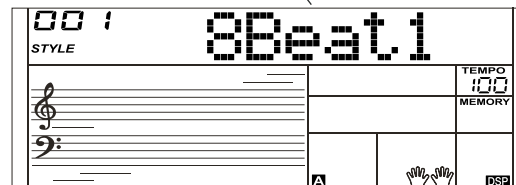
INTRO ENDING

Auto Accompaniment

Playing a Main
Press the [A/B] button to switch between Main A or Main B.

Note:
If you press and hold [A/B] button during style playback, the fill-in pattern will repeat playing until the button is released. Playback will then shift back to the current Main section.
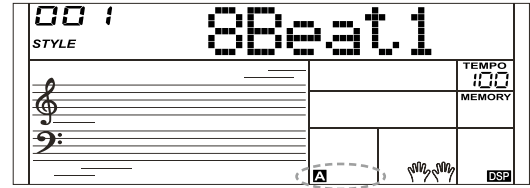
Tempo
Each style of the instrument has been programmed with a default tempo. However, you can change it as needed.
1. Press the [TEMPO] button to enter tempo adjustment menu. The tempo value in the LCD starts to flash.

2. Use [<] / [>] buttons to adjust the tempo value.

3. Press the [<] and [>] buttons simultaneously to reset the tempo to the default value.

Chord Mode
1. Press the [CHORD] button, the LCD will display the "FINGERED" indicator. The left hand section of the keyboard is the chord section. You can play different chords in the chord section.

Press [CHORD] button again to enter Full Range mode. The "FULL RANGE" indicator will be lit. You can play chords over the entire keyboard in multi-fingering.

2. Play chords in the chord section, and the LCD will display the corresponding chord names.

3. Please refer to the function menu to set the split point. The split point and the keys to its left all belong to the chord section.
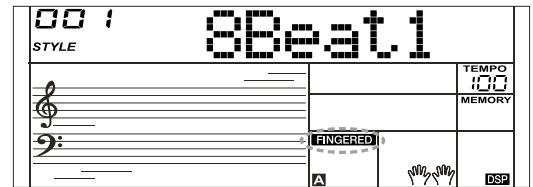
Chord Basics
A chord, in music, is any harmonic set of three or more notes that is heard as if sounding simultaneously. The most frequently encountered chords are triads. A triad is a set of three notes that can be stacked in thirds. When stacked in thirds, the triad's members, from lowest pitched tone to highest, are called: the Root, the Third, and the Fifth.

Triad Type
There are following basic triad types:

Major Triad	A root with a major third added above and a perfect fifth will consist as a "Major Triad".
Minor Triad	A root with a minor third added above and a perfect fifth will consist as a "Minor Triad".
Augmented Triad	A root with a major third added above and an augmented fifth will consist as an "Augmented Triad".
Diminished Triad	A root with a minor third added above and a diminished fifth will consist as a "Diminished Triad".
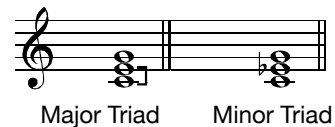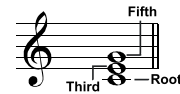
Chord Inversion

We define this chord its root is not in the bass (i.e., is not the lowest note) as an inversion chord. When the root is in the bass, we call the chord: root-position chord. If we put the Third and Fifth in the root position, then it forms "Inversion", we call this chord "Inversion Chord". See the following major triad and its inverted chord.
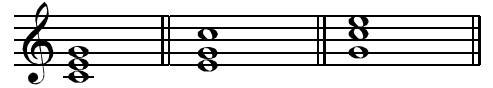
Root Position   First Inversion Second Inversion

Chord Name

The chord name contains two parts content: Chord root and Chord type.

Cm
Chord Root   Chord Type
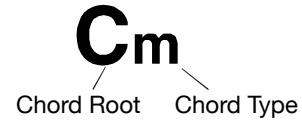
Single Finger

Single finger type not only can detect single finger but also can detect multi finger. And the single finger makes it easily to play chords through only one, two or three keys. Including major, minor, seventh, and minor seventh chord. Refer to relevant picture on the right for details.

C
★ Major Triad
Only press the root note on the keyboard.

Cm
★ Minor Triad
Press the root note and the nearest left black key simultaneously.

C7
★ Seventh chord
Press the root note and the nearest left white key simultaneously.

Cm7
★ Minor seventh chord
Press the root note and the nearest left white and black keys simultaneously .

Multi-finger

Multi-finger allows you to play chords in normal fingering. Try playing the 32 chord types in C scale as listed on the right.

Note:

In full range mode, the entire keyboard will only recognize chords played in normal fingering.

0 C	1 C_6	2 CM_7	3 $CM_7(\#11)$	4 $CM(9)$	5 $CM_7^{(9)}$
6 $C_6^{(9)}$	7 Caug	8 Cm	9 Cm_6	10 Cm_7	11 $Cm_7^{(b5)}$
12 Cm(9)	13 $Cm_7^{(9)}$	14 $Cm_7^{(11)}$	15 CmM_7	16 $CmM_7^{(9)}$	17 Cdim
18 $Cdim_7$	19 C_7	20 C_{7sus4}	21 $C_7^{(b5)}$	22 $C_7^{(9)}$	23 $C_7^{(\#11)}$
24 $C_7^{(13)}$	25 $C_7^{(b9)}$	26 $C_7^{(b13)}$	27 $C_7^{(\#9)}$	28 CM_{7aug}	29 C_{7aug}
30 $Csus_4$	31 C_{1+2+5}				

Notes enclosed in parentheses ⊛ are optional; the chords could be recognized without them.

Auto Chord

Auto Chord is the Chord changing function to Automatic Chord mode.

1. Long-press the [AUTO] button to turn on this mode.

2. Play a Style and the chords now change automatically.
On Auto Chord, the left-side chord area is cancelled, and it is possible to use all keys to play melodies.

