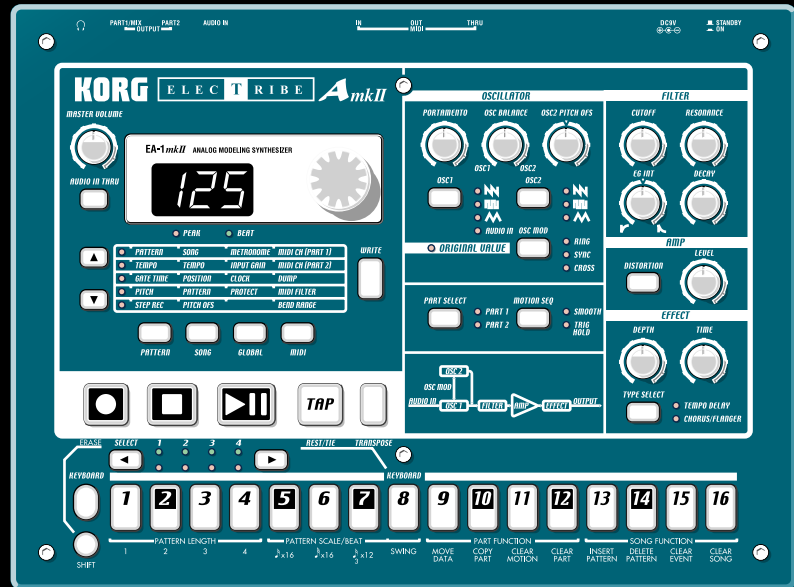


ELECTRIBE

AmkII



Owner's Manual

EA-1mkII ANALOG MODELING SYNTHESIZER

Thank you purchasing the Korg ELECTRIBE·AmkII EA-1mkII. In order to enjoy long and trouble-free use, please read this manual carefully and use the instrument correctly.

KORG

Precautions

Location

Using the unit in the following locations can result in a malfunction.

- In direct sunlight
- Locations of extreme temperature or humidity
- Excessively dusty or dirty locations
- Locations of excessive vibration
- Close to magnetic fields

Power supply

Please connect the designated AC adapter to an AC outlet of the correct voltage. Do not connect it to an AC outlet of voltage other than that for which your unit is intended.

Interference with other electrical devices

Radios and televisions placed nearby may experience reception interference. Operate this unit at a suitable distance from radios and televisions.

Handling

To avoid breakage, do not apply excessive force to the switches or controls.

Care

If the exterior becomes dirty, wipe it with a clean, dry cloth. Do not use liquid cleaners such as benzene or thinner, or cleaning compounds or flammable polishes.

Keep this manual

After reading this manual, please keep it for later reference.

Keeping foreign matter out of your equipment

Never set any container with liquid in it near this equipment. If liquid gets into the equipment, it could cause a breakdown, fire, or electrical shock.

Be careful not to let metal objects get into the equipment. If something does slip into the equipment, unplug the AC adapter from the wall outlet. Then contact your nearest Korg dealer or the store where the equipment was purchased.

THE FCC REGULATION WARNING (for U.S.A.)

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

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

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

CE mark for European Harmonized Standards

CE mark which is attached to our company's products of AC mains operated apparatus until December 31, 1996 means it conforms to EMC Directive (89/336/EEC) and CE mark Directive (93/68/EEC).

And, CE mark which is attached after January 1, 1997 means it conforms to EMC Directive (89/336/EEC), CE mark Directive (93/68/EEC) and Low Voltage Directive (73/23/EEC).

Also, CE mark which is attached to our company's products of Battery operated apparatus means it conforms to EMC Directive (89/336/EEC) and CE mark Directive (93/68/EEC).

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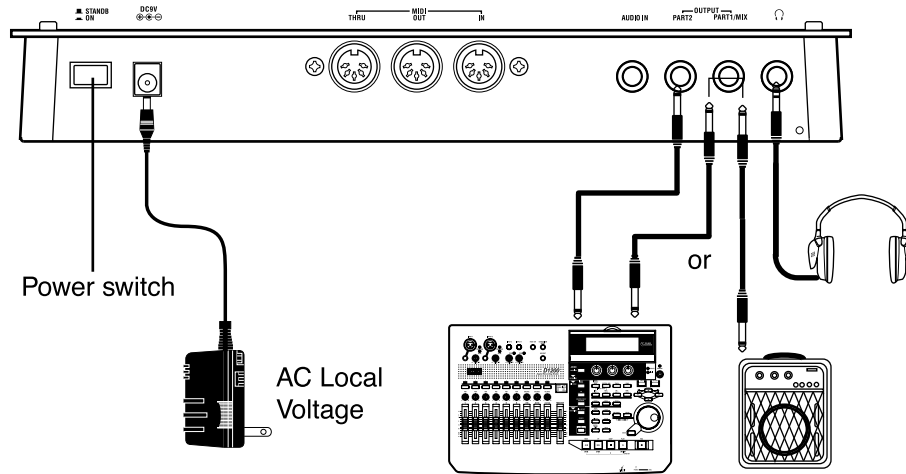
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Make connections and play!

Example connections



Preparing to play

⚠ Be sure to turn off the power before making connections. Careless operation may damage your speaker system or cause malfunctions.

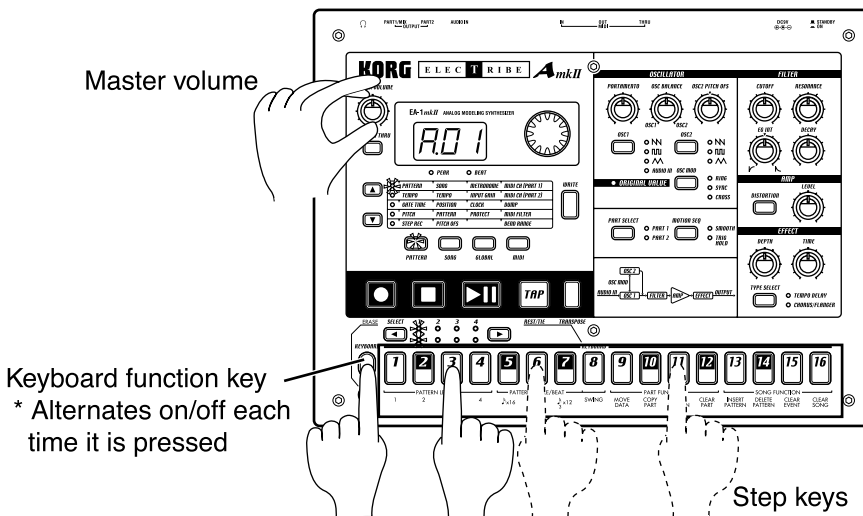
1. Connect the included AC adapter to the DC 9V jack, and plug the adapter into an AC outlet.

⚠ As shown in the above diagram, hook the AC adapter cable around the adapter cable holder. When removing the cable from the holder, do not use excessive force.

2. Connect one end of your audio cables to the Part output jacks of the EA-1mkII (PART1/MIX, PART2), and connect the other end to your mixer. The output of the EA-1mkII is not stereo, but is independent for each part, so you will need to make pan adjustments on your mixer. If you wish to mix the two parts for output, connect your powered monitor speaker (amplified speaker) to the PART1/MIX jack.

3. If you will be using headphones, connect them to the headphone jack. The headphone output is monaural.

⚠ The output from the Part output jacks will not be switched off even if headphones are plugged in.



4. When you have finished making connections, turn on the power. Slightly raise the master volume of the EA-1mkII, and press the Keyboard function key. Press the step keys to produce sound and verify that connections have been made correctly. Use the master volume of the EA-1mkII and the gain and fader controls of your mixer or powered monitor system to adjust the volume to an appropriate level.

Synthesizer section

1. OSCILLATOR

This produces the basic waveform.

- **PORTAMENTO**

This smoothly connects changes in pitch.

- **OSC BALANCE**(oscillator balance)

When **OSC MOD** is off and you are using **RING** or **SYNC**, this knob adjusts the level balance of the two oscillators. When you are using **CROSS**, this knob adjusts the depth of oscillator modulation.

- **OSC2 PITCH OFF**(oscillator 2 pitch offset)

Adjust the pitch difference between **OSC1** and **OSC2**.

- **OSC1**(oscillator 1 wave)

Select the waveform for **OSC1**.

- **OSC2**(oscillator 2 wave)

Select the waveform for **OSC2**.

- **OSC MOD**(oscillator modulation)

Specify the type of oscillator modulation.

2. Original value LED

This will light when the knob you are currently moving reaches the value of the original saved sound of the pattern.

3. MOTION SEQ(motion sequence)

This function allows you to loop knob movements. Each time you press this key, the setting will alternate between Off (dark), **SMOOTH** and **TRIG HOLD**.

4. PART SELECT key

Each time you press this key, **PART 1** and **PART 2** will alternate as the part selected for editing.

5. Synthesis diagram

This is a block diagram for the synthesizer section of the **EA-1mkII**.

6. FILTER

These controls let you adjust the brightness of the sound or add a distinctive tonal character.

- **CUTOFF**: Adjust the cutoff frequency of the filter.

- **RESONANCE**: Adjust the resonance of the filter.

- **EG INT**(EG intensity): Adjust the depth of the filter envelope.

- **DECAY**: Adjust the decay speed of the filter envelope.

7. AMP

Here you can adjust the volume level and the distortion effect.

- **DISTORTION**: Switch distortion on/off.

- **LEVEL**: Adjust the volume level.

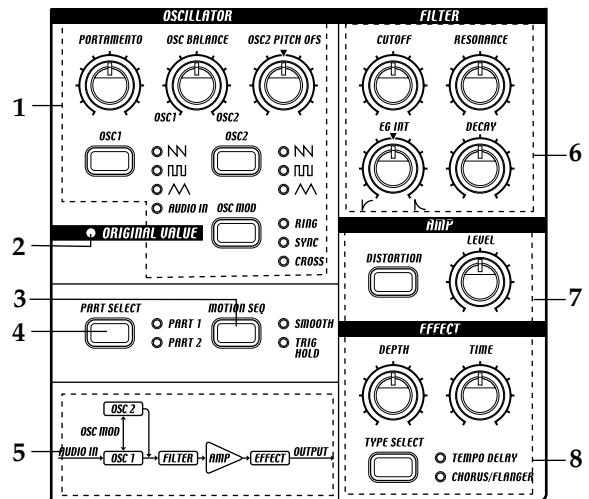
8. EFFECT

Here you can add effects to the sound.

- **DEPTH**: Adjust the depth of the effect (tempo delay, chorus/flanger).

- **TIME**: Adjust the delay time, or the speed of the chorus/flanger LFO.

- **TYPE SELECT**: Choose the effect (tempo delay or chorus/flanger) that will be adjusted by the Depth and Time controls.



5. SHIFT key

This key is used in conjunction with other keys. When held down, it gives an additional function to another key.

SHIFT + Play/Pause key: Play back from the beginning of the pattern.

SHIFT + Rec key: During playback, erase triggers from the pattern.

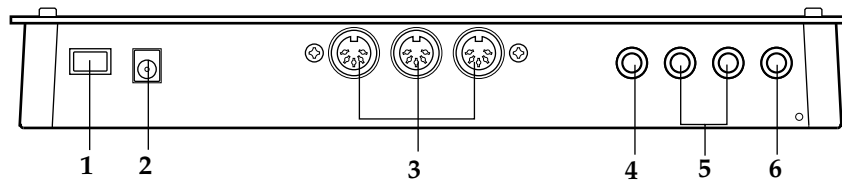
SHIFT + Step keys: Execute the function shown below each step key.

SHIFT + dial: If the Shift key is held down as you rotate the dial, the value in the display will change in steps of ten.

SHIFT + SELECT key: In Pattern mode, the target step will be advanced by one.

For other **SHIFT** key combinations, refer to the explanation of each parameter.

Connector section



1. Power switch

This switch turns the power on/off. Each time you press it, the power will alternate on or off.

2. DC 9V

Connect the included AC adapter here.

3. MIDI connectors

IN MIDI data is received at this connector to control the **EA-1mkII** from an external MIDI device or to receive a data dump.

OUT MIDI data is transmitted from this connector to control an external MIDI device or to transmit a data dump.

THRU MIDI data received at the **MIDI IN** connector is re-transmitted without change from this connector. This is used to "daisy-chain" multiple MIDI devices.

