
OWNER'S MANUAL

DIGITAL MULTI-DIMENSIONAL
SYNTHESIZER

K1



DIGITAL MULTI-DIMENSIONAL
SYNTHESIZER MODULE

K1m

KAWAI

WARNING: This equipment generates, uses, and can radiate radio frequency energy. If not installed and used in accordance with the instruction manual, it can cause interference to radio communications. The rules with which it must comply afford reasonable protection against interference when used in most locations. However, there can be no guarantee that such interference will not occur in a particular installation. If this equipment does not cause interference to radio or the equipment off and on, the user is encouraged to try correct the interference by one or more of the following measures:

- reorient the receiving antenna.
- move the receiver away from the synthesizer.
- plug the digital piano into a different outlet so that synthesizer and receiver are on different branch circuits.
- consult the dealer or an experienced radio television technician.

Introduction

The Kawai K1 digital synthesizer and K1m digital synthesizer module both offer 16-voice (max.) polyphonic output from Kawai's VM additive synthesis tone generator. The only difference is the former's 61-key weighted keyboard with a highly accurate touch response.

Features

★ VM tone generator

The K1/K1m built-in sound generator offers a selection of 256 basic waveforms using the two most advanced approaches to sound synthesis. 204 formed by the additive synthesis of the first 128 harmonics, 52 recorded with PCM sampling. You can freely mix up to four of these waveforms to produce an entirely new sound: a crisp digital sound, a rich analog sound, or any combination in between.

★ AM (Ring modulation)

The addition of ring modulation expands the K1/K1m range to include overloaded sounds of the type that digital waves alone cannot reproduce.

★ Rich selection of tone patches

Each K1/K1m leaves the factory with 64 SINGLE patches and 32 MULTI patches already stored in its internal memory bank. The K1's full editing capabilities and DC-8 memory cards (available as extra cost options) allow you to build up your own library of original sounds.

★ Built-in percussion section

The K1/K1m contains its own rhythm section: a total of nine drum and other percussive effects recorded with PCM precision.

★ Superb touch response

The K1 keyboard supports both velocity, the force with which you hit the key, and aftertouch, the pressure that you apply as you hold the key down.

★ Joystick for real-time control

The joystick provides real-time control over the balance between the four SOURCES of a SINGLE patch or between four SECTIONS in a MULTI patch. During editing, it provides a rapid means of changing parameter values.

★ Multi-tone patch LINKs

The K1/K1m LINK function allows you to link up to eight tone patches — SINGLE or MULTI, INTERNAL or EXTERNAL — from the 192 available and then step through the series during a performance simply by pressing the LINK switches.

★ MULTI patches

The K1/K1m's MULTI patches go far beyond the DUAL or SPLIT functions of other synthesizers in that they allow you to assign up to eight different SINGLE patches to different ranges on the keyboard and divide the key velocity as well.

★ Variable multi-timbre operation

This function helps maximize the use of the K1/K1m's 16-voice polyphonic capabilities by automatically redistributing unused capacity from one section to another.

★ Full MIDI implementation

Since each sound source can be assigned a different MIDI channel, each K1/K1m MULTI patch can simultaneously serve as up to eight different MIDI sound sources. For further flexibility, the keyboard version allows the musician to choose whether each sound source responds to notes received on the MIDI channel, those played on the keyboard, or both.

Care and Maintenance

☐ Proper Care

Your K1/K1m synthesizer is a delicate musical instrument. To prevent breakdowns and ensure years of reliable, trouble-free service, shield it from:

- Direct sunlight and exposure to the elements
- Extremes in temperature or humidity
- Dusty environments
- Vibration — especially during transport

☐ Power Supply

- Use only the AC adapter shipped with the K1/K1m and connect it only to a power supply with a voltage within the limits stated on the ratings plate on the back.
- Make sure that all power switches are off before changing equipment connections.
- Check all equipment connections before applying the power.
- Do not connect to the same circuit as a heavy load or equipment that generates line noise.

☐ Line Noise Reset

- The high-speed microprocessor at the core of the K1/K1m is extremely sensitive to line noise and sudden fluctuations in the supply voltage. Should it "lock up" under such conditions, simply turn it off for a few seconds and then reapply the power.

☐ Cleaning

- Clean the instrument with a soft cloth, a mild detergent, and lukewarm water.
- Never use harsh or abrasive cleansers or organic solvents.

☐ Battery Backup

- The lithium battery that protects the memory contents while the power to the unit is off is good for more than five years of normal use. We recommend, however, that you have your nearest authorized service representative replace it promptly after five years.

☐ Repairs

- Always save the INTERNAL tone patches to a memory card before taking the unit in for repairs or servicing. Otherwise, they may be lost in the course of testing.

☐ Memory Cards

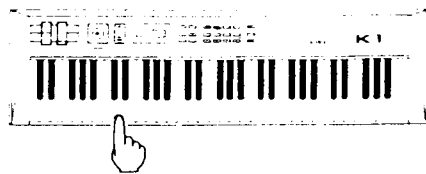
- The K1/K1m uses Kawai DC-8 memory cards for external data storage. These cards are available from your nearest authorized Kawai dealer. Kawai DC-16 or DC-32 cards can also be used.

TABLE OF CONTENTS

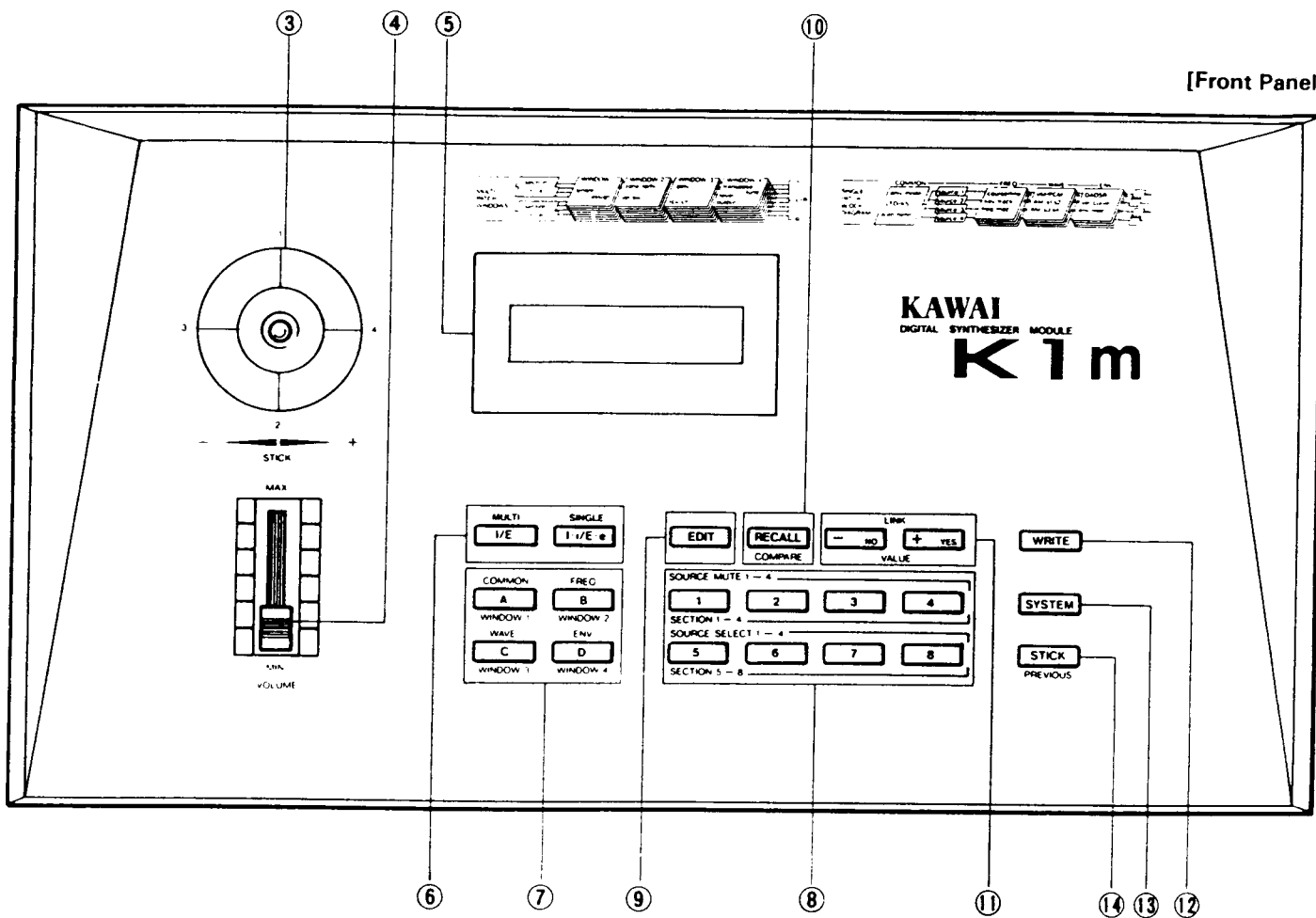
Names of Parts	6
I. Playing the Factory Tone Patches	7
1. Get Sound	7
2. Choose a Tone Patch	8
3. Try the Extra Features	9
4. Look Over the Construction of SINGLE or MULTI Patch	11
II. K1/K1m Sound Sources	13
1. VM Tone Generator	13
2. Digital Sound vs. Natural Sounds	13
III. Editing Tone Patches	15
1. Basics	15
2. Editing a SINGLE Patch	17
3. SINGLE Patch Parameters	18
4. Editing MULTI Patches	33
5. MULTI Patch Parameters	34
IV. WRITE — Storing Edited Tone Patches	38
1. Definition	38
2. Procedure	38
V. LINK Function	39
1. Definition	39
2. Procedure	39
VI. SYSTEM — System and MIDI Parameters	40
1. SYSTEM Parameters	40
2. MIDI Transmission Parameters	42
3. MIDI Receive Parameters	43
VII. Error Messages	44
VIII. Appendices	45
1. SINGLE Patch Parameters	45
2. MULTI/AUX Parameters	46
MIDI Implementation Chart	47, 48
3. Specifications	49

Notes

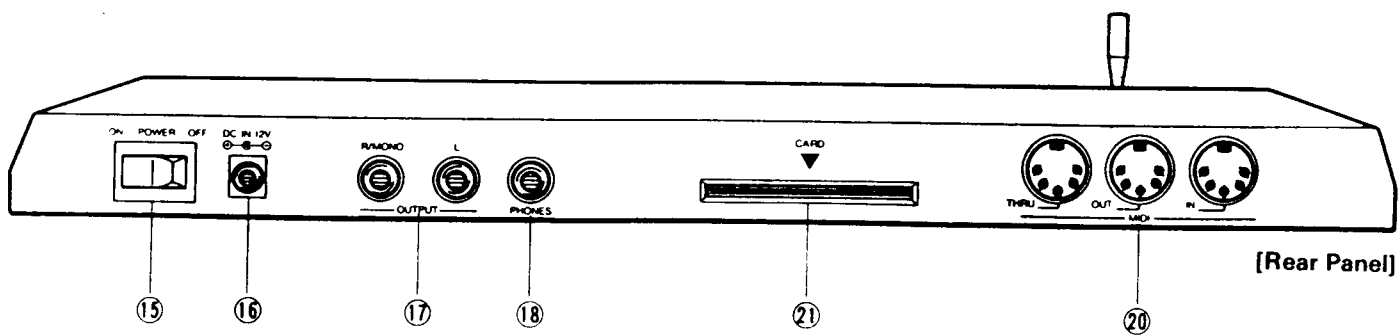
- II. See the Appendices "SINGLE Patch Parameters" and "MULTI Patch Parameters" for a brief overview of the K1/K1m sound generation system.
- III.1 See the Appendices "SINGLE Patch Parameters" and "MULTI Patch Parameters" for a brief summary of the editing process.
- III.3 See the Appendix "SINGLE Patch Parameters" for a brief summary of the editing process for "SINGLE patches.
- III.5 See the Appendix "MULTI Patch Parameters" for a brief summary of the editing process for MULTI patches.
- VI. See the AUX Parameter Chart for a summary of the SYSTEM and MIDI function.



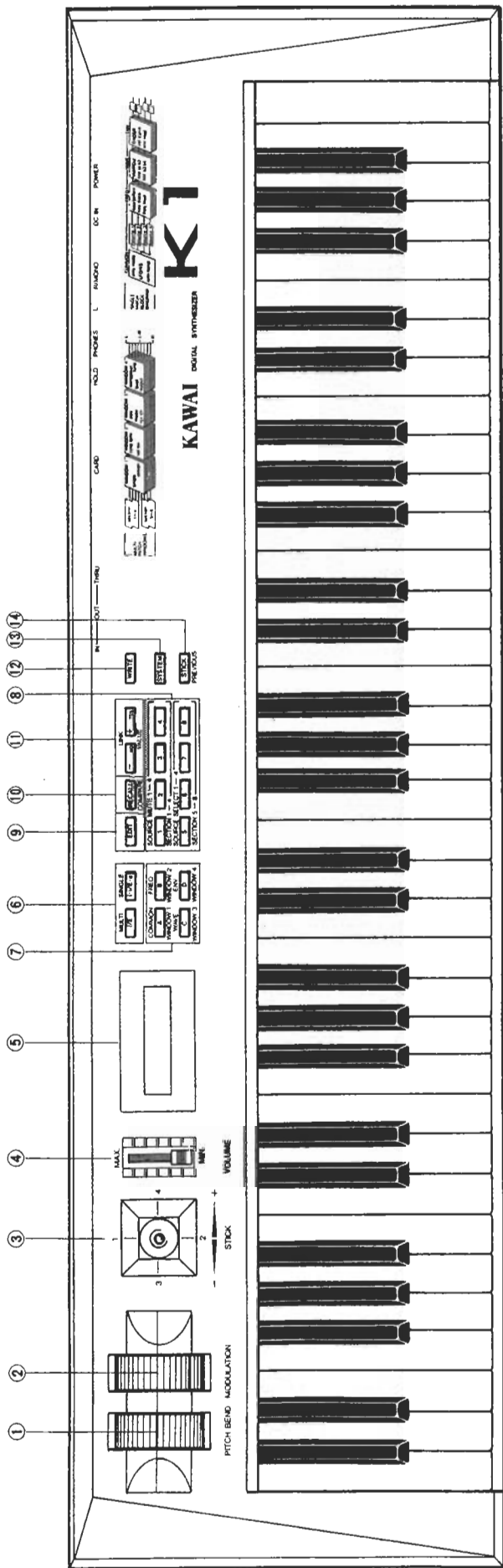
[Front Panel]



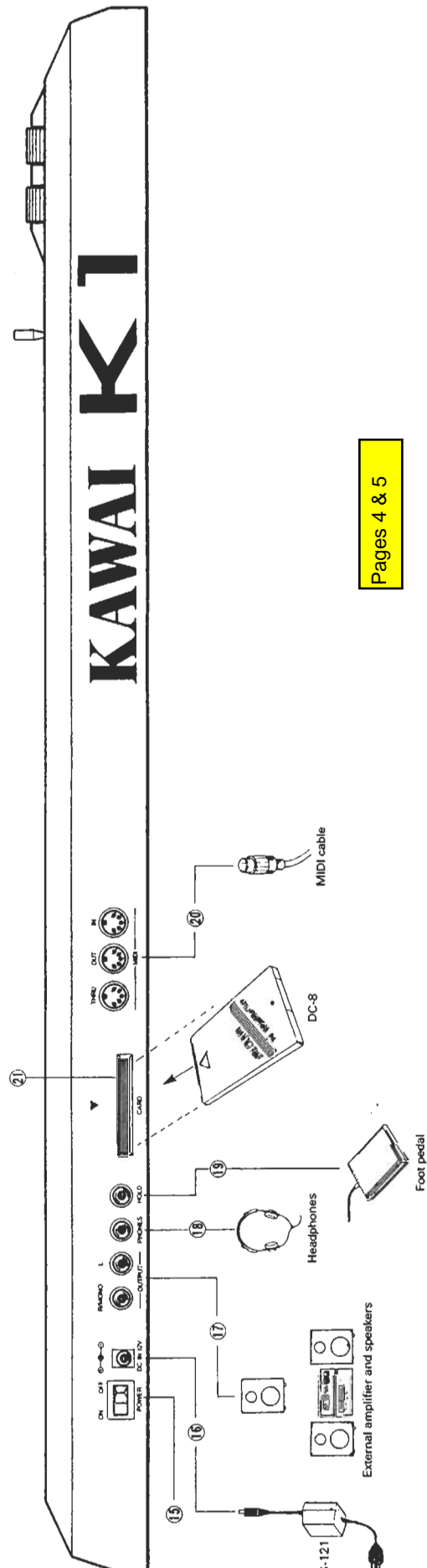
[Rear Panel]



[Front Panel]



[Rear Panel]



Names of Parts

① PITCH BEND wheel

Shifts the pitch of all notes. (See p.9.)