3. To disengage Auto Chord, press [AUTO] button again.

AUTO
CHORD

AUTO
001
SOUND
GrandPno
TEMPO
100
MEMORY
DSP
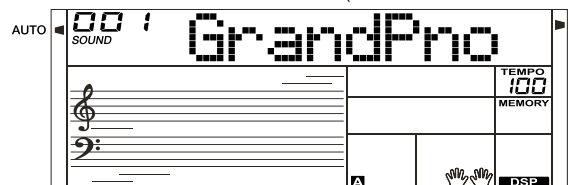
Auto Accompaniment

Quick Setting

When Quick Setting is switched on, you can instantly recall all auto accompaniment related settings including sounds selection and digital effects simply with a single touch of a button.

1. Press the [Q.S.] button to turns on the Quick Setting for current style. LCD shows "Q.S.".

2. Press one of the [M1]-[M4] buttons, various panel settings (such as sound, effect, etc.) that match the selected style can be instantly recalled.

3. CHORD mode is automatically turned on during Q.S. mode.

4. Press the [Q.S.] button again to quit Quick Setting mode, the "Q.S." indicator will disappear.
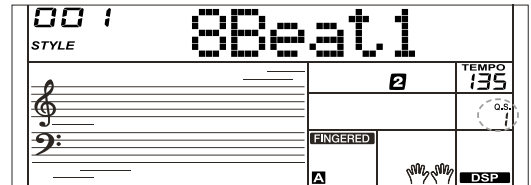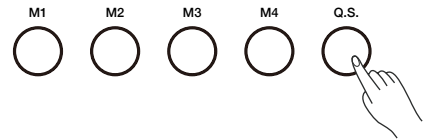
Note:
In Q.S. mode, the memory is not selectable.

Metronome

Turning on the Metronome

Press the [METRO] button to turn on the metronome.
Press the [METRO] button again to turn off the metronome.

Selecting the Beat

You can set the beat type in the function menu, please refer to the function menu for details.

If you turn on the metronome during style playback, the metronome sound will start from the next beat and its beat will match the current style. When style stops, you can change the metronome beat as desired. The metronome is not usable in song mode.
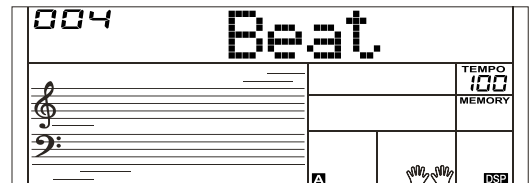
Parameter Item	LCD Display	Range
Split Point	XXX Split Pt	1 - 49
Beat Type	XXX Beat	0, 2 - 9
Accompaniment Volume	XXX Accomp	0 - 32
Auto Fill	XXX AutoFill	OFF, ON
AutoChord Key	XXX AC Key	0(C)~11(B)
AutoChord Mode	XXX AC Mode	1. Intelligent, 2. Free, 3. Dark
Touch	XXX Touch	OFF, 0 - 3
Tune	XXX Tune	-50 - 50
Reverb Level	XXX Rev Lev	0 - 127
Chorus Level	XXX Chr Lev	0 - 127
DSP	XXX DSP	OFF, ON
Auto Power Off	XXX PowerOff	OFF, 30, 60
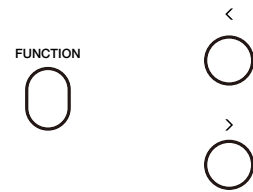
Note:
It will exit the function menu if there is no operation in 5 seconds.

Split Point

The Point on the keyboard that separates the left hand section to control the chords in the accompaniment when the CHORD function is on.
1. Press the [FUNCTION] button to select split point menu.
The LCD displays "Split Pt". Use [<] / [>] buttons to change Split Point. The range of Split Point is: 1~49.

2. Press [<] / [>] buttons simultaneously will set the split point value to its default setting: F3# (19).
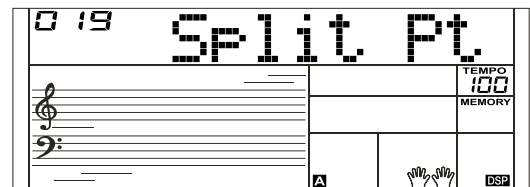
Beat Type

1. Repeatedly press the [FUNCTION] button to select the beat menu. The LCD displays "Beat". Use the [<] / [>] buttons to change the beat type.

2. Pressing [<] and [>] buttons at the same time will reset the beat type to default "004".
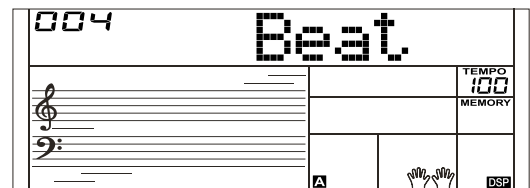
Accompaniment Volume

The function adjusts the accompaniment volume.
1. Repeatedly press the [FUNCTION] button to enter the function menu, and when the LCD displays "Accomp", you can adjust the volume level over the range of 0-32. LCD will show the current volume level.

2. In the function menu, press both [<] and [>] buttons simultaneously to mute the accompaniment part. LCD shows "OFF Accomp". Press both buttons again to unmute the accompaniment volume.
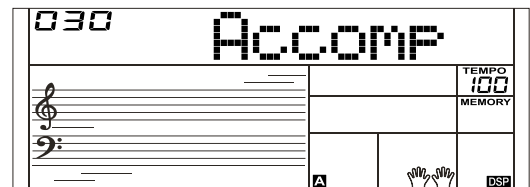
Auto Fill

This function turns Auto Fill on or off, which will automatically add a Fill when you switch between Main sections A and B. After the Fill plays, it will automatically return to the selected section.

Repeatedly press the [FUNCTION] button to select the Auto Fill menu. The LCD displays "AutoFill". Use the [<] / [>] buttons to switch Auto Fill on or off.
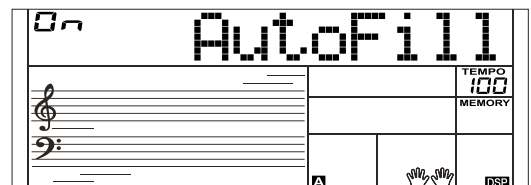
Function Menu

Auto Chord Key

You can set Auto Chord in any song key as desired.

1. Repeatedly press the [FUNCTION] button to select the Auto Chord Key menu. The LCD displays "ACkey C" Use the [<] / [>] buttons to change the key.

