

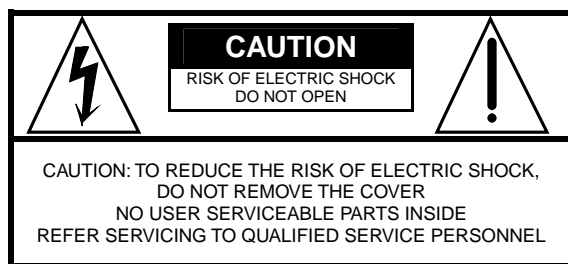
Kurzweil KME61

User's Guide



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Part Number: 910383-001 Rev. A



The lightning flash with the arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.



The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the product.

IMPORTANT SAFETY & INSTALLATION INSTRUCTIONS

INSTRUCTIONS PERTAINING TO THE RISK OF FIRE, ELECTRIC SHOCK, OR INJURY TO PERSONS

WARNING: When using electric products, basic precautions should always be followed, including the following:

1. Read all of the Safety and Installation Instructions and Explanation of Graphic Symbols before using the product.
2. This product must be grounded. If it should malfunction or break down, grounding provides a path of least resistance for electric current to reduce the risk of electric shock. This product is equipped with a power supply cord having an equipment-grounding conductor and a grounding plug. The plug must be plugged into an appropriate outlet which is properly installed and grounded in accordance with all local codes and ordinances.
DANGER: Improper connection of the equipment-grounding conductor can result in a risk of electric shock. Do not modify the plug provided with the product - if it will not fit the outlet, have a proper outlet installed by a qualified electrician. Do not use an adapter which defeats the function of the equipment-grounding conductor. If you are in doubt as to whether the product is properly grounded, check with a qualified serviceman or electrician.
3. **WARNING:** This product is equipped with an AC input voltage selector. The voltage selector has been factory set for the mains supply voltage in the country where this unit was sold. Changing the voltage selector may require the use of a different power supply cord or attachment plug, or both. To reduce the risk of fire or electric shock, refer servicing to qualified maintenance personnel.
4. Do not use this product near water - for example, near a bathtub, washbowl, kitchen sink, in a wet basement, or near a swimming pool, or the like.
5. This product should only be used with a stand or cart that is recommended by the manufacturer.
6. This product, either alone or in combination with an amplifier and speakers or headphones, may be capable of producing sound levels that could cause permanent hearing loss. Do not operate for a long period 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.

7. The product should be located so that its location or position does not interfere with its proper ventilation.
8. The product should be located away from heat sources such as radiators, heat registers, or other products that produce heat.
9. The product should be connected to a power supply only of the type described in the operating instructions or as marked on the product.
10. This product may be equipped with a polarized line plug (one blade wider than the other). This is a safety feature. If you are unable to insert the plug into the outlet, contact an electrician to replace your obsolete outlet. Do not defeat the safety purpose of the plug.
11. The power supply cord of the product should be unplugged from the outlet when left unused for a long period of time. When unplugging the power supply cord, do not pull on the cord, but grasp it by the plug.
12. Care should be taken so that objects do not fall and liquids are not spilled into the enclosure through openings.
13. The product should be serviced by qualified service personnel when:
 - A. The power supply cord or the plug has been damaged;
 - B. Objects have fallen, or liquid has been spilled into the product;
 - C. The product has been exposed to rain;
 - D. The product does not appear to be operating normally or exhibits a marked change in performance;
 - E. The product has been dropped, or the enclosure damaged.
14. Do not attempt to service the product beyond that described in the user maintenance instructions. All other servicing should be referred to qualified service personnel.
15. **WARNING:** Do not place objects on the product's power supply cord, or place the product in a position where anyone could trip over, walk on, or roll anything over cords of any type. Do not allow the product to rest on or be installed over cords of any type. Improper installations of this type create the possibility of a fire hazard and/or personal injury.

RADIO AND TELEVISION INTERFERENCE

WARNING: Changes or modifications to this instrument not expressly approved by Young Chang could void your authority to operate the instrument.

IMPORTANT: When connecting this product to accessories and/or other equipment use only high quality shielded cables.

NOTE: This instrument 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 instrument 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 instrument does cause harmful interference to radio or television reception, which can be determined by turning the instrument 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 instrument and the receiver.
- Connect the instrument into an outlet on a circuit other than the one to which the receiver is connected.
- If necessary consult your dealer or an experienced radio/television technician for additional suggestions.

NOTICE

This apparatus does not exceed the Class B limits for radio noise emissions from digital apparatus set out in the Radio Interference Regulations of the Canadian Department of Communications.

AVIS

Le présent appareil numérique n'émet pas de bruits radioélectriques dépassant les limites applicables aux appareils numériques de la classe B prescrites dans le Règlement sur le brouillage radioélectrique édicté par le ministère des Communications du Canada.

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Chapter 1

Introducing the KME61

Welcome!

Congratulations, and thank you for purchasing a Kurzweil / Young Chang KME61. You've got your hands on an excellent-sounding and flexible-yet economical-performance instrument and MIDI controller.

This manual will get you started with your new instrument. You'll definitely want to keep the manual handy as you become an advanced user.

KME61 Overview

The KME61 is a great live performance instrument. It has many excellent sounds, including most of the famous Kurzweil PC2 sounds, already programmed and ready to go. It is also a convenient MIDI controller ideally suited for controlling additional sound modules and as input to a sequencer.

Programs, Setups, and MIDI

We'll use these three terms throughout this manual. They're the components of the KME61's performance features.

Programs are the 256 internal sounds of the KME61.

Setups specify a combination of several performance features. Each setup contains three zones that can cover any part of the keyboard, or overlap across the entire keyboard. You can program each zone independently – with different programs, transposition, and MIDI channels. You can split and layer up to 3 KME61 sounds and control up to 3 external MIDI instruments at the same time. There are 32 setups, and you can edit and save 16 of these.

You will use the *MIDI mode* to control external sound modules or interact with a computer-based sequencer

The Keyboard and Controllers

The KME61's keyboard has 61 standard-sized, organ-style keys. The keyboard is *velocity-sensitive*, meaning the harder (faster) you press a key, the louder the voice (except for organ voices which, realistically, are not velocity-sensitive). The keyboard is also *release-velocity-sensitive*, meaning that MIDI signals expressing how rapidly a key is released get sent to external equipment. The keyboard also has monophonic *aftertouch* which means that the force used to hold a key down can affect the character of the sound being played.

The KME61 also has several *controllers*. There are 2 wheels, a slider, and 2 pedals.

The Pitch Wheel (the one on the left) makes the pitch of a sound go higher when the wheel is rotated upwards, and lower when the wheel is rotated downwards. The Modulation Wheel controls different characteristics of the sound for each program. Likewise, the Data Slider controls a different characteristic of the sound for each program.

The KME61 has 2 Pedal Inputs; one is for a Switch Pedal and the other one is for a continuous Control Pedal. The Switch Pedal is used as a sustain (damper) pedal, and the Control Pedal is used to control expression.

Caution: Be sure to plug the included switch pedal only into the jack marked “SW Pedal”. Your KME61 may be damaged if you plug a switch pedal into the “CC Pedal” jack and leave it there for a long time.

Modes

The KME61 has four operating modes.

When in *Program Mode*, the KME61 is an easy to understand and operate, stand-alone performance instrument. To change the sound group, press one of the 16 Group select buttons. To change the sound in the current group, press a Program select button. Each Program button has 2 different programs assigned to it. Press the button a second time to select the second program. The entire keyboard will play the sound shown in the display. You can read more about Program Mode in Chapter 3.

When in *Setup Mode*, the KME61 becomes a sophisticated MIDI controller with a built-in multi-timbral sound module. The keyboard can be split into 3 sections or zones, each playing a different sound and transmitting on a different MIDI channel. Up to 16 different MIDI setups can be defined and stored in the built-in nonvolatile memory. You can quickly select these setups with the 16 sound/setup select buttons. Additionally there are 16 permanently pre-programmed Factory Setups which cover the most commonly needed sound combinations. You can read more about Setup Mode in Chapter 4.

MIDI Mode is primarily for use with a computer-based sequencer. In this mode, the keyboard and performance controls are disconnected from the internal sound module. A computer-based sequencer or MIDI processor may then be connected between the keyboard/controls and the sound module. This is sometimes called “local off”. You can read more about MIDI Mode in Chapter 5.

Master Mode gives access to several parameters that affect the entire instrument. Read more about Master Mode in Chapter 6.

How to Use This Book

This *KME61 User's Guide* is designed to help you get up and running quickly. If you know electronic instruments and MIDI already and you know pretty much what you want to do with your KME61, at least read the beginning of Chapter 2. If you need some more help using the KME61's many features, you should also read all of Chapters 3 and 4. Chapters 5 and 6 give more information on use with a sequencer and global functions and describe some typical applications. The remaining chapters provide troubleshooting and reference material that can be referred to when needed. Finally, don't underestimate the index. We've tried to think of every word and topic you may need quick access to—it's the next best thing to a search engine!

Also, don't forget to check our web site for any late-breaking information on the KME61 and other Kurzweil products:

<http://www.kurzweilmusicsystems.com/>

Above all, have fun, and make lots of great music with your KME61!

Chapter 2

Getting Started

This chapter will help you hook up your KME61 and learn its basic functions.

Unpacking the Instrument

Carefully remove all of the contents of the shipping box. The box that your KME61 ships in contains the following:

- * KME61
- * AC Adapter (9VAC, 2.0A)
- * This manual
- * Warranty card
- * Four adhesive-backed rubber feet

Be sure to keep the box and packing materials, at least during the warranty period, in case you need to ship the unit for any reason.

Placement

If you are going to be using the unit on a table now or in the future, apply the four stick-on rubber feet to the bottom. Figure 2-1 shows the recommended locations. Remove the backing paper from each rubber foot and attach in the recommended locations. It is possible that these locations could interfere with some keyboard stand's supports, so check how the KME61 fits on your stand before applying the rubber feet.

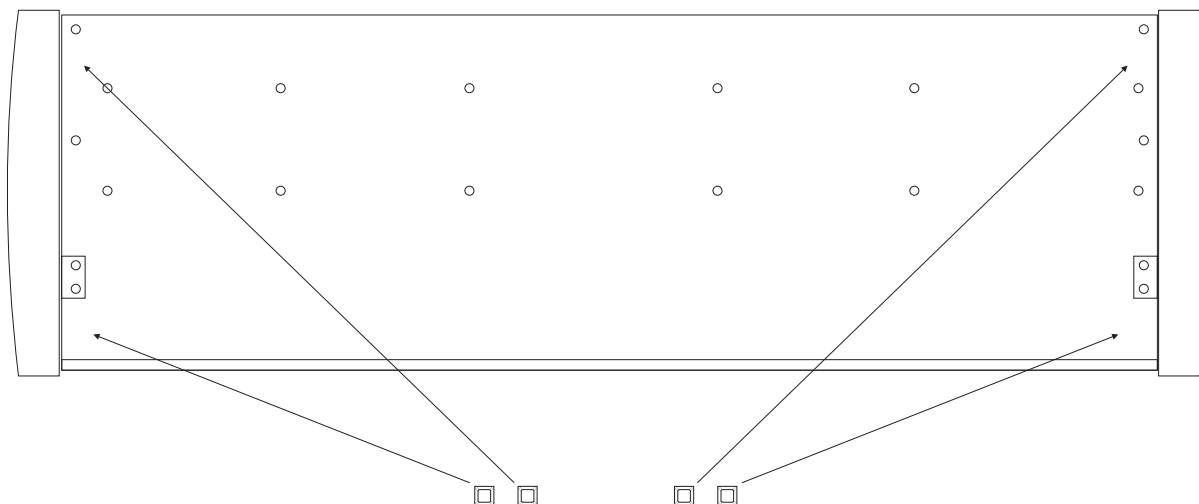


Figure 2-1

Placement of Rubber Feet

Connecting the Power

Turn the power switch (at the rear of the unit) off, then plug the power adapter into the KME61 and into the wall.

Place the power supply somewhere where it will stay dry and out of the way. We recommend keeping it on the floor. Never cover the power supply with anything; it needs adequate ventilation to prevent overheating.

If you're not in the USA, check that the line-voltage rating of the adapter matches line voltage in your area.

Connecting the Audio

Connect the Left and Right audio outputs to your audio system or mixer. The outputs are unbalanced *line-level*, so use the line or aux inputs to your audio system.

You can also listen to the KME61 using headphones. Plug a pair of headphones into the Headphones jack on the back of the KME61.

Connecting the Pedals

You can connect an optional switch pedal to the rear panel jack marked SW Pedal. You can also connect an optional continuous control pedal to the rear panel jack marked CC Pedal.

Turning on the Power

Turn the power switch to the On position. The display and all of the LEDs perform a brief lightshow, then the Program Mode, Group A (Piano 1) and Program 1 LEDs will light up. The LCD will also display its initial screen. See Chapter 3 for more detail.

Before playing, we recommend that you slide the Volume control nearly to the bottom and gradually push the control up while playing the keyboard. This way you won't cause any pain or damage if there's too much gain in your sound system.

Play Away!

Use the Volume slider or your audio system's volume control to vary the volume. Press a Program select button once to hear the **"red"** sound, and twice to hear the **"green"** sound. You can also press a Group button to select a different group of related sounds. You can select any of the KME61's 256 sounds by using the Group select buttons and Program select buttons, or by pressing the + and - buttons at the right of the display. The selected sound's full name will be displayed on the LCD.