4. AUDIO IN jack

This jack receives the signal that will be used for **AUDIO IN** of **OSC1**. The sound that is input here will be used as the sound of **OSC1**.

5. PART1/MIX, PART2 (part output jacks)

Connect your audio cables from these jacks to send the sound of Parts 1 and 2 separately to your mixer or powered monitor system (powered speakers) etc. If you wish to output the sound of Parts 1 and 2 together, make connections to the **PART1/MIX** jack.

6. (headphone jack)

A set of stereo headphones fitted with a stereo jack plug can be connected here. The output is monaural.

3. Basic operation (Quick Start)

Conceptual diagram of the EA-1mkII

On the EA-1mkII, a song consists mainly of Patterns (which consist of Parts and delay settings) and event data (refer to p.37 "Recording knob movements or your performance in a song (Event Recording)").

Structure of Song

Songs: S01...S16

Pattern order	Event data
A03	Part Trigger
B53	Part Pitch
C07	Gate Time
D06	
A52	
B17	
.	
.	
End	

Patterns: A01...D64

Pattern data	Part data
Tempo	Part 1
Length	Part 2
Beat/Scale	

Part

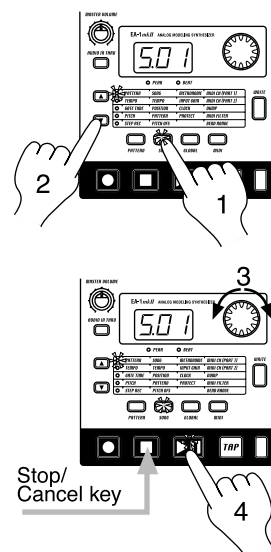
Synthesizer	Phrase pattern	Motion sequence
Portamento		
OSC Balance		
OSC1	Trigger	
OSC2	Pitch	
.	Gate Time	
Filter		
AMP		
Effect		

Listening to a Song

1. Press the Song Mode key to enter Song mode (the key will light).
2. Use the cursor [\blacktriangle][\blacktriangledown] keys to make the parameter select LED indicate SONG (the top LED).
3. Rotate the dial to select the desired song (S01...S16).
4. Press the Play/Pause key to playback the song (the key will light). When the song ends, playback will stop automatically (the key will go dark).

To pause during playback, press the Play/Pause key (the key will blink). To resume playback, press the Play/Pause key once again (the key will light). To stop playback, press the Stop/Cancel key.

It is not possible to change songs during playback.



What is a Song?

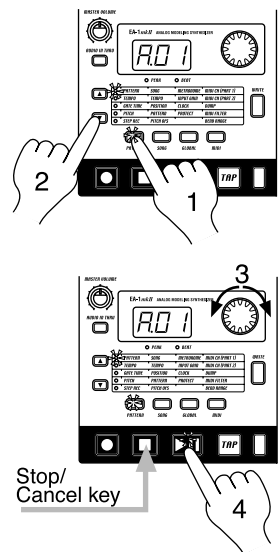
On the EA-1mkII, a song is musical data consisting of Patterns arranged in the desired playback order. The EA-1mkII lets you create and store up to sixteen songs. In each song you can arrange up to 256 patterns, and phrase and knob movements can also be recorded in addition to the playback. (Refer to p.34 "Song mode.")

Song



Listening to Patterns

1. Press the Pattern mode key to enter Pattern mode (the key will light).
2. Use the cursor [▲][▼] keys to make the parameter select LEDs indicate PATTERN (top).
3. Rotate the dial to select the desired pattern (A01...A64, b01...b64, C01...C64, d01...d64).
4. Press the Play/Pause key to playback the pattern (the key will light).



When pattern playback ends, the pattern will return to the beginning, and continue playing repeatedly.

To pause during playback, press the Play/Pause key (the key will blink). To resume playback, press the Play/Pause key once again (the key will light). To stop playback, press the Stop/Cancel key.

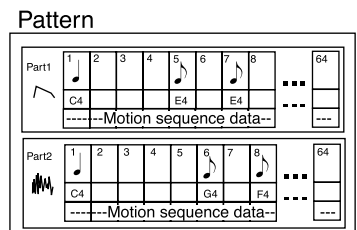
You can rotate the dial to select patterns when playback is stopped or even during playback.

When you change patterns during playback, the change will actually occur at the end of each pattern. (Refer to p.22 "The timing at which patterns will change.")

What is a Pattern?

A pattern is a unit of musical data consisting of sounds arranged in a phrase. On the EA-1mkII you can create and save 256 patterns.

Each pattern consists of two parts (refer to p.14). In addition to the sounds of each part, you can also record phrases and knob movements (refer to p.22 "Pattern mode").



Trying out the functions

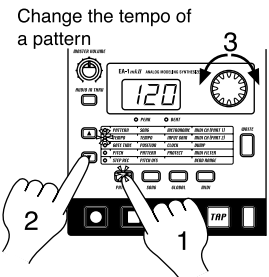
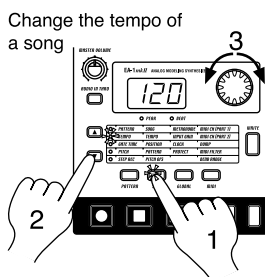
Changing the tempo of a song or pattern

There are two ways to change the tempo.

The tempo that you change here will return to the original tempo when you stop playback and switch to a different pattern or song.

• Using the dial to change the tempo

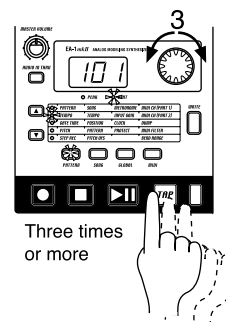
1. Press the Mode key to enter Song mode or Pattern mode.
2. Use the cursor [▲][▼] keys to set the parameter select LED to TEMPO.
3. Rotate the dial to change the tempo.



• Using the Tap Tempo key to change the tempo


While a song or pattern is playing, press the TAP key three times or more at the desired tempo. The EA-1mkII will detect the interval at which you pressed the TAP key, and will set the tempo accordingly. The tempo can also be changed in this way even if the EA-1mkII is not currently playing a song or pattern.

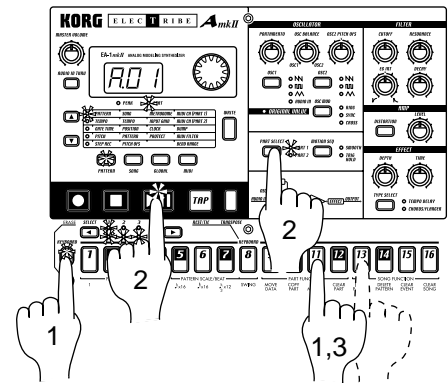
Use the cursor [▲][▼] keys to make the parameter select LEDs indicate TEMPO, and the tempo you modified will appear in the display.



Playing the sound of a part along with a song or pattern

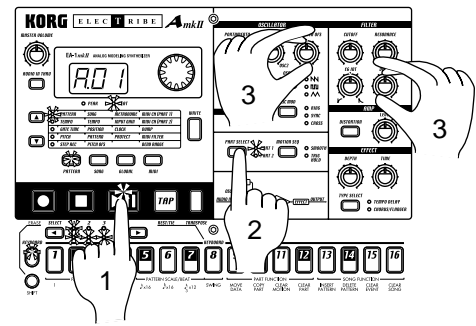
1. Turn on the Keyboard function key, and press the step keys to play the sound.
2. In Song mode or Pattern mode, press the Play/Pause key to begin playback. Use the PART SELECT key to select the part that you wish to play.
3. As you listen to the song or pattern, strike the step keys to play along.

 Each part is a monophonic synthesizer. It is not possible for a single part to sound two or more notes simultaneously.




Modify (edit) the sound along with a song or pattern

1. In Song mode or Pattern mode, press the Play/Pause key to begin playback.
2. Press the PART SELECT key to select the part whose sound you wish to edit.
3. Use the knobs and keys of the Synthesizer section to modify the sound. The sound of the part that is playing will be modified as you move the knobs or keys.



To save the pattern sounds that you modify here, use the Write operation (refer to p.17 "Saving a pattern that you create").

If you re-select a pattern or turn off the power without performing the Write operation, the sound will return to its unedited state.

 It is not possible to write the sounds you edit in a Song. Only in a Pattern can you write the edited sounds.

Modifying (editing) a phrase pattern

What is a Phrase Pattern?

A phrase pattern consists of a trigger (note location), pitch, and gate time (note length) at each step. You can modify the phrase pattern for each part by using the sixteen step keys (or by realtime input along with the playback). (Refer to p.22 "Pattern mode.")

Phrase pattern

	Timing of sounds																Time
Note trigger	On 1	Off 2	Off 3	On 4	On 5	Off 6	Off 7	Off 8	Off 9	On 10	Off 11	Off 12	Off 13	On 14	Off 15	Off 16	
Pitch	C4			E4	C4					A3				C4			
Note value																	

A phrase pattern can be edited in three ways.

- **Realtime recording**
While you playback a pattern, use the Keyboard function to record a new phrase along with the playback.
- **Step recording**
With pattern playback stopped, input pitches one at a time to create a phrase.
- **Event editing**
Edit the data (trigger, pitch, gate time) for individual steps to create a phrase.

7. Use the step keys to input the pitch for each note of the phrase. (The target step will automatically advance by one step each time you do so.)
8. Recording will end when you input the last step or press the Stop/Cancel key (the Rec key will go dark).

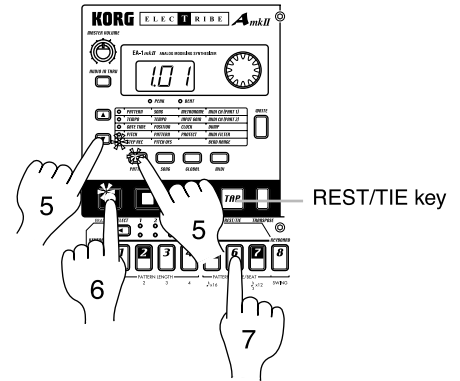
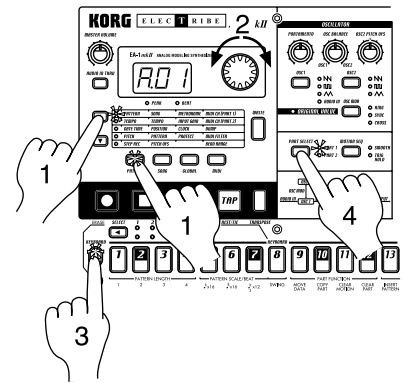
To input a rest, press the **RESET/TIE** key. To enter a tie, continue holding down the step key (the sound will continue) and press the **RESET/TIE** key.

During recording, you can rotate the dial to move the target step forward or backward. You can jump to a specific step by holding down the **SHIFT** key and pressing the desired **SELECT** key.

If you wish to save the completed pattern, press the **WRITE** key. (Refer to p.17 "Saving a pattern that you create.")

In step recording, the trigger and pitch are recorded simultaneously, but it is not possible to make detailed settings for the gate time. If you wish to create a pattern in more detail, use Event Edit (refer to p.28 "Event editing") to re-adjust the trigger and pitch, or to adjust the gate time.

For details on the target step, refer to p.27 "Target step."



Saving a pattern that you create

With the factory settings, memory protect will be on, and it will not be possible to save data. Before you save data, you must turn off the Memory Protect settings in Global mode. (Refer to p.40 "Protect settings.")

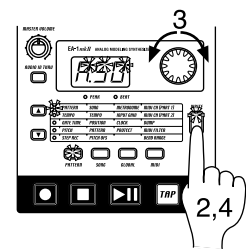
Please be aware that when you save data, the pattern in the save destination will be overwritten.

1. Edit a pattern as described in "Modifying the sound" or "Modifying (editing) a phrase pattern."
2. Press the **WRITE** key once (the key will blink). The display will blink to indicate the pattern number.
3. Rotate the dial to select the pattern number in which the data will be saved (i.e., the "save destination").
4. Press the **WRITE** key once again to begin saving the data. While the data is being saved, the key will blink. When saving is complete, the key will go dark.

If you decide to cancel, press the Stop/Cancel key. If you do not wish to save the pattern you created, simply select a different pattern without performing the Write operation.