2. Pressing [<] and [>] buttons at the same time will reset the type to default C (000).
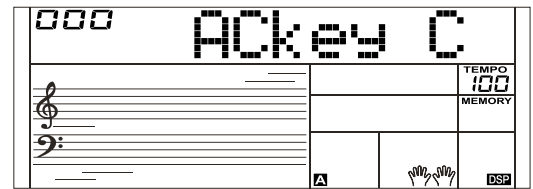
Auto Chord Mode

There are 3 modes in Auto Chord that offer different chord progression variations: Intelligent (1), Free (2) and Dark (3).

"Intelligent" follows your song melody input as much as possible. "Free" and "Dark" are arbitrary, based on relatively major chords and minor respectively.

1. Repeatedly press the [FUNCTION] button to select the Auto Chord Mode menu. The LCD displays "AC Mode." Use the [<] / [>] buttons to change the type.

2. Pressing [<] and [>] buttons at the same time will reset the type to default 001.
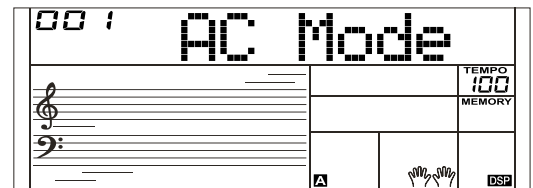
Touch

1. Repeatedly press the [FUNCTION] button to select the touch menu. The LCD displays "Touch". Use the [<] / [>] buttons to change the touch level.

2. Pressing [<] and [>] buttons at the same time will reset the touch level to default "002".
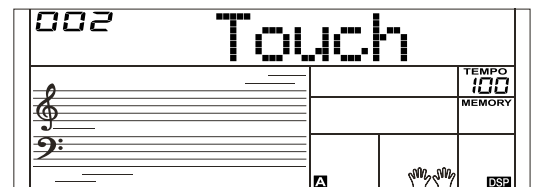
Tune

The function adjusts the pitch of the entire keyboard by a 2-cent step.

1. Repeatedly press the [FUNCTION] button to select the tune menu. The LCD displays "Tune". Use the [<] / [>] buttons to change the value over the range of -50 - +50.

2. Pressing [<] and [>] buttons at the same time will reset the tune value to default "000".

The setting applies to both accompaniment and the sound.
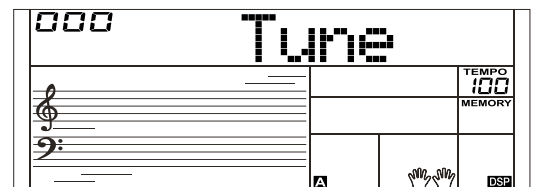
Reverb Level

1. Repeatedly press the [FUNCTION] button to select the reverb level menu. The LCD displays "Rev Lev". Use the [<] / [>] button to adjust the level over the range of 0-127.

2. Pressing [<] and [>] buttons at the same time will reset the reverb level to default.
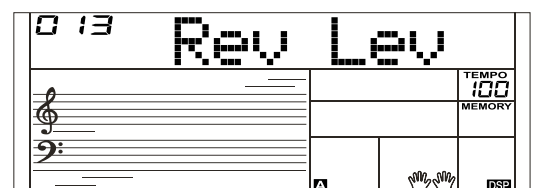
Chorus Level

1. Repeatedly press the [FUNCTION] button to select the chorus level menu. The LCD displays "Chr Lev". Use the [<] / [>] button to adjust the level over the range of 0-127.

2. Pressing [<] and [>] buttons at the same time will reset the chorus level to default.
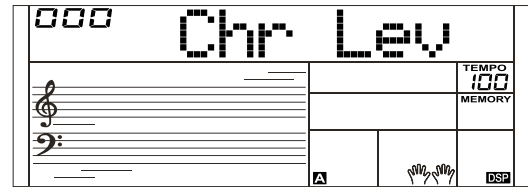
DSP

Repeatedly press the [FUNCTION] button to select the DSP menu. The LCD displays "Dsp".
Use the [<] / [>] buttons to switch DSP on or off.
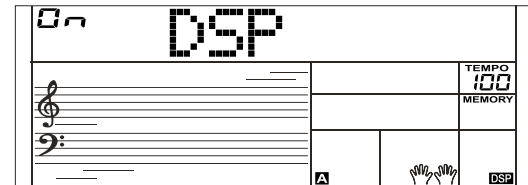
Auto Power Off

1. Repeatedly press the [FUNCTION] button to select the power off menu. The LCD displays "PowerOff". Use the [<] / [>] button to change the time setting.

2. Pressing [<] and [>] at the same time will reset the setting to default "030" (30 min).
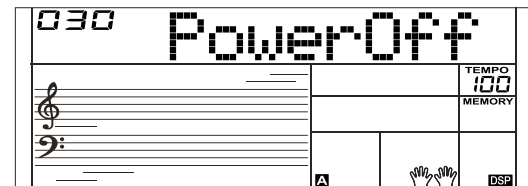
Performance Memory

The Performance Memory feature allows you to save virtually all panel settings to a memory slot, and you can instantly recall them by pressing a single button.

The instrument has 4 memory slots.

1. Hold down [STORE] button , then press one of the memory buttons [M1] - [M4] to save the panel settings. The LCD will display "MEM STOR" and the new settings will replace the previous memory data.

2. Press one of the memory buttons [M1] - [M4] to recall the panel settings saved to that memory slot.

3. You can save following parameters to the memory:
Sound Parameter: sound, DSP.
Accompaniment Parameter: style, tempo, and chord on/off, accompaniment sections.
Function Parameter: Some parameters in the function menu.
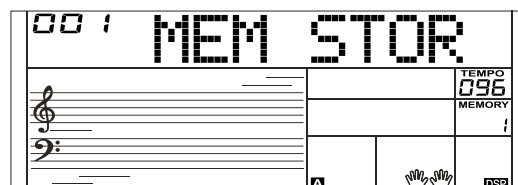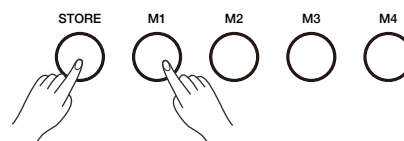
Note:
Performance memory cannot be recalled when the Quick Setting function is in use. The performance memory will reset to default settings after power off.