Playing the Demo

To play the demonstration song, press the center and right buttons under the display at the same time. They are lightly marked as **"Demo"**. You'll then see the next screen:

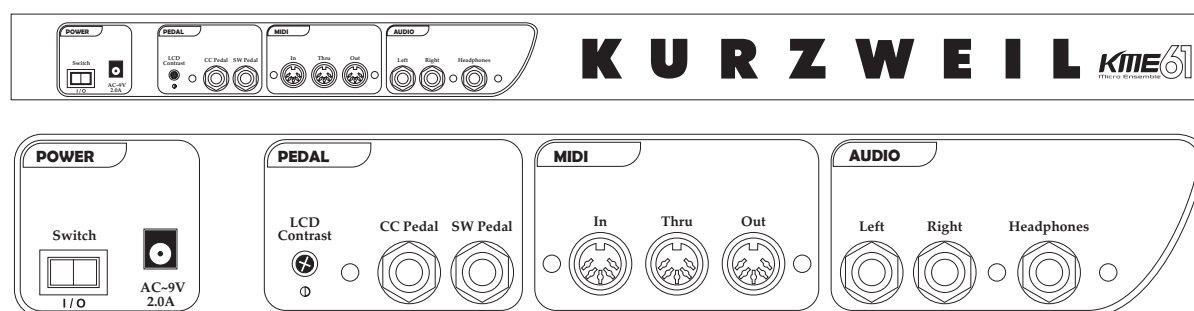
DEMO:Elements	
PLAY	EXIT

To play the demo song, press the left **"soft button"** marked **"Play"**. The demo song will start to play. In the display, the word **"Play"** changes to **"Stop"**. If you want to stop the song, press the **"Stop"** button.

While the song is stopped, you can select other demo songs by using the + and - buttons at the right of the display.

When you are ready to leave Demo Mode, press the right soft button (**"Exit"**).

The Rear Panel



Power Switch

Press the “I” to turn the KME61 on or the “O” to turn it off. If it will be off for a long period of time, unplug the power adapter from the wall. The KME61’s memory needs no power or battery to retain information, so there is no advantage in leaving the power on.

Power Jack

Plug the cord from the included power adapter into this jack. Try to always use the adapter supplied with the unit. Replacements can be ordered from your Kurzweil dealer.

Audio Jacks

The Left and Right audio jacks are used to connect to your audio system. If you are only planning to use one cable, please use the Left jack to hear a monaural mix of the left and right signals.

Phones Jack

Plug your headphones in here. You’ll need a “1/4 -inch to-1/8-inch” (or “phone-to-mini”) adapter plug when using headphones that have a mini plug.

Switch Pedal Jack

Use this jack to plug in the Switch pedal. For this pedal to work properly, it must be plugged in *before* power is turned on. The Switch Pedal transmits MIDI controller #64 messages to internal sounds and external MIDI for each active zone.

Control Pedal Jack

You can plug a Control pedal in here. Not all continuous control pedals are made the same; we recommend the Kurzweil CC-1. Please see chapter 7 for specifications. The Control Pedal transmits MIDI controller #11 messages to internal sounds and external MIDI for each active zone.

MIDI Ports

The KME61 both transmits and accepts most standard (and several specialized) MIDI messages. In other words, it can serve as both a MIDI master and a MIDI slave.

Using the KME61 as a MIDI Master (MIDI Out)

Connect a MIDI cable from the MIDI Out port of the KME61 to the MIDI In port of the device you want to control – another MIDI musical instrument or any device that accepts MIDI, such as a computer with a MIDI interface or an integrated MIDI In port. This makes the KME61 a MIDI control device, and you can use it to play other instruments, make recordings using sequencers, or send MIDI System Exclusive (SysEx) messages for storing setups and effects settings externally.

Using the KME61 as a MIDI Slave (MIDI In)

Connect a MIDI cable from the MIDI Out port of the instrument or device that you're using as the MIDI master to the MIDI In port of the KME61. This makes the KME61 a MIDI slave, enabling you to play its sounds from any MIDI instrument – keyboard, wind controller, drum pads, whatever – or to control it via MIDI devices like dedicated sequencers or computers running sequencing applications. The KME61 can receive 16 independent channels of MIDI information.

MIDI Thru

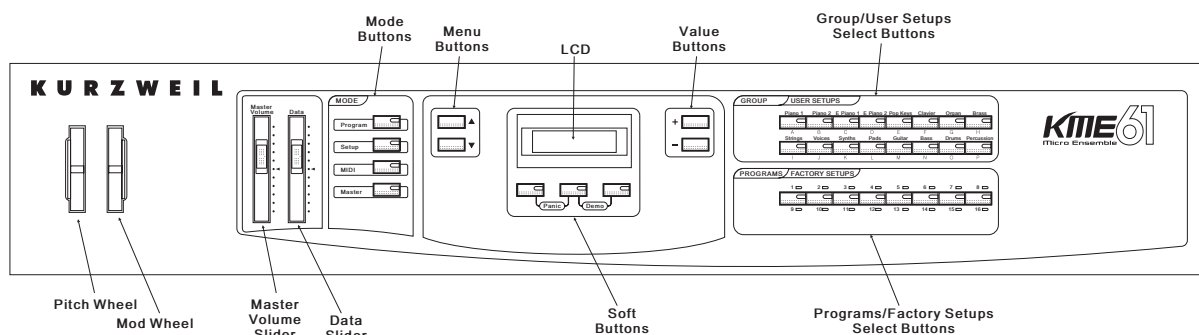
The MIDI Thru port passes along whatever MIDI information the KME61 receives at its MIDI In port (but not the MIDI information that the KME61 itself generates). This makes it easy to include the KME61 in a chain of multiple MIDI devices, which is a common configuration when you're using a computer for sequencing.

LCD Contrast control

Use this to control the LCD's contrast for best readability.

The Front Panel

The KME61's front panel is illustrated in detail below.



Pitch Wheel

The Pitch Wheel typically performs a pitch bending function with upward motion bending pitch upwards and downward motion bending pitch downwards. It also transmits MIDI Pitchbend messages (MSB and LSB) to internal sounds and external MIDI for each active zone.

Modulation Wheel

The Modulation Wheel may control a different characteristic of the sound. The Modulation Wheel transmits MIDI controller #1 messages to internal sounds and external MIDI for each active zone.

Volume Slider

The Volume Slider affects the level of sound sent to the Line and Phones output.

Data Slider

The Data Slider is used in a similar fashion to the Modulation Wheel. It often controls some aspect of the sound for the current Program. It also sends MIDI controller #6 to internal sounds and external MIDI for each active zone. In addition, the Data Slider is used for some editing functions.

Mode buttons

As described in Chapter 1, the KME61 has 4 main operating modes. The information is repeated here for your convenience.

Program

When in *Program Mode*, the KME61 is an easy to understand and operate, stand-alone performance instrument. To change the sound group, press one of the 16 Group select buttons. To change the sound in the current group, press a Program select button. Each Program button has 2 different programs assigned to it. Press the button a second time to select the second program. The entire keyboard will play the sound shown in the display. You can read more about Program Mode in Chapter 3.

Setup

When in *Setup Mode*, the KME61 becomes a sophisticated MIDI controller with a built-in multi-timbral sound module. The keyboard can be split into 3 sections or *zones*, each playing a different sound and transmitting on a different MIDI channel. Up to 16 different MIDI setups can be defined and stored in the built-in nonvolatile memory. You can quickly select these setups with the 16 sound/setup select buttons. Additionally there are 16 permanently pre-programmed Factory Setups which cover the most commonly needed sound combinations. You can read more about Setup Mode in Chapter 4.

MIDI

MIDI Mode is primarily for use with a computer-based sequencer. In this mode, the keyboard and performance controls are *disconnected* from the internal sound module. A computer-based sequencer or MIDI processor may then be connected between the keyboard/controls and the sound module. This is sometimes called "local off". You can read more about MIDI Mode in Chapter 5.

Master

Master Mode gives access to several parameters that affect the entire instrument. Read more about Master Mode in Chapter 6.

Menu (^ / v) buttons

In Edit Mode (Program Edit or Setup Edit) or MIDI and Master modes, you can move among the menus by pressing these buttons.

LCD

Displays 2 lines of 20 characters each to show the most relevant information in each operating mode. Chapters 3-6 detail the display contents in the various operating and editing modes.

Soft buttons

The 3 buttons under the LCD have different functions, which are labeled in the lower line of the display. These buttons are referred to as “soft” buttons. The buttons are used to select parameters for editing, as well as zone muting in Setup mode.

Value (+/-) buttons

In Program mode and Setup mode, you can use the + and – buttons to step through the Programs or Setups. If you have a parameter selected in Program or Setup mode using the soft buttons, these buttons will allow you to change the value for the parameter. On other editing screens that only have 1 available parameter, you can also change the value using these buttons.

Group / User Setups select buttons

While you are operating in Program mode, these buttons allow you to select a Group (category) of programs. The Group names are shown on the front panel. Once you have selected a Group, you can select one of the 16 programs in that group using the Programs buttons.

While you are operating in Setup mode, these buttons select one of the 16 user-created setups. These are labeled A through P.

Programs / Factory Setups select buttons

There are 8 buttons in this section, but each button can be used to select 2 different programs or setups. The first 8 programs or setups are labeled 1 through 8, and are shown on the front panel with a red LED. The next 8 programs or setups are labeled 9 through 16, and they are shown on the front panel with a green LED. In Program mode, you can select one of the 16 programs available in a group. In Setup mode, you can select one of the 16 factory-created setups. You can switch between the red and green selections by repeatedly pressing the button.

Button Combinations

Some combinations of buttons pressed simultaneously perform special functions:

The left two soft buttons under the display perform the Panic function when pressed together. This will silence “stuck” notes and reset the controllers to bring a runaway MIDI system back under control. After pressing, you should continue to hold the buttons until all stuck notes are silenced.

The right two soft buttons enter Demo Mode when pressed together. Demo Mode is described earlier in this chapter.

Depending on the edit mode, the + and – buttons to the right of the display may perform a special function when pressed.

Chapter 3

Program Mode

To enter Program Mode, press the Program button. Its LED lights to indicate that the panel and player controls are in Program Mode. Program Mode is automatically selected at power-up. In Program Mode, the KME61 is a single-zone instrument playing the current sound program across the keyboard and transmitting on just one MIDI channel. If Program Mode is reentered after having been in Setup Mode, the current program changes to that which was selected when Program Mode was last exited. On entry the Group and Program Select LEDs corresponding to the current sound program light.

Program Mode Base Page

When you are in Program mode, the main display looks similar to this:

A01:Stereo Grand
Ch:12 Oct:+1 Key:D#

On the top line, "Stereo Grand" is the name of the current Sound Program and "A01" indicates that it is Group A Program #01. The LEDs in the Group Select and Program Select buttons will also indicate the currently selected program. The color of the Program Select LED indicates whether it is the lower-numbered set (red, 1-8) or higher-numbered set (green, 9-16).

Selecting a Program

The current sound program may be changed by selecting a different Group using the 16 Group Select buttons, or a different Program within the current Group using the 8 Program Select buttons (as described below), or by receiving a MIDI Program Change message on the current MIDI Channel.

The first press of an unlit Program Select button will light it red and select the lower set of program numbers (1-8). A second press flips the color to green and selects the higher set. A quick "double-click" of an unlit button skips the red selection and goes directly to the green selection.

Pressing an already lit Program Select button will flip its color and corresponding set.

The + and - buttons will also change the program selection if no soft button is lit. They cycle first through the programs in the current group, then select the next or previous group and continue.

Selecting a new group and/or program from the front panel will also send a MIDI bank select and program change on the current channel if enabled by the Send Program Change MIDI Parameter. The Bank number, either 0 or 6, will be transmitted as Bank LSB (CC# 32).

Playing a Program

Once you've selected a program, you use the KME61's controls to change the sound while you play. Let's call up Group K, Program 1 "Solar Lead". This is a Synth sound with some great capabilities. Play the sound for a while. Notice that if you strike the keys harder, the sound gets brighter. This program, along with most of the KME61 programs, is *velocity sensitive*. Now play a key and press down harder on it. You are hearing *vibrato*, which is a wavering pitch. This vibrato is being triggered by the *aftertouch* controller. On this particular program, that same vibrato can be triggered by the Modulation Wheel. Try it! Now try moving the Data Slider while playing. This is changing the sound in yet another way. Finally, try moving the Pitch Wheel. This bends the pitch of all of the notes up or down, depending on which way you move the wheel.

In addition, you can use the Switch Pedal as a sustain (damper) pedal, much like a piano, and use the Control Pedal as an expression pedal, much like an organ.

Changing MIDI Channel and Transposition

On the bottom line of the display, "Ch:12" indicates that MIDI transmit and receive is on MIDI channel 12. To change this, press the left soft button, which lights in response, then the + and - buttons to alter the channel. The left soft button LED being on means that the +/- buttons are "connected" to the MIDI channel number.

In the sample display shown in this manual, "Oct:+1 Key:D#" indicates that the keyboard is transposed up one full octave, and then an additional 3 semitones sharp to the musical "key" of D#. The range of octave transposition is -2, -1, 0, +1, or +2 octaves. The range of key transposition is from G (5 semitones flat) to F# (6 semitones sharp). "Key:C" means no additional transpose. Total available transpose range is from -2,G (-30 semitones) to +2,F# (+29 semitones).