Never turn off the power while data is being saved to memory (i.e., while the Write key is lit). Doing so may damage the data.

It is not possible to Write data during playback or recording.




Connecting various sources to the audio input

Let's try connecting various types of audio device (radio, or MD or CD player) or tone generator to the audio input jack.

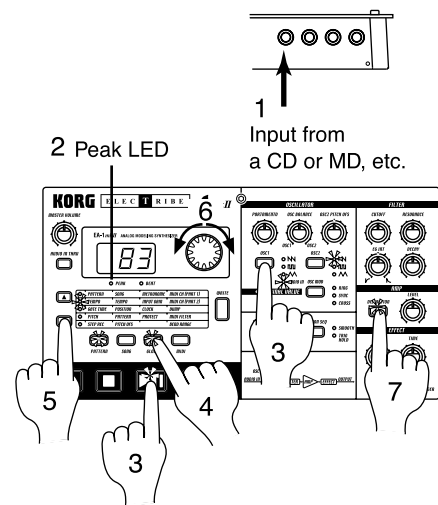
Try out various types of sounds or music. Depending on the content, you may discover unexpectedly interesting results.

1. Connect an audio device etc. to the audio input of the **EA-1mkII**. The input jack is monaural, so you may need to use a stereo-mono adapter plug, depending on the device you are connecting.
2. Adjust the output level of the connected device so that the peak LED lights only at the maximum levels. At this time you can turn on the **AUDIO IN THRU** key (the key will light) to hear the input sound.
3. Select the pattern or song whose volume you wish to adjust, press the **OSC1** key to select **AUDIO IN**, and begin playback.
4. Press the mode key to enter Global mode.
5. Use the cursor [**▲**][**▼**] keys to set the parameter select LED to **INPUT GAIN**.
6. Rotate the dial to adjust the input volume to create a balance with the volume of the other part.
7. Move the knobs and keys of the Synthesizer section to apply filtering or effects to the input signal.

 If you wish to use the audio input for the **OSC1**, you must turn the **AUDIO IN THRU** key off (key is dark).

Line-level input is recommended for the audio input. It is not possible to directly connect a mic or turntable etc.

If the Input Gain setting is too high, the sound may be distorted.



Playing with Pattern Set

What is Pattern Set?

Pattern Set is a function that lets you register a favorite pattern to each of the sixteen step keys, and use the step keys to switch patterns. You can use this function to play a performance simply by selecting patterns one after the other.

When you hold down the Keyboard function key (the key will blink) and press one of the sixteen step keys, the pattern registered for that key will be selected. At this time you can use the **SELECT** keys to change the pattern set group indicated by the red select LEDs (lower line) 1--4, to use 16 x 4 (total of 64) pattern sets.

If during playback you hold down the Keyboard function key and press another step key, the pattern assigned to that key will begin playing when the currently-playing pattern finishes playing. (Refer to p.32 "Pattern Set.")

While the Keyboard function key is blinking, it will control the Pattern Set function.

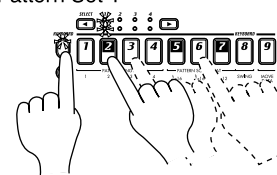
If you hold down the **SHIFT** key and press the Keyboard function key, the Pattern Set function will be held. (The Keyboard function key will blink.)

To defeat this "hold" condition, press the Keyboard function key once again.

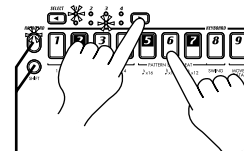
You can assign new pattern sets. (Refer to p.32, "Registering a pattern for Pattern Set.")

If you switch patterns during playback, the change will occur when each pattern finishes playing. (Refer to p.22 "The timing at which patterns will be switched.")

Pattern Set 1



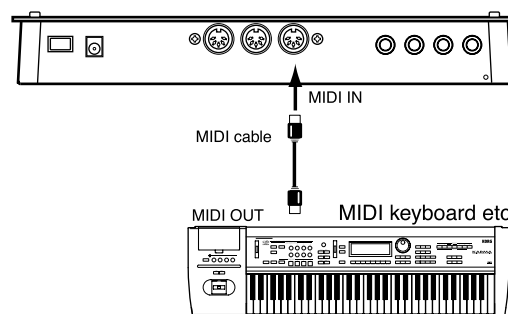
Pattern Set 3



Hold down the **SHIFT** key and press the Keyboard function key to hold the Pattern Set function.

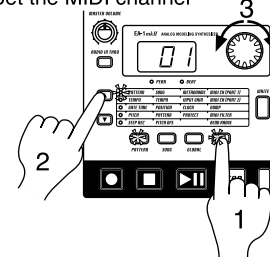
Using the EA-1mkl as a tone generator module

Read this section when you wish to use the EA-1mklII with other connected MIDI equipment. Use a MIDI cable to connect the MIDI OUT connector of your MIDI keyboard etc. to the MIDI IN connector of the EA-1mklII.



1. Press the MIDI mode key to enter MIDI mode.
2. Use the cursor [**▲**]/[**▼**] keys to make the parameter select LEDs indicate **MIDI CH[PART 1]**.
3. Set the channel of the transmitting device to match the channel of the EA-1mklII. (Refer to p.41 "Setting the MIDI channel of part 1.")
4. Play the connected MIDI keyboard etc., and the sound of part 1 will be heard.

Set the MIDI channel



If you are connecting a multi-track MIDI sequencer, use the cursor [**▲**]/[**▼**] keys to make the parameter select LEDs indicate **MIDI CH[PART 2]**, and set the MIDI channel for part 2 as you did for part 1. (Refer to p.41 "Setting the MIDI channel of part 2.") Set each part to the MIDI channel of the track that you want it to play, and start playback on your sequencer to hear the sound.

For details on the EA-1mklII's MIDI functionality, refer to p.43 "About MIDI."

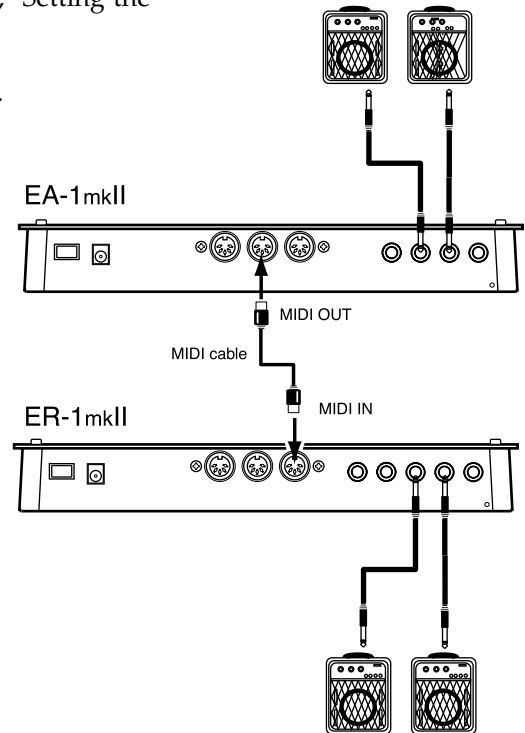
If you wish to save the settings of MIDI mode or Global mode, you must perform the Write operation in either of these modes. (Refer to p.40 "Saving the settings you modify in Global mode," or p.42 "Saving the settings you modify in MIDI mode.")

Synchronized playback with the ER-1mkII

By synchronizing the **Electribe EA-1mkII** and **ER-1mkII** you can enjoy even greater performance possibilities. Here's how you can make the **ER-1mkII** playback in synchronization with the tempo of the **EA-1mkII**.

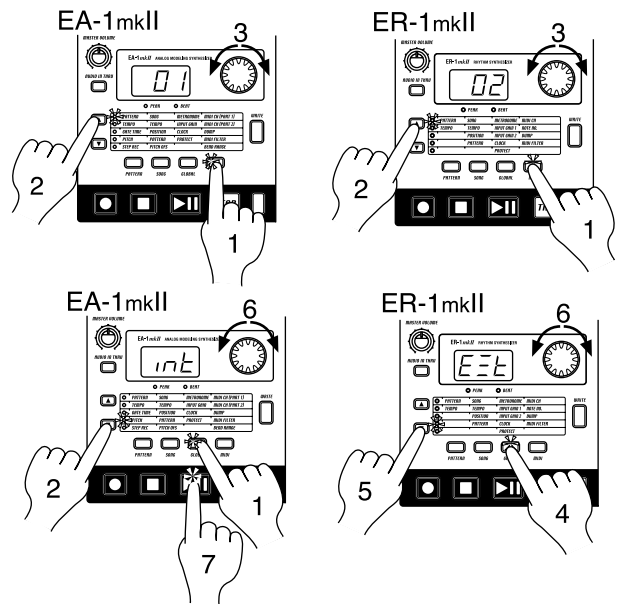
Use a MIDI cable to connect the **MIDI OUT** connector of the **EA-1mkII** to the **MIDI IN** connector of the **ER-1mkII**. Connect the part output jacks of the **EA-1mkII** and the line output jacks of the **ER-1mkII** to your mixer or powered monitor system (amplified speakers).

1. Press the MIDI mode key to move to MIDI mode.
2. Use the cursor [▲][▼] keys to make the parameter select LEDs indicate **MIDI CH[PART 1]**.
3. Set the **EA-1mkII** channel to "01," and the **ER-1mkII** channel to "10."
(Refer to p.41 "Setting the MIDI channel of part 1.", "Setting the MIDI channel of part 2.")
4. Press the Global mode key to move to Global mode.
5. Use the cursor [▲][▼] keys to make the parameter select LEDs indicate **CLOCK**.
6. Set the **EA-1mkII** to "int," and the **ER-1mkII** to "Ext."
(Refer to p.39 "Synchronizing the EA-1mkII with external MIDI device.")
7. Press the Play/Pause key of the **EA-1mkII** to start a pattern or song. (The Play/Pause key will light.) The **ER-1mkII** will play the pattern in synchronization with the tempo of the **EA-1mkII**.



If you want the **EA-1mkII** and **ER-1mkII** to play the identically-numbered pattern in synchronization, make the following settings.

- Synchronizing the **ER-1mkII** to the **EA-1mkII** as master. (Set the **EA-1mkII** to "int," and the **ER-1mkII** to "Ext.")
- Set the **EA-1mkII** and **ER-1mkII** to the same MIDI channel (for example, set both to "01").
- On the **EA-1mkII** and **ER-1mkII**, set the MIDI filter setting "P" to "O" (refer to p.42 "MIDI filter settings").
- On the **ER-1mkII**, set the MIDI note number setting to **C-1...A-1** or **A#8...G9**. (This will prevent the **ER-1mkII** from being sounded unintentionally when note-on messages are received.)



It is also easy to make the **EA-1mkII** playback in synchronization by connecting it to a sequencer or synthesizer that can transmit and receive MIDI Clock messages.

Selecting a pattern


You can use the **PART SELECT** key to switch the part that will be edited or played using the Keyboard function.

When you select a Part, the LED for that part will light, and you can edit it in the Synthesizer section, or edit a phrase pattern. At this time if the Keyboard function key is off (dark), the step keys will indicate the trigger locations (refer to p.28) of the phrase pattern for that part.

If the Keyboard function key is on (lit) while a pattern is playing back, the step keys will light in succession to indicate the pitch that the currently selected part is sounding. If the Keyboard function key is off (dark), the step keys will indicate the trigger locations for the phrase pattern of the currently selected part, and the step that is currently playing.

Creating a pattern


There are two ways to create a pattern. You can start with a pattern that is similar to the desired result and then edit it, or you can create a sound and phrase pattern for each part from scratch. Either way, the **EA-1mkII** makes it easy for you to create your own original patterns.

 If you wish to save a pattern you create, you must perform the Write operation before you select a different pattern or turn off the power.

Editing the sound of a part

Select a pattern that is close to what you have in mind (or a pattern which contains no sound or phrase). Use the **PART SELECT** key to select the part that you wish to edit. Then operate the knobs and keys to edit the sound. At this time, the Original Value LED will light when the knob etc. that you are currently moving reaches the same value as the original sound of the pattern. Referring to the example sounds in the appendix (p.46) will help you learn how to create your own sounds.