Chord Reference

If you know the name of a chord but don't know how to play it, you can use the Chord Reference function.

1. Press and hold the [CHORD REF.] button for 2 seconds to enter this mode. The LCD displays the Chord Type and Chord Notes.

2. The keys from C5-B5 are used to assign the Chord Root, and the keys from A3b-A4 are used to assign the Chord Type. When the Chord Type and Chord Root are confirmed, the LCD will display the Chord and the staff notation.

3. When you play the correct chord on the chord range of the keyboard, a voice that says "good" will be heard.

4. Press and hold the [CHORD REF.] button for 2 seconds again to exit this mode.
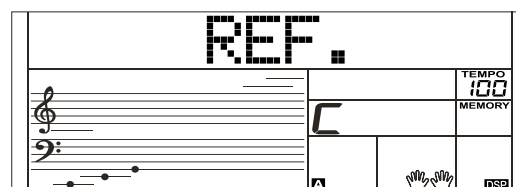
Chord types and roots will be displayed in the Chord Reference mode as follows:
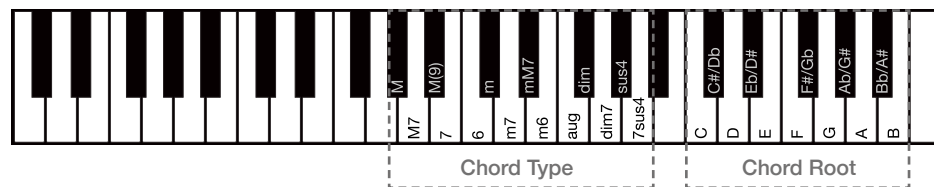
The instrument has a variety of songs (Please refer to the Song List). Each song can be practiced in LESSON mode.

Listening to the Songs

1. Press the [SONG] button to enter the song mode. It will play all songs circularly. Press the [SONG] button again, it will stop the song.

2. In song mode, use the number keys and [<] / [>] buttons to select a song.

3. During song playback, you can press the [START/STOP] button to stop the song, press it again to play the current song repeatedly.

4. Use the [TEMPO] and number or [<] / [>] buttons to change the tempo of the current song.

5. In order to come out from Song mode, press either one of the following buttons when the song is stopped: [SOUND], [STYLE].
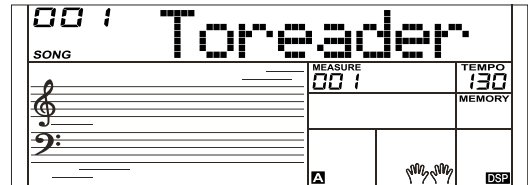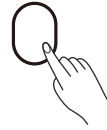
Lesson Mode

The instrument presets 3 different ways to practice a song, as specified in Lesson 1, Lesson 2 and Lesson 3. The instrument will grade your practice when you finish a lesson, helping you to keep track of your progress.

1. When song playback is stopped, press the [LESSON] button to enter the lesson mode or select a lesson to practice.
2. Press the [START/STOP] button to start the lesson. The LCD displays the note that needs to be played.
3. Press the [START/STOP] button again to stop the lesson.
4. In lesson mode, press repeatedly the [L/R] button to select to practice the left hand part, the right hand part, or both hands.
5. You can select to practice one of the three lessons. It will grade your practice when you finish a lesson.
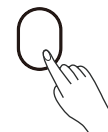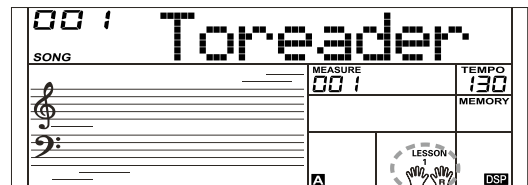
In lesson 1, you will learn to practice at the correct time value. It doesn't matter even you play the wrong notes.

In lesson 2, you will learn to play the correct notes. The lesson will continue only when you have played correctly the note displayed on LCD.

In lesson 3, you will learn to play the correct notes at the correct time value.

When you finish a lesson, the instrument will grade your practice by telling you the level you get.
Level 1: OK.
Level 2: Good.
Level 3: Very Good.
Level 4: Excellent.

After grading, the song will play back again, and you can practice again.

MIDI Function

By using the MIDI functions you can expand your musical possibilities. This section explains what MIDI is, and what it can do, as well as how you can use MIDI on your instrument.

What's MIDI?

MIDI (short for Musical Instrument Digital Interface) allows a wide variety of electronic musical instruments, computers and other related devices to connect and communicate with one another. MIDI carries event messages that specify notation, pitch and velocity, control signals for parameters such as volume, vibrato, audio panning, and program change information to change the sound selections.

The instrument can output the real-time playback information via MIDI and control external MIDI devices. The instrument can also accept incoming MIDI messages and generate sound accordingly.

MIDI Connection

The instrument is equipped with a standard USB interface, which allows the instrument to be connected to a computer. Most computers will automatically recognize the instrument, and allow MIDI messages to be transmitted between the instrument and the computer via the USB-MIDI jack.

Use a standard USB cable to connect the USB jack of the instrument to the USB port of a computer.

Note:

Activate the computer from a sleep/suspended/standby mode before connecting the USB cable.

Connect the USB cable to the instrument and a computer before turning the power of the instrument on.
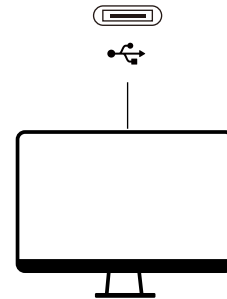
Troubleshooting

Problem	Possible Cause and Solution
The speakers produce a "pop" sound whenever the power is turned ON or OFF.	This is normal and is no cause for alarm.
No sound results when the keyboard is played.	1. Check if the master volume is set too low. 2. Check if headphones are plugged into the PHONES jack.
When using a mobile phone, noise is produced.	Using a mobile phone in close proximity to the instrument may produce interference. To prevent this, turn off the mobile phone or use it further away from the instrument.
The auto accompaniment does not play back even Sync is in standby condition and a key is pressed.	You may be trying to start accompaniment by playing a key in the right-hand range of the keyboard. To start the accompaniment with Sync Start, make sure to play a key in the left-hand range of the keyboard.