② MODULATION wheel

Controls the amount of VIBRATO. (See p.9.)

③ Joystick

Performance: Provides real-time control over the balance between the four SOURCES of a SINGLE patch or between four SELECTIONs in a MULTI patch. (See p.10.)

Editing: Changes the value of the current parameter.

Note: Setting the STICK parameter to OFF disables this function and prevents accidental movement of the joystick from changing the balance during a performance.

④ VOLUME slider

Controls the output levels for the PHONES jack as well as the OUTPUT (R/MONO and L) jacks.

⑤ Display

Performance: Indicates the number and name of the tone patch in use.

Editing: Indicates parameter name and current value.

⑥ Tone patch selector switches, I. Block (MULTI & SINGLE)

Switch between the SINGLE and MULTI sets of tone patches.

⑦ Tone patch selector switches, II. Bank (A, B, C, & D)

Performance: Select the tone patch bank.

Editing: Select parameters for editing. (See p.18.)

⑧ Tone patch selector switches, III. Number (1-8)

Performance: Select the tone patch number.

Editing: Switch SOURCES on and off (SOURCE MUTE/SOURCE SELECT) for SINGLE patches and select SECTIONS for MULTI patches.

(See p.18/34.)

⑨ EDIT switch

Activates the tone patch editing functions.

⑩ RECALL/COMPARE switch

Performance: Switches to (RECALLs) the tone patch last edited.

Editing: Switches between (COMPAREs) the current state of the tone patch and the state that it was in at the beginning of the editing session. (See p.16, 17.)

⑪ LINK/VALUE switches

Performance: Switch to the next tone patch in the linked series.

Editing: Change the value of the current parameter.

⑫ WRITE/LINK switch

Editing: Overwrites the original tone patch with the edited version.

Linking: Adds the current tone patch to the chain. (Max. 8 per chain)

⑬ SYSTEM/MIDI switch

SYSTEM: Changes the unit's pitch (TUNE or TRANSPOSE). (See p.41.)

MIDI: Changes the MIDI receive (RCV) or transmit (TRS) parameters. (See p.43, 44)

⑭ STICK/PREVIOUS switch

Performance: Switches the joystick on and off. (See note under entry for joystick above.)

Editing: Backs up to the preceding parameter. (See p.16.)

⑮ POWER switch

Controls the power to the unit.

Note: Check all connections BEFORE turning on the power.

⑯ DC IN jack

Accepts the plug from the PS-121 adapter.

⑰ OUTPUT jacks

Connect the unit to a KM-60 keyboard amplifier, public address system, audio amplifier, or similar equipment.

Note: The K1/K1m contains no amplifier or speakers. Either use headphones or connect it to an external amplifier.

⑱ PHONES jack

Serves for stereo headphones.

⑲ HOLD pedal jack

When connected to a Kawai F-1 (optional) or similar foot pedal, produces a damper pedal effect similar to that of an acoustic piano.

⑳ MIDI connectors

Accept standard cables for connecting the unit to other MIDI instruments.

㉑ CARD slot

Accepts DC-8 memory cards (optional).

Note: Insert the card so that the arrow on it lines up with the one on the unit.

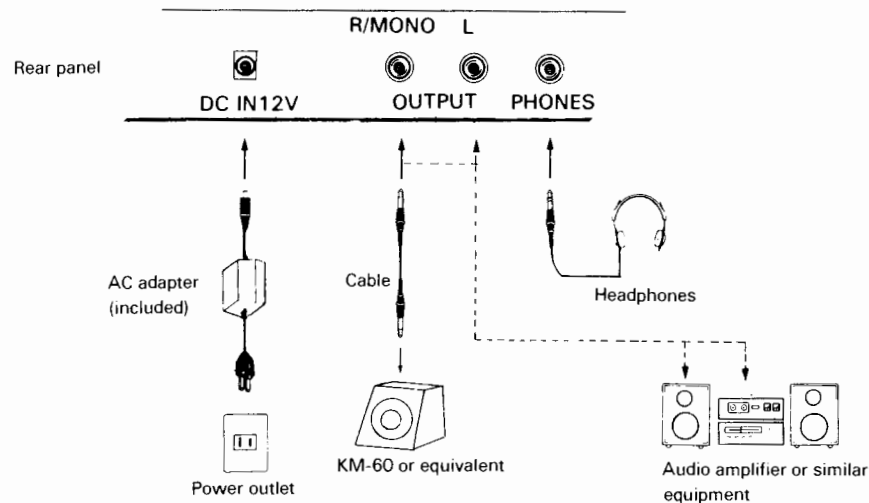
I. Playing the Factory Tone Patches

The K1/K1m comes with a complete set of built-in tone patches. The best way to familiarize yourself with the instrument's capabilities is to experiment with these tone patches and examine the contents of their parameters.

1. Get sound

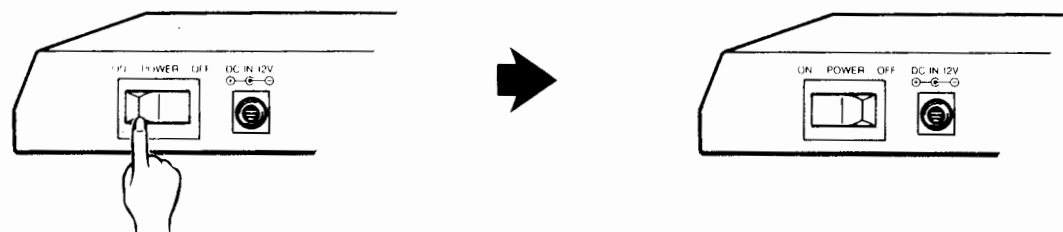
(1) Connect the instrument using the diagram below as your guide.

Note: Add a MIDI keyboard if you are using the K1m synthesizer module.

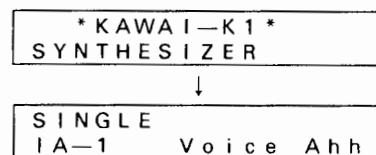


Note: The K1/K1m contains no amplifier or speakers. Either use headphones or connect it to an external amplifier — a keyboard amplifier, radio-cassette player, or audio amplifier, for example.

(2) Shift the POWER switch (located on the rear panel) to its ON position.



(3) Wait for the tone patch display.

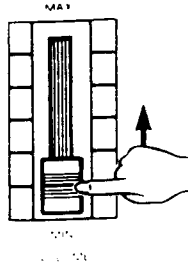


(This display lasts only a few seconds.)

(The unit is now ready to play.)

Note: The tone patch names and numbers used in this manual are not necessarily the same as those on your K1/K1m or later versions.

(4) Press a key and gradually raise the volume to a comfortable listening level.



(5) Play.

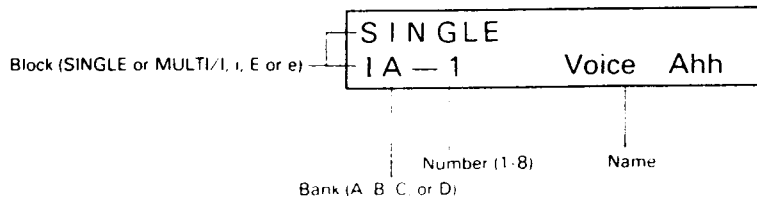
Note: If raising the volume to its maximum fails to produce any output, check all connections and amplifier settings.

2. Choose a tone patch.

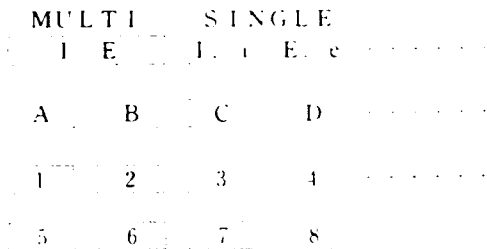
The K1/K1m offers a selection of 64 SINGLE patches and 32 MULTI patches based on them.

The two-line display indicates which tone patch is currently in effect. The first line tells whether it is a SINGLE or MULTI patch; the second gives its tone patch number and name.

The tone patch number consists of three fields: I Block (SINGLE or MULTI/I, i, E, or e), II Bank (A, B, C, or D), and III Number (1~8).



The tone patch selector switches Groups I-III change these three fields.

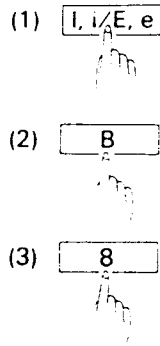


These switch between MULTI and SINGLE patches and then between the internal (I and i) and external (E and e) blocks

These switch between the four banks available for each block

These select the tone patch number within the bank

Example: Changing to SINGLE patch iB-8



SINGLE
iA-1 Voice A h h

SINGLE
iA-1 Tenor Sax

SINGLE
iB-1 Sitar

SINGLE
iB-8 Pizzicato

Note: The above three steps can be in any order.

Note: The unit will not allow you to change the block to E or e unless there is a card firmly in place in the slot.

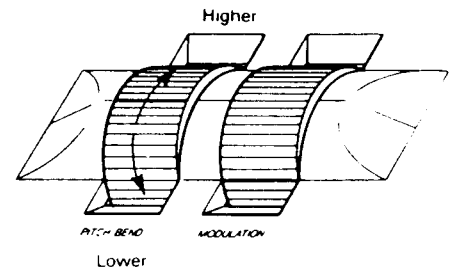
3. Try the extra features.

The K1/K1m provides a wide range of additional features that you can exploit to enhance your performance.

(1) PITCH BEND wheel (K1 only)

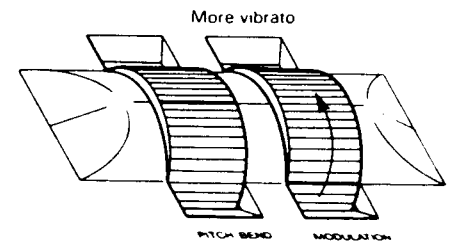
Rotating this wheel away from you raises the pitch of the unit; rotating it towards you lowers the pitch.

Note: It is also possible to adjust the amount of pitch bend.
(See p.23.)



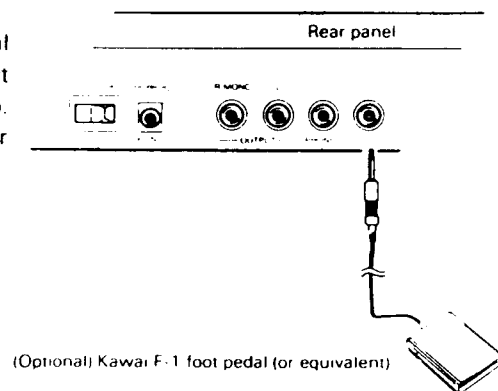
(2) MODULATION wheel (K1 only)

Rotating this wheel away from you adds the vibrato effect.



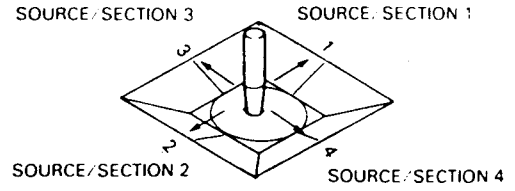
(3) HOLD pedal (K1 only)

Connecting an optional Kawai F-1 or equivalent foot pedal to the HOLD jack on the rear panel provides an effect similar to that of a damper pedal on an acoustic piano. When the pedal is pressed, a sound continues even after the key is released.



(4) Joystick

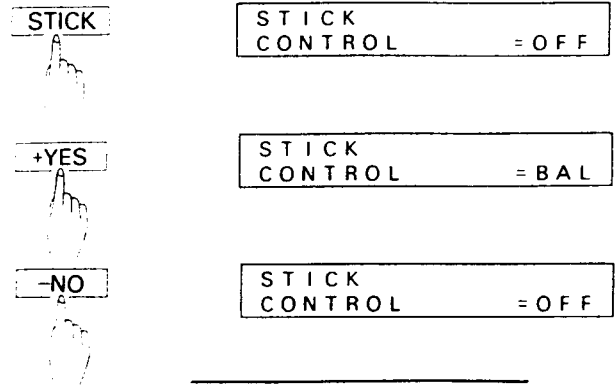
A SINGLE patch can use up to four separate SOURCES. This joystick provides real-time control over the volume balance between them. It also provides similar control for the four SECTIONS in a MULTI patch.



Note: The STICK switches this control function ON and OFF.

Procedure:

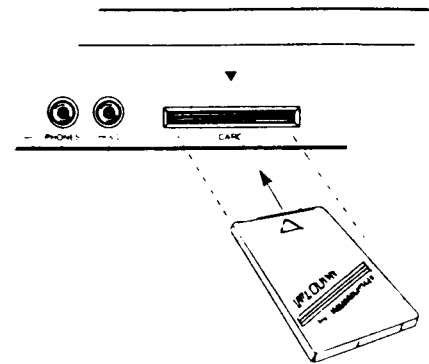
- ① Press the **STICK** switch.
- ② Press the **+YES** switch for ON and the **-NO** switch for OFF.



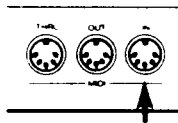
(5) CARD slot

In addition to the 96 internal tone patches, each optional DC-8 memory card provides storage for 64 SINGLE patches and 32 MULTI patches in blocks E and e (for external).

Note: Before storing data on the card, you must first format it for use with the K1/K1m. (See p.41, 42.)



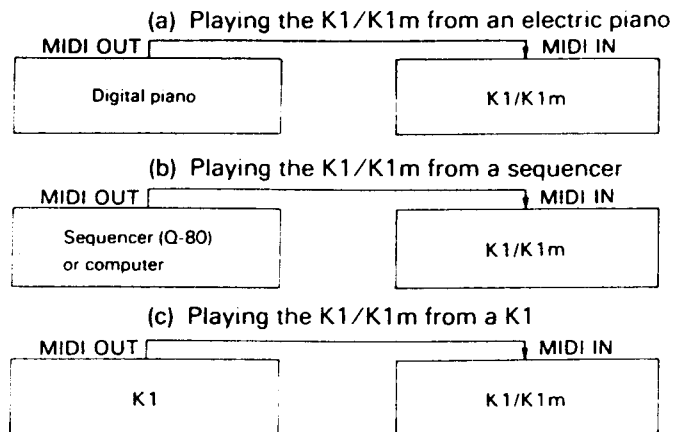
(6) MIDI jacks



The three MIDI jacks on the rear panel are your gateway to the world of MIDI music. You can, for example, play your K1/K1m from another keyboard, a Kawai Q-80, or other sequencer, or even another K1.