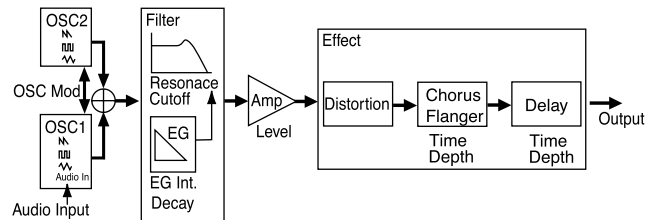
You can also edit while playing back a pattern. It is also possible to use an external MIDI device to control the value of each knob (refer to p.43 "About MIDI").

 If the sound does not change when you rotate a knob or switch the setting of a key, either another knob or key has been set so that the parameter you are attempting to adjust has no effect, or the Motion Sequence function (p.29 "Motion Sequence") is operating.

Synthesizer parameters

OSCILLATOR

This specifies the basic waveform and pitch of the sound.



PORTAMENTO

0...100


This parameter creates a smooth change in pitch from one note to the next. As this knob is turned further toward the right, the pitch will change more slowly.

If portamento is raised excessively, a certain amount of time will elapse before the destination pitch is reached.

OSC BALANCE (oscillator balance)


OSC1...OSC2

When **OSC MOD** is off and you are using **RING** or **SYNC**, this knob adjusts the volume balance of the two oscillators. If you turn the knob all the way to one side, the level will be zero for the other oscillator. When you are using **CROSS**, this knob adjusts the depth of oscillator modulation.

 **OSC BALANCE** does nothing if the **OSC MODE** is **CROSS** and you select **AUDIO IN** for **OSC 1**.

CUTOFF

Set the cutoff frequency of the low-pass filter. Overtones higher than the cutoff frequency will be cut, making the sound more mellow.

-  If CUTOFF and EG INT are set to 0, you will hear virtually no sound.


RESONANCE

This parameter adds character to the sound by boosting the region around the cutoff frequency. If you raise the resonance and turn the CUTOFF knob (or adjust EG INT and DECAY), you will hear the typical "meow-ing" sound typical of analog synthesizers.

If the resonance is raised, the sound may be distorted depending on the cutoff frequency or on the pitch that you play.

EG INT (EG intensity) -100...0...100

Specify the depth and direction of the effect that the EG (envelope generator) will have on the cutoff frequency. The EG will start when trigger-on occurs (the instant you play the keyboard). If this knob is in the center position, the EG will have no effect.

-  If the gate time length of a step extends beyond the point at which the next step is sounded, the EG will not be re-triggered for the next step.

DECAY 0msec...10sec

Specify the time over which the EG will decay. In conjunction with the CUTOFF and EG INT parameters, this controls the way in which the sound will change over time. If EG INT is set to a negative (-) setting, Decay Time can be used in place of Attack Time.

AMP

These parameters adjust the volume level and distortion effect.

DISTORTION On, Off

Turn distortion on/off. Distortion is an effect that intentionally distorts the sound to produce a hard sound even from a mellow waveform. It is highly effective to raise the resonance and use distortion.

LEVEL

Adjust the volume.

EFFECT

Here you can apply effects to the sound.

TYPE SELECT

TEMPO DELAY, CHORUS/FLANGER


The DEPTH and TIME knobs will edit the effect that is selected by TYPE SELECT.

Tempo Delay settings

Set the TYPE SELECT button to TEMPO DELAY, and adjust the delay. Delay is an effect that plays back a time-delayed version of the original signal, and is also known as "echo." TEMPO DELAY is a delay that can automatically synchronize the delay time to the tempo of a pattern. If the MIDI Clock parameter is set to "Ext" (external), the delay time can also be synchronized to the clock of an external device. (Refer to p.39 "Synchronizing the EA-1mkII and an external MIDI device.")


- DEPTH (delay depth)

Adjust the depth of the delay and the amount of feedback (the number of delay repeats). Rotating the knob toward the right will increase the level of the delayed sound and the amount of feedback.

-  Raising the Depth excessively may cause the sound to distort.

- TIME (delay time) 1/4...8

Set the delay time. Rotating the knob toward the right will lengthen the delay time. If you have selected Tempo Delay as the effect type, this parameter will let you set the tempo in terms of sixteen different multiples of the step: 1/4, 1/3, 1/2, 2/3, 3/4, 1, 1.33, 1.5, 2, 2.5, 3, 4, 5, 6, 7, or 8.


-  Depending on the tempo setting, it may be impossible to set the delay time. In such cases, set the delay time to half the desired value.

Chorus/Flanger settings

Set the TYPE SELECT button to CHORUS/FLANGER, and adjust the chorus/flanger. Chorus creates minute differences in the pitch to produce an ensemble effect, and Flanger adds a "swooshing" modulation to the sound.

- DEPTH (chorus/flanger depth)

Adjust the depth of the chorus/flanger effect. Rotating the knob toward the right will change from a chorus effect to a flanger effect.

-  Raising the depth excessively may cause the sound to distort.

TIME (LFO rate) 0.2 Hz ... 5,000 Hz

Adjust the LFO speed of the chorus/flanger. Rotating the knob toward the right will speed up the LFO.

Creating a phrase pattern

There are three ways to create a phrase pattern.

Realtime recording

Use the Keyboard function to play the step keys at the exact timing you wish to record them.

Step recording

Use the Keyboard function to specify the pitch of the note for each target step to create the phrase.

Event editing

Edit the data (trigger, pitch, gate time) for each step to create the phrase.

If you wish to erase the phrase of each part before you create your own rhythm data, refer to p.29 "Erasing phrase data from a part."

Realtime recording

Please refer to "Realtime recording (Using the Keyboard function to create a phrase)" (p.16) in chapter 3. Basic operation (Quick Start).


Step recording

Please refer to "Step recording (Using the step keys to create a phrase)" (p.16) in chapter 3. Basic operation (Quick Start).

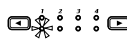
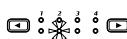
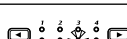
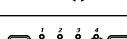
About the Target Step


Target Step 1.01...4.16

The value shown in the display when the parameter select LEDs indicate **STEP REC** is called the "target step." The value shown in the display indicates the location of a certain step in the phrase pattern. To change the target step, you can use the dial or press one of the sixteen step keys. Alternatively, you can hold down the **SHIFT** key and use the **SELECT** keys to move forward or backward in single steps.

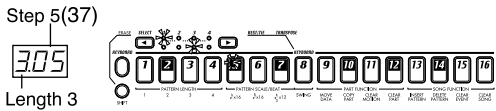
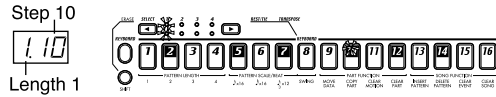
 The maximum number of steps will depend on the length and scale/beat settings.

In the case of a pattern with a length of 2 or greater, you can use the **SELECT** keys to move the select LED in the lower line (red) in order to change the length that is shown by the step keys, and verify or modify the trigger locations.

Length	Select LED display	Area shown by the step keys	
		For ♩ x 16, ♪ x 16	For ♩3 x 12
1		Steps 1...16	Steps 1...12
2		Steps 17...32	Steps 13...24
3		Steps 33...48	Steps 25...36
4		Steps 49...64	Steps 37...48

 When the Keyboard function key is on, the step keys will not indicate the target step. When the Keyboard function is off, the step key corresponding to the target step will blink.

Example display



Event editing

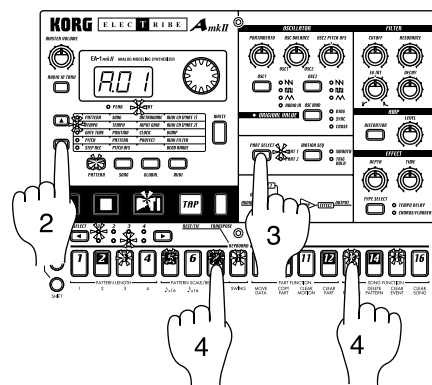
A phrase pattern consists of the following three data items for each step. For each step, you can set these three items.

- Trigger: Whether or not a note will sound
- Pitch: The pitch that will be sounded
- Gate time: The duration of the sound

Step	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Trigger	On	On		On	On	On				On	On		On	
Pitch	C2	G2		F2	D2	D2				A1	E2		A2	
Gate time (duration of the sound)	1.25	2.00		0.5	0.5	4.00				1.50	2.00		1.00	

Changing the trigger settings

1. Turn off the Keyboard function key (the key will be dark).
2. Use the cursor keys to make the parameter select LEDs indicate either **PATTERN**, **TEMPO**, or **STEP REC**.
3. Use the **PART SELECT** key to select the part that you wish to edit.
4. For a pattern with a pattern length of 2 or more, you can use the **SELECT** keys to move the red select LEDs to left or right to change the length location that you will edit.
5. The step keys will light to indicate the trigger locations of the pattern for that part. You can press each key to switch the trigger on/off for that step. Each time you press a step key, the trigger will alternate on (lit) and off (dark).



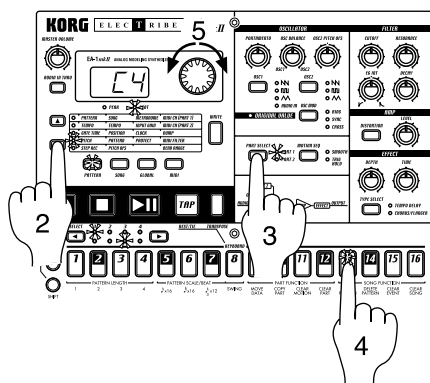
Changing the pitch

PITCH C-1...G9

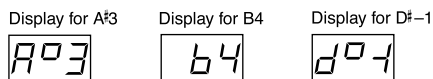
1. Turn off the Keyboard function key (the key will go dark).
2. Use the cursor keys to make the parameter select LEDs indicate PITCH.
3. Use the **PART SELECT** key to select the part that you wish to edit.
4. The step keys will light to indicate the trigger locations of the pattern for that part. Press the step key for the step whose pitch you wish to edit (the key will blink). By pressing a step key where a trigger exists, you can audition its pitch.
5. Rotate the dial to modify the pitch of that step.

When the display is showing the Pitch, pressing a step key will not switch its trigger on/off.

Changing the pitch of a step whose trigger is off will have no effect. If you turn that trigger on, the specified pitch will be used. If you wish to transpose the pitch for one part of the entire pattern, refer to p.30 "Changing the pitch data of a part (Pitch Shift)."



The pitch will be shown in the display as follows.



Changing the gate time

GATE TIME 0.25...64.0

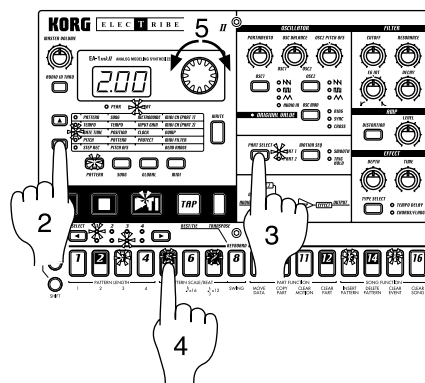
1. Turn off the Keyboard function key (the key will go dark).
2. Use the cursor keys to make the parameter select LEDs indicate GATE TIME.
3. Use the **PART SELECT** key to select the part that you wish to edit.
4. The step keys will light to indicate the trigger locations of the pattern for that part. Press the step key for the step whose gate time you wish to edit (the key will blink). By pressing a step key where a trigger exists, you can audition its pitch.
5. Rotate the dial to modify the gate time of that step.

The value shown in the display is the gate time length in units of a step. For example if the gate time is set to 1.0, the gate time will be exactly as long as one step.

If the gate time length extends into the timing of the next note, the filter EG of the next note will not be retrIGGERED.

When the display is showing the Gate Time, pressing a step key will not switch its trigger on/off.

Changing the gate time of a step whose trigger is off will have no effect. If you turn that trigger on, the specified gate time will be used.



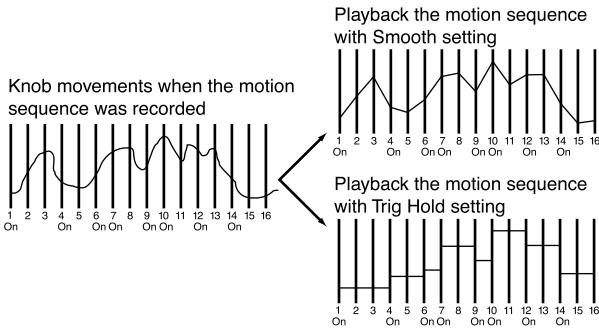
Motion sequence

Playing a motion sequence

A motion sequence can be played back in one of the following two ways, and you can select the playback method independently for each part.