Specifications

Keyboard & Display	
Keyboard	49 Mini (Touch Response)
Touch Response	3 types, off
Display	LCD

Sounds	
Polyphony (max.)	64
Sounds	200

Styles		
Styles	120	
Style Control		Start / Stop
		Sync / Fill
		Intro / Ending
		A / B
		Chord mode / Auto
Q.S.	Yes	
Chord Types	32	

Effects	
Effects	DSP on / off
Reverb	128 levels
Chorus	128 levels

Song & Recording	
Music Library	100 Preset Songs

Pitch Adjustment	
Transpose	-12 ~ +12
Octave	-2 ~ +2
Tuning	-50 ~ +50

Other Functions	
Accompaniment Volume	32
Performance Memory	4
Metronome	Yes
Tempo	5 ~ 320
Other control	Sustain, Auto Chord

Connections	
Phones	1 x 1/8"
Pedals	Sustain
USB	USB-C (Power, MIDI & Audio)

Power Supply	
Power	USB-C 5V or 4 x AA Batteries
Power Off Protection	Yes

Amplifiers & Speakers	
Amplifiers	2 x 3 W
Speakers	2 x 9 cm

Dimensions & Weight	
Dimensions LWH (mm)	642 x 200 x 68 mm
Weight (kg)	1.78

* All specifications and appearances are subject to change without notice.

Sound List

No.	Bank MSB	Bank LSB	Program	Full Name	Short Name
PIANO					
1	16	0	0	Acoustic Grand Piano	GrandPno
2	101	0	0	Piano Dark	GrdPnD
3	25	0	0	Octave Piano	OctPno
4	26	0	0	Octave Piano 2	OctPno2
5	46	0	0	Piano & Choir	Pno&Cho
6	50	0	0	Grand Piano / W	GrandPnW
7	51	0	0	Analog E.Piano	AnEPno
8	0	0	1	Bright Piano	BritPno
9	10	0	1	Bright Piano 2	BritPno2
10	21	0	1	Chorus Piano	ChoPno
11	45	0	1	Piano & Vibraphone	Pno&Vib
12	0	0	2	Electric Grand Piano	EPianoG
13	50	0	2	Electric Grand Piano / W	E.PianoW
14	0	0	3	Honky-Tonk Piano	HnkyTonk
15	18	0	3	Honky-Tonk Dark	HnkTonkD
E.PIANO					
16	0	0	4	E.Piano	E.Piano
17	11	0	4	Stereo E.Piano	EPianoS
18	15	0	4	50's E.Piano	50'sEP
19	16	0	4	E.Piano / W	EPianoW
20	50	0	5	E.Piano 2 / W	EPianoW2
21	0	0	5	E.Piano 2	E.Piano2
22	101	0	5	E.Piano 3	E.Piano3
23	20	0	5	Detuned E.P.	DetunEP
24	0	0	6	Harpsichord	Harpsi
25	16	0	6	Harpsichord / W	HarpsiW
26	26	0	6	Harpsichord Octave	HarpsiO
27	25	0	6	Harpsichord Octave 2	HarpsiO2
28	27	0	6	Digital E.Piano	DigiEP
29	0	0	7	Clavichord	Clavi
30	11	0	7	Stereo Clavichord	ClaviS
CHROMATIC PERCUSSION					
31	0	0	8	Celesta	Celesta
32	101	0	8	Celesta 2	Celesta2
33	41	0	8	Reecho Bell	ReBell
34	0	0	9	Glockenspiel	Glocken
35	45	0	9	Children's Song	ChilSong
36	46	0	9	Analog Bell	AnaBell
37	0	0	10	Music Box	MusicBox
38	2	0	11	Vibraphone	Vibra
39	8	0	11	Vibraphone / W	VibraW
40	44	0	11	Vibraphone & Bell	Vibr&Bel
41	0	0	12	Marimba	Marimba
42	44	0	12	Sine Marimba	Marm&Sin
43	46	0	12	Wood Drum	WoodDrum
44	47	0	12	Rotating	Rotating
45	0	0	13	Xylophone	Xylophon
46	0	0	14	Tubular Bells	TubuBel
47	0	0	15	Dulcimer	Dulcimer
ORGAN					
48	0	0	16	Drawbar Organ	DrawOrg
49	10	0	16	Stereo Drawbar Organ	DrawOrgS
50	0	0	17	Percussive Organ	PercOrgn
51	8	0	17	Percussive Organ Detuned	DePerOrg

52	2	0	18	Rock Organ	RockOrgn
53	0	0	19	Church Organ	ChurOrgn
54	25	0	19	Octave Church Organ	ChrOrgO
55	26	0	19	Octave Church Organ 2	ChrOrgO2
56	27	0	19	Finale	Finale
57	28	0	19	Digital Organ	DigiOrg
58	29	0	19	Analog Organ	AnaOrg
59	0	0	20	Reed Organ	ReedOrgn
60	11	0	20	Stereo Reed Organ	ReedOrgS
ACCORDION					
61	2	0	21	Accordion	Acordin
62	50	0	21	Accordion 2	Acordin2
63	11	0	21	Stereo Accordion	AcordinS
64	0	0	22	Harmonica	Harmnica
65	16	0	22	Dark Harmonica	HarmnicD
GUITAR					
66	2	0	24	Nylon Guitar	NylonGtr
67	22	0	24	Chorus Nylon Guitar	NylonGtC
68	11	0	24	Stereo Nylon Guitar	NylonGtS
69	0	0	25	Steel Guitar	SteelGtr
70	8	0	25	12 String Guitar	12StrGtr
71	0	0	26	Jazz. Guitar	JazzGtr
72	0	0	27	Clean Guitar	CleanGtr
73	11	0	27	Stereo Clean Guitar	CleanGtS
74	22	0	27	Chord Clean Guitar	ClnGtCho
75	0	0	28	Muted Guitar	MutedGtr
76	0	0	29	Overdrive Guitar	Ovrdrive
77	0	0	30	Distortion Guitar	DistGtr
78	10	0	30	5Th Distortion	5ThDist
79	101	0	30	5Th Distortion 2	5ThDist2
80	11	0	30	Analog Distortion	AnaDist
81	13	0	30	Analog Distortion Wah	AnDisWah
82	0	0	31	Guitar Harmonics	GtrHarmo
BASS					
83	2	0	32	Acoustic Bass	AcoBass
84	10	0	32	Acoustic Bass 2	AcoBass2
85	44	0	32	Jazz Style	JazzSty
86	45	0	32	A.Bass & Mute G.T.	ABs&MtGT
87	0	0	33	Finger Bass	FngrBs
88	23	0	33	Velocity Bass	VelBass
89	0	0	34	Pick Bass	PickBs
90	35	0	34	Mute Pick Bass	PickBsM
91	0	0	35	Fretless Bass	Fretles
92	0	0	36	Slap Bass	SlapBas
93	10	0	36	Slap Bass 2	SlapBas2
94	0	0	38	Synth Bass	SynBass
95	0	0	39	Synth Bass 2	SynBass2
96	10	0	38	Synth Bass 3	SynBass3
STRINGS & ORCHESTRAL					
97	2	0	40	Violin	Violin
98	10	0	40	Violin 2	Violin2
99	0	0	41	Viola	Viola
100	0	0	42	Cello	Cello
101	0	0	43	Contrabass	Contrbs
102	0	0	44	Tremolo Strings	TremStr
103	2	0	45	Pizzicato Strings	PizzStr