Note: The K1m comes with one MIDI cable.

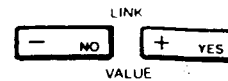
Sample Setups



(7) LINK function

The K1/K1m LINK function allows you to link up to eight tone patches — SINGLE or MULTI, INTERNAL or EXTERNAL — from the 192 available and then step through the series simply by pressing the LINK switches. This function saves valuable time during a live performance. (See p.40.)

Note: The upper right corner of the LCD screen keeps track of the position in the series. For example, **LINK:8-7** indicates that the synthesizer is currently using the seventh tone patch of an eight-member series



SINGLE LINK: 8-7
IA-8 1Key Beat 1

4. Look over the construction of SINGLE or MULTI patch

The K1/K1m contains a total of 96 built-in tone patches — sets of complex waveform/parameter combinations. Two-thirds (64) of these are SINGLE patches. Each SINGLE patch is divided into four (or two) SOURCES. Each SOURCE consists of a waveform chosen from the 256 basic waveforms available plus pitch, volume, and various other parameters for modifying it.

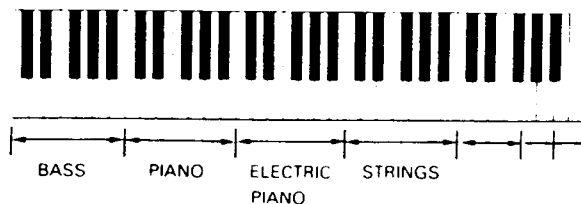
The remaining 32 tone patches are MULTI patches. Each MULTI patch is divided into eight SECTIONS. Each SECTION consists of a SINGLE patch plus various parameters that tie sound generation to key velocity and keyboard range.

In other words, the synthesizer merges four waveforms to produce a SINGLE patch and then merges eight SINGLE patches to form a MULTI patch. Certain built-in tone patches illustrate some of the ways in which you can exploit this capability.

(1) Splitting the keyboard.

One application would be to split the entire keyboard into various zones, assigning a different SINGLE patch to each zone: BASS to the lower third, PIANO to the middle, and STRINGS to the upper third, for example. The only limit is on the number of zones (max.8). The K1/K1m otherwise gives you complete freedom to divide the keyboard as you wish.

Example:



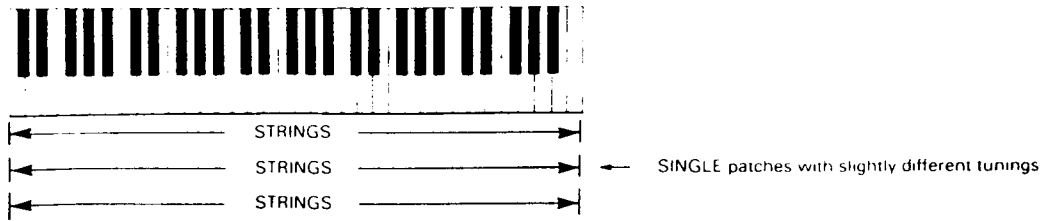
(2) Linking sound to velocity.

Another way to divide SINGLE patches would be to make the SINGLE patch dependent on the key velocity, the

(3) Layering sounds.

Overlapping SINGLE patches with slightly different tunings or with complementary tones produces a richer, fuller sound

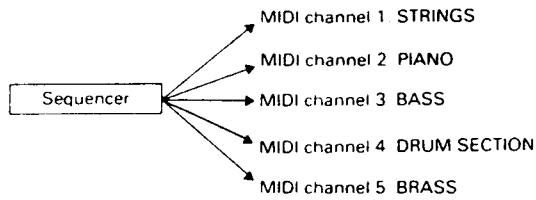
Example:



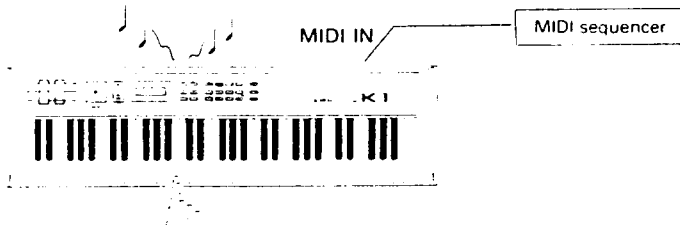
(4) Using the K1/K1m as eight MIDI sound sources.

If you assign a different MIDI receive channel to each SINGLE patch in the MULTI patch, the K1/K1m simultaneously performs as eight different MIDI sound sources. Since these can include the K1/K1m's built-in percussion sounds, a sequencer or other external controller can use a single K1/K1m for everything from rhythm to harmony.

Example:



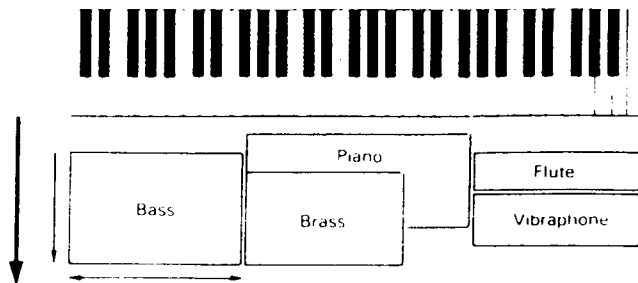
(5) Playing one tone patch on the K1 keyboard while a MIDI sequencer plays another.



(6) Combinations of the above

The K1/K1m gives you complete freedom to combine SINGLE patches any way you wish.

Example:

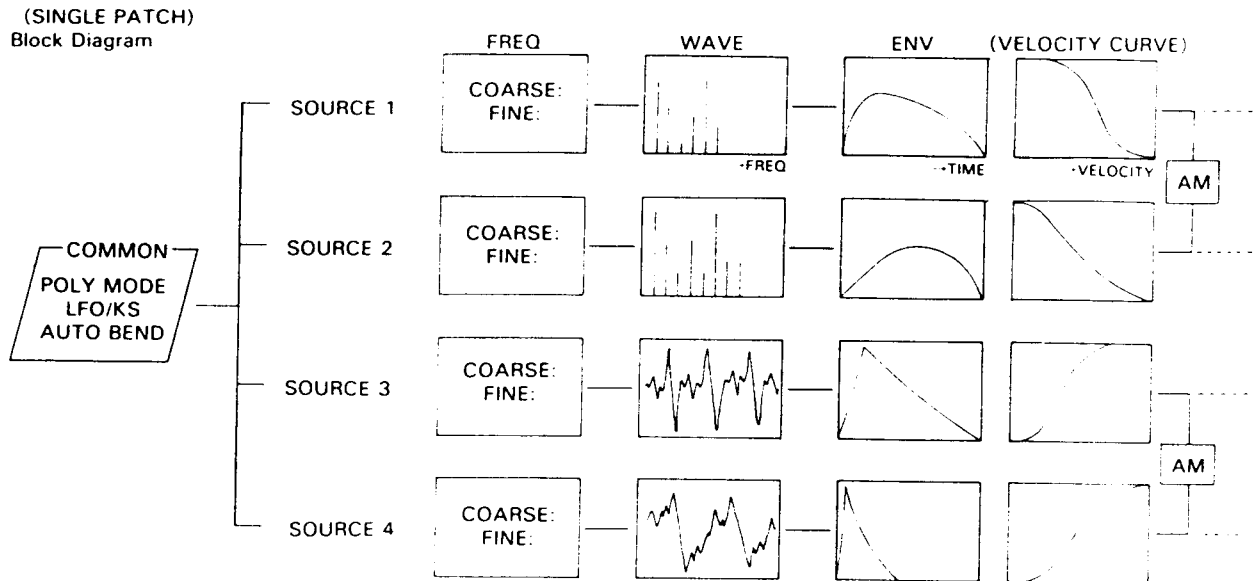


II. K1/K1m Sound Sources

1. VM Tone Generator

The K1/K1m allows you to combine up to four different SOURCES, each with its own frequency, waveform, and envelope.

The K1/K1m also supports AM (Ring modulation), allowing you to use the output from one SOURCE to modulate the output from another.



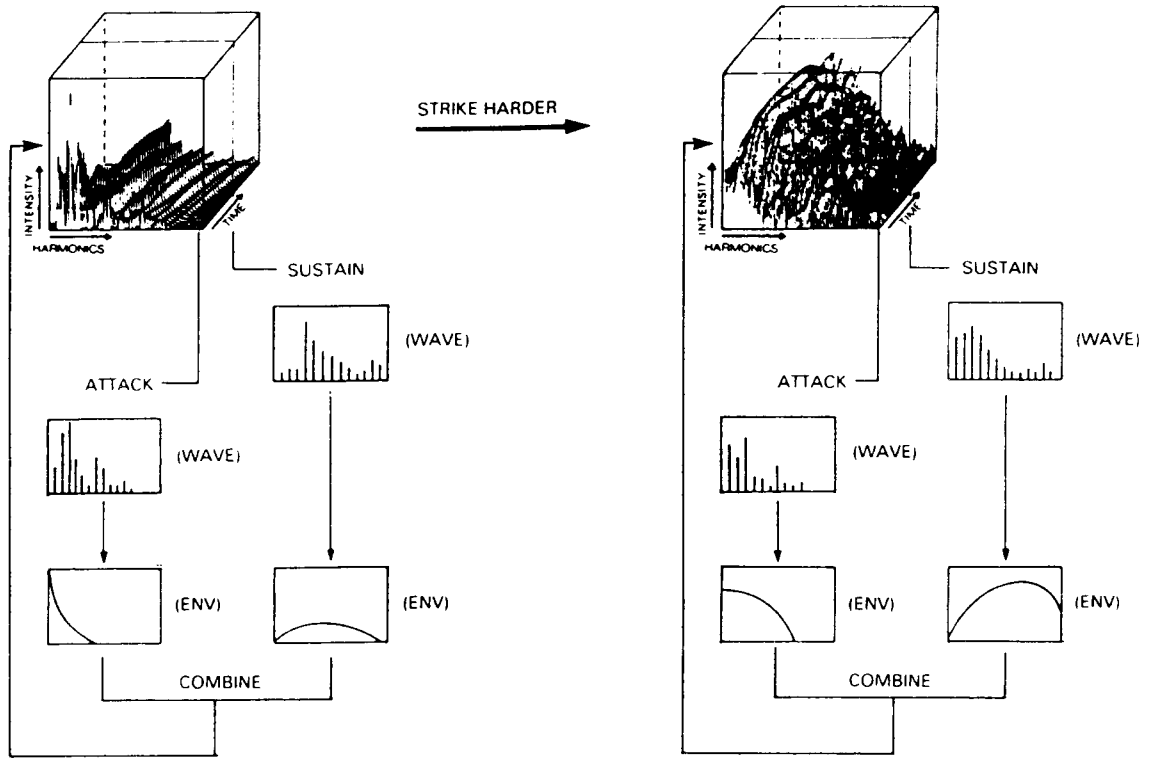
2. Digital Sound vs. Natural Sounds

If you listen carefully to a singer or a musical instrument, you will notice that each note exhibits at least three distinct phases: (1) a rapid rise in volume (ATTACK), (2) a relatively long constant phase (SUSTAIN), and (3) a gradual fading out (DECAY). You will also notice that blowing harder into a horn, plucking a string harder, or shouting changes the tonal quality, making the result brighter or distorted.

The ATTACK phase is particularly difficult to duplicate because it has a complicated harmonic distribution that changes rapidly with time. The K1/K1m therefore uses PCM recordings of actual instruments to provide the most faithful reproduction.

A SINGLE patch on the K1/K1m consists of up to four SOURCES drawn from the 52 PCM waveforms and 204 VM waveforms available — a total of 256 — with a separate frequency and envelope for each.

The result is a combination that accurately reproduces the complex changes in tonal quality with time and velocity.



III. Editing Tone Patches

1. Basics

(1) EDIT mode

Besides its PLAY mode, the K1/K1m features an EDIT mode which allows you to modify SINGLE and MULTI patches. To enter this mode, use the normal procedure to select the tone patch and then press the **EDIT** switch. To return to the PLAY mode, simply press either the MULTI or SINGLE switch.

SINGLE
IA-8 1Key Beat 1

SIA-8 1Key Beat 1
VOLUME = 100

MULTI
IA-8 SYMPHONY

MIA-1 SYMPHONY
VOLUME = 100

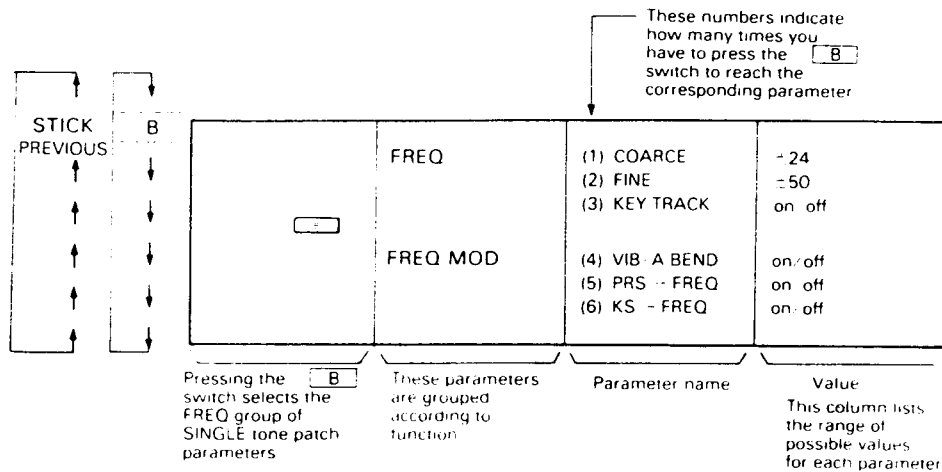
(2) Parameters and values

In the EDIT mode, the display gives two types of information: the name of the current parameter and its value. SINGLE patches list these pairs in four parameter groups; MULTI patches divide among four windows. Although the names differ, the basic procedure is the same: Select the group (SINGLE) or window (MULTI) with one of the four switches marked with the letters A, B, C, and D.

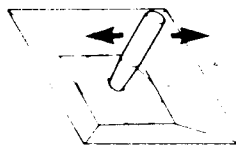
Note: The labels above these switches — COMMON, FREQ, WAVE, and ENV — give the group names for SINGLE patches, the ones below, the window names for MULTI patches.

Once you have selected a particular group or window, further presses on the same switch cycle through the list of parameters for that group or window. Pressing the STICK/PREVIOUS switch cycles through the same list, but in the reverse direction.

Example:



After you have selected a particular parameter, change its value with the **-NO** / **+YES** switches or the joystick. Moving the joystick to the left decreases the value and moving it to the right increases the value.