SMOOTH: Knob values will be connected smoothly, and the sound will change smoothly.

TRIG HOLD (trigger hold): The value of the motion sequence knob will be held at the note timing of that part.



There will be no effect when the Motion Sequence LED is dark (off).

Recording a motion sequence

You can record knob movements (motion sequence) for each part. When recording a motion sequence, only one knob is valid for each part. If you record a motion sequence on the same part using a different knob, the effect of the previously recorded knob will disappear.

For the recording procedure, refer to p.18 "Using a motion sequence" in section 3. Basic operation (Quick Start).

Motion sequences are recorded in realtime while you listen to the playback. It is not possible to partially modify a motion sequence after it has been recorded. You will need to keep trying until you record a motion sequence to your liking. (Refer to p.31 "Erasing motion sequence data from a part.")

Checking motion sequence data

Hold down the **SHIFT** key and press the **MOTION SEQ** key. If motion sequence data has been recorded in the selected part, step keys 1, 2, 3, 4 will light.

It is not possible to check for motion sequence data during playback, recording, or Pattern Set Play.

Convenient functions for editing patterns

If you wish to save the pattern you edit using these functions, you must perform the Write operation before selecting a different pattern or turning off the power.

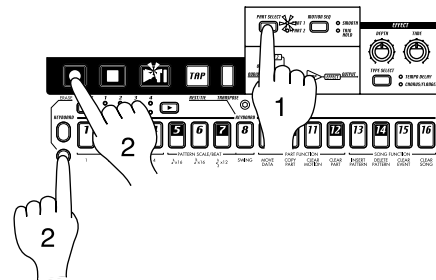
Erasing phrase pattern data from a part

To erase the phrase pattern data for the selected part, you can use one of the following two methods in addition to turning each of the sixteen step keys off.

Erasing data during playback or recording (ERASE)

1. Press the **PART SELECT** key to select the part from which you wish to erase data.
2. During playback or recording, hold down the **SHIFT** key and press the **Rec** key. As long as you continue holding these keys, trigger data will be automatically be erased from the selected part.

Performing this operation will not affect the pitch and gate time data.



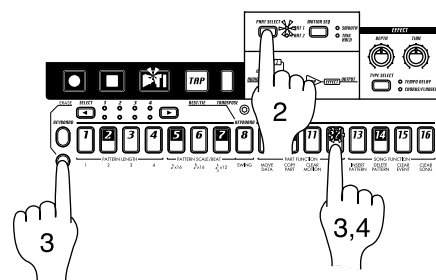
Erasing all data from a part (CLEAR PART)

This operation erases all phrase pattern and motion sequence data at once.

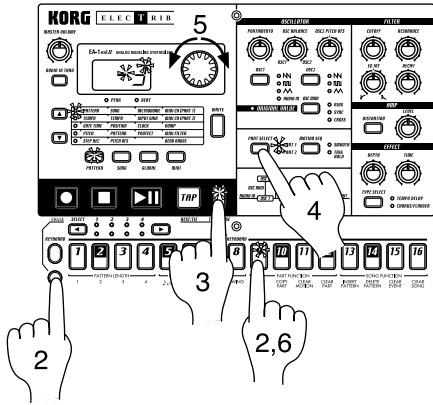
1. If the pattern is playing, press the Stop/Cancel key to stop playback.
2. Press the **PART SELECT** key to select the part whose data you wish to erase.
3. Hold down the **SHIFT** key and press step key 12 (**CLEAR PART**). (Key 12 will blink.)
4. Once again press step key 12 to clear the data.

To cancel without clearing the data, press the Stop/Cancel key.

When you perform this operation, the pitch of all steps will be set to "C4," and the gate time to "1.00."



To cancel without executing, press the Stop/Cancel key.



Copying a part (COPY PART)

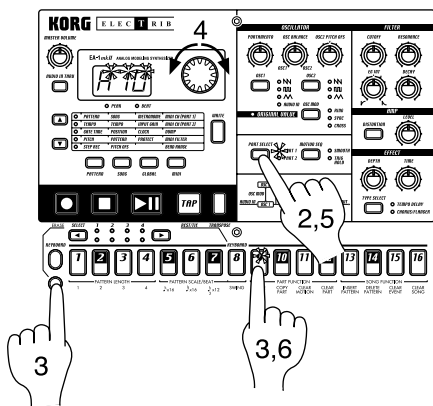
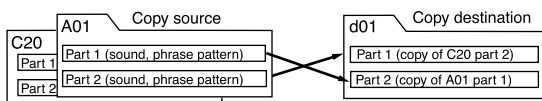
You can copy the sound settings and phrase pattern data (including motion sequence) from a selected part to another part.

1. If the pattern is playing, press the Stop/Cancel key to stop playback.
2. Press the **PART SELECT** key to select the copy destination part (the LED will light).
3. Hold down the **SHIFT** key and press step key 10 (**COPY PART**). (Key 10 will blink.) The display will begin blinking.
4. Rotate the dial to select the copy source pattern number.
5. Use the **PART SELECT** key to select the copy source part. (The copy source LED will blink, and the copy destination LED will be dark.)
6. Press step key 10 once again to execute the Copy Part operation.

To cancel, press the Stop/Cancel key.

For details on data copy within the same part, refer to the following section "Data Copy within a part."

Example



Data Copy within a pattern

Phrase pattern data (including motion sequence data) that you create for a pattern of length 1 can be copied to the steps of lengths 2...4. This function is a convenient way to create a pattern that uses similar phrases repeatedly.

1. Create a pattern with a length of 1, and Write it into memory. (Refer to p.32 "Saving a pattern.")
2. At this point, the same data as in length 1 will automatically be copied to the steps of lengths 2...4.
3. Change the pattern length to the desired length. (Refer to p.26, "Length, Scale/Beat settings.")
4. The steps of lengths 2...4 will contain the same data as length 1. Now you can edit the data of lengths 2...4 to complete the pattern.

The data will be copied in a similar way when the pattern length is 2 or 3 (refer to the table below). If you shorten a pattern you create, the data will be copied according to the shortened length.

Copy Pattern data

Pattern length	Pattern data before writing	Pattern data after writing
1	A	A A A A
2	A B	A B A B
3	A B C	A B C C

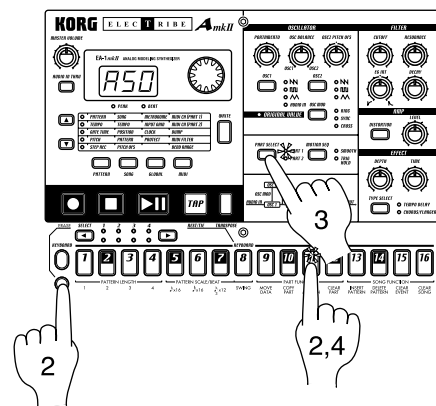
The data that is copied automatically when you Write a pattern does not force the pattern length (1--4) to change. If the length is 4, data will not be copied within the pattern.

Erasing motion sequence data from a part (CLEAR MOTION)

This operation erases all the motion sequence data of a part.

1. If the pattern is playing, press the Stop/Cancel key to stop playback.
2. Hold down the **SHIFT** key and press step key 11 (**CLEAR MOTION**). (Key 11 will blink.)
3. Use the **PART SELECT** key to select the part whose motion sequence you wish to erase.
4. Press step key 11 once again to clear the motion sequence data.

To cancel, press the Stop/Cancel key.



Pattern Set

Pattern Set is a function that lets you assign your favorite patterns to each of the sixteen step keys, and switch them at the touch of a key.

During playback, you can successively switch patterns to perform a song.

By using the **SELECT** key in conjunction with this to switch pattern set groups, you can register and select 16 x 4 (total of 64) patterns.

Using Pattern Set to perform (Pattern Set Play)

Press the Play/Pause key to begin playback.

Hold down the Keyboard function key and press a step key to switch to the pattern that was assigned to that step key.

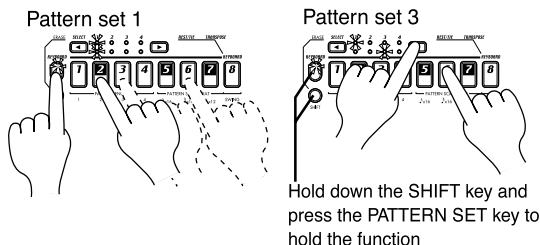
By holding down the Keyboard function key and pressing a **SELECT** key, you can switch to a different group of registered pattern sets. The pattern set group will be indicated by the lower line of the Select LEDs (red).

By holding down the **SHIFT** key and pressing the Keyboard function key, you can hold the Pattern Set function (the key will light).

To defeat the Hold condition, press the Keyboard function key once again (the key will go dark).

Example

Step key	1	2	3	4	5	14	15	16
1	A01	A20	B03	B04	A51	A20	B43	B61
2	C21	C23	C56	C64	C28	C21	A07	A08
3	B01	B02	B04	B62	A01	A05	A45	A64
4	D01	D02	D03	D04	D05	D07	D08	D09



In Pattern Set Play, the timing at which patterns will change, tempo adjustment, and functions such as Reset & Play etc. are the same as for Pattern Play.

⚠ Pattern Set cannot be used during recording. When you enter recording (ready) mode, Pattern Set will be cancelled.

Registering a pattern for Pattern Set

1. With playback stopped, press and hold the Keyboard function key and press the step key for the location that you wish to assign a pattern.
2. While continuing to press the Keyboard function key (or while Hold is still in effect), rotate the dial to select the pattern number that you wish to assign. Release the Keyboard function key (or defeat Hold) to complete the registration process.

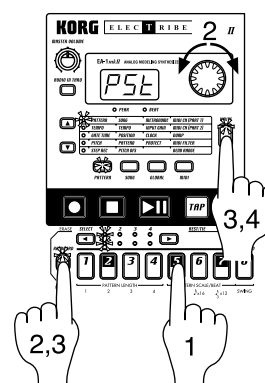
3. To save the pattern set registrations, press the Stop/Cancel key to stop playback. Continue pressing the Keyboard function key, and press the **WRITE** key (the **WRITE** key will blink).

4. The display will blink "PSt." Press the **WRITE** key once again to save the data.

To cancel, press the Stop/Cancel key.

⚠ If the Global mode Memory Protect setting is on, it will not be possible to write the data. In this case, turn off the Global mode Memory Protect setting before you execute the Write operation.

Never turn the power off during the Write operation. This may damage the data.




Saving a pattern (WRITE)

If you wish to keep the pattern data that you create, you must perform this Write operation. When you perform the Write operation, "Data Copy within a pattern" (p.31) will occur automatically, depending on the pattern length.

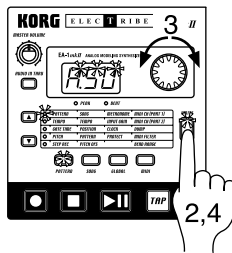
If you intentionally want to discard your edits and revert to the original pattern data, simply select a different pattern without Writing.

1. If the pattern is playing, press the Stop/Cancel key to stop playback. Use the cursor keys to make the parameter select LEDs indicate **PATTERN**.
2. Press the **WRITE** key once (the key will blink). The pattern number will blink in the display.
3. Rotate the dial to select the writing destination pattern number.
4. Press the **WRITE** key once again to write the data.

To cancel, press the Stop/Cancel key.

 If the Global mode Memory Protect setting is on, it will not be possible to Write. In this case, you must turn off the Global mode Memory Protect setting before you execute the Write operation.

Never turn off the power during the Write operation. This can damage the data.

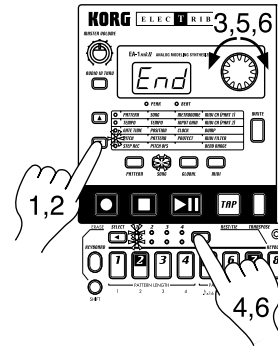


Creating a song

Creating a song from scratch

Here's how to create a song by placing patterns in the desired order.

- ⚠ If you switch to a different song while editing a song, your edited data will be lost. If you wish to keep the edited song, you must perform the Write operation to save the song data.