104	0	0	46	Orchestral Harp	Harp
105	0	0	47	Timpani	Timpani
106	10	0	47	Timpani 2	Timpani2
107	2	0	48	Strings Ensemble	Strings
108	0	0	49	Strings Ensemble 2	Strings2
109	11	0	48	Stereo Strings	StringS
110	0	0	50	Synth Strings	SynStrs
111	11	0	50	Stereo Synth Strings	SynStrS
112	11	0	51	Stereo Synth Strings 2	SynStrS2
113	13	0	50	Analog String	AnaStr
114	12	0	51	Slow Strings	SlowStr
115	101	0	51	Slow Strings 2	SlowStr2
116	0	0	52	Choir Aahs	ChoirAah
117	11	0	52	Stereo Aahs	ChoAhS
118	12	0	52	Stereo Aahs 2	ChoAhS2
119	0	0	54	Synth Voice	SynVoic
120	12	0	54	HK 80's	HK80's
121	0	0	55	Orchestra Hit	OrchHit
BRASS					
122	2	0	56	Trumpet	Trumpet
123	18	0	56	Dark Trumpet	TrumpetD
124	42	0	56	Wah Trumpet	TrumpetW
125	0	0	57	Trombone	Trmbone
126	0	0	58	Tuba	Tuba
127	0	0	59	Muted Trumpet	MuteTrp
128	0	0	60	Horn	Horn
129	11	0	60	Stereo Synth Brass	StSyBras
130	0	0	61	Brass Ensemble	Brass
131	10	0	61	Majestic Unison	Unison
132	0	0	62	Synth Brass	SynBras
133	11	0	62	Synth Brass 2	SynBras2
134	11	0	63	Analog Brass	AnaBrass
135	101	0	63	Analog Brass 2	AnaBras2
136	12	0	63	Dynamics Analog Brass	DyAnaBra
137	25	0	63	Octave Synth Brass	SynBrasO
WOODWIND					
138	2	0	64	Soprano Sax	SprnSax
139	0	0	65	Alto Sax	AltoSax
140	0	0	66	Tenor Sax	TenoSax
141	0	0	67	Baritone Sax	BariSax
142	0	0	68	Oboe	Oboe
143	0	0	69	English Horn	EngHorn
144	0	0	70	Bassoon	Bassoon
145	0	0	71	Clarinet	Clarine
146	0	0	72	Piccolo	Piccolo
147	0	0	73	Flute	Flute
148	10	0	73	Flute 2	Flute2
149	0	0	74	Recorder	Recordr
150	0	0	75	Pan Flute	PanFlut
151	0	0	77	Shakuhachi	Shakchi
152	10	0	77	Shakuhachi 2	Shakchi2
153	0	0	78	Whistle	Whistle
154	0	0	79	Ocarina	Ocarina
SYNTH					
155	10	0	80	Square Lead	SquarLd
156	9	0	80	Analog Lead	AnaLead

157	8	0	80	Lead Sine	SineLead
158	12	0	80	Analog Electric	AnaElect
159	49	0	80	Sine Solo	SineSolo
160	0	0	81	Sawtooth Lead	SawLead
161	11	0	81	Stereo Sawtooth	SawLdS
162	15	0	81	80's Synth	80'sSyn
163	58	0	81	Analog Signal	AnSignal
164	0	0	82	Calliope Lead	CalipLd
165	11	0	82	Grand	Grand
166	0	0	83	Chiff Lead	ChiffLd
167	11	0	84	Fruity Lead	FruityLd
168	12	0	85	Modulation Distortion	ModDist
169	16	0	85	Analog Filter	AnaFilt
170	0	0	87	Bass & Lead	Bs&Lead
171	10	0	88	New Age Pad	NewAgPd
172	12	0	88	Praise	Praise
173	15	0	88	Dunhuang	Dunhuang
174	21	0	88	Phase Shift	PhaShift
175	0	0	89	Warm Pad	WarmPad
176	20	0	89	Analog Pad	AnalPd
177	15	0	91	Electric Pad	ElecPad
178	0	0	93	Metallic Pad	MetalPad
179	102	0	93	Dream	Dream
180	10	0	94	Background	Backgrd
ETHNIC					
181	0	0	104	Sitar	Sitar
182	0	0	105	Banjo	Banjo
183	0	0	106	Shamisen	Shamisn
184	0	0	107	Koto	Koto
185	0	0	108	Kalimba	Kalimba
186	0	0	109	Bagpipe	Bagpipe
187	0	0	110	Fiddle	Fiddle
188	0	0	111	Shania	Shania
SFX					
189	0	0	119	Reverse Cymbal	RevCymbl
190	0	0	121	Breath Noise	BrthNoiz
191	0	0	122	Seashore	Seashore
192	0	0	123	Bird Tweet	Tweet
193	0	0	124	Telephone Ring	Telphone
194	0	0	125	Helicopter	Helicptr
195	0	0	126	Applause	Applause
196	0	0	127	Gunshot	Gunshot
197	10	0	127	Fall	Fall
DRUMS					
198	120	0	0	Standard Drum Set	StandSet
199	120	0	8	Rock Drum Set	RockSet
200	120	0	16	Electronic Drum Set	ElecSet