(3) Storing the new tone patch

When you edit a tone patch, you work with a temporary copy that disappears when you turn off the power. If you wish to save the tone patch for later use, you must store it in the K1/K1m's internal memory or on a memory card using the WRITE function. (See p.39)

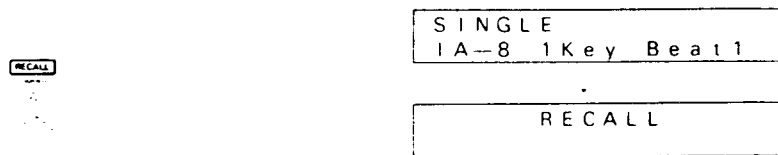
(4) RECALL and COMPARE functions

• RECALL

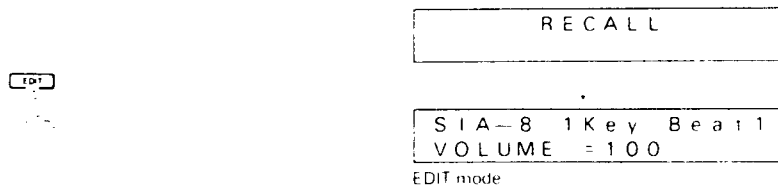
This function returns you to the last SINGLE or MULTI patch that you edited so that you can continue editing. It is most useful when you have accidentally left the EDIT mode by pressing the wrong switch and/or turning the power off before saving an edited version of a SINGLE patch.

Note: This second use of the RECALL function is not available for MULTI patches.

This function actually remembers two tone patch numbers: one for SINGLE and one for MULTI. Pressing the switch selects the one matching the tone patch currently in use — in other words, the most recently edited SINGLE patch if the word SINGLE is on the first line of the display and the most recently edited MULTI patch otherwise.

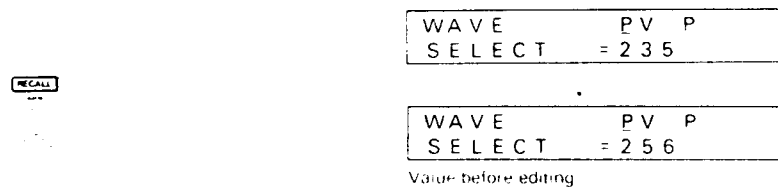


To resume editing, press the EDIT switch

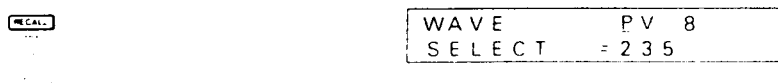


• COMPARE

This function allows you to compare the temporary copy that you are working on with the original tone patch. Pressing the COMPARE switch redisplay the original tone patch.



Pressing it a second time returns you to the edited version



Note: You cannot edit while using the compare function.

2. Editing a SINGLE Patch

(1) Basic approach

Each K1/K1m SINGLE patch uses either two or four SOURCES.

Because it would take too much time to construct a tone patch completely from scratch, the usual approach is to select the closest tone patch and then edit it.

(2) Procedure

- ① In the PLAY mode, select the SINGLE patch that best approximates the desired sound.

```
SINGLE
IA-8 1Key Beat 1
```

- ② Press the **EDIT** key.

```
SIA-8 1Key Beat 1
VOLUME = 100
```

EDIT

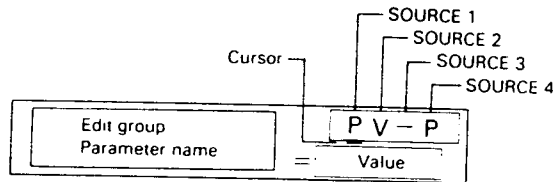
- ③ Select the parameter to be edited.

A B or EDIT or ST<>

```
WAVE PV-P
SELECT = 256
```

(3) EDIT display

The EDIT display provides four different types of information.



- **Edit parameter name:** This indicates the parameter being edited. Change with the letter switches (A, B, C, or D) or the PREVIOUS switch.
- **Parameter value:** This gives the current value for the parameter. Change with the **+YES** / **-NO** switches or the joystick.
- **SOURCES:** These indicate, from left to right, the current statuses of SOURCES 1-4.

Status	Source
P	PCM waveform
V	VM waveform
—	Mute

Note: Use the SOURCE MUTE (numbers 1-4) switches to turn the individual SOURCES on and off.

- **Cursor** This underline tells which SOURCE is being edited.

(4) Selecting a SOURCE to be edited

Press the corresponding SOURCE SELECT (numbers 5-8) switch. The cursor shifts to the appropriate symbol.

(S1) (S2) (S3) (S4)

```
WAVE PV-P
SELECT = 256
```

3. SINGLE Patch Parameters

(1) EDIT switch

There are two parameters that you can edit before proceeding to the ones grouped under the letter switches (A, B, C, and D):

EDIT -1 VOLUME

Determines the volume for the SINGLE patch.

Normally, this should be the maximum (100), but it may be necessary to adjust the balance between tone patches with this parameter.

Note: The parameter **D -1 LEVEL** adjusts the relative balance between the SOURCES used in the tone patch.

```
S I A - 1   V o i c e   A h h
VOLUME = 100
```

Value	Effect
1	Minimum
100	Maximum

EDIT -2 NAME

Assigns a 10-character name for the tone patch.

This name may mix any of the following 96 characters:

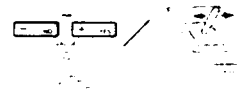
Procedure:

- Use the **+YES** / **-NO** switches or the joystick to modify the current character.



```
S I A - 1   V o i c e   A h h
NAME       = V
```

- Press the **EDIT** key to move from character to character.



```
S I A - 1   V o i c e   A h h
NAME       = 0
```

- Repeat the above steps as often as necessary.

Valid name characters

```

■ ! " # $ % & ' ( ) * + , - . /
0 1 2 3 4 5 6 7 8 9
: ; < = > ? @
A B C D E F G H I J K L M N O P Q R S T U V W X Y Z
[ \ ] ^ _
a b c d e f g h i j k l m n o p q r s t u v w x y z
: ; < = > ? @
```

(2) Group A -- COMMON

The parameters in this group affect all four SOURCES equally.

A -1 SOURCE

Determines whether the tone patch uses all four SOURCES or only two. Choosing the former makes the K1/K1m an eight-voice polyphonic instrument — that is, limited to sounding a maximum of eight notes at a time; the latter makes it sixteen-voice polyphonic.

Note: Sources 3 and 4 are not available when this parameter is set to 2.

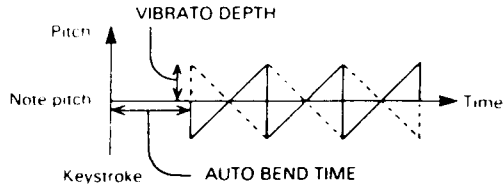
Muting Sources 3 and 4 is not the same as changing this parameter to 2. The unit remains eight-voice polyphonic.

```
COMMON      P V - P
SOURCES 2 / 4 = 4
```

Value	Effect
2	The unit uses only SOURCES 1 and 2
4	The unit uses all four SOURCES

A -2 VIBRATO DEPTH

Determines the amount by which the vibrato effect alters the pitch above and below the note pitch



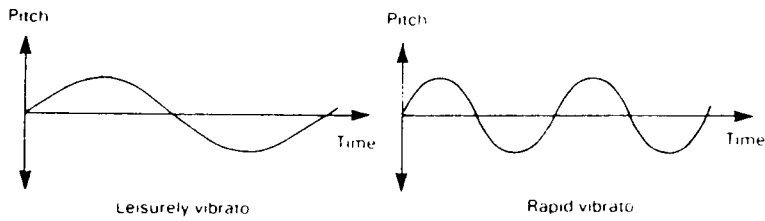
Note: **B** -4 VIBRATO/AUTO BEND determines whether the individual SOURCEs use the vibrato effect. **A** -8 VIBRATO/AUTO BEND TIME determines the delay before the start of the vibrato effect.

VIBRATO	PV - P
SPEED	= 50

Value	Effect
-50	Maximum vibrato with normal waveform
0	No vibrato
50	Maximum vibrato with inverted waveform

A -3 VIBRATO SPEED

Determines the vibrato rate.

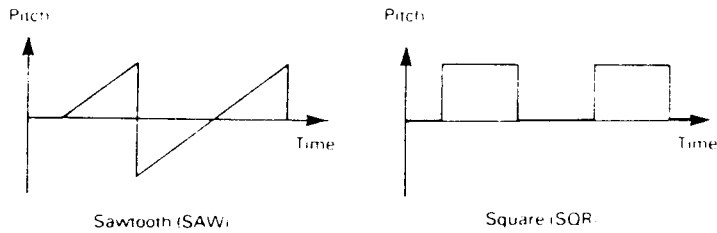


VIBRATO	PV - P
SPEED	= 100

Value	Effect
0	Leisurely vibrato
100	Rapid vibrato

A -4 VIBRATO SHAPE

Determines the waveform for the vibrato effect.



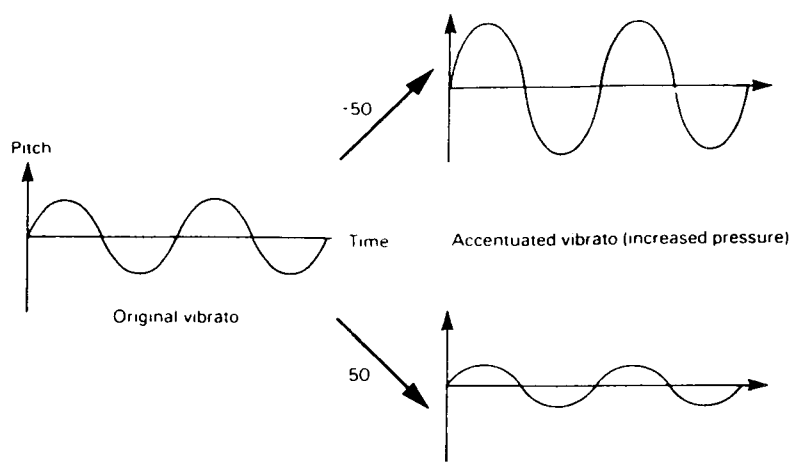
VIBRATO	PV - P
SHAPE	= SAW

Value	SHAPE
TRI	Triangle
SAW	Sawtooth
SQR	Square
RND	Random variation

A -5 PRS VIBRATO

Links the amount of vibrato to aftertouch, the amount of pressure on the key.

VIBRATO	PV - P
PRS-DEPTH	= ± 50



Value	Effect of increasing pressure
-50	Increased vibrato
0	No effect
50	Decreased vibrato

Note: This effect is only available with keyboards that transmit aftertouch data.

A -6 WHEEL VIBRATO ASSIGN

Determines whether the MODULATION wheel controls vibrato depth or speed.

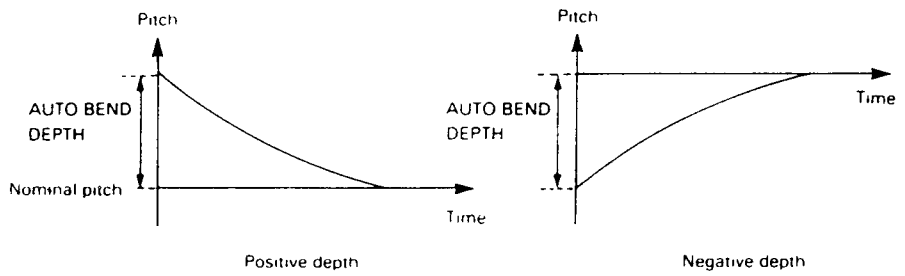
VIBRATO	PV - P
WHEEL	= DEP

Value	Effect
DEP	Depth (amplitude)
SPD	Speed (rate)

A -7 AUTO BEND DEPTH

Determines how the pitch alters as each key is struck — the AUTO BEND effect

AUTO BEND	PV - P
DEPTH	= ± 50



Value	Effect
-50	Pitch drops to nominal value
0	No effect
50	Pitch rises to nominal value

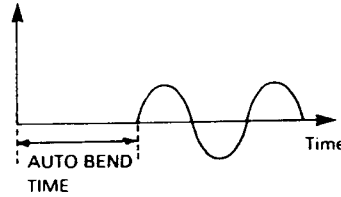
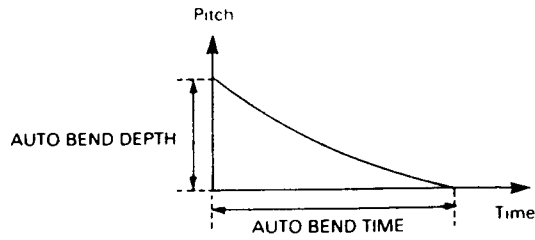
Note: **B -4 VIBRATO/AUTO BEND** determines whether the individual SOURCES use this effect

A -8 AUTO BEND TIME

Determines the time for the automatic bend function (**A**-7 above) and the delay before the start of the vibrato effect (**A**-2 above).

AUTO BEND TIME	PV - P
	= 100

Value	Effect
0	No effect
100	Maximum period

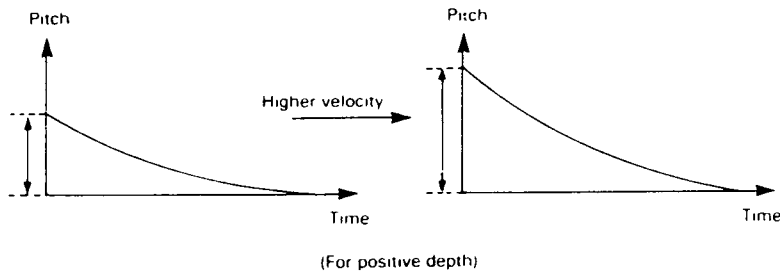


A -9 AUTO BEND VEL DEP

Uses **D**-7 VEL CURVE to link the depth of the AUTO BEND effect to key velocity.

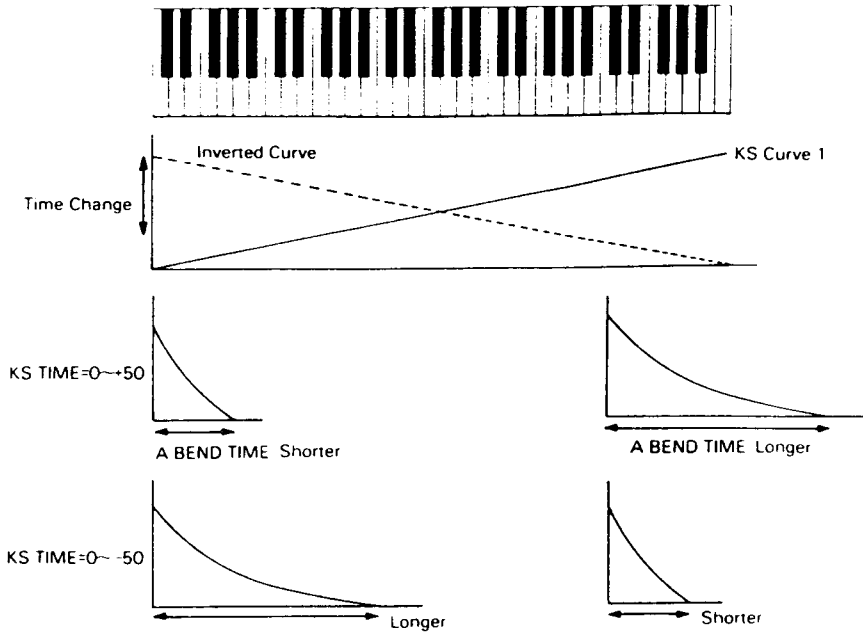
AUTO BEND VEL - DEPTH	PV - P
	= ± 50

Value	Effect
-50	Depth increases with velocity
0	No effect
-50	Depth decreases with velocity



A -10 AUTO BEND KS-TIME

Uses **A -13 KS CURVE** to link the AUTO BEND time to key position.