To change either the Octave or Key values, first press the corresponding soft button (which then lights up). Next, adjust the value with the + and - buttons. The Octave value "pins" when it reaches -2 or +2 but the Key value "wraps with carry to the octave" when it passes F# going up or G going down. However if the ultimate transposition limit is reached (-2,G going down or +2,F# going up) Key also pins. Pressing + and - at the same time clears transposition to Oct:0 and Key:C.

The Channel and Transpose setting are remembered as long as the KME61 is in Program Mode. When you select Setup Mode, the setup parameters govern channel(s) and transposition. When returning to Program Mode, they revert to what they were when Program Mode was exited. When you turn on your KME61, Channel is set to 1 and Transposition is set to Octave:0 and Key:C.

Editing a Program

Program Mode has two Edit Pages for setting up the effects. Unlike the Base Page edits for Channel and Transpose, these edits can be made permanent and saved with the sound program.

To access the Program Mode Edit Pages, press the Program Mode button again. Its LED will flash to indicate that an edit page is active. Changing to Setup, MIDI, or Master modes is disabled. To leave the Program Mode Edit Pages, press the Program Mode button again. If

changes were made, the Program Save Dialog is executed first (see below). Otherwise the display will immediately change back to Program Mode Base Page and the Program Mode LED will stop flashing.

Edit Effect Type
 16 Hall:Chorus

The first Program Mode Edit Page is for selecting the Effect Type (program).

There are 30 Effect Types, each with a unique combination of an "A Effect" and a "B Effect". The number and name of the currently selected Effect Type are displayed on the bottom line of the LCD. The + and - buttons or Data Slider may be used to scroll through the list of choices.

Edit Effect Levels
 ►A: 5% B: 10%

Edit Effect Levels
 A: 5% ►B: 10%

The second Program Mode Edit Page is for adjusting the wet/dry mix for the A and B effects separately. The arrow ">" indicates which parameter you are adjusting. You can move the arrow to the A or B parameter by using the up and down menu buttons. The +/- buttons or Data Slider are used to adjust the level which is pointed by the arrow.

Restoring the Default Effects Parameters

For either of these edit screens, pressing + and – at the same time will bring up this page:

Reload default prog?
 Yes Cancel

Pressing the left soft button ("Yes") will cause the original factory settings for Effect Type and Effect Levels for the current program to be reloaded. Pressing the right soft button ("Cancel") brings back the previous display.

Saving Your Edited Program

To leave Program Mode Edit, press the Program Mode button (which is still flashing). If the Effect Type or FX levels were changed from their previous values (including reloading the defaults), the Program Save Dialog is executed first as shown below. If no changes have been made, the dialog is skipped, the Program Mode Base page is displayed and the Program Mode LED stops flashing.

Save Current Prog?
 Yes No Cancel

The right soft button ("Cancel") will cancel the exit and return the display to the previous edit page. The center soft button ("No") will discard the changes to Effect Type and Effect levels then return the display to the Program Mode Base page.

Program Mode

The left soft button ("Yes") will first display the following screen momentarily:

FX settings saved to
A01 Grand Piano

then save the current effect type and level settings to the currently selected sound program. Finally the Program Mode Base page will be displayed.

Chapter 4

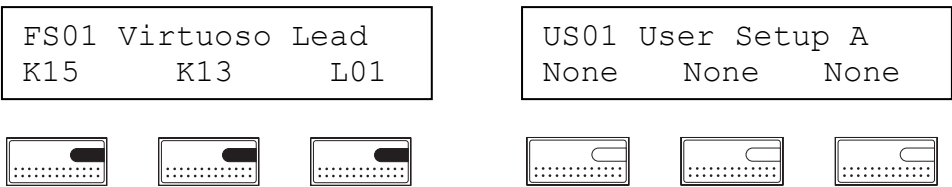
Setup Mode



To enter Setup Mode, press the Setup button. Its LED lights to indicate that the panel controls are in Setup Mode. If the LCD display is showing an edit page of the current mode, it will be necessary to exit to that mode's base page (mode LED on continuously) before the Setup Mode button will be recognized. When in Setup Mode, the KME-61 is a 3-zone instrument playing up to 3 different internal sound programs at once and perhaps more if an external module is connected. The zones may overlap or not without restriction. This means that you can split and layer the zones. Each zone has a number of parameters associated with it which may be edited. These edited parameter values may then be saved as one of 16 User Setups and recalled at a later time. There are also 16 permanent "Factory Setups".

If Setup Mode is reentered after having been in Program or MIDI Mode, the current setup changes to that which was selected when Setup Mode was last exited. The mute status of its zones (see below) is also remembered.

Setup Mode Base Page

The Setup Mode Base LCD page looks similar to this:



In the drawing above, "  " means the soft button in that position is on while "  " means it is off.

Selecting Setups

While the current setup is not being edited, different setups may be freely selected by using the User Setups and Factory Setup buttons in the right part of the front panel. The 16 User Setups buttons select one of the 16 User-created Setups. The 8 Factory Setups buttons select one of the 16 factory-created preset setups. The first 8 of these (1-8) are indicated by red and the second 8 (9-16) are indicated by green. Selection and changing the color works just like Program Mode.

While the Setup Mode Base Page is displayed, the + and - buttons can be used to sequence through the different setups, factory setups first then user setups.

"FS01" or "US01" are abbreviations of Factory Setup and User Setup, respectively. For the factory setups, a name is displayed. For the user setups, the setup is identified by its letter code, A-P.

Sound Program For Each Zone

The bottom display row shows the Group and Program for each of the 3 zones. For example, Zone 2 is using Group L and Program 9. A zone can also have no program assigned to it, and the display shows “None”.

If you want to see the full name of a program that is assigned to a zone, simply press the associated soft button (which then causes the display format to change). For example, if the Zone 1 button (left soft button) is pressed, the display changes to:

FS01 Virtuoso Lead
Z1:K15 Sawyer's Bomb



Zone Muting

The bottom line displays the selected zone and its program name. Z1 stands for Zone1, Z2 for Zone2, and so forth. If the same zone soft button is pressed again, the zone will be temporarily muted, that is, its sound will be turned off. Press the button a third time and the sound returns. The zone soft buttons are lit when the corresponding zone sound is on. It is best to experiment with this to understand exactly how it works.

The mute status is remembered until a different setup is selected. The mute status may also be saved (see below).

If the same or a different setup button on the front panel is selected again, the display will go back to the initial page.

Setup Edit Pages

There are a number of Setup Edit pages. The Setup Edit pages are where you will create or modify setups to suit your performing needs. In addition to selecting programs, you can adjust the volume, transposition, key range, effects levels, and other parameters for each of the 3 zones. To edit the currently selected setup, press the Setup button. The Setup Mode LED will begin flashing. The soft button LEDs continue to display the mute state of each zone.

When you enter the edit pages, the default mute status of the setup will be reloaded. To exit the Edit pages, press the Setup button again.

Factory Setups may be edited but the edited version must either be saved in a User Setup slot or abandoned when a different setup is selected.

The Up and Down menu buttons at the left of the display can be used to select the desired edit page. The page selection pins when either end of the list is reached. The pages (in order) are:

- 1. Edit Sound Select**
- 2. Edit Key Range Low, High**
- 3. Edit Note Shift**
- 4. Edit Vel. Range Low, High**
- 5. Edit Volume**
- 6. Edit Effect Type**

7. Edit FX A, FX B Level
8. Edit MIDI Channel
9. Edit MIDI Bank, Program
10. Edit MIDI Volume

When an Edit Page is displayed, its name is in the top line and the corresponding parameter values for the 3 zones are shown on the bottom line (see examples below). As before a zone soft button may be pressed to select a zone for editing, pressed again to mute, and pressed a third time to unmute.

The parameter value for the selected zone may be edited as usual by using the + and – buttons or the data slider. Note that the effect of edits is audible either immediately or when the next note is played.

Screens, editing rules, and the function of each parameter is described below.

Edit Sound Select

```
Z1:Edit Sound Select
K15 Sawyer's Bomb
```

Initially the above screen appears when the Sound Select parameter is selected. When one of the zones is selected for editing, the currently selected zone number is shown in the top line and the full program name is displayed in the bottom line.

The + and - buttons step through the sounds in front panel Group/Program order with None being first in the sequence and the Data Slider scans through them in front panel Group/Program order with A01 Stereo Grand being first in the sequence. Additionally the Group and Program Select buttons may be used to change the selection directly. None means that this zone does not play any internal sounds. It still may send to external MIDI devices unless that too is set to None in the Edit MIDI Channel page.

Edit Key Range

Setting the key range allows you to create a setup with keyboard splits (2 separate sounds on 2 sets of keys) or layers (overlapping sounds).

```
Z1:Edit Key Range
▶Lo: C2      Hi: C7
```

```
Z1:Edit Key Range
Lo: C2      ▶Hi: C7
```

This menu includes 2 paired parameters so “▶” is used to indicate the current parameter to be edited. The “▶” can move to the right by pressing the down menu button or to the left by pressing the up menu button to select Low key or High key. The + and - buttons step and the data slider scans through the 128 possible keys in chromatic order.

You may also set these directly from the keyboard. First press the + and - buttons at the same time. The display changes to show the following screen:

```
Z1:Strike Low Key
▶Lo: C2      Hi: C7
```

Next strike the key you wish to specify for the Low Key value. The pointer then moves and waits for the High Key to be struck:

```
Z1:Strike Low Key
Lo: C2   ►Hi: C7
```

Note that keys struck to set these parameters do not sound. After both Low Key and High Key are set, keyboard operation returns to normal.

Edit Note Shift

Note shift is like transposition for each separate zone. It is called note shift because the MIDI note numbers that would normally be sent for a key are being shifted. You can use this parameter in 2 creative ways. First, if you are splitting your keyboard, you might notice that a program in a zone is too high on the right side and too low on the left side. You can shift the left program up by an octave or two, and shift the right program down by an octave or two, and get a better result. Second, if you are layering your keyboard, you might want the "second program" to be up or down an octave, or even some other interval!

```
Z1>Edit Note Shift
Shift: -12st
```

Each zone can have a different Note Shift (transpose). The display shows the shift amount relative to Middle C in semitones for the current zone. The + and - buttons step and the data slider scans through possible shift amounts.

Edit Velocity Range

Velocity ranges allow you to create a setup where a soft strike on a key will play one program, while a hard strike on the same key will play a different one!

```
Z1>Edit Vel Range
►Lo: 1      Hi: 90
```

```
Z1>Edit Vel Range
Lo: 1      ►Hi: 90
```

The 2 parameters Velocity Range Low and Velocity Range High define a velocity *window*. If a key press produces a velocity inside a zone's window (between the Low and High values), the note is sent to the zone; if the velocity is outside (less than Low or greater than High), then no note is sent. It is also possible to specify a reversed range. If a reversed range is specified (High is less than Low), then the note will be sent if the velocity is outside the range and not sent if it is inside the range. The arrow indicates which parameter is being edited. The arrow can be moved between Low and High by using the up and down menu buttons at the left of the display.

Edit Volume

Use this parameter to set the initial levels of your 3 programs. This allows you to “mix” the sounds to suit your performance.

```
Z1:Edit Volume
Vol: 110
```

This parameter adjusts the relative volumes of the internal sounds played by the zones. 127 is maximum and zero becomes Off. The value may be changed using the + and – buttons and by the Data slider. It is best to set the loudest zone to a value near 127 then set the others to lesser values.

Edit Effect Type

In program mode, each program has its own Effect Type and effect levels. In setup mode, the effects are shared among the 3 programs, but you can still set individual effect levels. So, for example, if an Effect Type has a Chorus and a Reverb, you can adjust the 1st zone to have Chorus and Reverb added to the sound, and the 2nd and 3rd zones to only have Reverb added to the sound.

```
Z*:Edit Effect Type
14 Stage:Chorus
```

The Effect Type applies to all 3 zones so any of the 3 zone buttons may be pressed to begin editing. The zone number in the top line changes to an “*” to denote that this page applies to all of the zones.

The possible values are 30 different effect types (see the appendix for a list).

Edit Effect Levels

As we mentioned above, you can independently set the effects levels for each zone in your setup. If the Effect Type has 2 names, such as “Stage:Flanger”, the first is the A effect, and the second is the B effect.

```
Z1:Edit FX Levels
►A: 5%    B: 10%
```

```
Z1:Edit FX Levels
A: 5%    ►B: 10%
```

These parameters independently adjust the wet/dry send levels to each section of the selected Effect Type. When the Effect Type has only one effect block such as ‘4 Bright Stage’, FX B level will always be ‘NONE’.

MIDI Parameters

The remaining parameters are for use with an external MIDI device connected to the MIDI Out jack. Their values will have no effect on the KME61's internal sounds.

Edit MIDI Channel

```
Z1:Edit MIDI Channel
      Ch: 1
```

This screen allows you to set the MIDI channel each zone uses to send notes and controllers to external devices. "None" means that the zone does not send any MIDI messages.