Style List

No.	Full Name	Short Name
BEAT & POP		
1	8 Beat 1	8Beat1
2	8 Beat 1-2	8Beat1-2
3	8 Beat2	8Beat2
4	60's 8 Beat	60's8Bt
5	60's 8 Beat-2	60's8Bt2
6	8 Beat Ballad	8BtBld
7	8 Beat Ballad-2	8BtBld-2
8	8 Beat Rock	8BtRock
9	8 Beat Rock-2	8BtRck-2
10	16 Beat	16Beat
11	16 Beat-2	16Bt-2
12	16 Beat Pop	16BtPop
13	16 Beat Pop-2	16BtPop2
14	16 Beat Shuffle	16BtShfl
15	16 Beat Shuffle-2	16BtShf2
16	Ballad	Ballad
17	Slow Ballad	SlowBld
18	Slow Ballad-2	SlwBld-2
ROCK		
19	Rock	Rock
20	Rock-2	Rock-2
21	Pop Rock	PopRock
22	Pop Rock-2	PopRck-2
23	Fast Rock	FastRock
24	Fast Rock-2	FastRk-2
25	Slow Rock	SlwRock
26	Slow Rock-2	SlwRk-2
27	Rock & Roll	RockRoll
28	Rock & Roll-2	RkRoll-2
29	Blues Boogie	B.Boogie
30	Blues Boogie-2	B.Bogie2
31	Blues	Blues
32	Blues-2	Blues-2
33	Blues Shuffle	B.Shufle
34	Blues Shuffle-2	B.Shufl2
35	Rock Shuffle	R.Shufle
36	Rock Shuffle-2	R.Shufl2
37	Charleston	Charston
DANCE		
38	Disco	Disco
39	Disco-2	Disco-2
40	Disco Funk	DiscFunk
41	Disco Funk-2	DiscoFk2
42	Dance	Dance
43	Dance-2	Dance-2
44	House	House
45	House-2	House-2
46	Rap	Rap
47	Rap-2	Rap-2
48	Euro Beat	EuroBeat
49	Euro Beat-2	EuropBt2
50	Hip Hop	HipHop
51	Hip Hop-2	HipHop-2
52	Techno	Techno
53	Techno-2	Techno-2
SOUL & FUNK		
54	Funky Pop	FunkyPop
55	Funky Pop-2	FunkPop2
56	Jazz Funk	JazzFunk
57	Jazz Funk-2	JazzFk-2
58	Cool Funky	CoolFunk
59	Soul	Soul
60	Soul Blues	SoulBlue
61	R & B	R&B
62	6/8 Gospel	6/8Gospl
63	6/8 Gospel-2	6/8Gosp2
64	Pop Groove	PopGrove
JAZZ		
65	Swing	Swing
66	Swing-2	Swing-2
67	Cool Jazz	CoolJazz
68	Cool Jazz-2	CoolJz-2
69	Pop Swing	PopSwing
70	Pop Swing-2	PopSwin2
71	Swing Fox	SwingFox
72	Swing Fox-2	SwinFox2
73	Big Band	BigBand
74	Big Band-2	BigBand2
75	Ragtime	Ragtime
76	Ragtime-2	Ragtime2
77	Dixieland	Dixeland
78	Dixieland-2	Dixland2
79	Quick Step	QuickStp
80	Quick Step-2	QuickSp2
COUNTRY		
81	Country	Country
82	Pop Country	PopCntry
83	Country Rock	CtryRock
84	3/4 Country	3/4Ctry
85	Country Shuffle	CtryShfl
86	Country Quick Step	CtryStep
LATIN		
87	Cha Cha	ChaCha
88	Cha Cha-2	ChaCha2
89	Pop Cha Cha	P.ChaCha
90	Pop Cha Cha-2	P.ChaCa2
91	Rhumba	Rhumba
92	Rhumba-2	Rhumba2
93	Pop Rhumba	P.Rhumba
94	Pop Rhumba-2	P.Rhumb2
95	Bossa Nova	Bossa
96	Bossa Nova-2	Bossa-2
97	Tango	Tango
98	Tango-2	Tango-2
99	Jazz Samba	JzSamba
100	Reggae	Reggae
101	Reggae-2	Reggae2
102	Pop Reggae	P.Reggae

TRADITIONAL		
103	March	March
104	German March	G.March
105	6/8 March	6/8March
106	Polka	Polka
107	Pop Polka	PopPolka
108	Waltz	Waltz
109	Slow Waltz	SloWaltz
110	Vienna Waltz	VieWaltz
111	Musette	Musette
PIANIST		
112	Piano 8 Beat	Pno8Beat
113	Piano Ballad	PnoBalad
114	Piano Boogie	PnoBogie
115	Piano Jazz	PnoJazz
116	Piano Swing	PnoSwing
117	Piano Twist	PnoTwist
118	Piano March	PnoMarch
119	Piano 6/8 March	Pno6/8Mr
120	Piano Waltz	PnoWaltz