AUTO BEND KS-TIME	PV-P = ± 50
----------------------	----------------

Value	Effect
-50	Maximum effect with normal KS curve
0	No effect
50	Maximum effect with inverted KS curve

A -11 PRS FREQ

Links key frequency (pitch) to aftertouch, the amount of pressure on the key.

Note: This effect is only available with keyboards that transmit aftertouch data, such as the K1.

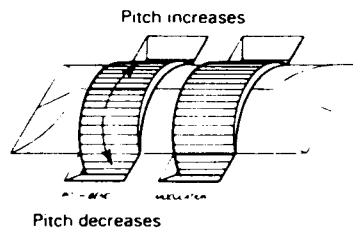
B -5 PRS FREQ determines whether the individual SOURCES use this effect.

COMMON PRS-FREQ	PV-P = ± 50
--------------------	----------------

Value	Effect
-50	Pitch increases with pressure
0	No effect
-50	Pitch decreases with pressure

A -12 PITCH BEND

Determines the PITCH BEND wheel range in semitones.




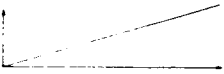
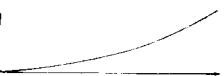


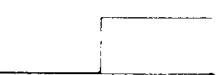
COMMON PITCH BEND	PV-P = 12
----------------------	--------------

Value	Effect
0	No effect
12	Range of one octave

A -13 KS CURVE

Determines the shape of the keyboard scaling curve, a curve that other parameters use to make volume, note length, pitch, and other variables a function of key position.

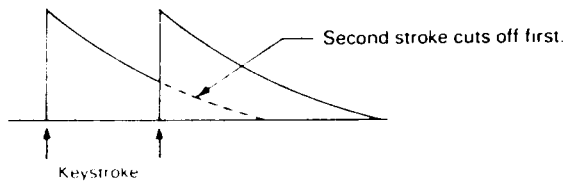
COMMON	PV - P
KS CURVE	= 5

Value	Effect
	
1	
2	
3	
4	
5	

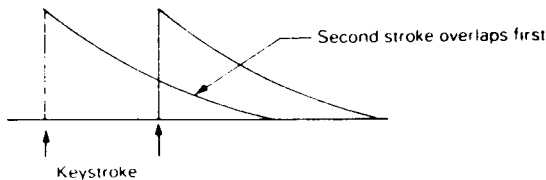
A -14 POLY MODE

Selects the voice assignment mode.

POLY 1 — Striking the key a second time cuts off the previous note.



POLY 2 — The first note continues to die out even after the key is struck a second time



SOLO — The keyboard sounds only one note at a time.

Note: If you hold down one key and strike another, the second note will replace the first, but the first note will reappear when you release the second key.

COMMON	PV - P
POLY MODE	= PL 2

Value	Effect
PL1	Second stroke cancels first
PL2	Second stroke overlaps first
SOLO	One note at a time

(3) Group B — FREQUENCY

The parameters in this group determine the pitch.

B -1 COARSE

Determines the relative pitch of the SOURCE in semitones when **B** -3 KEY TRACK is ON.

FREQUENCY	PV - P
COARSE	= ± 24

Value	Effect
+24	Two octaves higher
0	Normal pitch
-24	Two octaves lower

B -1 FIXED KEY

Determines the pitch used when **B** -3 KEY TRACK is OFF.

Note: When **B** -3 KEY TRACK is ON, COARSE appears; when it is OFF, FIXED KEY appears.

FREQUENCY	PV - P
FIXED KEY	= C# - 4

Value	C-4 ~ G6
-------	----------

B -2 FINE

Provides precise pitch adjustment.

FREQUENCY	PV - P
FINE	= ± 50

Value	Effect
+50	1 semitone higher
0	Normal pitch
-50	1 semitone lower

B -3 KEY TRACK

Switches tracking function on and off. When tracking is ON, each key produces a note of a different pitch. When it is OFF, all keys produce the same note, the one selected by **B** -1 FIXED KEY.

FREQUENCY	PV - P
KEY TRACK	= OFF

Value	Effect
ON	Normal keyboard pitch
OFF	Monotone pitch

B-4 VIBRATO/AUTO BEND

Switches the vibrato and AUTO-BEND functions defined with parameters

A-2 through **A**-10 on and off for the individual SOURCES.

FREQ MOD	PV - P
VIB/A . BEND	= OFF

Value	Effect
ON	Vibrato and AUTO-BEND on
OFF	Vibrato and AUTO-BEND off

B-5 PRS-FREQ

Switches the pressure-frequency link defined with parameter **A**-11 on and off for the individual SOURCES.

FREQ MOD	PV - P
PRS - FREQ	= ON

Value	Effect
ON	Pressure-frequency on
OFF	Pressure-frequency off

B-6 KS-FREQ

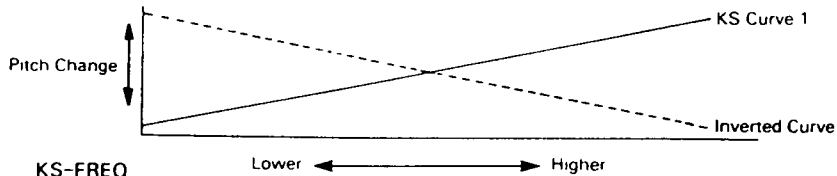
Adjusts the pitch according to the keyboard scaling curve selected by

A-13.

FREQ MOD	PV - P
KS - FREQ	= ± 50

Value	Effect
+50	Maximum effect with normal KS curve
0	No effect
-50	Maximum effect with inverted KS curve

Example



KS-FREQ
= 0 ~ + 50

Lower ← → Higher

KS-FREQ
= 0 ~ - 50

Higher ← → Lower

(4) Group C — WAVE

The parameters in this group determine the waveform.

C -1 WAVE SELECT

Determines the waveforms for the individual SOURCES.

Note: You may select any four from the 52 PCM waveforms and 204 VM waveforms available on the K1/K1m. (See the Wave List)

WAVE	P V - P
SELECT	= 2 5 6

Value	Waveform
1-204	VM waveform
205-256	PCM waveform

C -2/ C -3 AM (Ring Modulation)

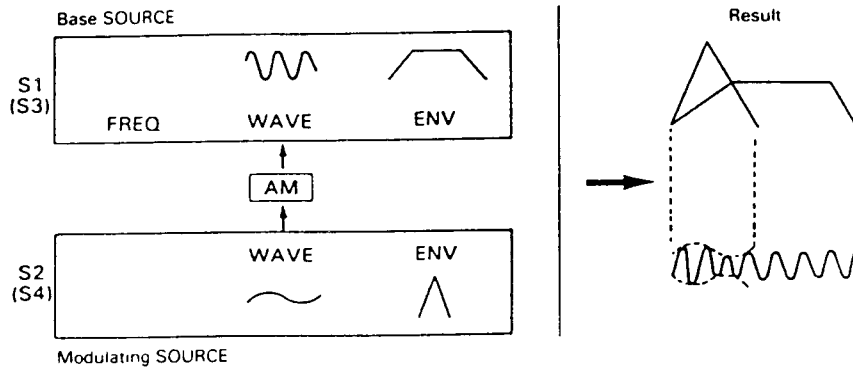
Uses one SOURCE to modulate the output from another. (See illustration.)

This type of modulation produces overloaded sounds that are difficult to produce with harmonic synthesis alone.

Note: The size of the effect depends on the ENV LEVEL for the modulating SOURCE.

AM	P V - P
S 1 . S 2	= 1 - 2

Value	Effect
OFF	No AM (Both SOURCES sound.)
1-2	SOURCE 1 modulates SOURCE 2
2-1	SOURCE 2 modulates SOURCE 1



AM	P V - P
S 3 . S 4	= 4 - 3

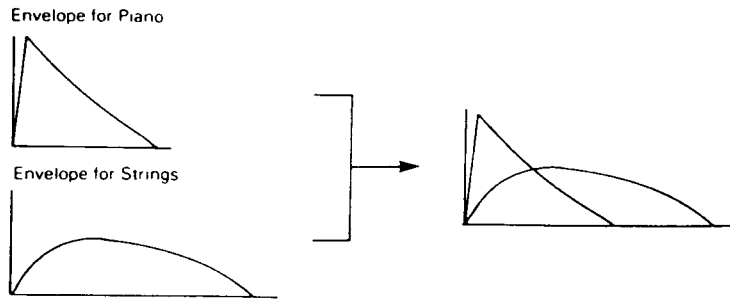
Value	Effect
OFF	No AM (Both SOURCES sound.)
3-4	SOURCE 3 modulates SOURCE 4
4-3	SOURCE 4 modulates SOURCE 3

Note: Even if the base SOURCE is muted, it will still sound if the envelope for the modulating SOURCE is large enough.

C -4 COPY FROM

Copies a block of data (FREQ. WAVE, or ENV) for a SOURCE in the current tone patch to a SOURCE in another tone patch.

Note: This function is useful for mixing parameters from, for example, a PIANO tone patch and a STRINGS tone patch.



COPY PV-P
FROM SINGLE = IA-8

Procedure:

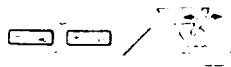
- 1 Use the number switches (5-8) to select the SOURCE number for the destination.

COPY PV-P
FROM SINGLE = IA-8



- 2 Use the + YES / - NO switches or the joystick to select the tone patch number for the SOURCE to be copied.

COPY PV-P
FROM SINGLE = eA-6

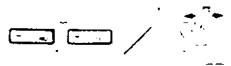


- 3 Press the C switch to change to the SOURCE display.

COPY PV-P
FROM SOURCE = S4

- 4 Use the +YES / -NO switches or the joystick to select the SOURCE to be copied.

COPY PV-P
FROM SOURCE = S1

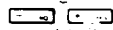


- 5 Press the C switch to change to the confirmation display.

COPY
FROM EXEC ? = - -

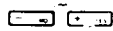
- 6 Press the +YES switch to proceed

COPY
FROM SURE ? = - -



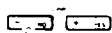
- 7 Press the +YES switch to complete.

COMPLETED!



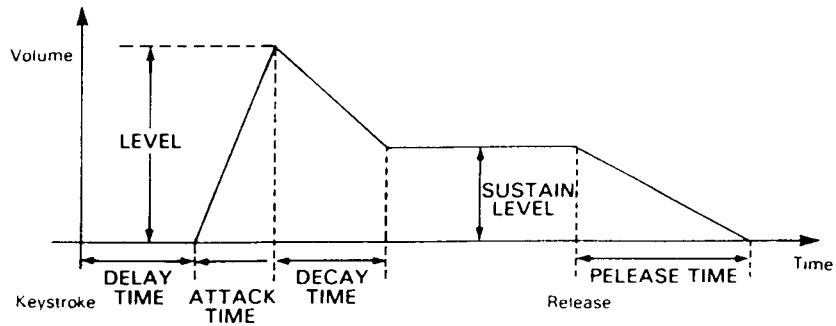
Press the -NO switch to cancel.

CANCELED!



(5) Group D — ENVELOPE

The parameters in this group determine the envelope, the way the volume of a sound changes with time. For example, a note on a piano begins to fade immediately after you strike it, but one on an organ stays at the same volume until you release the key. The graph below defines the five phases of the envelope.



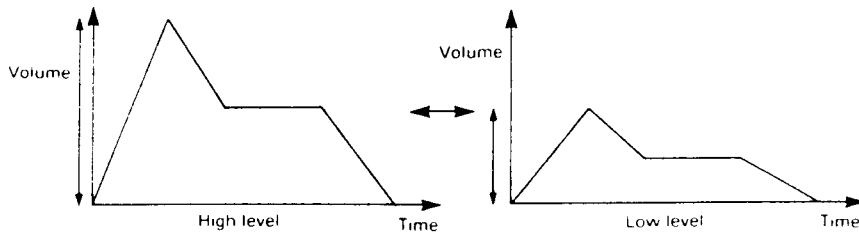
D -1 LEVEL

Determines the overall envelope volume.

Note: These settings affect the balance between individual SOURCES and the size of the amplitude modulation effect

ENVELOPE	PV - P
LEVEL	= 100

Value	Effect
0	No output (mute)
100	Maximum level

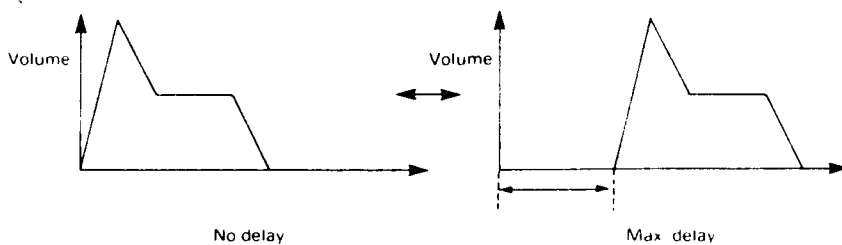


D -2 DELAY

Determines the time that elapses before the keystroke begins producing a sound

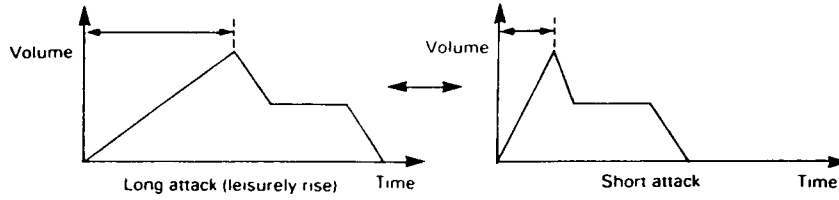
ENVELOPE	PV - P
DELAY	= 100

Value	Effect
0	0
100	Max delay



D -3 ATTACK

Determines the time that the sound takes to peak.

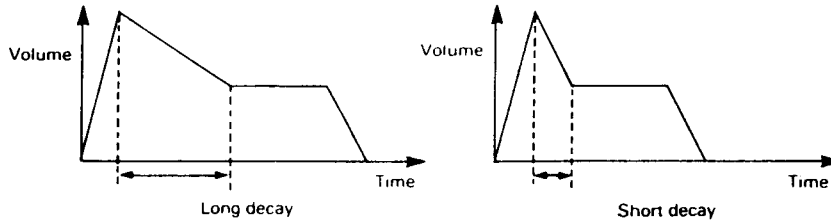


ENVELOPE	PV - P
ATTACK	= 100

Value	Effect
0	Short attack (instantaneous rise)
100	Long attack (leisurely rise)

D -4 DECAY

Determines the time that the sound takes to fall from the peak to the SUSTAIN level.

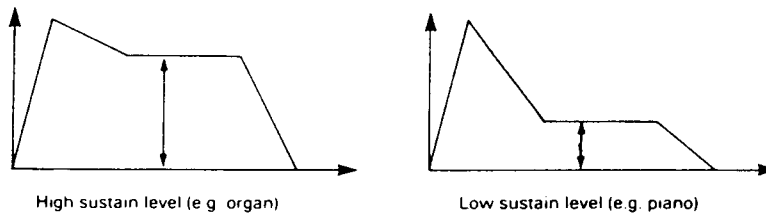


ENVELOPE	PV - P
DECAY	= 100

Value	Effect
0	Instantaneous drop
100	Gradual drop

D -5 SUSTAIN

Determines, relative to the peak, the volume when the key is held down.