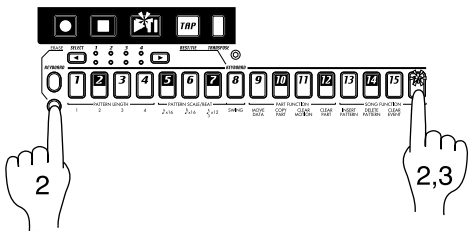


Erasing song data (CLEAR SONG)

1. If the song is playing, press the Stop/Cancel key to stop playback. Then select the song that you wish to erase.
2. Hold down the **SHIFT** key and press step key 16 (**CLEAR SONG**). (Key 16 will blink.)
3. Press step key 16 once again to erase the song data.

To cancel, press the Stop/Cancel key.

If you erase the song data by mistake, rotate the dial to re-select the song before you save it. This will restore the data to its original condition.



If you wish to view the order of patterns in the song, or to re-select the pattern for a specific position, make the parameter select LEDs indicate **PATTERN**. Each time you press a **SELECT** Key, you will move to the next or previous position. You can use the dial to change the pattern number that is displayed.

Use the select keys to move through the positions, and use the dial to select patterns

PATTERN A01 · A13 · A22 · B01 · B30 · B60 · End

Alternatively, you can make the parameter select LEDs indicate **POSITION**, and use the dial or **SELECT** Key to select the position you wish to check. Then make the parameter select LEDs indicate **PATTERN**, and view or change the Pattern.

At the Position setting use the select keys or dial to move; then select Pattern and use the dial to select or view the pattern.

POSITION 001 · 002 · 003 · 004 · 005 · 006 · 007
 PATTERN A01 A13 A22 B01 B30 B60 End

Specifying a pattern for each position

POSITION 001...256
 PATTERN A01...d64

Specify a pattern for each position. When doing this, please turn the Keyboard function key off (the key will go dark).


1. Use the cursor keys to make the parameter select LEDs indicate **POSITION**. Notice that the display indicates "001."
2. Use the cursor keys to make the parameter select LEDs indicate **PATTERN**.
3. Rotate the dial to select the pattern that you wish to assign to position "001."
4. Press the **SELECT** [**▶**] key to advance to the next position. The display will indicate "End."
5. Rotate the dial to select the pattern. The pattern you select here will be the pattern for position "002."
6. When you select a pattern for the "End" position, the "End" will move to the next position. Repeat steps 4 and 5 to assign as many patterns as you wish.

To playback the completed song from the beginning, press the Play/Pause key once, and then press the Stop/Cancel key. Alternatively, use the cursor keys to make the parameter select LEDs indicate **POSITION**, and rotate the dial or use the **SELECT** Keys to set the position to "001." Then press the Play/Pause key.

Specifying the pitch of each pattern

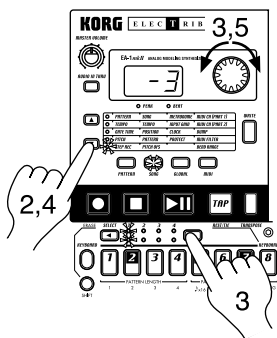
PITCH OFS (Pitch Offset) -24...24

This function offsets the pitch of the pattern at the specified position within the song.

 Pitch Offset simply offsets the pitch within the song. It does not affect the pitch data of the pattern itself.


1. If the song is playing, press the Stop/Cancel key to stop playback.
2. Use the cursor keys to make the parameter select LEDs indicate **POSITION**.
3. Use the dial or **SELECT** keys to select the position whose pitch you wish to offset.
4. Use the cursor keys to make the parameter select LEDs indicate **PITCH OFS**.
5. Use the dial to specify the desired pitch offset. $+/-1$ offsets the pitch by a semitone, $+/-2$ by a whole tone, $+/-7$ by a fifth, and $+/-12$ by one octave.

Even when the parameter select LEDs indicate **PITCH OFS**, you can use the **SELECT** keys to move the position forward or backward in single steps.



Editing a song

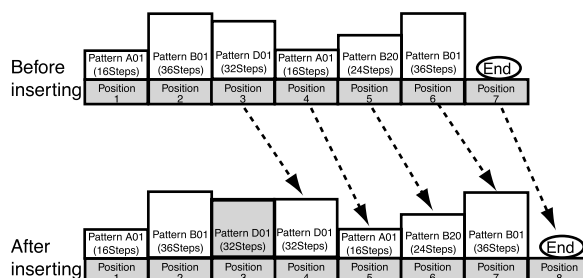
You can insert a new pattern into a song, or delete an existing pattern. You can also add knob movements or your own performance to a song.

 If you wish to keep the edited song, you must perform the Write operation. If you select a different song or turn off the power without performing the Write operation, the song will return to the state in which it was before you edited it.

Inserting a pattern at a specified position (INSERT PATTERN)

You can insert a pattern at a specified position, and subsequent patterns will be moved backward (toward the end of the song).

Insert a new pattern at position 3

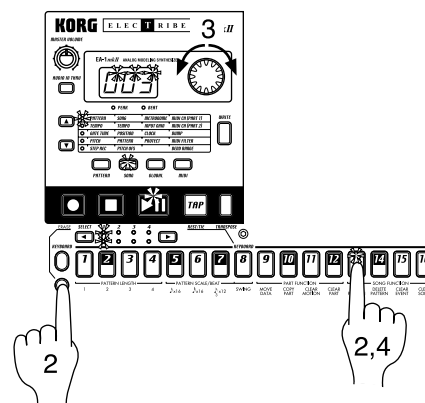


1. If the song is playing, press the Stop/Cancel key to stop playback.
2. Hold down the **SHIFT** key and press step key 13 (**INSERT PATTERN**). (The 13 key will blink.)
3. The position indication in the display will blink. Rotate the dial to select the position at which you wish to insert a pattern. (For example if you wish to insert a pattern into position 3. make the display blink "003.")
4. Press step key 13 once again, and a pattern will be inserted in front of that position. (The key will go dark.)

To cancel, press the Stop/Cancel key.

The pattern that is inserted will be the pattern which had previously been at that position. Now you can specify the desired pattern for the position that was inserted.

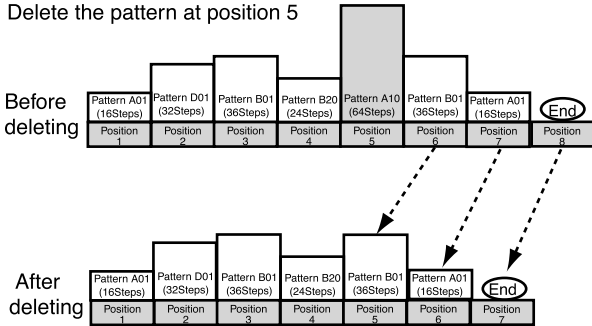
Data following the inserted pattern will be moved backward.



Deleting a pattern from a specified position (DELETE PATTERN)

You can delete a pattern from a specified position, and subsequent patterns will be moved forward (toward the beginning of the song).

Delete the pattern at position 5

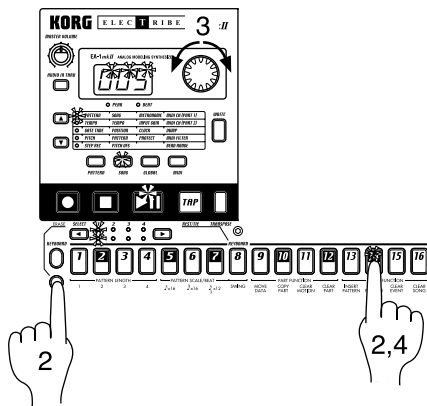


1. If the song is playing, press the Stop/Cancel key to stop playback.
2. Hold down the **SHIFT** key and press step key 14 (**DELETE PATTERN**). (The 14 key will blink.)
3. The position indication in the display will blink. Rotate the dial to select the position from which you wish to delete the pattern. (For example if you wish to delete the pattern from position 5. make the display blink "005.")
4. Press step key 14 once again, and the pattern will be deleted.

To cancel, press the Stop/Cancel key.

When you delete a pattern, the event data (refer to the following page) at that position will also be deleted.

Data following the inserted pattern will be moved forward.




Changing the pattern for a specific position

1. If you are playing back, press the Stop/Cancel key to stop playback.
2. Use the cursor keys to make the parameter select LEDs indicate **POSITION**.
3. Use the dial to select the position that you wish to modify.
4. Use the cursor keys to make the parameter select LEDs indicate **PATTERN**.
5. Use the dial to select the pattern that you wish to assign to the selected position.

If you wish to audition the patterns as you select one, press the Pattern mode key to enter Pattern mode, and listen to the playback. To return to Song mode, press the Stop/Cancel key to stop playback, and then press the Song mode key.

6. Global mode

In Global mode you can set parameters such as Metronome or Protect. Press the Global mode key to enter Global mode. To execute Global mode, press a different mode key.

 The settings you make in Global mode will be cancelled if you turn off the power without Writing. If you wish to save the settings you make, you must perform the Write operation (refer to p.40 "Saving the settings you modify in Global mode").

Metronome settings

METRONOME **oFF, r-0, r-1, r-2, on**

Specify how the metronome will function. If you will be using realtime recording to create a pattern from scratch, it is convenient to use the metronome. The metronome will sound at quarter-note timing.

oFF: The metronome will not sound.


r-0: The metronome will sound only during recording (when the Rec and Play/Cancel keys are lit).

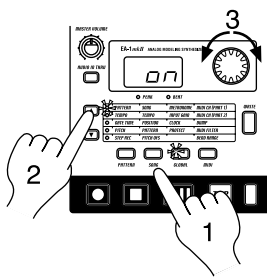
r-1: When recording, a one-measure count will be sounded before recording begins. The metronome will sound only during recording.

r-2: When recording, a two-measure count will be sounded before recording begins. The metronome will sound only during recording.

on: The metronome will sound during playback and recording. There will be no count before recording begins.

1. Use the cursor keys to make the parameter select LEDs indicate **METRONOME**.
2. Rotate the dial to make the metronome setting.
3. Press the **PATTERN** or **SONG** key to return to the previous mode.

 The metronome setting cannot be written. When you turn on the power, it will always be "oFF."



Adjusting the volume of the Audio In


INPUT GAIN **0...100**

These parameters adjust the volume that is input to the Audio In jacks. For the procedure, refer to p.19 "Connecting various sources to the audio inputs" in section 3. Basic Operation (Quick Start).

Synchronizing the EA-1mkII with external MIDI devices (MIDI Clock)

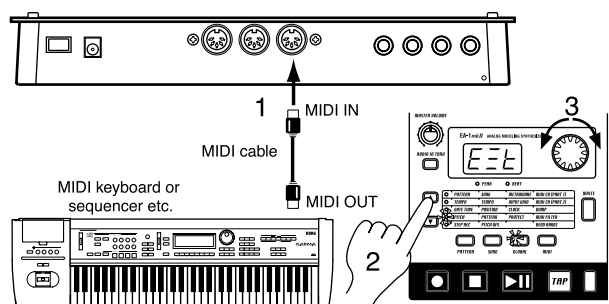
CLOCK **int, Ext**


The Global mode **CLOCK** setting allows the tempo of the EA-1mkII to be synchronized with the tempo of an external MIDI device that is able to send or receive MIDI Clock messages. For details on synchronization settings of your external MIDI device, refer to the owner's manual for your device.

 Even if you set **CLOCK** to **Ext**, the EA-1mkII will operate with its own internal clock if no MIDI Clock messages are being received at its MIDI IN connector.

Synchronizing the EA-1mkII to a master external MIDI device (Ext)

1. Use a MIDI cable to connect the **MIDI IN** connector of the EA-1mkII to the **MIDI OUT** connector of the external MIDI device (sequencer or synthesizer etc.).
2. Use the cursor keys to make the parameter select LEDs indicate **CLOCK**.
3. Rotate the dial to select "**E≡t**" (external clock).
4. Make settings on the external MIDI device (master) so that it will transmit MIDI Clock messages.
5. Return to Pattern mode or Song mode.
6. When you start the sequencer of the external MIDI device, the EA-1mkII will simultaneously begin playback.
7. If MIDI Clock data is being received at the **MIDI IN** connector, you can make the EA-1mkII playback in synchronization with the external MIDI device by pressing the EA-1mkII's Play/Pause key.