Song List

No.	Full Name	Short Name
CLASSIC		
1	Chanson Du Toreador	Toreador
2	Meditation	Meditati
3	Wiegenlied	WieGenli
4	A Lover's Concerto	Concerto
5	Whispering Hope	Whisper
6	O Sole Mio	OSoleMio
7	Auf Flugeln Des Gesanges	Gesanges
8	Santa Lucia	SantaLuc
STANDARD		
9	Deck The Halls	DeckHall
10	Old Folks At Home	OldFolks
11	Oh! Susanna	Susanna
12	Jeanie With The Light Brown Hair	Jeanie
13	My Old Kentucky Home	Kentucky
14	Turkey In The Straw	TukyStaw
15	Aloha Oe	AlohaOe
16	Carry Me Back To Old Virginny	Virginny
17	The Blue-Bells Of Scotland	BlueBell
18	Jingle Bells	JingBell
19	Battle Hymne Of The Republic	BatlHyme
20	Ode To Joy	OdeToJoy
21	La Cucaracha	Cucarach
22	Yellow Rose Of Texas	YellRose
23	The Wabash Cannon Ball	CannBall
24	Dreaming Of Home And Mother	Dreaming
25	Ring Ring De Banjo	DeBanjo
26	Die Forelle	Forelle
FOLK		
27	Aura Lea	AuraLea
28	When The Saints Go Marching In	Marching
29	Twinkle Twinkle Little Star	Twinkle
30	I've Been Working On The Railroad	WorkRail
31	With Games	WithGame
32	Way Home	WayHome
33	Yankee Doodle	YankeeD
34	My Darling Clementine	Clemtine
35	Danny Boy	DannyBoy
36	El Condor Pasa	ElCondor
37	Wiegenlied 2	Wieglid2
38	The Quilting Party	TheParty
39	The Colorado Trail	TheTrail
40	Shenandoah	Shenando
41	Down In The Valley	Valley
42	Barbara Allen	Allen
43	Careless Love	CaleLove
44	Sweet Betsy From Pike	SwetPike
45	Jesse James	James
46	Skip To My Lou	SkipMyLo
47	London Bridge Is Falling Down	Bridge
48	This Old Man	OldMan
49	Polly Wolly Doodle	PlyWlyDo
50	Sippin' Cider Through A Straw	SipinCid
51	Mary Had A Little Lamb	MaryLamb
52	Blue Bird Waltz	BlueBird

No.	Full Name	Short Name
PIANO & KEYBOARD		
53	Kaiser Walzer	Kaiser
54	Hanon Piano Fingering 1	Hanon1
55	Hanon Piano Fingering 2	Hanon2
56	Hanon Piano Fingering 3	Hanon3
57	Hanon Piano Fingering 4	Hanon4
58	Hanon Piano Fingering 5	Hanon5
59	Hanon Piano Fingering 6	Hanon6
60	Hanon Piano Fingering 7	Hanon7
61	Basic Tutorial Beyer Piano 8	Beyer8
62	Basic Tutorial Beyer Piano 12	Beyer12
63	Basic Tutorial Beyer Piano 13	Beyer13
64	Basic Tutorial Beyer Piano 14	Beyer14
65	Basic Tutorial Beyer Piano 15	Beyer15
66	Basic Tutorial Beyer Piano 16	Beyer16
67	Basic Tutorial Beyer Piano 18	Beyer18
68	Basic Tutorial Beyer Piano 19	Beyer19
69	Basic Tutorial Beyer Piano 20	Beyer20
70	Basic Tutorial Beyer Piano 21	Beyer21
71	Basic Tutorial Beyer Piano 29	Beyer29
72	Basic Tutorial Beyer Piano 45	Beyer45
73	Christmas Eve	XmasEve
74	Basic Tutorial Beyer Piano 50	Beyer50
75	Basic Tutorial Beyer Piano The Scale Of C Major	BeyerC
76	Basic Tutorial Beyer Piano 65	Beyer65
77	Old Folks At Home (Piano)	OldFolk2
78	Basic Tutorial Beyer Piano The Scale Of G Major	BeyerG
79	A Little Polish Dance	PolishDc
80	Larghetto	Largheto
81	Dance Of The Four Swans From "Swan Lake"	SwanLake
82	Jesus Saviour Pilot Me	Jesus
83	Old Macdonald Had A Farm	OldAFarm
84	2-Part Invention No.13 In A Minor BWV 784	Invetion
85	Musette	Musette
86	Bourree	Bourree
87	Carl Czerny 599 NO92	599No92
88	Away In A Manger	AwayInAM
89	Marriage Of Figaro	Marriage
90	Angels We Have Heard On High	Angles
91	Waltz	Waltz
92	Did You Ever See A Lassie	Lassie
93	Old France	OldFranc
94	Santa Claus Is Coming To Town	SantComn
95	Minuet 3	Minuet3
96	Alfredo And Violetta Column Tower Duet	Alfredo
97	Als Die Alte Mutter Mich Noch lehrte Singen	Mutter
98	Menuett G Dur 3	MenuettG
99	Knight	Knight
100	The Angels Singing	Singing

MIDI Implementation Chart

Function		Transmitted	Recognized	Remarks
Basic	Default	1ch	ALL	
Channel	Changed	x	x	
	Default	x	1	
Mode	Messages	x	x	
	Altered	********	x	
Note	Note	12-114	0-127	
Number	: True Voice	********	0-127	
Velocity	Note on	o 9nH,V=1-127	o 9nH,V=1-127	
	Note off	x (9nH,V=0)	o (9nH,V=0; 8nH,V=0-127)	
After	key's	x	x	
Touch	Ch's	x	x	
Pitch Bend		o	o	
Control	0	o	o	Bank Select
Change	5	x	x	Portamento Time
	6	x	o	Data Entry
	7	x	o	Volume
	10	x	o	Pan
	11	x	o	Expression
	64	o	o	Sustain Pedal
	65	x	x	Portamento On/Off
	66	x	o	Sostenuto Pedal
	67	x	o	Soft Pedal
	91	x	o	Reverb Level
	93	x	o	Chorus Level
	120	x	o	All Sound Off
	121	x	o	Reset All Controllers
	123	o	o	All Notes Off
Program		o	o	
Change	: True Number	********	0-127	
System Exclusive		x	o	
System	: Song Position	x	x	
Common	: Song Select	x	x	
	: Tune	x	x	
System	: Clock	x	x	
Real Time	: Commands	x	x	
Aux	: Local On/Off	x	x	
	: All Notes Off	o	o	
Messages	: Active sense	x	o	
	: Reset	x	o	
Notes:				

- Mode 1: OMNI ON, POLY
- Mode 2: OMNI ON, MONO
- Mode 3: OMNI OFF, POLY
- Mode 4: OMNI OFF, MONO

o: YES
x: NO