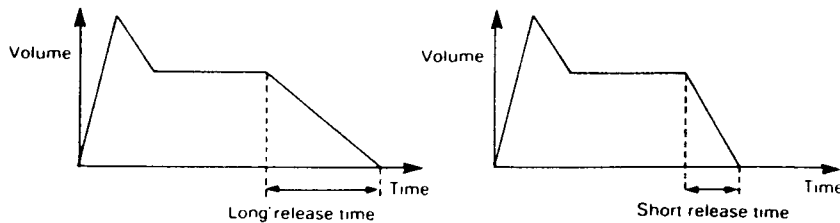


ENVELOPE	PV - P
SUSTAIN	= 100

Value	Volume
0	No sustain (mute)
100	Max sustain

D -6 RELEASE

Determines the time the sound takes to die out after the key is released.

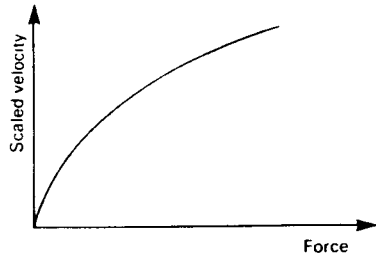


ENVELOPE	PV - P
RELEASE	= 100

Value	Effect
0	Sound dies instantly after release
100	Sound gradually dies out

D -7 VEL CURVE

Determines the curve that **D -8 VEL ENV LEVEL** and **D -11 VEL ENV TIME** use to adjust the overall volume and length, respectively, of the envelope for velocity, the initial force on the key.

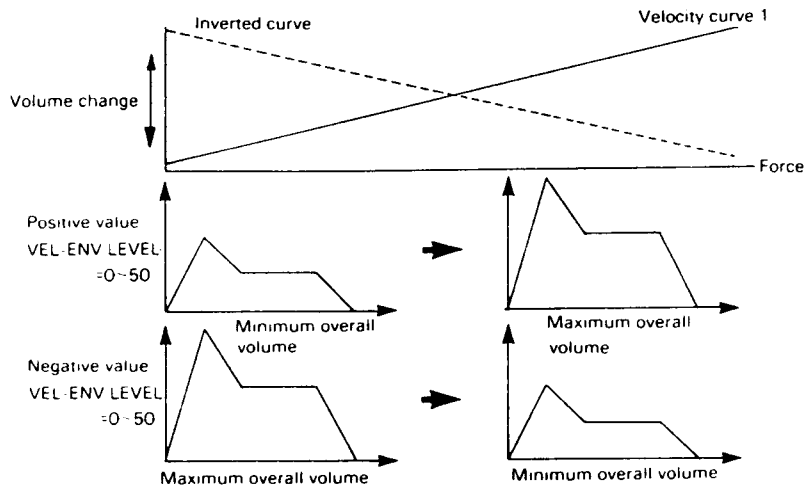


VELOCITY CURVE		PV - P = 8	
Value	Curve	Value	Curve
1		5	
2		6	
3		7	
4		8	

D -8 VEL-ENV LEVEL

Uses **D -7 VEL CURVE** to adjust the overall volume of the envelope.

Example: Velocity curve 1



LEVEL MOD		PV - P = ± 50	
Value	Effect	Value	Effect
+50	Maximum effect		
0	No effect		
-50	Maximum effect with inverted velocity curve		

D -9 PRS ENV LEVEL

Links the overall volume to aftertouch, the amount of pressure on the key.

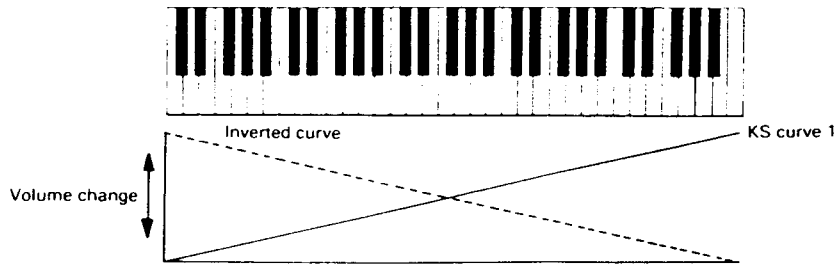
Note: This effect is only available with keyboards that transmit aftertouch data, such as K1.

LEVEL MOD		PV - P = ± 50	
Value	Effect	Value	Effect
-50	Maximum effect		
0	No effect		
50	Maximum effect, but volume decreases with aftertouch		

D -10 KS-ENV LEVEL

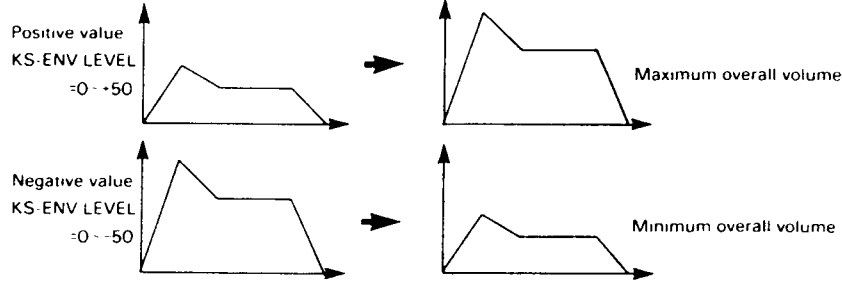
Uses **A** -13 KS CURVE to link the overall volume to key position.

Example: KS curve 1



LEVEL	MOD	PV - P
KS		= - 50

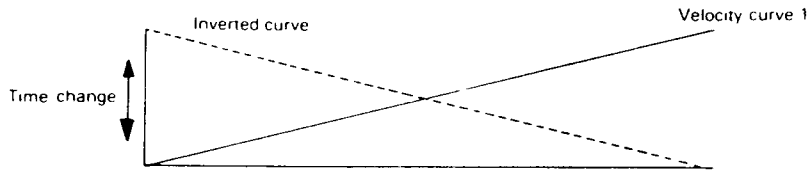
Value	Effect
+50	Maximum effect with normal KS curve
0	No effect
-50	Maximum effect with inverted KS curve



D -11 VEL-ENV TIME

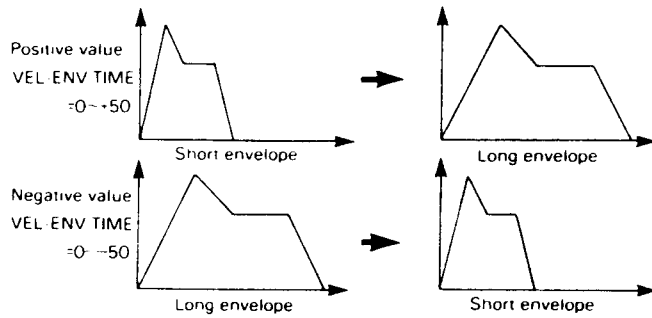
Uses **D** -7 VEL CURVE to link the attack time to velocity.

Example: Velocity curve 1



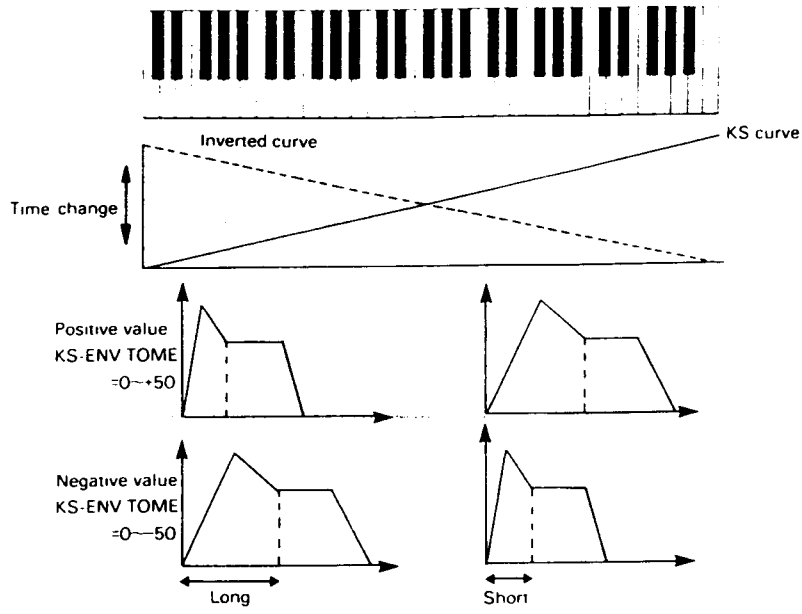
TIME	MOD	PV - P
VEL		= ± 50

Value	Effect
+50	Maximum effect with normal velocity curve
0	No effect
-50	Maximum effect with inverted velocity curve



D -12 KS-ENV TIME

Uses **A** -13 KS CURVE to link the attack and decay time to key position.

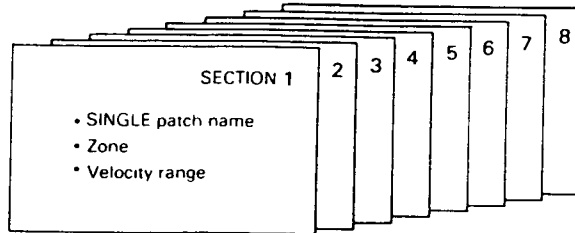


TIME	MOD	PV - P
KS		= 50
Value	Effect	
+50	Maximum effect with normal KS curve	
0	No effect	
-50	Maximum effect with inverted KS curve	

4. Editing MULTI Patches

(1) Basic approach

Each K1/K1m MULTI Patch consists of from one to eight SECTIONS, each consisting of a SINGLE patch with additional control information. Because it would take too much time to construct a tone patch completely from scratch, the usual approach is to select the closest MULTI patch and then edit it.



(2) Procedure

- ① In the PLAY mode, select the MULTI patch that best approximates the desired sound.
- ② Press the **EDIT** switch.

```
MULTI
IA-1 SYMPHONY
```

EDIT

```
MIA-1 SYMPHONY
VOLUME = 100
```

- ③ Select the parameter to be edited.

A **B** **C** **D** or **EDIT** or **STACK**

```
TRANS 21654-3815
= ± 24
```

(3) Edit display

The EDIT display provides five different types of information.

```
Parameter name      1 2 3 4 5 6 7 8  ← SECTIONS
SINGLE patch name = Value
```

- **Parameter name** This indicates the parameter being edited. Change with the letter switches (A, B, C, or D) or the PREVIOUS switch.
- **Parameter value** This gives the parameter value for the SECTION indicated by the cursor. Change with the **+YES** / **-NO** switches or the joystick.
- **Sections** These indicate the current status of the eight possible SECTIONS. A number (1-16) indicates the SECTION's MIDI receive channel and "—" tells that the number of the SECTION's polyphonic voices is 0.
- **Cursor** This underline tells which SECTION is being edited. Use the SOURCE SELECT switches (numbers 1-8) to change SECTIONS.
- **SINGLE patch name** This gives the name of the SINGLE patch currently assigned to this SECTION.

5. MULTI Patch Parameters

(1) **EDIT** switch

There are two parameters that you can edit before proceeding to the ones grouped under the letter switches (A, B, C, and D):

EDIT -1 VOLUME

Determines the volume for the MULTI patch.

Normally, this should be the maximum (100), but it may be necessary to adjust the balance between MULTI patches with this parameter.

Note: The parameter **D** -4 LEVEL adjusts the relative balance between the SECTIONS used in the tone patch.

```
M I A - 1   S Y M P H O N Y
V O L U M E   = 1 0 0
```

Value	Effect
1	Minimum
100	Maximum

EDIT -2 NAME

Assigns a 10-character name for the tone patch.

This name may mix any of the 96 characters:

```
M I A - 1   S Y M P H O N Y
N A M E     = S
```

The procedure is the same as that for SINGLE patch. (See p.19.)

(2) Group **A** — WINDOW 1

This group assigns the SINGLE patches to SECTIONS.

A -1 SINGLE ASSIGN

Determines the SINGLE patches for each SECTION.

Note: The K1/K1m will not allow you to mix internal (I/i) and external (E/e) tone patches. You cannot use an internal SINGLE patch in an external MULTI patch or an external SINGLE patch in an internal MULTI patch, for example.

The MULTI patch remembers only the tone patch number and not tone patch contents. Editing a SINGLE patch will therefore automatically affect all MULTI patches using it as well.


```
S I N G L E   2 1 6 5 4 - 3 8 1 5
S t r E n s   = I A - 8
```

Procedure:

① Select SECTION

```
S I N G L E   2 1 6 5 4 - 3 8 1 5
S t r E n s   = I A - 1
```

② Select the SINGLE patch to be assigned.

/ 

```
S I N G L E   2 1 6 5 4 - 3 8 1 5
O r c h e s t r a   = I A - 5
```

Group **B** — WINDOW 2

The parameters in this group determine the keyboard zone for the SECTION.

B -1 ZONE LO

Determines the lower limit (between C-2 and G8) for the SECTION.

```
Z O N E   L O   2 1 6 5 4 - 3 8 1 5
V o i c e   A h h   = C # - 2
```

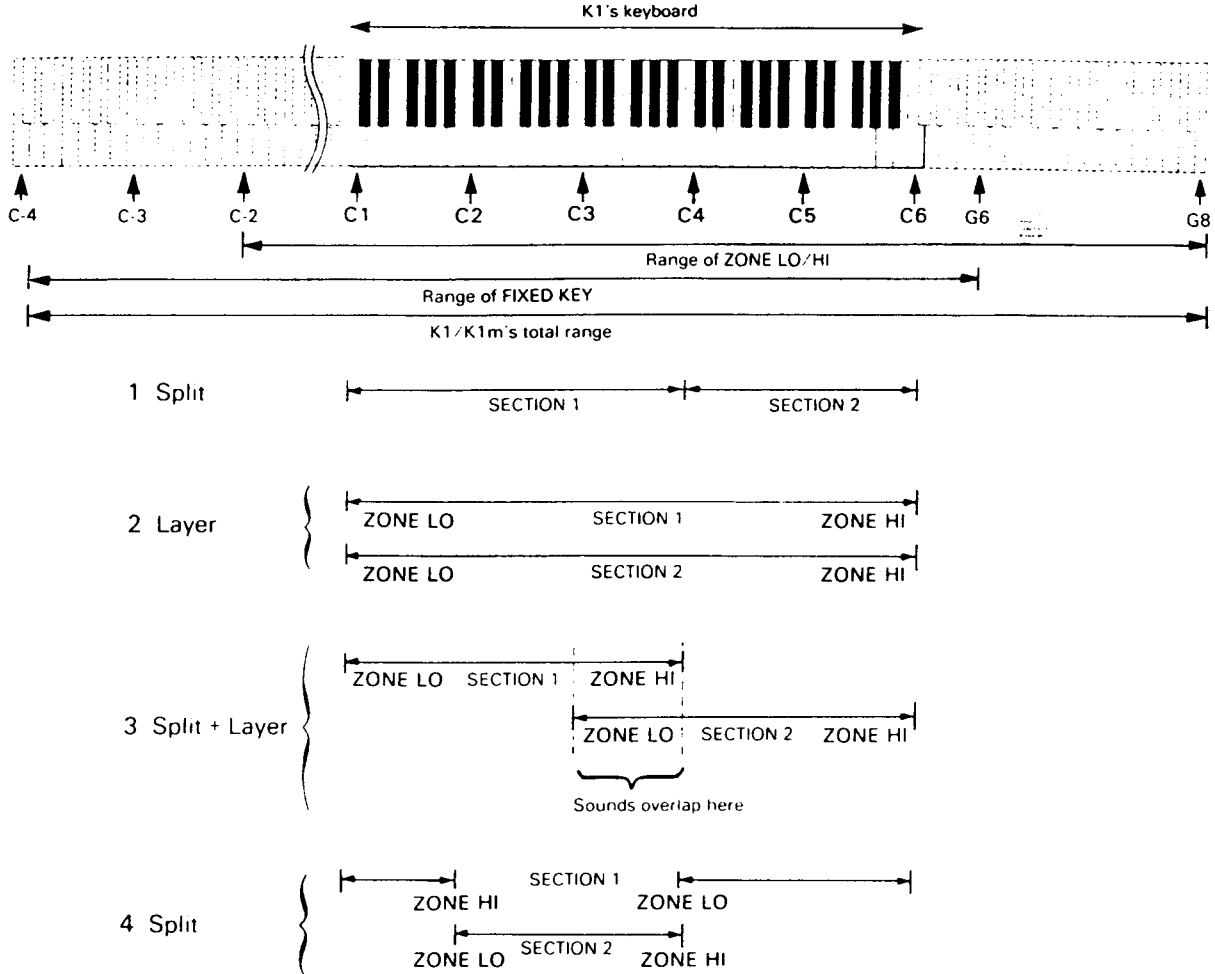
B -2 ZONE HI

Determines the upper limit (between C-2 and G8) for the SECTION.