Edit MIDI Bank and Program

```
Z1:Edit MIDI program
▶Bnk: 0      Pg: 35
```

```
Z1:Edit MIDI program
      Bnk: 0      ▶Pg: 35
```

These parameters allow sending a program and bank change for each zone to external MIDI devices. Each has possible values of "None" and 0-127. If "None" is specified, then no message of that type will be sent. The messages are sent immediately while editing and when the setup is selected while playing.

Edit MIDI Volume

```
Z1:Edit MIDI Volume
      Vol: 90
```

This parameter adjusts the relative volumes of sounds played by external MIDI devices controlled by the zones. MIDI Volume (Controller #7) messages are sent to accomplish this. A value of "None" means that no volume message is sent for that zone. The messages are sent immediately while editing and when the setup is selected while playing.

Saving and Exiting from Editing

To exit the setup editing pages and return to the Setup Base page, press the Setup button. If any parameter was changed while on the editing pages, the Save Dialog will begin with this screen:

```
Save Current Setup?
Yes      No      Cancel
```

At this point only the three soft buttons will be recognized as follows:

Cancel - Return to the previous edit page.

No - Go to the Setup Base page without saving the edited values.

Yes - Continue with the next save dialog screen.

Select a User Setup:
OK Cancel

At this point the 16 User Setup buttons will light as follows:

Off - User Setup slots that are currently "empty" (have default setup).

On - User Setup slots that have previously been saved to.

Flashing - The currently selected setup if it is a user setup.

Now only the left and right soft buttons and the User Setup Select buttons will be recognized as follows:

Cancel - Return to the previous edit page.

User Setup - When pressed, that button's LED will begin to flash. If another button's LED was flashing, it will either turn off or stop flashing according to its previous use status.

OK - The edited setup will be saved to the User Setup slot with the flashing LED.

Thus if you simply want to update the current user setup, the left soft button would just be pressed twice.

Save to User Setup
X

After the save operation, a confirmation screen is displayed briefly then the Setup Base page is displayed as originally requested.

Chapter 5

MIDI Mode

MIDI Mode is used when working with a sequencer. When MIDI Mode is selected, the internal connection from keyboard and controls to internal sound generator is disconnected. Instead, key presses, control movements, and sound selections are only sent to the MIDI Out jack. Similarly, the internal sound generator acts like an independent sound module. A sequencer or other MIDI processor would typically complete a loop from MIDI Out back to MIDI In recording and altering the messages as they go.

To enter MIDI Mode, press the MIDI button. Its LED lights to indicate that the panel controls are in MIDI Mode.

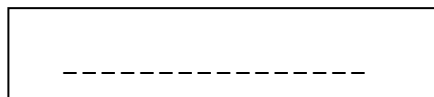
All of the editable MIDI Mode parameters are for setting up the internal sound generator. They are:

1. MIDI Effect Type (Global for all 16 channels)
2. MIDI Effect Levels (A and B, separate for each channel)
3. MIDI Channel Enable (On and Off for each channel)

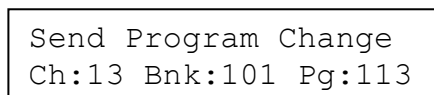
MIDI Mode Base Pages

MIDI Mode has two base pages, which are shown below. The up and down menu buttons may be used to switch between these pages.

1.



2.



#1 is a full-screen display of incoming MIDI note activity. Each channel is associated with a vertical bar with Channel 1 being on the left. Recently received Note-On will cause a bar to be drawn with an initial height proportional to the Attack Velocity. While the note is held, the bar will gradually decrease in height. If all notes for the channel turn off, the bar will be immediately erased. This is an activity indication only; no attempt is made to match the bar's dynamics with the envelope of the sound being played.

#2 allows MIDI program changes to be sent manually to any channel. The left soft button allows the transmit MIDI channel for MIDI Mode to be changed and may be edited with the + and - buttons in the usual way. Editing the channel does not itself send anything.

The middle and right soft buttons are used to send arbitrary Program Change messages. Editing either in the usual way causes MIDI Program Change and Bank Select LSB messages to be sent each time one of the values changes. Besides the usual 0-127 choice, "None" is available which suppresses sending the corresponding message.

MIDI Mode Edit Pages

There are 3 MIDI Mode Edit Pages. An edit page is entered by pressing the MIDI button, which then begins to flash. The up and down menu buttons cycle among the edit pages. Pressing the MIDI button again exits back to the last displayed MIDI Mode base page.

Note that Effect Type and Effect Levels set in MIDI Mode only apply to MIDI Mode. However the Channel Enables also apply to Program Mode as well as MIDI Mode. Selecting Program or Setup modes resets the effects as specified in the new mode's parameters. The MIDI Mode settings are remembered however and become effective again when MIDI Mode is re-entered. They may also be saved.

Edit MIDI Effect Type

MIDI Effect Type
14 Stage:Chorus

This page permits the Effect Type for the internal sound generator to be set. The editing logic is the same as the corresponding screen in Program Mode. See the Appendix for a list of the 30 available effect types.

Edit MIDI Effect Levels

MIDI Effect Levels
Ch:14 A: 99% B: 28%

This page permits the wet/dry mix for the A and B effects to be set in the internal sound generator. The levels for each incoming MIDI channel may be set separately.

The left soft button allows a MIDI channel to be selected for level editing. The existing mix levels for that channel are then displayed. The center and right soft buttons can then be used to select a level for editing with the + and - buttons and the data slider.

Note that the Effects Type and Effects Levels may be changed from a sequencer via MIDI. Any MIDI channel that is enabled (see below) may be used. See the MIDI Implementation chart in the appendix for the controller numbers used to change effects settings.

Edit MIDI Channel Enables

MIDI Channel Enables
Ch:14 On

This screen allows some of the MIDI channels in the internal sound generator to be turned off. An off channel will not play any notes or respond to any controllers. The left soft button along with the + and - buttons or data slider selects a channel to examine or change. The center soft button along with the + and - buttons will toggle the On/Off status of the channel.

Saving and Exiting

To escape MIDI Edit Mode and return to the MIDI base page, press the MIDI Mode button again. If any parameter was changed while on the editing pages, the MIDI Save dialog will begin with this screen:

Save Edited Value?		
Yes	No	Cancel

At this point only the three soft buttons will be recognized as follows:

Cancel - Return to the previous edit page.

No - Exit MIDI Mode without saving the edited values.

Yes - Save the new MIDI parameter values.

MIDI parameters Saved.

After the save operation, a confirmation screen is displayed briefly then MIDI Edit Mode is exited.

Chapter 6

Master Mode

Master Mode is used to change miscellaneous parameters that affect the entire instrument and also to select and execute utility functions. When the Master button is pressed, its LED turns on.

The Up and Down menu buttons at the left of the display can be used to select the desired Master page. The pages are:

Master Tune

Keyboard Touch

Send Memory Data

Receive Memory Data

System Hard Reset

Each screen and its changing rules is described below.

Master Tune

Master Tune Oct:+1 Key:C# Tu:+15

The left and center parameters are Master Transpose displayed as Octaves, with a range of -2 to +2, and Keys with a range of G (-5) to F# (+6). These may be changed in the same manner as in Program Mode.

The right parameter is Master Tune with a range of -99 to +99 cents and may be changed in the usual way with the + and – buttons and Data Slider.

Master Tune affects the sound engine globally, that is, both locally played notes and incoming MIDI. However if the combined Transpose (Program Mode) or Note Shift (Setup Mode) and Master Tune shifts a note beyond the full piano range (A0 - C8), that note may not sound.

Keyboard Touch

Keyboard Touch Medium

The keyboard may be adjusted for an Easy, Medium, or Hard touch. Medium is an approximation to the touch response of a standard piano and is suitable for most players. Easy requires somewhat less force to produce a given loudness and Hard requires somewhat more. This setting does not affect the after-touch response which is fixed.

Managing Memory

These pages are used to manage the permanent memory which holds the various editable parameters. Effects settings for Program Mode, User Setups, and MIDI/Master Parameters, or all of these may be sent to a computer-based sequencer as a data string. Or they may be received from a sequencer or the memory can be reset to its factory default state.

Sending Memory Data

The following page allows you to select what kind of data will be sent out. Use the + and - buttons to scroll through the choices which are displayed on the bottom line. When the desired data item is displayed, press the right soft button ("Send") to continue.

Send Memory Data	
All	Send

The data item choices are:

All – All three of the data items listed below

Program FX – These are the effects settings for the 256 sound programs.

User Setups – These are the parameters of the 16 user setups.

MIDI/Master – These are the MIDI Mode and Master parameters.

After pressing Send, the following screen is displayed:

Press Start to Send	
Start	Cancel

Pressing the left soft button will begin sending the memory data and proceed to the next screen. The sequencer should be set up and recording before pressing Start. The right soft button will cancel sending and return to the "Send memory data" page.

Sending Memory	
	

This screen will be displayed while the memory data is being sent out. The bottom line is used to display a progress bar. When the send operation is complete, the "Send memory data" page is displayed again.

Receiving Memory Data

Receive Memory Data	
Receive	

This page allows you to receive previously sent memory data from a computer-based sequencer. To begin the receive process, press the right soft button which will proceed to

the next screen:

Waiting for data... Cancel

You should now start playing a previously recorded memory send from your sequencer program. If you wish to cancel, press the right soft button to return to the "Receive memory data" page. Otherwise once the first valid data block is received, the next screen is displayed:

Receiving... ■■■■■

The bottom line is used to display a progress bar. When receiving is complete, the "Receive memory data" page is displayed again. Although not shown, the right soft button will still cancel receiving but the partially loaded memory may be corrupt.

System Hard Reset

This page allows you to erase all of the edits and changes you have made to your KME61 and thus reset it to its original condition. This is a serious operation which is deliberately made difficult as a data safety measure.

System Reset Reset

To begin the reset process, press the right soft button labeled Reset which will display the following screen:

ERASE EVERYTHING? Yes Cancel

The right soft button will cancel the operation and return to the "System reset" page without erasing anything. The left soft button will proceed to the next screen.

ARE YOU SURE? Yes Cancel

The middle soft button will proceed with resetting to the factory defaults and the next screen. The right soft button will cancel back to the "System reset" screen.

Defaults restored.

After the original factory defaults are restored, this screen is displayed briefly then returns to Master Tune page which is the first page of Master mode.

Chapter 7

Troubleshooting

Maintenance

Aside from normal care in handling and use, your KME61 requires no regular maintenance. Clean with a soft cloth dampened with water. Never use abrasives or solvents as they may damage the unit's paint, markings, and display lens. There are no batteries inside to replace-ever. Instead of volatile SRAM used in most other instruments, your KME61 uses nonvolatile EEPROM for storage, which retains information as captured electrons, without power.

Common Problems

Below is a list of the most commonly encountered problems and suggestions for solving them.

Power Problems

The LCD and LEDs will display a short startup sequence when power is turned on then begin normal operation. If nothing at all happens when you turn the power switch on (solid line "I" pressed in), check these items:

- Power module not plugged securely in wall outlet.
- Cord from power module not fully plugged into KME61.
- Input voltage rating of power module does not match your power system.
- Incorrect or defective power module. The power module specifications are: 9.5VAC, 2.0 amp, center pin positive, 5.5mm OD, 2.5mm ID coax type plug (Kurzweil Model No. PP95-20).
- Dead wall outlet, power strip, or extension cord.

If there's evidence of life but operation isn't quite normal, check these items:

- Input voltage rating of power module does not match your power system.
 - Incorrect or defective power module. See above for power module specs. Voltage or current rating less than specified will cause unusual or intermittent operation.
 - Power system voltage abnormally low. Try a different, unused outlet.
 - Intermittent operation can be caused by a replacement power module with the wrong size plug. The correct plug fits snugly into the jack, and doesn't wobble.
-

Audio Problems

NOTE: When diagnosing audio problems, set the KME61 to play its demo sequence.

If there is no sound from your KME61, check the following:

- KME61 Volume slider moved down. Move the slider to the Up position.
- If a control pedal is plugged in, be sure it is pressed down.
- Volume control on audio system or mixer turned down.
- Signal source selection on audio system or mixer is incorrect.
- Audio cables not securely plugged in at both ends.
- Incorrect type of audio cable.

If you can hear sound but it is low or distorted, look into these possibilities:

- Audio cables not securely plugged in at both ends.
- Low voltage output from power module. Check Power Problems above.
- A received MIDI Volume or Expression message has specified a low volume.
- A control pedal is plugged in but is not pressed down.
- Input to audio system is set for low impedance instead of high impedance.
- Input trim to audio system or mixer is set too low.

MIDI Problems

If you are experiencing problems *sending* MIDI to an external module, check these:

- MIDI cable not securely plugged in at both ends.
- Wrong MIDI connections. To send MIDI, plug into the KME61's MIDI Out connector and the module's MIDI In connector. Don't assume; read the jack labels.
- Defective MIDI cable
- MIDI Transmit channel(s) specified by Program Mode or MIDI mode or current setup does not match that of the receiving device.

If there are problems with the internal sound module *receiving* MIDI from an external device like a computer sequencer, try these:

- Transmitting device not sending MIDI on Channel 1.
- MIDI cable not securely plugged in at both ends.
- Wrong MIDI connections. To receive MIDI, plug into the KME61's MIDI In connector and the source's MIDI Out connector.

Prerecorded General MIDI (or GS or XG) sequences may not play through the KME61 correctly. The KME61 is not a General MIDI compatible sound module. These are some of the differences between the KME61's internal sound module and a typical General MIDI module:

- Most of the sound program numbers are different.
- Effects setting messages are different.
- Drum sounds are not locked to MIDI channel 10.