 If the MIDI Clock parameter is set to "Ext" and the EA-1mkII is synchronized to the external MIDI clock, it will synchronize to the tempo of the external sequencer, and it will not be possible to change the tempo on the EA-1mkII.

If a MIDI Start message is received while the EA-1mkII is already playing in synchronization with MIDI Clock, the EA-1mkII will begin playback from the beginning of the currently playing pattern (or in the case of a song, from the beginning of the pattern that was playing when the Start message was received).

7. MIDI mode

In MIDI mode you can make MIDI-related settings, and dump exclusive data. To enter MIDI mode, press the MIDI mode key. To leave MIDI mode, press a different mode key.


 If you turn off the power without Writing, the settings you made in MIDI mode will be lost. If you wish to keep the modified settings, you must execute the Write operation (refer to p.42 "Saving the settings you modify in MIDI mode").

Setting the MIDI channel of part 1

MIDI CH[PART1] 1...16

This sets the MIDI channel of part 1. The same MIDI channel is used for both transmission and reception. With the factory settings this will be "1."

1. Use the cursor keys to make the parameter select LEDs indicate MIDI CH[PART1].
2. Rotate the dial to select the channel.

 Program changes and exclusive data will be transmitted and received on the MIDI channel you specify here.

Setting the MIDI channel of part 2

MIDI CH[PART2] 1...16

This sets the MIDI channel of part 2. The same MIDI channel is used for both transmission and reception. With the factory settings this will be "2."

1. Use the cursor keys to make the parameter select LEDs indicate MIDI CH[PART1].
2. Rotate the dial to select the channel.

If part 1 and part 2 are set to the same channel, the sounds of part 1 and part 2 will be heard simultaneously when controlled from an external MIDI device.

Transmit/receive dump data (MIDI Data Dump)

DUMP Ptn, SnG, ALL

Transmission

Here's how system exclusive data (pattern data, song data, or Global mode settings) can be transmitted from the EA-1mkII to an external MIDI data filer or computer connected to the MIDI OUT connector.

1. Connect the MIDI OUT connector of the EA-1mkII to the MIDI IN connector of an external MIDI device that is able to receive MIDI data dumps (another EA-1mkII, or a computer that is running a MIDI data filer program or editing program, etc.).
2. Set the MIDI channel of the external MIDI device and the EA-1mkII to match. However when transmitting to a data filer, it is not normally necessary to match the MIDI channel.
3. Use the cursor keys to make the parameter select LEDs indicate DUMP.
4. Rotate the dial to select the data that you wish to transmit.
Ptn: All pattern data
SnG: All song data
ALL: All data (pattern data, song data, Global data)
5. Press the Play/Pause key to transmit the data dump.


Reception

Here's how EA-1mkII system exclusive data can be received from an external MIDI data filer or computer connected to the MIDI IN connector.

1. Connect the MIDI IN connector of the EA-1mkII to the MIDI OUT connector of the external MIDI device that will transmit the MIDI data dump (another EA-1mkII, or a computer that is running a MIDI data filer program or editing program, etc.).
2. Set the MIDI channel of the external MIDI device and the EA-1mkII to match. However when transmitting from a data filer, it is not normally necessary to match the MIDI channel.
3. Use the cursor keys to make the parameter select LEDs indicate DUMP.
4. Transmit the data dump from the external MIDI device.

Details on data dumps are provided in the MIDI implementation chart of the EA-1mkII.

Consult your local Korg distributor for more information on MIDI implementation

 Do not touch the keys of the EA-1mkII while a data dump is in progress.

When the parameter select LEDs indicate DUMP, system exclusive data can be transmitted or received even if the MIDI FILTER parameter "E" is set to "-."

If the MIDI FILTER parameter "E" is set to "O," system exclusive data can be transmitted or received in any mode.

8. Appendices

About MIDI

1. MIDI channels

Similarly to a television, data can be received when the channel of the receiving device matches the channel on which the data is being transmitted.

The transmit/receive channel of the **EA-1mkII** is set by the MIDI channel setting in MIDI mode.

2. Note-on/off

When you use the Keyboard function and press a step key, the note number assigned to that step key will be transmitted as a Note-on message [9n, kk, vv] (n: channel, kk: note number, vv: velocity) on the MIDI channel specified for that part. On the **EA-1mkII**, the vv: velocity value is fixed at 64H (100). When you release the step key, a note-off message [8n, kk, vv] is transmitted. However, most devices do not transmit note-off velocity, and neither does the **EA-1mkII**. When note-on/off messages are received on the MIDI channel assigned to a part, that part will sound.

Note-on/off messages are transmitted and received on the MIDI channels that you specify for part 1 and part 2 in MIDI mode.

3. Switching patterns

When you switch patterns, Program Change and Bank Select messages [Bn, 00, mm] (control change #00), [Bn, 20, bb] (control change #32) (mm: bank number upper byte, bb: bank number lower byte, together allowing 16,384 banks to be selected) will be transmitted.

If a Program Change is received on the MIDI channel of the **EA-1mkII**, patterns will be switched within the same group (e.g., from A01 to A02). After a Bank Select has been received, the next-received Program Change will be able to switch to a pattern of a different group (e.g., from A01 to C01).

Transmission and reception of Program Change messages can be controlled by the MIDI mode MIDI Filter setting.

Bank Select		Program Change	Pattern number
MSB	LSB		
00	00	0...127	A01...b64
00	01	0...127	C01...d64

4 Applying pitch bend

Pitch bend messages [En, vv, vv] (vv, vv: lower and upper bytes of the value, together expressing 16,384 steps, where 8192 (vv, vv = 00H, 40H) is the center value) are not transmitted, but can be received to apply a pitch bend effect. The range of pitch bending is specified by the Pitch Bend Range setting of MIDI mode.

5. Using NRPN messages to edit

NRPN (Non Registered Parameter No.) messages are messages to which manufacturers are free to assign their own functions. On the **EA-1mkII**, NRPN messages are assigned to all knobs and keys of the Synthesizer section other than Motion Seq.

To edit, first use NRPN (LSB) [Bn, 62, rr] and NRPN (MSB) [Bn, 63, mm] (control change #98 and 99) (rr, mm: lower and upper

bytes of the parameter no.) to select the parameter. Then transmit Data Entry (MSB) [Bn, 06, mm] and Data Entry (LSB) [Bn, 26, vv] (control change #06 and 38) (mm, vv: upper and lower bytes of the value, together expressing 16,384 steps) to set the value. The **EA-1mkII** uses only the MSB value (128 steps) of the Data Entry message.

6. If "stuck notes" occur

If for some reason a note fails to stop sounding, you can usually switch modes to stop the sound. If a note played via MIDI fails to stop, you can simultaneously press the Shift key and the Stop/Cancel key to perform a MIDI Reset.

7. About synchronization

Two or more sequencers can be connected via MIDI and made to playback in synchronization. Messages used for synchronization (realtime messages) include Timing Clock [F8], Start [FA], Continue [FB], and Stop [FC].

In a synchronized system, one synthesizer (the master) will transmit these messages, and the other sequencer(s) (the slave(s)) will receive these messages. The slave devices will playback according to the tempo specified by the Timing Clock messages transmitted by the master. Twenty-four Timing Clock messages are transmitted for each quarter note. When the **EA-1mkII**'s Global mode parameter Clock is set to INT, it will be the master device, and will transmit these realtime messages. When Clock is set to EXT, it will be the slave device, and will receive these realtime messages. However even when Clock is set to EXT, the **EA-1mkII** will operate according to its own internal clock if no Timing Clock messages are being received. The Start message specifies when playback will begin. When the Start/Pause key is pressed on the master device, it will transmit a Start message. Slave devices that receive this Start message will synchronize to the Timing Clock messages subsequently received, and will begin playback from the beginning. If the Start/Pause key is pressed on the master devices when it is paused, the master will transmit a Continue message. When a slave device receives the Continue message, it will resume playback from the point where it is currently stopped. If the Stop key is pressed during playback, the master will transmit a Stop message. Slave devices will stop playback when they receive a Stop message.

8. Synchronization in Song mode

In Song mode, the **EA-1mkII** can transmit and receive Song Select and Song Position Pointer messages. When you switch songs, a Song Select [F3 ss] message will be transmitted (ss: song number, where one of 128 songs can be selected. On the **EA-1mkII** you can select 16 songs.) If the **EA-1mkII** receives a Song Select message in Song mode, it will switch songs. Transmission and reception of Song Select messages can be restricted by the MIDI Filter settings of MIDI mode. If you change the current position on the master device (i.e., the device whose Clock is set to INT) when the song is stopped, a Song Position Pointer message [F2 pp pp] will be transmitted. (pp: the number of MIDI beats from the beginning of the song; i.e., the number of Timing Clocks divided by six.) Song Position Pointer indicates the location at which the sequencer is currently stopped. When Song Position Pointer is received in Song mode by a slave device (i.e., a device whose Clock is set to EXT), it will change the location at which its song is currently stopped to match the location of the master. However on the **EA-1mkII**, the length of each pattern may be different, so the master and slave will not necessarily be in the same location. When the Start/Pause key is pressed

on the master device, a Continue message is transmitted, and the song will begin playback from the currently selected position. When the slave device receives the Continue message, it will synchronize to the Timing Clock messages and begin playback from the current point in the song. In the same way as synchronizing the playback from the beginning of the song, you can specify the location at which playback will start, and then playback in synchronization. If you use the dial or Select keys to fast-forward or rewind while the song is playing, Song Position Pointer messages will not be transmitted. Be aware that if you perform these operations during synchronized playback, the synchronization will be lost. Also, even if Song Position Pointer messages are received during playback, the playback location will not change.

9. About system exclusive messages

Manufacturers are free to use system exclusive messages in any way they choose, and these messages are used mainly to transmit and receive parameters that are specific to particular devices, such as sound data and editing data.

The system exclusive message format of the EA-1mkII is [F0, 42, 3n, 52, ... F7] (n: exclusive channel).

However, some system exclusive messages have been defined for use in a specific way, and these are called "universal system exclusive messages."

Of the several different universal system exclusive messages, the EA-1mkII supports the following one.

- When an Inquiry Message Request [F0, 7E, nn, 06, 01, F7] is received, the EA-1mkII will transmit an Inquiry Message [F0, 7E, nn, 06, 02, (nine bytes), F7] that means "I am a Korg EA-1mkII and my system version is ..."

10. Transmitting sound setting data (Data Dump)

Song, Pattern, or All (song, pattern, global) data can be transmitted as MIDI exclusive data, and stored on an external device. This data is transmitted by the MIDI mode Dump command. The channel used for transmission and reception of this data is set by the MIDI mode MIDI ch setting. Data dumps are also transmitted when a Data Dump Request message is received.

11. Editing sounds etc.

By sending MIDI exclusive data dumps, you can rewrite all patterns or individual programs. By using NRPN messages in Pattern mode, you can edit the knobs that are active for each part.

Troubleshooting

The display does not light up when I press the Power switch!

- Is the AC adapter connected?
- Is the AC adapter plugged into an AC outlet?

No sound!

- Is your amp, mixer, or headphones connected to the correct jack? (Can you playback a pattern? If so, the connections are correct.)
- Are your amp or mixer powered-on and set correctly?
- Is the master volume knob of the EA-1mkII raised?

Sound does not stop!

- When a pattern is played back, it will continue playing repeatedly. When you are finished listening to a pattern, press the Stop/Cancel key (p.13).

Sounds or operations are different than when I edited!

- Did you perform the Write operation after editing? (p.33, 38)
After you have edited, you must perform the Write operation before switching songs or patterns, or turning off the power.
- Did you edit the selected pattern or song after writing it?

Can't control via MIDI!

- Is the MIDI cable or special cable connected correctly?

When playing the EA-1mkII from an external device

- Has the EA-1mkII been set to receive MIDI data on the channel on which the data is being transmitted? (p.41)
- Is the MIDI mode MIDI Channel parameter set to the desired channel? (p.41)
- Are the MIDI mode MIDI Filter settings set appropriately? (p.42)

When playing an external device from the EA-1mkII

- Does the MIDI channel of the EA-1mkII match the MIDI channel of the receiving device? (p.41)

Cannot write a pattern or song!