ZONE HI	21654 - 3815
Voice Ahh	= G 3

Note: The above two parameters serve to divide the K1/K1m's effective keyboard range into zones.

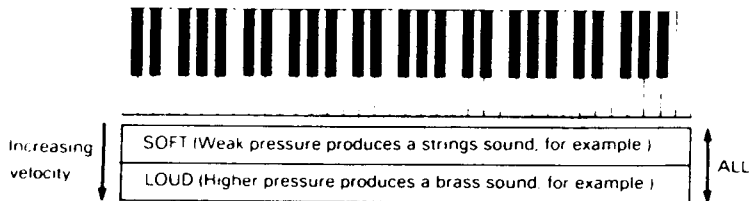
Examples:



B -3 VELOCITY SW

Determines how the SECTION reacts to changes in key velocity

VEL SW	2164 - 41815
Mellow EP	= LOUD



Value	Effect
ALL	All strikes produce a sound
SOFT	Only weak strike produces a sound.
LOUD	Only hard strike produces a sound.

(4) Group **C** – WINDOW 3

The parameters in this group determine the number of polyphonic voices and the MIDI channel assignments.

C-1 POLY

Determines the maximum number of polyphonic voices available for each SECTION. This can be a number, 0-8, or VR (variable). In the latter case, the K1/K1m automatically redistributes voices that are not in use.

Note: The K1/K1m assigns priority to the most recently struck keys.

The VR setting introduces greater flexibility when the K1/K1m is driven by a sequencer, computer, or similar device.

POLY	2 1 6 5 4 - 3 8 1 5
Str	Ens = VR
Value:	Effect
0	None (mute)
1-8	Limit
VR	Variable (All available)

Example:

SECTION 1 Melody

SECTION 2 Piano

SECTION 3 Strings

SECTION 4 Bass

No of simultaneous voices 6 2 7

Consider the following four-part segment. Taken separately, the SECTIONS seem to require 1+3+3+2=9 voices, one more than the eight available. A closer look, however, reveals that the maximum number of notes at any given time is only seven.

Since the second and third SECTIONS do not simultaneously require three voices each, they can share. (Alternatively, since the maximum is within the limit, all four SECTIONS can be made variable.)

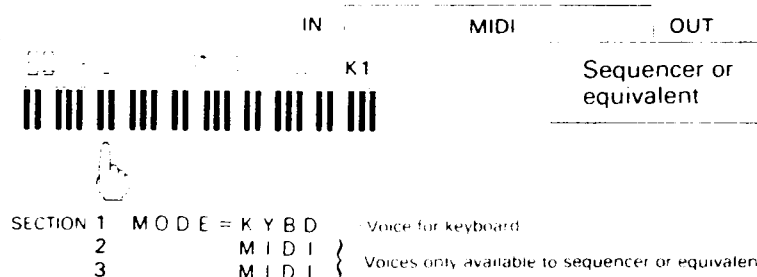
SECTION	Max.	Option 1	Option 2
1	1	1	VR
2	3	VR	VR
3	3	VR	VR
4	2	2	VR

C-2 MODE (K1 only)

Determines whether the SECTION accepts keyboard input, MIDI input, or both. This function allows the simultaneous use of the K1 as a local keyboard and as a remote voices under sequencer control.

Note: This function is available only on the K1 keyboard version.

Example:



MODE	2 1 6 5 4 - 3 8 1 5
Str	Ens = KYBD
Value:	Effect
KYBD	Voice available only to keyboard
MIDI	Voice available only to external MIDI devices
MIX	Voice available to both

C-3 RCV CH

Assigns MIDI receive channels to SECTIONS so that a sequencer or other external device can use the K1/K1m as up to eight different MIDI sound sources.

Note: The channel numbers appear in the upper right corner of the display.

RCV CH	2 1 6 5 4 - 3 8 1 5
Str	Ens = 5
Value:	Effect
1	MIDI receive channel number 1
16	MIDI receive channel number 16

(5) Group **D** — WINDOW 4

The parameters in this group affect SECTION pitch and level.

D-1 TRANSPOSE

Shifts SECTION pitch up or down in increments of a semitone. Combining a SECTION with normal pitch (value=0) with one transposed up 7 or 12 semitones, for example, creates a perfect fifth or octave, respectively.

TRNS	2 16 5 4 - 3 8 15
Str	Ens = ± 2 4

Value	Effect
+24	Two octaves higher
0	Standard pitch
-24	Two octaves lower

D-2 TUNE

Shifts SECTION pitch up or down by small amounts.
Combining SECTIONS with slightly different pitches adds depth to the sound.

TUNE	2 16 5 4 - 3 8 15
Str	Ens = ± 2 4

Value	Effect
+50	Semitone higher
0	Standard pitch
-50	Semitone lower

D-3 LEVEL

Determines the relative volume for each SECTION.

Note: If the value is zero, the SECTION's portion of the upper right corner of the display changes to a dash (-).

LEVEL	2 16 5 4 - 3 8 15
Str	Ens = 1 0 0

Value	Effect
0	Min (mute)
100	Max

D-4 OUTPUT

Determines whether the SECTION output goes to the left channel, right channel, or both. This function allows the routing of specific SECTIONS to a reverberator or other effect.

Note: If there is only one keyboard amplifier, connect it to the R/MONO jack. The K1/K1m will then mix both channels to produce a monaural output.

OUTPUT	2 16 5 4 - 3 8 15
Str	Ens = L + R

Value	Effect
R	Right channel
L+R	Both channels
L	Left channel

IV. WRITE — Storing Edited Tone Patches

1. Definition

When you edit a tone patch, you work with a temporary copy that disappears when you turn off the power. If you wish to save the tone patch for later use, you must store it in the K1/K1m's internal memory or on a DC-8 memory card with the WRITE function.

It is also possible to copy a tone patch from one location to another and to copy all tone patches from the internal memory to a card (SAVE) or in the opposite direction (LOAD). (See p.41, 42.)

Note: Copying data from one location to another involves erasing all data that was formerly at the destination. One way to avoid accidentally erasing valuable data is to keep backup copies on cards.

2. Procedure

To store the tone patch that you are currently editing:

- ① Disable the WRITE PROTECT function.

For an internal tone patch, press the **SYSTEM** switch four times and the **-NO** switch once. (See p.41.)

SYSTEM four times + **-NO**

For an external tone patch, press the **SYSTEM** switch five times and the **-NO** switch once. (See p.41.)

SYSTEM five times + **-NO**

SYSTEM
INT PROTECT = ON

SYSTEM
INT PROTECT = OFF

CARD
PROTECT = ON

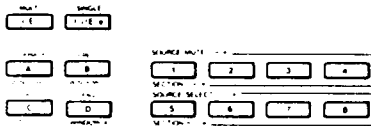
CARD
PROTECT = OFF

- ② Press the **WRITE** switch.

WRITE

WRITE MEA-8
TO EXEC? = - -

- ③ Select the destination.



WRITE MIB-1
TO EXEC? = - -

- ④ Press the **+YES** switch to display the **SURE?** prompt.

+ YES

WRITE MIB-1
TO SURE? = - -

- ⑤ Press the **+YES** switch to complete.

+ YES

COMPLETED!

Or press the **-NO** to cancel.

- NO

CANCELED!

V. LINK Function

1. Definition

The LINK function allows you to link up to eight tone patches — SINGLE or MULTI, INTERNAL or EXTERNAL — from the 192 available and then step through the series during a performance simply by pressing the LINK switches.

2. Procedure

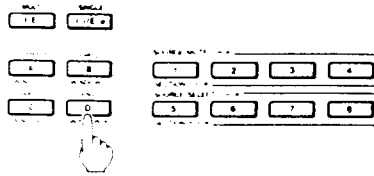
- ① Press the **WRITE** switch twice.



Two times

LINK	S I A - 8
1 S T	

- ② Select a tone patch of the series.



LINK	S I D - 7
1 S T	

- ③ Press the **WRITE** switch and go back to Step 2 to select the next tone patch in the series



LINK	M I B - 2
2 N D	

- ④ Repeat steps ② and ③ another seven times

Note: If there are fewer than eight tone patches in the series, press the **NO** switch at step 2 to terminate.

LINK	OFF
5 T H	

VI. SYSTEM — System and MIDI Parameters

1. SYSTEM Parameters

Pressing the **SYSTEM** switch activates the K1/K1m's **SYSTEM** mode. Subsequent presses then cycle through the parameters, the values of which may be changed with the **+YES** / **-NO** switches or the joystick.

SYSTEM -2 TUNE

Adjusts the K1/K1m's master tuning.

SYSTEM/MIDI
= SYS

SYSTEM
TUNE = 50

Value	Effect
+50	Semitone higher
0	Normal pitch
-50	Semitone lower

SYSTEM -3 TRANSPOSE

Shifts the pitch of all notes up or down in increments of a semitone.

SYSTEM
TRANSPOSE = 12

Value	Effect
+12	One octave higher
0	Normal pitch
-12	One octave lower

SYSTEM -4 INT PROTECT

Controls the WRITE PROTECT function for the K1/K1m's internal memory. It must be OFF for a LOAD operation.

SYSTEM
INT PROTECT = ON

SYSTEM -5 CARD PROTECT

Controls the WRITE PROTECT function for the memory card.

Note: You should normally keep the preceding two parameters ON to prevent accidental erasure of valuable data.

CARD
PROTECT = ON

SYSTEM -6 CARD FORMAT

Prepares a DC-8 memory card (option) for the first use with the K1/K1m.

Note: Proceed with caution. This procedure erases any data that may be on the card.

Procedure:

- ① Insert the card in the slot.
- ② Press the **+YES** switch to proceed to the **SURE?** prompt

+YES

CARD FORMAT
EXEC? = --

CARD FORMAT
SURE? = --

- ③ Press the +YES switch to complete the operation.

+ YES

COMPLETED!

Or press the -NO to cancel.

- NO

CANCELED!

SYSTEM -7 SAVE

Copies all data from the internal memory to a card.

Set SYSTEM -5 CARD PROTECT to OFF beforehand.

Note: Proceed with caution. This procedure erases any data that may be on the card.

Procedure:

- ① Insert the card in the slot.

SAVE EXEC? = - -

- ② Press the +YES switch to proceed from the EXEC? prompt to the SURE? prompt.

+ YES

SAVE SURE? = - -

- ③ Press the +YES switch to complete the operation.

+ YES

COMPLETED!

or press the -NO switch to cancel.

- NO

CANCELED!

SYSTEM -8 LOAD

Copies all data from a card to the internal memory.

Set SYSTEM -4 INT PROTECT to OFF beforehand.

Note: Proceed with caution. This procedure erases any data that may be on the card.

Procedure:

- ① Insert the card in the slot.

LOAD EXEC? = - -

- ② Press the +YES switch to proceed from the EXEC? prompt to the SURE? prompt.

+ YES

LOAD SURE? = - -

- ③ Press the +YES switch to complete the operation.

+ YES

COMPLETED!

Or press the -NO switch to cancel.

- NO

CANCELED!

2. MIDI Transmission Parameters

Press the **SYSTEM** switch and then use the **+YES** / **-NO** switches or the joystick to change from SYS to TRS. Subsequent presses of the **SYSTEM** switch then cycle through the parameters, the value of which may be changed with the **+YES** / **-NO** switches or the joystick.

SYSTEM TRS-2 TRS CH (K1 only)

Determines the MIDI channel (1-16) on which the K1 keyboard transmits MIDI data.

SYSTEM TRS-3 PGM (K1 only)

Determines whether the K1 transmits program change data.

SYSTEM TRS-4 PRS (K1 only)

Determines whether the K1 transmits pressure (aftertouch) data.

SYSTEM TRS-5 BEND (K1 only)

Determines whether the K1 transmits PITCH BEND data.

SYSTEM TRS-6 MOD (K1 only)

Determines whether the K1 transmits MODULATION data.

SYSTEM TRS-7 HOLD (K1 only)

Determines whether the K1 transmits HOLD pedal data.

SYSTEM TRS-8 DATA DUMP

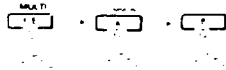
Transmits tone patch data from one K1/K1m to another — either one tone patch at a time or as one block consisting of 32 tone patches.

Procedure:

- Connect the two units as shown.
On the receiving unit, set **SYS** -4 INT PROTECT to OFF and **RCV** -11 EXCL to ON beforehand.

- Select the tone patch or block to send.

Example



- Press the **SYSTEM** switch and shift to the DATA DUMP display.

- Use the **+YES** / **-NO** switches or the joystick to select PACH or BLOCK.

- NO + YES

- Press the **SYSTEM** switch to display the EXEC? prompt.

SYSTEM

SYSTEM/MIDI = SYS

SYSTEM/MIDI = TRS

MIDI TRS CH = 16

MIDI TRS PGM = ON

MIDI TRS PRS = OFF

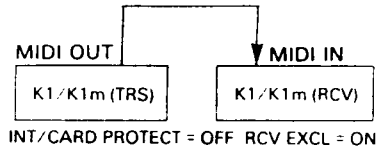
MIDI TRS BEND = ON

MIDI TRS MOD = OFF

MIDI TRS HOLD = ON

MIDI MIA-8 DUMP EXEC? = - -

Value	Effect
PACH	One tone patch is transmitted at a time.
BLOK	One block is transmitted at a time.



MULTI IA-8 MARCH BAND

MIDI MIA-8 DATA DUMP = BLOK

MIDI MIA-8 DATA DUMP = PACH

MIDI MIA-8 DATA EXEC? = - -

- ⑥ Press the **+YES** switch to proceed to the **SURE?** prompt.

+ YES

MIDI MIA-8
DATA SURE? ..

- ⑦ Press the **+YES** switch to complete the dump.

+ YES

COMPLETED!

Or press the **-NO** switch to cancel.

- NO

CANCELED!