Switch Pedal Problems

If you are having problems with the included switch pedal or an aftermarket pedal, check these:

- Be sure the switch pedal is plugged into the jack marked “SW Pedal”. DO NOT plug into the “CC Pedal” jack as that may damage the KME61.
- If Sustain is stuck on when using the included pedal, be sure the pedal is plugged in *before* switching on the power. Turn power off then on if necessary.
- If the pedal is acting backward (active when up instead of down), turn power off then on. Be sure the pedal is plugged in before turning power on and don’t use the pedal until after the unit has completed its power up sequence.

Control Pedal Problems

If you are having problems making a control pedal work properly, give these a try:

- Be sure the control pedal is plugged into the jack marked “CC Pedal”
- Never use a control pedal that has a mono (two circuit) plug. It won’t work and could damage your KME61.
- If the pedal works backward, operates very abruptly (more like a switch), or not at all, it’s most likely a wiring problem. See discussion below.
- When using adapter cables to adapt a pedal with two mono cables, verify that the Y adapter is a stereo splitter type and not just a Y adapter designed to plug two headphones into a single jack.
- Volume pedals typically won’t work well because of impedance or taper problems. See below for details. “Active” volume pedals won’t work at all.

The control pedal must be wired to a single stereo 1/4-inch plug as follows:

- Wiper to Tip connection of 1/4-inch plug
- Top end of resistance element to Ring connection
- Bottom end of resistance element to Sleeve connection

Use the Right Impedance, Taper, and Range

For best results, use a Kurzweil CC-1 control pedal, available from your dealer. The CC-1 meets all of the requirements described below at an economical price.

A control pedal should have an *impedance* between 5,000 and 100,000 ohms. Less than 5,000 may overload the reference voltage source in the KME61 and interfere with operation of other controls like the Data slider. More than 100,000 may result in electrically noisy

operation, which may cause your KME61 to send MIDI Controller messages constantly.

The *taper* of the control should be linear for easy, predictable control. Pedals designed for volume control will typically have most of their range concentrated in the upper half of travel. To check taper, run the Control Pedal diagnostic and check the reading when the pedal is pressed halfway down. If it's less than about 50, then it has an audio taper and will probably be difficult to use.

Pedals may have a control *range* that is less than 0-127. To check this, run the Control Pedal diagnostic and check the reading at both extremes of pedal motion. Good is a minimum reading of 0 or 1 and a maximum of 126 or 127. If one end is OK but doesn't quite reach at the other end, it may be possible to adjust the linkage or gear to properly center its range.

If None of the Above...

If your problem is not covered above, or none of the suggestions seems to work, first check back and review the relevant sections of this manual. Many difficulties are just programming problems caused by inappropriate settings of setup parameters. If you want to be sure that all of the factory defaults are in place, refer to *Hard System Reset* in Chapter 6 Master Mode.

Also be sure to check out Kurzweil's Internet web site for additional KME61 information that may have been published since this manual was written:

www.kurzweilmusicsystems.com

Service Centers

Contact the nearest Young Chang office listed at the front of this book to locate your local Young Chang/Kurzweil representative.

Diagnostics

The KME61 has extensive diagnostic software built-in that can be used to test for proper operation of almost every component. Although this chapter is intended primarily for service personnel, the diagnostic software can also be helpful for identifying problems with the cables and external controls.

Starting Diagnostics

1. Turn the power switch off.
2. Press and hold the two buttons marked "+" and "-" on the front panel.
3. Turn the power switch on while continuing to hold the buttons.
4. Wait until the soft button LEDs begin to flash then release the buttons.
5. On the LCD, "System Diag Wait" will be displayed briefly then the Main Diagnostic Menu will become active:

SYSTEM DIAG READY		
SCAN	LCD	ENGINE

There are three diagnostic groups that may be used as follows:

1. **SCAN** – This single diagnostic displays the action of every control.
2. **LCD** – This diagnostic tests the memory of the display module.
3. **ENGINE** – These diagnostics test various parts of the internal sound board.

To proceed to a diagnostic group, press the associated soft button.

Scan Diagnostic

When the Scan Diagnostic is selected, the initial screen will be like this;

SCAN DIAG
 PRESS ANY KEY

At this point, any key press, button press, or control movement will display what moved and what its value is. Response to each of the controls is described below.

Keys

When a key is pressed very slowly halfway down, the display will first change to:

KEYBRD POS:25
 1ST:1 2ND:0 PRS:0

“POS:25” means that key number 25 (Middle C, C4) was pressed. The key numbers range from 1 (C2) to 61 (C6). “1ST” and “2ND” show the status of the key’s two switches, 0=Off and 1=On. Since the key is halfway down, only the first switch is on. After pressing the remaining distance, the second switch turns on and the display changes to:

KEYBRD POS:25
 1ST:1 2ND:1 PRS:0

Now both key switches are on. After the key is down, pressing harder will activate the aftertouch (pressure) sensor and the “PSR” value will increase:

KEYBRD POS:25
 1ST:1 2ND:1 PRS:78

Firm pressure should be required to get the reading up to 126 or 127. If it is too difficult or too easy to reach values near 127, a service center may need to adjust the pressure sensitivity.

Finally, when the key is released, the two key switches turn off in the opposite order they turned on: 2ND first then 1ST and displayed as follows:

KEYBRD POS:25
 1ST:0 2ND:0 PRS:0

Properly functioning keys will go through the sequence just described. If one of the switches doesn’t turn on or the 0/1 indication flickers, it means that the keyswitches need cleaning by a service center.

Pitchbend (left) Wheel

Moving the left wheel will trigger a display similar to this:

PITCH BEND VALUE 101

With the wheel rolled all the way forward, the Value reading should be less than 5; rolled all the way back, it should be more than 123. When released, it should spring to a value between 59 and 67 inclusive.

If it is indeed 63, then "CENTER" will also be displayed which indicates perfect centering of the wheel mechanism. However any value between 59 and 67 inclusive is OK.

Modulation (right) Wheel

Moving the right wheel will trigger a display similar to this:

MODULATION VALUE 76

With the wheel rolled all the way forward, the value should be no greater than 1. When rolled all the way back, it should be no less than 126.

Data Slider

When the data slider is moved, the display should change to something like:

DATA SLIDE VALUE 119

Moving the data slider downward should produce values down to zero. Moving it upward should produce values up to 127.

Control Pedal

When a control pedal is plugged into the CC Pedal jack and moved, the display should change to something like:

CC PEDAL VALUE 56

When the pedal is moved, the values should change from 0 or 1 to 126 or 127. See the Control Pedal Problems section above if the pedal's range is less than this. Also check the value reading when the CC Pedal plug is pulled out, it should change to 126 or 127.

Switch Pedal

If a Kurzweil switch pedal is plugged into the SW Pedal jack, the display should change to this after the pedal is stepped on once:

SWITCH PEDAL VALUE 0

The value will be 0 when the pedal is not stepped on and 127 when it is stepped on. Note that other brands of pedals may work backward: 127 when not stepped on and 0 when stepped on. The KME61 will work with either type as long as it is plugged in before power is switched on.

Panel Buttons and LEDs

Pressing any panel button will change the display to show button and LED information. For example, pressing the Program Mode button will change the display to this:

PROGRAM MENU BUTTON PROGRAM LED ON

The LED in the Program Mode button should also turn on. All of the non-sound select buttons with LEDs will behave similarly.

Pressing a button without an LED, like up or down menu or + or - will display the button's name but the bottom line will be blank since there is no associated LED.

Pressing a Group or Program button is a little different. For example, pressing the Piano Group button will change the display to this:

EXTENSION KEY POS:01-01 LED:RED

The top line will be the same for any of these buttons. The bottom line indicates the button's row number first (01, 02, or 03) then the column number (01 - 08). Also the button's LED should light. For the Program buttons, the LED color indication should match the LED that is lit. To change from red to green or green to red, press the same Program button twice.

You can turn all of the LEDs on by pressing the + and - buttons together. The 8 Program button LEDs should be orange and the others red. Press any other button to turn the LEDs off again.

To escape the Scan diagnostics, press the up and down buttons together. The Main Diagnostic Menu page will now be displayed.

LCD Diagnostic

On the Main Diagnostic Menu, press the center soft button to start the LCD diagnostic. While the diagnostic is running, the screen will turn white, then black, then will run through all of the possible display characters. Let it run through 2 or 3 cycles of this to ensure there are no problems then press and hold the up and down buttons until the main menu page is displayed again.

Engine Diagnostics

On the Main Diagnostic Menu, press the right soft button to enter the “Sound Engine” diagnostic selection menu. The display will change to:

DIAG ENGINE
STEP AUTO

The left soft button (STEP) allows you to run one diagnostic at a time. The center soft button (AUTO) will start an automatic sequence of diagnostics that will run repeatedly. Pressing the up and down buttons together will cancel engine diagnostics and return to the Main Diagnostic Menu.

When the STEP soft button is pressed, the display changes to:

TEST ROM
START

and the left soft button will be flashing. Press it to begin the diagnostic named in the top line. Or use the - button to move down and + button to move up the list of available diagnostics. Pressing the up and down buttons together will cancel engine diagnostics and return to the Main Diagnostic Menu. Below is a description of each of the available diagnostics.

1. **TEST ROM** - This performs a checksum test of the engine software.
2. **TEST SROM** - This performs a checksum test of the Sound ROM. While running, a progress bar is displayed. The test takes about 1 minute.
3. **TEST SRAM** - This tests the read/write memory of the sound engine CPU.
4. **TEST DRAM** - This tests the delay memory used by the effects processor.
5. **TEST MABEL** - This tests the main sound generator chip.
6. **TEST MIDI PORT** - Before running this diagnostic, a MIDI cable **MUST** be connected between the MIDI In and MIDI Out jacks of the KME61. Do not connect to any other MIDI device when running this diagnostic.
7. **SEND SINEWAVE** - This diagnostic will generate a 1000Hz sinewave audio signal beginning at a moderately loud volume. Please disconnect or turn down your audio system before pressing the Start soft button! While running, the data slider can be moved to change digital level of the sinewave signal from -127dB (very faint) to 0dB (very, very loud!). The sinewave is used with external test equipment to measure distortion, signal-to-noise ratio, and other audio parameters. Press the “-” button to stop the sinewave.

While an Engine Diagnostic is running, the display will change to (using the MIDI test as an example):

TEST MIDI PORT
CHECK MIDI PORT

After a few seconds, the bottom line will change to show the results:

TEST MIDI PORT
TEST OK

If there was an error, the display would instead show:

TEST MIDI PORT
TEST FAIL CODE:00

In either case, the left soft button may be pressed to run the same test again or a different test selected with the + and - buttons. As usual, the up and down buttons pressed together will exit back to the Main Diagnostic Menu page.

AUTO Diagnostics

If AUTO is selected in the Engine Diagnostic Menu, all of the above diagnostics including the sinewave are run in sequence repeatedly until stopped. Please turn down or disconnect your audio system before selecting! Each iteration takes about 90 seconds. This mode is useful for “burning in” a unit at the factory or after a repair has been made. Note that a MIDI cable must be connected from MIDI Out to MIDI In for the MIDI test to pass.

If a test fails, the sequence will pause for a couple of seconds so the failure message can be seen, then it will continue. A Fail Counter is displayed in the upper right corner of the screen which increments every time a test fails.

To stop the test sequence, press and hold the up and down buttons until they are recognized between the tests.

Chapter 8

Reference

Default Program Setup

The Program Setup defines the MIDI characteristics of Program mode.

You also set the effects parameters for each of the 256 sounds while editing the Program.

Program Parameters

Below is a list of the parameters and default values for the Program Mode. The shaded parameters are not available in Program mode. The default values of the effects parameters vary according to which sound is selected.

ZONE 1	ZONE 2	ZONE
Sound Group and Program - According to sound selected	None	None
Key Range Low - C2	-	-
Key Range High - C6	-	-
Vel. Range Low - 1	-	-
Vel. Range High - 127	-	-
Note Shift - Initially 0 then as edited	-	-
Volume - 127		
FXA Level - According to sound selected then as edited	-	-
FXB Level - According to sound selected then as edited	-	-
MIDI Channel - Initially 1 then as edited	None	None
MIDI Program - According to sound selected	None	None
MIDI Bank - According to sound selected	None	None
Zone Mutes - On	Off	Off
FX Type - According to sound selected		

Program List

Below is a list of the 256 sounds (Programs) available from the internal sound module. The list includes the control assignment and the factory default effects setting for each sound.