- Is the Global mode Protect setting turned "on"? (p.40)

Playing the step keys does not sound the specified sound!

- After editing the sound of a part, did you perform the Write operation? (p.33)
- Is the Keyboard function turned on?
- Is a motion sequence being used? (p.29)

Error messages

- Er.1** Data could not be written.
- Er.2** When writing a song to a different song number, the maximum number of recordable events was exceeded. Use the Clear Event operation to erase unwanted events from the song (p.38).
- Er.9** Protect was turned "on" for the memory into which you attempted to write data. In Global mode, turn the Protect setting "oFF" (p.40).
- Full** When event-recording on a song, event data memory has filled up. If you attempt to record additional events, the "memory full" message will appear immediately. Either use Clear Event to delete unwanted events from a song, or record blank data to clear the memory.

Restoring the factory set data


The pattern and song data with which the **EA-1mkII** is shipped from the factory is referred to as the "preloaded data," and you can restore this preloaded data back into the memory of the **EA-1mkII**.

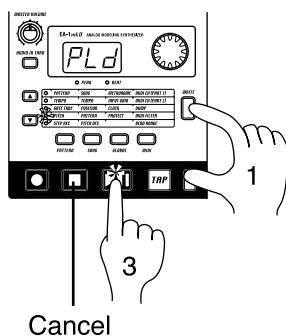
When you do this, the patterns you created and the songs which use these patterns will be erased, and replaced by the preloaded data. If you wish to keep the patterns and songs you created, you must save the data on a data filer etc. before you load the preloaded data.

1. While simultaneously pressing the **TRANPOSE** key and the **WRITE** key, turn on the power.
2. The display will indicate "PLd," and the Play/Pause key will blink.
3. To load the factory preloaded data, press the blinking Play/Pause key.

This will require approximately 15 seconds.
To cancel, press the Stop/Cancel key.

When loading is complete, the **EA-1mkII** will return to its initial state. After several seconds the display will indicate pattern number "A01," and the **EA-1mkII** will be in Pattern mode.

-  Never turn off the power during the Load process. The data may be damaged.

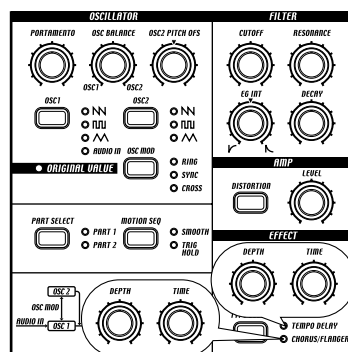
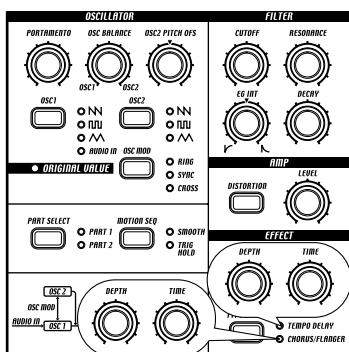
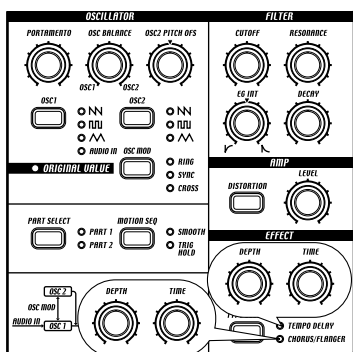
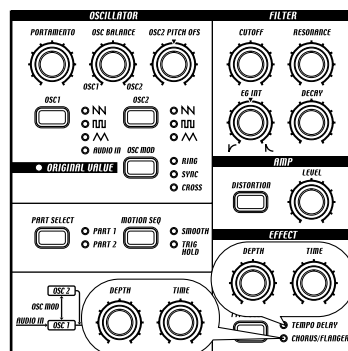
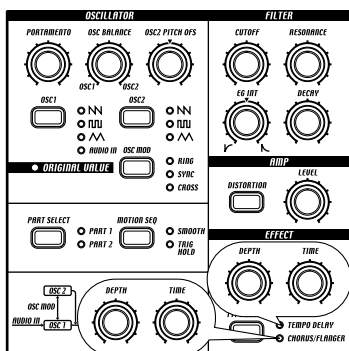
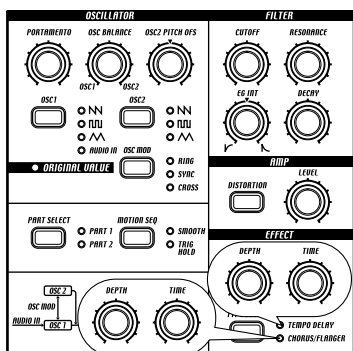
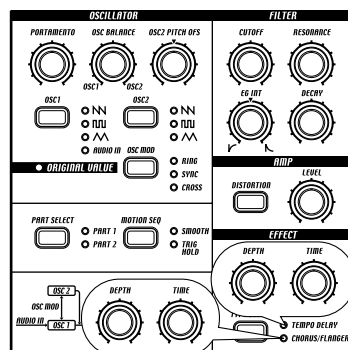
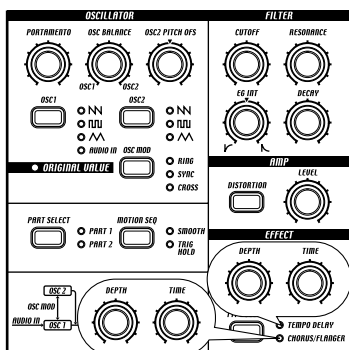
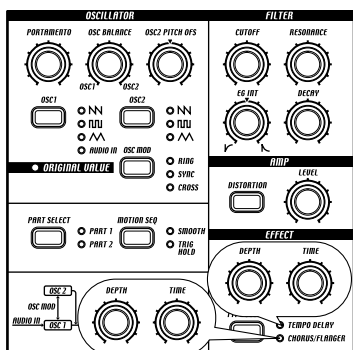
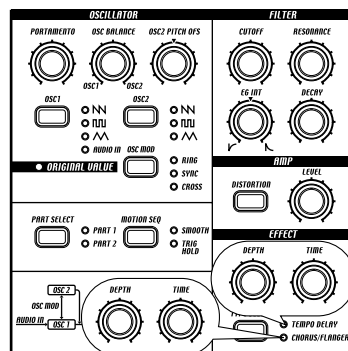
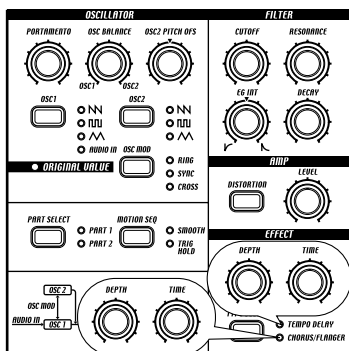
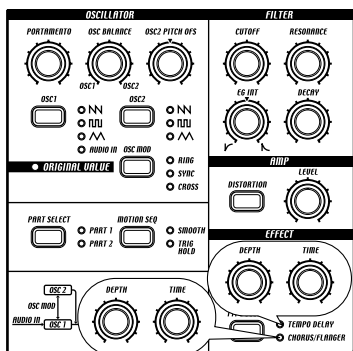


Specifications

- System:** Analog modeling
- Number of parts:** 2 parts
- Memory capacity:** 256 patterns, 16 songs
- Effects:** Distortion, Tempo Delay, Chorus/Flanger
- Sequencer:** Pattern
Maximum 64 steps per part
Motion sequence
One parameter for each part, 64 events
- Song**
Maximum 256 patterns per song
Maximum approximately 65,500 events for event recording
- Connectors:** PHONES
Stereo phone plug
Nominal level: 21 mW + 21 mW (32 ohms)
OUTPUT (PART1/MIX, PART2)
Phone jacks: mono x 2
Nominal output level: -10 dBu
Output impedance: 1 k-ohms
AUDIO IN (phone jack: mono x 1)
Nominal input level: -10 dBu
Input impedance: 47 k-ohms
MIDI (IN, OUT, THRU)
- Power supply:** DC 9 V (AC adapter included)
- Power consumption:** 5.5 W
- Dimensions:** 296 (W) x 220 (D) x 55 (H) mm (with rubber feet)
- Weight:** 1.5 kg

Blank Chart

When you have created a sound that you like, you can store the knob and key locations in this page.



P

Part	14
Part select key	9
Pattern	
Create	23
Delete	37
Insert	36
Mode	22
Select	23
Pattern mode	13
Pattern name list	50
Pattern set	20, 32
Peak LED	8
Phrase pattern	27
Pitch	
Bend	43
Bend range	42
Change	28
Offset	36
Shift	30
PITCH OFS	9
Play	
Motion sequence	18, 29
Pattern	15
Pattern set	20, 32
Song	15, 34
Portamento	9, 23
POSITION	35
Protect	40

R

Realtime recording	16, 27
Rec key	10
Reception	41
Recording	
Event	38
Motion sequence	29
Realtime	16
Step	16
Registering a pattern for Pattern Set	32
Reset & Play	34
Resonance	25
REST/TIE key	10
Rewind	34
Ring modulation	24

S

Save	
Pattern	17, 33
Song	38
Scale	26
Select key	10

Select LED	10
Select pattern	22, 23
Sequence control section ---	10
SHIFT key	11
Song	
Fast-forward	34
Mode	34
Rewind	34
Select	34
Tap tempo	34
Tempo	34
Song name list	50
Specification	45
Step key	10
Step key section	10
Step recording	16, 27
Swing	26
Switching songs	34
Synchronize ---	21, 39, 40, 43
Synthesis diagram	9
Synthesizer parameter	23
Synthesizer section	9
System exclusive	44

T

TAP key	10
Tap tempo	13, 22, 34
Target step	27
Tempo	
Pattern	22
Song	34
Tempo delay	25
Tone generator module	20
Transepose	30
Transmission	41
TRANSPOSE key	10
Trigger	27
Troubleshooting	44
Type select	25

W

Write	
Global	40
MIDI	42
Pattern	17, 33
Song	38
WRITE key	8

Function ...		Transmitted	Recognized	Remarks
Basic channel	Default Changed	1 - 16 1 - 16	1 - 16 1 - 16	Memorized
Mode	Default Messages Altered	×	3 ×	
Note number :	True voice	0- 127	9n, v=1- 127	
Velocity	Note ON Note OFF	× ×	× ×	
After Touch	Polyphonic Channel	× ×	× ×	
Pitch Bender		×	○	*C
Control Change	0,32 98, 99 8 121	○ ○ ○ ×	○ ○ ○ ○	Bank Select(MSB,LSB) *P NRPN(LSB,MSB) *C Data Entry(MSB) *C Reset All Controllers
Program Change :	True#	○ 0 - 127 *****	○ 0 - 127 0 - 127	Transmitted/received in Pattern mode *P
System Exclusive		○	○	Can always be transmitted/received in the MIDI Dump page *2 *E
System Common	: Song Pos : Song Sel : Tune	○ ○ 0 - 15 ×	○ ○ 0 - 15 ×	Transmitted/received in Song mode *1 *P
System Realtime	: Clock : Commands	○ ○	○ ○	*1 *1
Aux Messages	: Local ON/OFF : All Notes OFF : Active Sense : Reset	× × ○ ×	○ ○123-127 ○ ×	
Notes		*P, *C, *E: Sent and received when MIDI mode MIDI Filter (P, C, E) respectively are set to "O" *1: Sent but not received when Global mode Clock is "Int."When set to "Ext," received but not sent. *2: In addition to Korg exclusive messages, also responds to Inquiry messages.		

Mode 1: OMNI ON, POLY
Mode 3: OMNI OFF, POLY

Mode 2: OMNI ON, MONO
Mode 4: OMNI OFF, MONO

○ : Yes
× : No

* Consult your local Korg distributor for more information on MIDI IMPLEMENTATION.

IMPORTANT NOTICE TO CONSUMERS

This product has been manufactured according to strict specifications and voltage requirements that are applicable in the country in which it is intended that this product should be used. If you have purchased this product via the internet, through mail order, and/or via a telephone sale, you must verify that this product is intended to be used in the country in which you reside.

WARNING: Use of this product in any country other than that for which it is intended could be dangerous and could invalidate the manufacturer's or distributor's warranty.

Please also retain your receipt as proof of purchase otherwise your product may be disqualified from the manufacturer's or distributor's warranty.

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