3. MIDI Receive Parameters

Press the **SYSTEM** switch and then use the **+YES** / **-NO** switches or the joystick to change from **SYS** to **RCV**. Subsequent presses of the **SYSTEM** switch then cycle through the parameters, the value of which may be changed with the **+YES** / **-NO** switches or the joystick.

SYSTEM/MIDI = SYS

SYSTEM/MIDI = RCV

SYSTEM RCV-2 RCV CH

Determines the MIDI channel (1-16) on which the K1/K1m receives.

Note: The SECTIONS in a MULTI patch receive on independent channels.

MIDI RCV CH = 16

SYSTEM RCV-3 OMNI ON/OFF

Determines whether the K1/K1m monitors all MIDI channels.

MIDI OMNI = OFF

SYSTEM RCV-4 PGM

Determines how the K1/K1m acts on program change data.

There are four possibilities: (See accompanying chart.)

- OFF The synthesizer ignores all incoming program change commands.
- NORM (Normal) A program change command between 0 and 63 changes the synthesizer to a SINGLE patch; one between 64 and 127, to a MULTI patch.
- SECT (Section) A program change command between 0 and 63 changes the SINGLE patch for the SECTION with the same MIDI channel; one between 64 and 127, changes to a MULTI patch.
- LINK A program change command changes the synthesizer to the next tone patch in the series.

MIDI RCV PGM = NORM

Note: For NORM and SECT, the synthesizer chooses the same bank (INT/EXT) as the patch currently on the display.

Value PGM No.	OFF	NORM		SECT		LINK	Transmitting	
		INT	EXT	INT	EXT	LINK	INT	EXT
0—31	Nothing recognized	SIA-1 ~SID-8	SEA-1 ~SED-8	SIA-1 ~SID-8	SEA-1 ~SED-8	No.1—No.8	SIA-1 ~SID-8	SEA-1 ~SED-8
32—63	Nothing recognized	SiA-1 ~SiD-8	SeA-1 ~SeD-8	SIA-1 ~SID-8	SEA-1 ~SED-8	No.1—No.8	SiA-1 ~SiD-8	SeA-1 ~SeD-8
64—95	Nothing recognized	MIA-1 ~MID-8	MEA-1 ~MED-8	MIA-1 ~MID-8	MEA-1 ~MED-8	No.1—No.8	MIA-1 ~MID-8	MEA-1 ~MED-8
96—127	Nothing recognized	MIA-1 ~MID-8	MEA-1 ~MED-8	MIA-1 ~MID-8	MEA-1 ~MED-8	No.1—No.8	Nothing transmitted	Nothing transmitted

SYSTEM RCV-5 PRS

Determines whether the K1/K1m acts on pressure (aftertouch) data.

MIDI
RCV PRS = OFF

SYSTEM RCV-6 BEND

Determines whether the K1/K1m acts on PITCH BEND data.

MIDI
RCV BEND = ON

SYSTEM RCV-7 MOD

Determines whether the K1/K1m acts on MODULATION data.

MIDI
RCV MOD = OFF

SYSTEM RCV-8 VOL

Determines whether the K1/K1m acts on VOLUME data.

MIDI
RCV VOL = ON

SYSTEM RCV-8 HOLD

Determines whether the K1/K1m acts on HOLD pedal data.

MIDI
RCV HOLD = OFF

SYSTEM RCV-10 VEL

Determines whether the K1/K1m acts on VELOCITY data.

MIDI
RCV VEL = ON

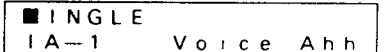
SYSTEM RCV-11 EXCL

Determines whether the K1/K1m acts on SYSTEM EXCLUSIVE data.

MIDI
RCV EXCL = OFF

Note: MIDI RCV INDICATOR

Every time the K1/K1m receives MIDI data, the sign appears at the upper left corner.

MIDI RCV INDICATOR


VII. Error Messages

(1) PROTECTED

The WRITE PROTECT parameter for the destination (internal memory or card) is ON. Turn it OFF. (See p.41.)

PROTECTED!

(2) NO CARD

The card is not correctly inserted.
Insert it firmly.

NO CARD!

(3) ID ERROR

The card is not ready for use with the K1/K1m. Format it. (See p.41.)

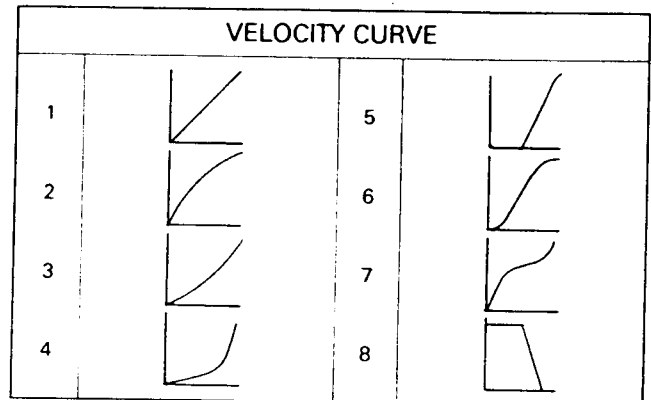
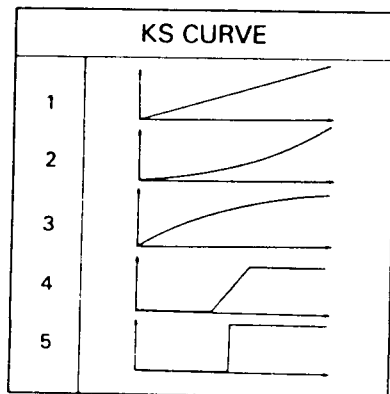
ID ERROR!

VIII. Appendices

1. SINGLE Patch Parameters

K1 SINGLE PARAMETERS

EDIT	1 VOLUME	1-100	2-11 NAME	10 characters		
COMMON A	1 SOURCES -VIBRATO-	2/4	-AUTO BEND-			
	2 DEPTH	±50	7 DEPTH	±50	11 PRS-FREQ	±50
	3 SPEED	0-100	8 TIME	0-100	12 PITCH BEND	0-12
	4 SHAPE	TRI/SAW/SQR/ RND	9 VEL-DEPTH	±50	13 KS CURVE	1-5
	5 PRS-DEPTH	±50	10 KS-TIME	±50	14 POLY MODE	PL1/PL2/SOLO
	6 WHEEL	DEP/SPD				
SW	PARAMETER		S1	S2	S3	S4
FREQ B	FREQ	1 COARSE (FIXED KEY)	±24 C-4~G6	KEY TRACK=ON KEY TRACK=OFF		
		2 FINE	±50			
	FREQ MOD	3 KEY TRACK	on/off			
		4 VIBRATO/AUTO BEND	on/off			
		5 PRS-FREQ	on/off			
		6 KS-FREQ	±50			
WAVE C	WAVE	1 WAVE SELECT	1-256			
	AM	2 AM S1.S2	off/1-2/2-1			
		3 AM S3.S4	off/3-4/4-3			
	COPY	4 COPY FROM	1A-8~eD-8 S1~S4			
ENV D	ENVELOPE	1 LEVEL	0-100			
		2 DELAY	0-100			
		3 ATTACK	0-100			
		4 DECAY	0-100			
		5 SUSTAIN	0-100			
		6 RELEASE	0-100			
	VEL CURVE	7 VELOCITY CURVE	1-8			
	LEVEL MOD	8 VEL-ENV LEVEL	±50			
		9 PRS-ENV LEVEL	±50			
		10 KS-ENV LEVEL	±50			
	TIME MOD	11 VEL-ENV TIME	±50			
		12 KS-ENV TIME	±50			



2. MULTI Patch Parameters

K1 MULTI PARAMETERS

EDIT	1 VOLUME 2-11 NAME	1~100 10 characters								
SW	PARAMETER	SC1	SC2	SC3	SC4	SC5	SC6	SC7	SC8	
WINDOW 1	1 SINGLE (assign)	IA-1~iD-8 (name)								
WINDOW 2	1 ZONE LO 2 ZONE HI 3 VEL SW	C-2~G8 C-2~G8 ALL/SOFT/LOUD								
WINDOW 3	1 POLY 2 MODE (K1 only) 3 RCV CH	VR.0~8 KYBD/MIDI/MIX 1~16								
WINDOW 4	1 TRANSPOSE 2 TUNE 3 LEVEL 4 OUTPUT	±24 ±50 0~100 R/L+R/L								

AUX Parameters

K1 AUX PARAMETERS

SW	PARAMETER		VALUE			
WRITE	1 WRITE 2 LINK 1ST 3 LINK 2ND 9 LINK 8TH		select with panel sw select with panel sw select with panel sw select with panel sw			
SYSTEM	1 SYSTEM/MIDI		SYS/TRS/RCV			
	SYS		TRS		RCV	
	2 SYSTEM TUNE	±50	2 MIDI trs CH	1~16	2 MIDI rcv CH	1~16
	3 TRANSPOSE	±12	3 PGM	on/off	3 OMNI	on/off
	4 INT PROTECT	on/off	4 PRS	on/off (K1 only)	4 PGM	OFF/NORM /SECT/LINK
	5 CARD PROTECT	on/off	5 BEND	on/off (K1 only)	5 PRS	on/off
	6 CARD-FORMAT-EXEC		6 MOD	on/off (K1 only)	6 BEND	on/off
	7 SAVE EXEC		7 HOLD	on/off (K1 only)	7 MOD	on/off
	8 LOAD EXEC		8 MIDI DATA DUMP EXEC	BLOCK/PATCH	8 VOL	on/off
					9 HOLD	on/off
					10 VEL	on/off
					11 EXCL	on/off
STICK	STICK CONTROL		OFF/BAL			

Function ...		Transmitted	Recognized	Remarks
Basic Channel	Default	1—16	1—16	Memorized
	Changed	1—16	1—16	
Mode	Default	—	1, 3	Memorized MONO ignored
	Messages	×	OMNI on/off	
	Altered	***		
Note Number	: True voice	24—108	0—127	
		***	0—127	
Velocity	Note ON	*	*	
	Note OFF	×	×	
After Touch	Key's	×	×	
	Ch's	*	*	
Pitch Bender		*	*	
Control Change	1	×	*	Modulation
	7	×	*	Volume
	64	×	*	Hold 1
	100, 101 6	*(0, 1) *	*(0, 1) *	RPC Data entry
Prog Change	: True #	*	*	96—127 → 65—95
		***	0—95	
SystemExclusive		*	*	
System Common	: Song Pos	×	×	
	: Song Sel	×	×	
	: Tune	×	×	
System Real Time	: Clock	×	×	
	: Commands	×	×	
Aux Messages	: Local ON/OFF	×	×	
	: All Notes OFF	○ (123)	○ (123~127)	
	: Active Sense	○	○	
	: Reset	×	×	
Notes		* Can be set to ○ or × Memorized even after turning off the power RPC #0=Pitch Bender sensitivity #1=Master fine tuning Values are given by Data entry		

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

○ : Y
 × : N

Function ...		Transmitted	Recognized	Remarks
Basic Channel	Default	1—16	1—16	Memorized
	Changed	1—16	1—16	
Mode	Default	—	1, 3	Memorized
	Messages	×	OMNI on/off	MONO ignored
	Altered	***		
Note Number	: True voice	×	0—127	
		***	0—127	
Velocity	Note ON	×	*	
	Note OFF	×	×	
After Touch	Key's	×	×	
	Ch's	×	*	
Pitch Bender		×	*	
Control Change	1	×	*	Modulation
	7	×	*	Volume
	64	×	*	Hold 1
	100, 101 6	*(0, 1) *	*(0, 1) *	RPC Data entry
Prog Change	: True #	*	*	96—127 — 65—95
		***	0—95	
SystemExclusive		*	*	
System Common	: Song Pos	×	×	
	: Song Sel	×	×	
	: Tune	×	×	
System Real Time	: Clock	×	×	
	: Commands	×	×	
Aux Messages	: Local ON/OFF	×	×	
	: All Notes OFF	×	○ (123 ~ 127)	
	: Active Sense	○	○	
	: Reset	×	×	
Notes		* Can be set to ○ or × Memorized even after turning off the power RPC #0=Pitch Bender sensitivity #1=Master fine tuning Values are given by Data entry		

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

○ : Y
 × : N

3. Specifications

K1/K1m

Pitch range Number of keys Voices Tone patches	C-4~G8 61 (K1 only) 16 max. (32 SOURCES) 96 internal (64 SINGLE, 32 MULTI) 96 external (64 SINGLE, 32 MULTI) per DC-8 card (available separately)
SINGLE EDIT	<p>EDIT : VOLUME, NAME</p> <p>A COMMON : SOURCE 2/4 (Shared by all SOURCES) VIBRATO DEPTH-SPEED-SHAPE-PRS→DEPTH, WHEEL ASSIGN, AUTO BEND DEPTH-TIME-VEL→DEPTH-KS→TIME, PRS→FREQ, PITCH BEND, KS CURVE, POLY MODE</p> <p>B FREQ : COARSE (FIXED KEY), FINE, KEY TRACK. (For each SOURCE) VIBRATO/AUTO BEND on off, PRS→FREQ on off, KS→FREQ on off</p> <p>C WAVE : WAVE SELECT, AM S1.S2 AM S3.S4, COPY FROM (For each SOURCE)</p> <p>D ENV : LEVEL, DELAY, ATTACK, DECAY, SUSTAIN RELEASE, (For each SOURCE) VEL CURVE, LEVEL MOD VEL-PRS-KS, TIME MOD VEL-KS</p>
MULTI EDIT The functions in parentheses are available only on the K1	<p>EDIT : VOLUME, NAME</p> <p>A WINDOW1 : SINGLE ASSIGN</p> <p>B WINDOW2 : ZONE LO-HI, VEL SW</p> <p>C WINDOW3 : POLY, (MODE), RCV CH</p> <p>D WINDOW4 : TRANSPOSE, TUNE, LEVEL, OUTPUT</p>
WRITE	WRITE LINK 1ST~8TH
SYSTEM The functions in parentheses are available only on the K1.	<p>SYS : TUNE, TRANSPOSE, INT PROTECT, CARD PROTECT, CARD FORMAT, SAVE, LOAD</p> <p>TRS : CH, PGM, (PRS), (BEND), (MOD), (HOLD), DATA DUMP</p> <p>RCV : CH, OMNI, PGM, PRS, BEND, MOD, VOL, HOLD, VEL, EXCLUSIVE</p>
STICK	STICK CONTROL
Controls The functions in parentheses are available only on the K1	(PITCHBEND WHEEL), (MODULATION WHEEL), STICK, VOLUME, PATCH SELECT Switch, WRITE Switch, SYSTEM Switch, STICK Switch, POWER Switch, DC IN, OUTPUT R/MONO-L, PHONES JACK, CARD SLOT, MIDI IN-OUT-THRU
Display Dimensions (W × D × H) Weight Power consumption	<p>16 × 2 LCD back lit</p> <p>K1 936 mm (36.9") × 260 mm (10.3") × 80 mm (3.2") K1m 370 mm (14.6") × 201 mm (7.9") × 58 mm (2.3")</p> <p>K1 6.8kg (15.1 lbs) K1m 1.3kg (2.8 lbs)</p> <p>K1 4w K1m 4w</p>
Accessories	<p>K1 AC adapter Owner's Manual Data format Audio cable</p> <p>K1m AC adapter Owner's Manual Data format MIDI cable</p>

Note: Appearance and specifications subject to change without prior notice.

KAWAI

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