Reference

Group A	Piano 1	Data Slider	MW	Mpress	FX Type
1	Stereo Grand				4. Bright Stage
2	Classical Grand				7. Large Hall
3	Dynamic Grand				3. Stage
4	Warm Grand				6. Bright Hall
5	Solo Grand Piano				4. Bright Stage
6	Concert Piano				4. Bright Stage
7	Mono Grand Piano				4. Bright Stage
8	Piano for layers				3. Stage
9	Sweet Ivories				3. Stage
10	Nice Touch Grand				3. Stage
11	Piano Solitude				1. Room
12	Piano Recital				5. Hall
13	Full Bloom Piano				6. Bright Hall
14	Pianetta				3. Stage
15	Suite Piano				1. Room
16	Dreamy Piano				6. Bright Hall

Group B	Piano 2	Data Slider	MW	Mpress	FX Type
1	Hard Rock Piano				1. Room
2	Rock Piano				1. Room
3	Grand Piano 440				4. Bright Stage
4	Mono Stage Piano				1. Room
5	Dyn Stage Piano				1. Room
6	Ragtime Piano				1. Room
7	Tack Piano				1. Room
8	Piano & String	LoPass Freq	String Level		4. Bright Stage
9	Basement Upright				4. Bright Stage
10	Chiano				4. Bright Stage
11	Way Back Piano				7. Large Hall
12	Dance Piano	Highpass filter			1. Room
13	Cloud Ride Piano				8. Large Bright Hall
14	Organic Piano	Vox timbre			9. Deep Space
15	Piano & Wash	Cutoff, Pad layer			3. Stage
16	Piano & Vox Pad	Cutoff, Vox layer			4. Bright Stage

Group C	E Piano 1	Data Slider	MW	Mpress	FX Type
1	Classic E Piano	Timbre	Tremolo Depth		1. Room
2	Serious Classic	Tremolo Rate	Tremolo Depth		2. Bright Room
3	That's 70's E Pno		Tremolo Depth		1. Room
4	Hard E Piano		Tremolo Depth		2. Bright Room
5	Lounge E Piano	Timbre	Tremolo Depth		1. Room
6	Dynamic E Piano	Hi Freq Cut	Tremolo Depth		4. Bright Stage
7	Soft E Piano	LoPass Freq Cut	Tremolo Depth		4. Bright Stage
8	Hybrid E Piano	Timbre	Tremolo Depth		1. Room
9	Mello E Piano	Tremolo Rate	Tremolo Depth		1. Room
10	Tines Square	Tremolo Rate	Tremolo Depth		1. Room
11	Brunch In Seoul	Tremolo Rate	Tremolo Depth		1. Room
12	Classy Roadz	Tremolo Rate	Tremolo Depth		1. Room
13	Barking Tines	Tremolo Rate	Tremolo Depth		1. Room
14	Clean and Soft	Filter cutoff	Tremolo Depth: duller		7. Large Hall
15	Ballad Keys	Tremolo Rate	Tremolo Depth		8. Large Bright Hall
16	Lotus Keys	Tremolo Rate	Tremolo Depth		6. Bright Hall

Group D	E Piano 2	Data Slider	MW	Mpress	FX Type
1	My Best Wurly	Tremolo Rate	Tremolo Depth		3. Stage
2	Big Red Wurly	Tremolo Rate	Tremolo Depth		1. Room
3	Brkfst in Korea	Timbre	Tremolo Depth		2. Bright Room
4	Soft Wurly	Timbre	Tremolo Depth		2. Bright Room
5	Wurly Road	Timbre	Tremolo Depth		1. Room
6	Pearly Keys	Timbre	Tremolo Depth		1. Room
7	Digital E Piano	Timbre	Tremolo Depth		1. Room
8	Ballad E Piano	Timbre	Tremolo Depth		7. Large Hall
9	Soft Ballad	Tremolo Rate	Tremolo Depth		6. Bright Hall
10	70's FM Tines	Filter cutoff	Tremolo Depth		1. Room
11	90's FM Ballad	Alternative attack	Vibrato Depth		1. Room
12	Chorus Rock Pno				13. BrightRoom:Chorus
13	Bright Pianotone	Tremolo Rate	Tremolo Depth		8. Large Bright Hall
14	Family Portrait	Tremolo Rate	Tremolo Depth		18. LargeHall:Chorus
15	Harpsi-Piano	Vib/Tremolo Rate	Vib/Tremolo Depth		8. Large Bright Hall
16	Fantasy Keys	Timbre/Amp control	Vibrato Depth		8. Large Bright Hall

Group E	Pop Keys	Data Slider	MW	Mpress	FX Type
1	C3PO	Timbre	Tremolo Depth		14. Stage : Chorus
2	Digital E Grand	Timbre	Tremolo Depth		12. Room :Chorus
3	Rock E Grand	Timbre	Tremolo Depth		12. Room :Chorus
4	FantAsmAtron	Timbre	Tremolo Depth		1. Room
5	Atmaz	Timbre	Tremolo Depth		14. Stage : Chorus
6	Celestial Comet	Treble Cut	Tremolo Depth		22. Stage : Flanger
7	Comp Time	LoPass Freq	Vibrato rate, Depth		4. Bright Stage
8	Ruth Buzzy	LoPass Freq Cut	Vibrato	Vibrato	22. Stage : Flanger
9	Janet's Comp	Filter Cutoff	Vibrato Depth		22. Stage : Flanger
10	Mild Sheen	Filter Cutoff	Vib/Tremolo Depth		3. Stage
11	Scrape Glass	Filter Cutoff	Vibrato Depth		12. Room :Chorus
12	Air Society	Filter Cutoff	Vib/Tremolo Depth		22. Stage : Flanger
13	Push Air	Filter Cutoff	Filter LFO Depth/rate		9. Deep Space:Flanger
14	Dronin'	Bandpass freq	BandPass Width		15..Brit Stage:Chorus
15	Alien Salt Mine	Env control:Attack	Vibrato Depth		26. DeepSpace :Flanger
16	Imperfect Storm	Cutoff Freq: Layer1	Resonance		20. DeepSpace :Chorus

Group F	Clavier	Data Slider	MW	Mpress	FX Type
1	Clav Classic	Bass Level	HiPass LFO Depth		1. Room
2	Touch Clav	Timbre	BandPass LFO Rate		1. Room
3	Dual Wah Clav	Bandpass Width			21. Room : Flanger
4	Harpsichord	Timbre	Decay Control		1. Room
5	Modern Harpsi	Timbre	Lopass Freq, Layer Detune		8. Large Bright Hall
6	CrystalClavchd	Treble Cut	Vibrato		5. Hall
7	Accordion	Timbre	Swell	Swell	1. Room
8	Celesta	Timbre	LoPass Freq		1. Room
9	Mod Clavier	Timbre:Para EQ amp	Timbre: fade bright layer		1. Room
10	Belly Celeste	Trelmolo rate	Tremolo Depth		5. Hall
11	Harpsichordion	Timbre:Para EQ freq	Tremolo Depth		4. Bright Stage
12	Circus Keys	LFO rate control	Vib/Tremolo Depth		5. Hall
13	Cosmic Calliope	LFO rate	Tremolo/Vibrato		11. PingPong
14	Calliope Keys	LFO rate	Tremolo/Vibrato		3. Stage
15	Chiff Attack	Timbre:Para EQ freq	Vibrato Depth		7. Large Hall
16	Spaced Harmonix	Timbre:Amp control	Vibrato Depth		4. Bright Stage

Reference

Group G	Organ	Data Slider	MW	Mpress	FX Type
1	The Reverend's	LoPass Freq	Rotary Ramp Speed		14. Stage : Chorus
2	Ballad Of 3 Bars	Perc Xfade	Rotary Ramp Speed		3. Stage
3	Prog Rocker's B	Perc Xfade	Rotary Ramp Speed		3. Stage
4	All Out Full On		Rotary Ramp Speed		7. Large Hall
5	Grungy Overdrive		Rotary Ramp Speed		1. Room
6	Uptown Gospel	Para EQ Freq	Rotary Ramp Speed		12. Room:Chorus
7	Retro Roto	Xtra Hi Freq	Rotary Ramp Speed		1. Room
8	Pipe Organ	Layer Xfade			5. Hall
9	BackgroundOrgan	LFO rate control	Vib/Tremolo Depth		3. Stage
10	Mello Tone Wheel	LFO rate control	Vib/Tremolo Depth		3. Stage
11	Piped Organ	Vibrato rate	Vibrato Depth	Pitch Bend	3. Stage
12	Playful Piper	More breath	Delayed Vibrato		4. Bright Stage
13	Peter's Pan	Timbre(air)	Vibrato Depth		3. Stage
14	Imaginary Flute	Chiffer attack	Delayed Vibrato	Pitch Bend	4. Bright Stage
15	Bright Koreana	Timbre	Vibrato Depth		17. Bright Hall:Chorus
16	Bouncin' BassBall	LFO rate control	Vib/Tremolo Depth		20. Deep Space Chorus

Group H	Brass	Data Slider	MW	Mpress	FX Type
1	Big Brass	LoPass Freq	Vibrato Depth	Swell Env & Pitch	3. Stage
2	Saxes/Trumpets	Lopass Freq	Vibrato Depth	Swell Env & Pitch	1. Room
3	Split Section	Lopass Freq	Vibrato Depth	Swell Env & Pitch	1. Room
4	Broadway Brass	Lopass Freq	Vibrato Depth	Swell Env & Pitch	4. Bright Stage
5	Trombones	Timbre	Vibrato Depth	Swell Env & Pitch	4. Bright Stage
6	Bari/Tenor Sect	Lopass Freq	Vibrato Depth	Swell Env & Pitch	1. Room
7	Solo Tenor Sax	Lopass Freq	Vibrato Depth	Vibrato Depth	3. Stage
8	Williams Brass	Lopass Envelope	Vibrato Depth	Swell Envelope	6. Bright Hall
9	Goosed Riff Sect		Disable Tsax octave layer	Pitch Bend	3. Stage
10	Fatso Sax	Layer 3 Amplitude	Delayed Vibrato	Pitch Bend	3. Stage
11	Big&Beefy Saxes	Enable layer	Vibrato Depth		1. Room
12	Goosed Unison			Pitch Bend	1. Room
13	Anabrass	Timbre Control	Vibrato Depth		3. Stage
14	Honk'n Dyn Sax	Switches programs	Vibrato Depth		1. Room
15	Saxy Lush		Vibrato Depth	Vibrato	5. Hall
16	Classical Brass	Envelope: release rate	Vibrato Depth	Envelope Control	5. Hall

Group I	Strings	Data Slider	MW	Mpress	FX Type
1	Lyrical Strings	Brightness	Attack Switch		4. Bright Stage
2	Slow Strings	Brightness(Cut)	Slow Vibrato		7. Large Hall
3	Marcato Strings	Brightness(Cut)	Envelope Switch		3. Stage
4	Layer Strings	Brightness	Attack Control		2. Bright Room
5	Fast Strings	Timbre	Layer Switch		4. Bright Stage
6	Touch Strings	Timbre	Tremolo		4. Bright Stage
7	Velocity Strings	Timbre	Layer Switch		4. Bright Stage
8	Phantom Strings	Timbre	Envelope Control		7. Large Hall
9	Fast Vtrig Rosin	Timbre:dullar	Envelope:attack rate		2. Bright Room
10	Emotional String	Timbre:dullar	Switch Layers		3. Stage
11	Octave Strings	Timbre:dullar	Disables lower-pitched layer		4. Bright Stage
12	Emphatic Strings	Timbre:dullar	Switches layers		9. Deep Space
13	Rosin Section	Timbre:dullar	Switches layers		3. Stage
14	Resolute Section		Switches layers		4. Bright Stage
15	Tender Strings	Timbre:dullar	Switches layers		6. Bright Hall
16	Flute & Strings	Resonance, brightness	Modulation sweep		9. Deep Space

Group J	Voices	Data Slider	MW	Mpress	FX Type
1	Ooh><Aah	Timbre	Vibrato	Layer Xfade	3. Stage
2	Doo><Daa	Timbre	Vibrato	Layer Xfade	3. Stage
3	Baa stacc. Bop	Envelope Control	Vibrato	Swell	3. Stage
4	Doo stacc. Doop	Envelope Control	Vibrato	Swell	6. Bright Hall
5	Daa stacc. Dot	Envelope Control	Vibrato	Swell	1. Room
6	Scatman	Envelope Control	Vibrato	Swell	1. Room
7	The croons	Timbre	Vibrato		20. Deep Space:Chorus
8	Cathedral Vox	Brightness(Cut)	Brightness(Cut)		5. Hall
9	Bright Voices	Timbre	Vibrato Depth		3. Stage
10	Crystal Voices	LFO rate control	Vib/Tremolo Depth		17. Bright Hall:Chorus
11	Vox & Organ	Disable organ layer	Envelope: release rate		17. Bright Hall:Chorus
12	BIG Ooh Voices	Vibrato rate	Vibrato Depth		20. Deep Space:Chorus
13	BIG Voices	Vibrato rate	Vibrato Depth		27. 4Tap:Chorus
14	Bright Syn Vox	Timbre	Vibrato Depth		10. 4 Tap Dly
15	Vox Orgel	Timbre Control	Vibrato Depth		6. Bright Hall
16	Vox & Strings	Vibrato rate	Vibrato Depth		5. Hall

Group K	Synths	Data Slider	MW	Mpress	FX Type
1	Solar Lead	LoPass Freq	Vibrato Rate, Depth	Vibrato Rate, Depth	14. Stage : Chorus
2	Vox Lead	LoPass Freq	Vibrato Rate, Depth	Vibrato Rate, Depth	20. Deep Space:Chorus
3	Alazawi	LoPass Envelope	Vibrato Rate, Depth	Vibrato Rate, Depth	28. Pingpong:Chorus
4	Slo Wood Flute	Breath Noise	Tremolo Depth(Cut)		19. LargeBHall:Chorus
5	Groove Bass	LoPass Freq	Vibrato Depth	Vibrato Rate	21. Room : Flanger
6	1/3 Pulse Bass	LoPass Freq	Vibrato Rate, Depth		19. LargeBHall:Chorus
7	Sweeper Bass	LoPass Freq	Vibrato Depth	Vibrato Depth	12. Room : Chorus
8	Lowdown Bass	LoPass Freq	Vibrato Rate, Depth	Vibrato Rate, Depth	21. Room : Flanger
9	Subdivide	Filter cutoff	Vibrato Depth		12. Room : Chorus
10	Rezzzy Bass/Poly	Filter cutoff	Vibrato Depth		17. Bright :Chorus
11	Technicolor	Filter cutoff	Vibrato Depth		29. 4Tap DLY : Flanger
12	Elan Lead	Filter cutoff	Vibrato Depth	Vibrato	5. Hall
13	Sun Sport Lead	Filter cutoff	Vibrato Depth	Vibrato	16. Hall:Chorus
14	Dinosaur's Lead	Filter cutoff/resonance	Vibrato Depth	Vibrato	1. Room
15	Sawyer's Bomb	BandPass width	Vox pitch bend		15 Stage :Chorus
16	Reverse FeedBack	Filter cutoff	Vibrato Depth		3. Stage

Group L	Pads	Data Slider	MW	Mpress	FX Type
1	Rez Aah Pad	LoPass Freq	Vibrato	Swell	9. Deep Space
2	Crypt	Timbre	Vibr, Pan/Filtr LFO	Vibr, Pan/Filtr LFO	9. Deep Space
3	Meteor Strings	LoPass Freq	Vibrato, Trem Depth	Brightness	7. Large Hall
4	Orch Pad	LoPass Freq	Vibrato	Horn Layer Swell	8. Large Bright Hall
5	Neptune	"Chiff" Level	Tremolo Depth		8. Large Bright Hall
6	Analogy	LoPass Freq	Vibrato Rate, Depth	Swell	5. Hall
7	Dream Catcher	LoPass Freq	Filter LFO Depth	Swell	8. Large Bright Hall
8	U say Tomita...	LoPass Freq	Vibrato/Trem	Vibrato/Trem	3. Stage
9	Poseidon	Filter cutoff, treble boot	Tremolo Depth	Vibrato/Trem	7. Large Hall
10	Analogica	Resonance	Vibrato Depth	Filter cutoff	10. 4Tap Dly
11	Anti Rez	Filter cutoff	Vibrato Depth/rate		2. Bright Room
12	Spider's Web	Filter cutoff	Filter Sweep	Volume	7. Large Hall
13	Ethereal Strings	Filter cutoff in Layer2	BandPass width&Freq		5. Hall
14	FreeResAhh Notch	Filter cutoff	Crossfade, layer detune	Treble Boost	5. Hall
15	Ooh><Ahh Pad	Resonance	Vibrato Depth	Filter cutoff, layer xfade	8. Large Bright Hall
16	Vocalicious	Timbre:duller	Deffierent envelope		5. Hall

Reference

Group M	Voices	Data Slider	MW	Mpress	FX Type
1	Acoustic Guitar	EQ Ctr Freq	Vibrato	Vibrato Rate	1. Room
2	Strummer 12 Str	Brightness	Vibrato		3. Stage
3	Rich 6 String	Timbre	Vibrato		5. Hall
4	12 String Guitar	EQ Ctr Freq	Vibrato	Vibrato Rate	3. Stage
5	Chorus Elec Gtr	Timbre	Tremolo Depth		3. Stage
6	Elec 12 String	Timbre	Tremolo		5. Hall
7	Jazzy Frets	Attack Control	Tremolo		1. Room
8	Lead Rock Gtr	Timbre	Vibrato	Feedback Amount	8. Large Bright Hall
9	Titanium Guitar	More body	Muted Guitar		4. Bright Stage
10	Latin Lover	Disables knock layer	Muted Guitar		3. Stage
11	Roto 12 String	Filter cutoff	Swaps layers		8. Large Bright Hall
12	Electric 12		Enables layer		3. Stage
13	Twangy Guitar	Filter cutoff	Vibrato Depth		4. Bright Stage
14	Chr Elec & Mute	Filter cutoff	Vibrato Depth		5. Hall
15	Comp Chr E Gtr	Filter cutoff	Vibrato Depth		4. Bright Stage
16	Trashed Tubes	Filter cutoff	Vibrato Depth		8. Large Bright Hall

Group N	Voices	Data Slider	MW	Mpress	FX Type
1	Round and Wound	LoPass Freq(Cut)	Vibrato	Vibrato	3. Stage
2	Punch Bass	LoPass Freq	Vibrato	Vibrato	3. Stage
3	Two Finger Bass	LoPass Freq(Cut)	Vibrato	Vibrato	0. No Effect
4	Dual-Tri Bass	Timbre	Vibrato	Vibrato	0. No Effect
5	Clav o' Bass	Timbre	Vibrato	Vibrato	21. Room : Flanger
6	Fret Not Bass	Timbre	Vibrato	Vibrato	16. Hall: Chorus
7	Upright Bass 1	Timbre		Vibrato	1. Room
8	Upright Bass 2	Timbre		Vibrato	1. Room
9	Gimme The Finger	Filter cutoff	Vibrato Depth	Vibrato Depth	0. No Effect
10	Bright E Bass	Filter cutoff	Vibrato Depth	Pitch Bend	12 Room:Chorus
11	Bright A Bass	Vibrato rate	Vibrato Depth	Pitch Bend	3. Stage
12	Triangle Bass	Filter cutoff	Vibrato Depth	Vibrato Depth	12 Room:Chorus
13	Yow Bass	Filter cutoff	Vibrato Depth	Vibrato depth/rate	21 Room:Flanger
14	Mono Synth Bass	Filter cutoff	Vibrato Depth	Vibrato depth/rate	12 Room:Chorus
15	400 HP Bass	Filter cutoff	Vibrato Depth	Resonance	12 Room:Chorus
16	Base in Face	Filter cutoff	Vibrato Depth	Resonance	12 Room:Chorus

Group O	Drum	Data Slider	MW	Mpress	FX Type
1	Studio Drum 1+2	Timbre	Layer Switch		1. Room
2	Studio Drum 3+4	Timbre	Layer Switch		1. Room
3	Ambient Rock Kit	Timbre	Layer Switch		3. Stage
4	Coliseum Kit	Timbre	Pitch control		5. Hall
5	Resonant Traps	Timbre	Pitch control		1. Room
6	Tripkit/Trashkit	Timbre	Layer Switch		1. Room
7	Beat Box	Timbre	Layer Switch		1. Room
8	Electro Kit	Timbre	Layer Switch		1. Room
9	Radio Kings/Rods	Timbre	2nd kit Enable		1. Room
10	Ripper Kit/Vynyl	Shaper;timbre	2nd kit Enable		3. Stage
11	LA Drums/Brk Bt.	Timbre	2nd kit Enable		1. Room
12	Compact/Raw Kit	Shaper;timbre	2nd kit Enable		6. Bright Hall
13	Tubetraps/lb.der	Shaper;timbre	2nd kit Enable		1. Room
14	Acoustic/HipKit	Shaper;timbre	2nd kit Enable		4. Bright Stage
15	Dirt/Triphop Kit	Timbre	2nd kit Enable		5. Hall
16	SumPumpKit MWSus	Timbre	Drone layer	Pitch Control	5. Hall

Group P	Percussion	Data Slider	MW	Mpress	FX Type
1	Virtuoso Perc	Pitch Control	Muting		4. Bright Stage
2	Rhythm Maker	Pitch Control	Sample Start		1. Room
3	Woody Marimba	Sample Start	Layer switch		5. Hall
4	African Marimba	Lyr Enable(Shaker)			2. Bright Room
5	Vibes	Lyr Enable(Sine)			3. Stage
6	New Fluid Vibes				8. Large Bright Hall
7	Aborigine Jam				3. Stage
8	Drums 'n Belles		Sample Start		3. Stage
9	Marimba	Timbre:duller	Alternative Attack		1. Room
10	Milky Way Vibes	Tremolo rate	Tremolo Depth		20. Brit Stage:Flanger
11	Percussionist	Shaper; timbre	Alternative Attack		3. Stage
12	Carnival	Filter cutoff	Alternative Attack		2. Bright Room
13	Primitive Perc	Disables layer	Alternative Attack		1. Room
14	Bunch of Perc	Pitch change	Alternative Attack		1. Room
15	Perc Party	Enable Mpres pitch bend	Alternative Attack	Pitch bend with Data slider	1. Room
16	Perc Circle	Enable Mpres pitch bend	Alternative Attack	Pitch bend with Data slider	1. Room

When you play the KME61 with a master keyboard, computer-based sequencing software or a standalone sequencer, you can use MIDI program and bank numbers from the following list. Note that the list shows true MIDI program numbers from 0 to 127. Some sequencers use a 1 to 128 numbering scheme. In that case, add 1 to the program number shown in the list.

A few computer-based sequencers, such as Cakewalk, Cubase, etc., allow you to use program names directly. The KME61 uses the same program name/number/bank assignment as the Kurzweil PC2 so set your sequencer to "PC2 mode" to take advantage of this feature. (Note that the KME61 does not provide the KB3 Mode programs that are in the PC2.)

Factory Setup Configuration

Factory Setup 01	Virtuoso Lead		
	Zone 1	Zone 2	Zone 3
Sound	K15	K13	L01
Key Low	C2	C4	C2
Key High	B3	C#7	C#7
Note Shift	0	0	0
Vel Low	81	1	1
Vel High	127	127	127
Volume	127	122	127
FX Type	28 - PingPong + Chorus		
FX Level	0 / 52%	34 / 0%	31 / 43%

Factory Setup 02	Jazz Gig		
	Zone 1	Zone 2	Zone 3
Sound	A01	N07	None
Key Low	C4	C2	-
Key High	C#7	B3	-
Note Shift	-12	0	-
Vel Low	1	1	-
Vel High	127	127	-
Volume	127	127	-
FX Type	4 - Bright Stage		
FX Level	12%	0%	-

Factory Setup 03	Cocktail Hour		
	Zone 1	Zone 2	Zone 3
Sound	G09	N14	G02 (Muted)
Key Low	C4	C2	C2
Key High	C#7	B3	C#7
Note Shift	-12	0	0
Vel Low	1	1	1
Vel High	127	127	127
Volume	127	127	109
FX Type	04 - Bright Stage		
FX Level	12%	0%	22%

Factory Setup 04	Salsa Caliente		
	Zone 1	Zone 2	Zone 3
Sound	B02	N11	P01
Key Low	C4	C2	C2
Key High	C#7	B3	C#7
Note Shift	-12	0	0
Vel Low	1	1	59
Vel High	127	127	127
Volume	127	127	109
FX Type	03 - Stage		
FX Level	20%	0%	34%

Factory Setup 05	Evocative		
	Zone 1	Zone 2	Zone 3
Sound	L12	K08	J14
Key Low	C4	C2	C2
Key High	C#7	B3	C#7
Note Shift	0	0	-12
Vel Low	1	1	0
Vel High	127	127	127
Volume	127	127	86
FX Type	10- 4 Tab Delay		
FX Level	56%	0%	58%

Factory Setup 06	Angula Mass		
	Zone 1	Zone 2	Zone 3
Sound	K10	N16	J14
Key Low	C4	C2	C2
Key High	C#7	B3	C#7
Note Shift	0	0	-12
Vel Low	1	1	0
Vel High	127	127	127
Volume	127	104	86
FX Type	10 - 4 Tap Delay		
FX Level	14%	0%	18%

Factory Setup 07	Funky Bunch		
	Zone 1	Zone 2	Zone 3
Sound	C02	K05	H12
Key Low	C4	C2	B3
Key High	C#7	B3	C#7
Note Shift	-12	0	-12
Vel Low	1	1	89
Vel High	127	127	127
Volume	127	127	127
FX Type	23 - BritStage + Flanger		
FX Level	14 / 0%	0 / 0%	44 / 0%

Factory Setup 08	Set Adrift		
	Zone 1	Zone 2	Zone 3
Sound	E07	G14	L14
Key Low	C-1	C4	C4
Key High	B3	G9	G9
Note Shift	12	-12	0
Vel Low	1	1	1
Vel High	106	127	127
Volume	127	127	107
FX Type	24 - Hall + Flanger		
FX Level	21 / 0%	36 / 0%	31 / 37%

Factory Setup 09	Stormy Space		
	Zone 1	Zone 2	Zone 3
Sound	E16	K11	I10
Key Low	C-1	C-1	C-1
Key High	G9	G9	G9
Note Shift	0	0	0
Vel Low	100	1	1
Vel High	127	84	127
Volume	105	127	127
FX Type	11 - PingPong		
FX Level	75%	75%	75%

Factory Setup 10	Freakshow		
	Zone 1	Zone 2	Zone 3
Sound	P03	E05	P08
Key Low	C-1	C-1	C-1
Key High	G9	G9	G9
Note Shift	0	0	0
Vel Low	1	1	1
Vel High	127	127	127
Volume	127	127	127
FX Type	7 - Large Hall		
FX Level	4%	14%	13%

Factory Setup 11	Royal Wedding		
	Zone 1	Zone 2	Zone 3
Sound	F04	I03	L11
Key Low	C-1	C-1	C-1
Key High	G9	G9	G9
Note Shift	0	0	0
Vel Low	1	1	1
Vel High	127	127	127
Volume	110	127	127
FX Type	6 - Bright Hall		
FX Level	16%	23%	16%

Factory Setup 12	Mr. Crowley		
	Zone 1	Zone 2	Zone 3
Sound	G08	F04	I04
Key Low	C-1	C-1	C-1
Key High	G9	G9	G9
Note Shift	0	0	0
Vel Low	1	1	1
Vel High	127	127	127
Volume	127	127	127
FX Type	9 - Deep Space		
FX Level	40%	18%	40%

Factory Setup 13	Solar Strings		
	Zone 1	Zone 2	Zone 3
Sound	K01	I02	
Key Low	C-1	C-1	
Key High	G9	G9	
Note Shift	-12	12	
Vel Low	1	1	
Vel High	127	127	
Volume	119	127	
FX Type	12 - Room + Chorus		
FX Level	33%	33%	

Factory Setup 14	Provincial		
	Zone 1	Zone 2	Zone 3
Sound	D16	L09	
Key Low	C-1	C-1	
Key High	G9	G9	
Note Shift	0	0	
Vel Low	1	1	
Vel High	127	127	
Volume	127	127	
FX Type	5 - Hall		
FX Level	65%	65%	

Factory Setup 15	Grace		
	Zone 1	Zone 2	Zone 3
Sound	L01	M11	
Key Low	C-1	C-1	
Key High	G9	G9	
Note Shift	0	0	
Vel Low	1	1	
Vel High	127	127	
Volume	88	127	
FX Type	9 - Deep Space		
FX Level	49%	49%	

Factory Setup 16	Fanfare		
	Zone 1	Zone 2	Zone 3
Sound	I04	H16	H05
Key Low	C-1	C-1	C-1
Key High	G9	G9	G9
Note Shift	0	-12	0
Vel Low	1	1	1
Vel High	127	127	127
Volume	127	127	127
FX Type	8 - Large Bright Hall		
FX Level	14%	13%	14%

MIDI Program Selection

MIDI Bank 0

0=Stereo Grand	32=C3PO	64=Lyrical Strings	96=Acoustic Guitar
1=Classic Grand	33=Digi E Grand	65=Slow Strings	97=Strummer 12 Str
2=Dynamic Grand	34=Rock Grand	66=Marcato Strings	98=Rich 6 String
3=Warm Grand	35=FantAsmAtron	67=Layer Strings	99=12 String Guitar
4=Solo Grand Piano	36=Atmaz	68=Fast Strings	100=Chorus Elec Gtr
5=Concert Grand	37=Celestial Comet	69=Touch Strings	101=Elec 12 String
6=Mono Grand Piano	38=Comp Time	70=Velocity Strings	102=Jazzy Frets
7=Piano for layers	39=Ruth Buzzy	71=Phantom Strings	103=Lead Rock Gtr
8=Hard Rock Piano	40=Clav Classic	72=Ooh><Aah	104=Round and Wound
9=Rock Grand	41=Touch Clav	73=Doo><Daa	105=Punch Bass
10=Grand Piano 440	42=Dual Wah Clav	74=Baa stacc.Bop	106=Two Finger Bass
11=Mono Stage Piano	43=Harpsichord	75=Doo stacc.Doop	107=Dual-Tri Bass
12=Dyn StagePiano	44=Modern Harpsi	76=Daa stacc.Dot	108=Clav o' Bass
13=Ragtime Piano	45=CrystalClavchd	77=Scatman	109=Fret Not Bass
14=Tack Piano	46=Accordion	78=The Croons	110=Upright Bass 1
15=Piano & Strings	47=Celesta	79=Cathedral Vox	111=Upright Bass 2
16=Classic E Piano	48=The Reverend's	80=Solar Lead	112=Studio Drums 1+2
17=Serious Classic	49=Ballad Of 3 Bars	81=Vox Lead	113=Studio Drums 3+4
18=That 70's E Pno	50=Prog Rocker's B	82=Alazawi	114=Ambient Rock Kit
19=Hard E Pno	51=All Out Full On	83=Slo Wood Flute	115=Coliseum Kit
20=Lounge E Piano	52=Grungy Overdrive	84=Groove Bass	116=Resonant Traps
21=Dyno E Pno	53=Uptown Gospel	85=1/3 Pulse Bass	117=Tripkit/Trashkit
22=Soft E Piano	54=Retro Roto	86=Sweeper Bass	118=Beat Box
23=Hybrid E Piano	55=Pipe Organ	87=Lowdown Bass	119=Electro Kit
24=My Best Wurly	56=Big Brass	88=Rez Aah Pad	120=Virtuoso Perc
25=Big Red Wurly	57=Saxes/Trumpets	89=Crypt	121=Rhythm Maker
26=Brkfst in Korea	58=Split Sections	90=Meteor Strings	122=Woody Marimba
27=Soft Wurly	59=Broadway Brass	91=Orch Pad	123=African Marimba
28=Wurly Road	60=Trombones	92=Neptune	124=Vibes
29=Pearly Keys	61=Bari/Tenor Sect	93=Analogy	125=New Fluid Vibes
30=Digital E Piano	62=Solo Tenor Sax	94=Dream Catcher	126=Aborigine Jam
31=Ballad E Piano	63=Williams Brass	95=U Say Tomita...	127=Drums 'n Bells

MIDI Bank6

0=Sweet Ivories	32=Janet's Comp	64=Fast Vtrig Rosin	96=Titanium Guitar
1=Nice Touch Grand	33=Mild Sheen	65=Emotional String	97=Latin Lover
2=Piano Solitude	34=Scrape Glass	66=Octave Strings	98=Roto 12 String
3=Piano Recital	35=Air Society	67=Emphatic Strings	99=Electric 12
4=Full Bloom Piano	36=Push Air	68=Rosin Section	100=Twangy Guitar
5=Pianetta	37=Dronin'	69=Resolute Section	101=Chr Elec& Mute
6=Suite Piano	38=Alien Salt Mine	70=Tender Strings	102=Comp Chr E Gtr
7=Dreamy Piano	39=Imperfect Storm	71=Flute & Strings	103=Trashed Tubes
8=Basement Upright	40=Mod Clavier	72=Bright Voices	104=Gimme The Finger
9=Chiano	41=Belly Celeste	73=Crystal Voices	105=Bright E Bass
10=Way Back Piano	42=Harpsichordion	74=Vox & Organ	106=Bright A Bass
11=Dance Piano	43=Circus Keys	75=BIG Ooh Voices	107=Triangle Bass
12=Cloud Ride Piano	44=Cosmic Calliope	76=BIG Voices	108=Yow Bass
13=Organic Piano	45=Calliope Keys	77=Bright Syn Vox	109=Mono Synth Bass
14=Piano & Wash	46=Chiff Attack	78=Vox Orgel	110=400 HP Bass
15=Piano & Vox Pad	47=Spaced Harmonix	79=Vox & Strings	111=Base in Face
16=Mello E Piano	48=BackgroundOrgan	80=Subdivide	112=Radio Kings/Rods
17=Tines Square	49=Mello Tone Wheel	81=Rezzzy Bass/Poly	113=Ripper Kit/Vinyl
18=Brunch In Seoul	50=Piped Organ	82=Technicolor	114=LA Drums/Brk Bt.
19=Classy Roadz	51=Playful Piper	83=Elan Lead	115=Compact/Raw Kit
20=Barking Tines	52=Peter's Pan	84=Sun Spot Lead	116=TubeTraps/lb.der
21=Clean and Soft	53=Imaginary Flute	85=Dinosaur's Lead	117=Acoustic/HiPKit
22=Ballad Keys	54=Bright Koreana	86=Sawyer's Bomb	118=Dirt/Triphop Kit
23=Lotus Keys	55=Bouncin'BassBall	87=Reverse Feedback	119=SumPumpKit
24=Soft Ballad	56=Goosed Riff Sect	88=Poseidon	MWSus
25=70's FM Tines	57=Fatso Sax	89=Analogica	120=Marimba
26=90's FM Ballad	58=Big&Beefy Saxes	90=Anti Rez	121=Milky Way Vibes
27=Chorus Rock Pno	59=Goosed Unison	91=Spider's Web	122=Percussionist
28=Bright Pianotone	60=Anabrass	92=Ethereal Strings	123=Carnival
29=Family Portrait	61=Honk'n Dyn Sax	93=FreeResAhh Notch	124=Primitive Perc
30=Harpsi-Piano	62=Saxy Lush	94=Ooh><Aah Pad	125=Bunch of Perc
31=Fantasy Keys	63=Classical Brass	95=Vocalicious	126=Perc Party
			127=Perc Circle

KME61 Effect Types

No Effect
0. No Effect

Reverb
1.Room
2.Bright Room
3.Stage
4.Bright Stage
5.Hall
6.Bright Hall
7.Large Hall
8.Large Bright Hall
9.Deep Space

Delay
10. 4Tap Dly
11. PingPong

Reverb :Chorus
12. Room :Chorus
13. Bright Room :Chorus
14. Stage :Chorus

15. Bright Stage :Chorus
16. Hall :Chorus
17. Bright Hall :Chorus
18. Large Hall :Chorus
19. Large Bright Hall :Chorus
20. Deep Space :Chorus

Reverb :Flanger
21. Room :Flanger
22. Stage :Flanger
23. Bright Stage :Flanger
24. Hall :Flanger
25. Bright Hall :Flanger
26. Deep Space :Flanger

Delay :Chorus
27. 4Tap Dly :Chorus
28. PingPong :Chorus

Delay :Flanger
29. 4Tap Dly :Flanger
30. PingPong :Flanger

MIDI Implementation Chart

Manufacturer:
Young Chang Digital Synthesizers

Model: KME61

Date: 9/30/02
Version 1.0

Function		Transmitted	Recognized	Remarks
Basic Channel	Default	1	1	
	Changed	1–16	1-16	
Mode	Default	Multi	Multi *	memorized
	Messages	Any	Modes 3 & 4	memorized
	Altered	X		
Note Number	Transmitted	0-127	0-127	key range
	True Voice	1-128	1-128	C 0–C 8
Velocity	Note On	O	O	
	Note Off	O	O	
After Touch	Keys	X	X	
	Channels	O	O	
Pitch Bender		O	O	
Control Change	0,32	O	O	Bank select
	1	O	O	Mod wheel
	2	X	O	Breath Controller
	4	X	O	Foot Controller
	6	O	O	Data entry
	38	X	O	Data entry
	7	O	O	Volume
	10	O	O	Pan
	11	O	O	Expression
	15,47	X	O	AuxBend2
	21,53	X	O	AuxBend1
	64	O	O	Sustain Pedal
	66	X	O	Sostenuto Pedal
	67	X	O	Soft Pedal
	90	O	O	FX Select
	91	O	O	FX A Wet/dry
	93	O	O	FX B Wet/Dry
	98,99	X	O	Non-registered param num
	100,101	X	O	Registered param num
120	O	O	All Sounds off	
121	O	O	Reset All Control	
Program Change		O 0-127	O 0-127	
	True #	0-127	0-127	
System Exclusive		O	O	
System Common	Song Pos.	X	X	
	Song Sel.	X	X	
	Tune	X	X	
System Real Time	Clock	X	X	
	Messages	X	X	
Aux Messages	Local Control	X	O	
	All Notes Off	X	O	
	Active Sense	X	X	
	Reset	X	X	
Notes Manufacturer's ID = 07 Device ID = 0		*Use Multi to assign different programs To each MIDI channel		

Mode 1: Omni On, Poly
Mode 3: Omni Off, Poly

Mode 2: Omni On, Mono
Mode 4: Omni Off, Mono

O = yes
X = no

Specifications

Physical Specifications

	KME61		Power Adapter (cord type)	
Height	3 1/4 in	8.3 cm	3 3/4 in	9.6 cm
Width	37 1/8 in	94.4 cm	2 1/2 in	6.3 cm
Depth	12 in	30.5 cm	2 1/8 in	5.5 cm
Weight	22.0 lb	10.0 Kg	1.4 lb	0.65 Kg

Electrical Specifications

Voltage	120VAC	220VAC	230VAC
Adapter	AD 54001	AD 54003	AD 54002
Safe voltage Range	100-125 Volts RMS	190-230 Volts RMS	200-250 Volts RMS
Safe Frequency Range	58-65 Hz	48-65 Hz	48-65 Hz
Power Consumption	0.26 Amps	0.13 Amps	0.13 Amps

Environmental Specifications

	Minimum	Maximum
Operating temperature	40F 5C	104F 40C
Storage temperature	-13F -25C	185F 85C
Operating humidity	5%	95% (non-condensing)
Storage Humidity	5%	95% (non-condensing)

Audio Specifications

Left and Right Analog Audio Outputs

Connectors	Unbalanced outputs using two 1/4-inch phone plugs
Impedance	1000 ohms left & right (stereo)
	500 ohms left/mono
Maximum output level	+15dBu (4.4 Volts RMS) high impedance load
Frequency response	20Hz - 20KHz +/- 1.0dB
Harmonic distortion	Less than 0.005% @ 1KHz, full-scale
Idle channel noise	Less than -125dBA relative to full-scale signal
Dynamic range	Greater than 120dBA using -40 dBFS signal

Headphone Output

Output Impedance	47 ohms, nominal
Maximum output level	0.9 Volts RMS into 32 ohms (25 mW)

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