

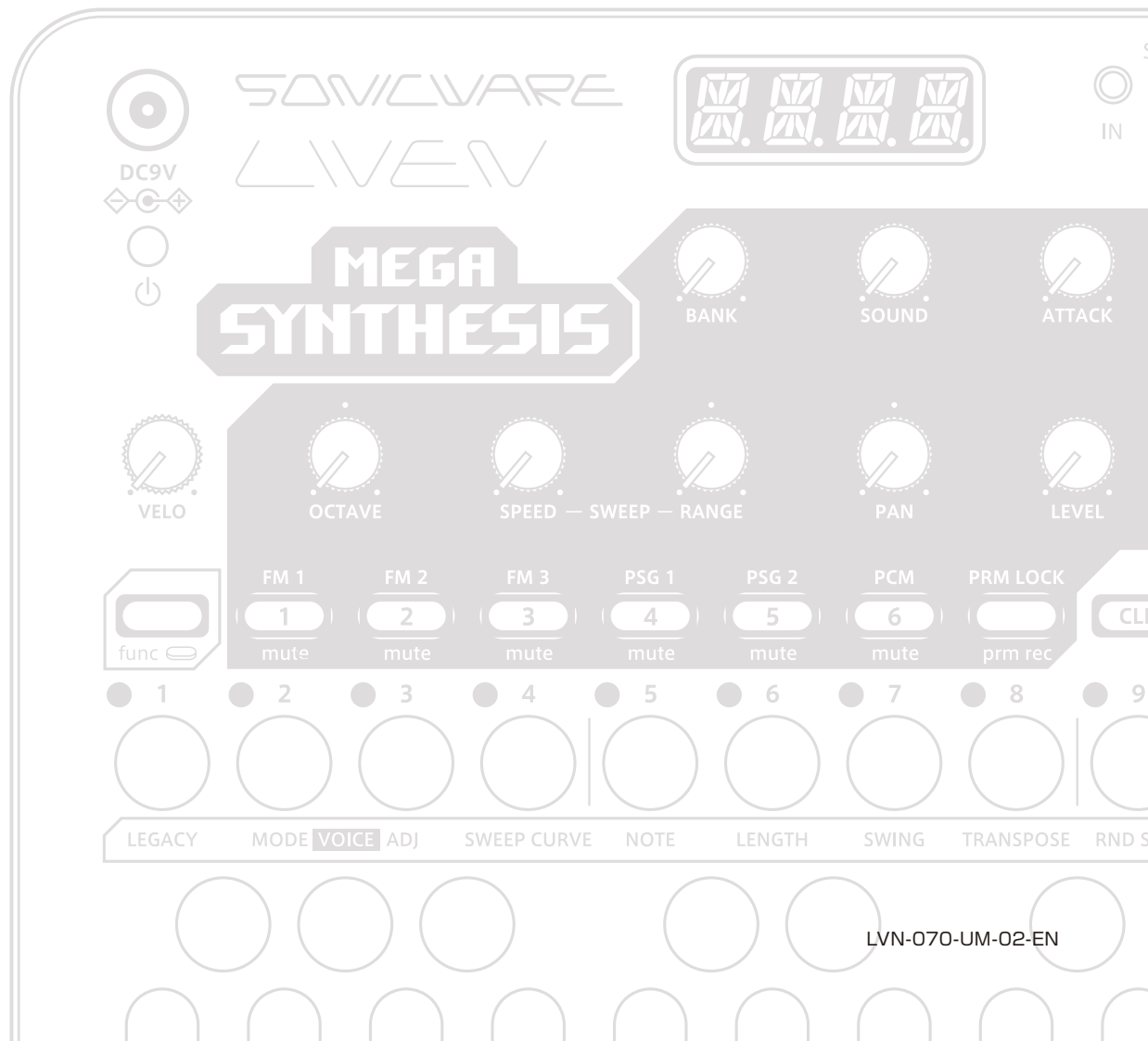
SONICWARE

LIVEN

# MEGA SYNTHESIS

User's Manual

Rev.2



LVN-070-UM-02-EN

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## FCC regulation warning (for USA)

Note: 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:

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- 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.

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## Important safety precautions

You must read the following precautions in order to use the product safely and prevent accidents.

**< WARNING > Failure to follow these precautions could result in serious harm to the user or even death.**

- 
- Operation using an AC adapter

Do not do anything that could exceed the ratings of outlets and other electrical wiring equipment.

Disconnect the AC adapter from the outlet when lightning occurs and when not using it for a long time.

- Operation using batteries

Use commercially available 1.5V AA batteries.

Carefully read the precautions of the batteries being used.

Be sure to insert the batteries with +/ – ends oriented correctly.

Do not use new and old batteries together. Do not use batteries of different types together.

Remove the batteries when they will not be used for a long time.

If a leak occurs, thoroughly wipe the battery compartment and battery terminals to remove the leaked fluid.

- Do not open the case and disassemble or modify the product.
- Do not drop, strike or apply excessive force to the unit.
- Do not put liquid on or in the unit.
- Do not put foreign objects into the case.
- Do not use at a loud volume. Doing so could generate loud volumes that might lead to hearing loss.
- When transferring this unit, use the individual packing box and cushioning material that it came with when purchased new.
- When the unit is powered on, do not wrap it in cloth, plastic or other materials.
- Do not step on or apply pressure to the power cord.
- Do not use in the following environmental conditions. Doing so could cause malfunction.
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  - Locations with extremely low or high temperatures
  - Locations with extremely high humidity or where the product could become wet
  - Locations with frequent vibrations or much dust or sand
- If the unit becomes broken or malfunctions, immediately turn the power off and stop using it.

## < Usage Precautions >

Failure to follow these precautions could cause injury to the user and physical damage.

- When connecting cables or working with the power of the unit, minimize the input levels of connected devices or turn them off.

- Cleaning

If the screen or the case become dirty, wipe them gently with a soft cloth.

Do not use chemicals, including alcohol, benzene, thinner or cleansers.

If this does not clean them, wipe them with a slightly damp cloth that has been wrung out well.

Do not turn the power on until the product is completely dry.

# Introduction

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Thank you for purchasing a SONICWARE LIVEN MEGA SYNTHESIS. LIVEN MEGA SYNTHESIS is a compact groovebox that allows live performance in any environment with a 6-track step sequencer, intuitive operation with 16 physical knobs, battery power and a built-in speaker.

We hope you enjoy using it for a long time.

## Key features of the LIVEN MEGA SYNTHESIS

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- Complete reproduction of the legendary sound of the world's first 16-bit game console that released at the end of the 1980s
- Creating various game music with a highly functional 6-track sequencer and 10 types of effects
- Includes sound banks and patterns created by Yuzo Koshiro, a famous composer known for "Ys" and "Bare Knuckle" and so much more.

## Jam in any situation

Battery power and a built-in speaker enable producing and performing anywhere

## Synchronize with all kinds of devices

Clock synchronization is possible with devices that have MIDI or SYNC connectors.

The audio SYNC function enables synchronization with Teenage Engineering Pocket Operator devices using the LINE jack.

In addition, clock synchronization signals can be bridged between different connectors. For example, MIDI clock can be generated from an external SYNC clock signal.

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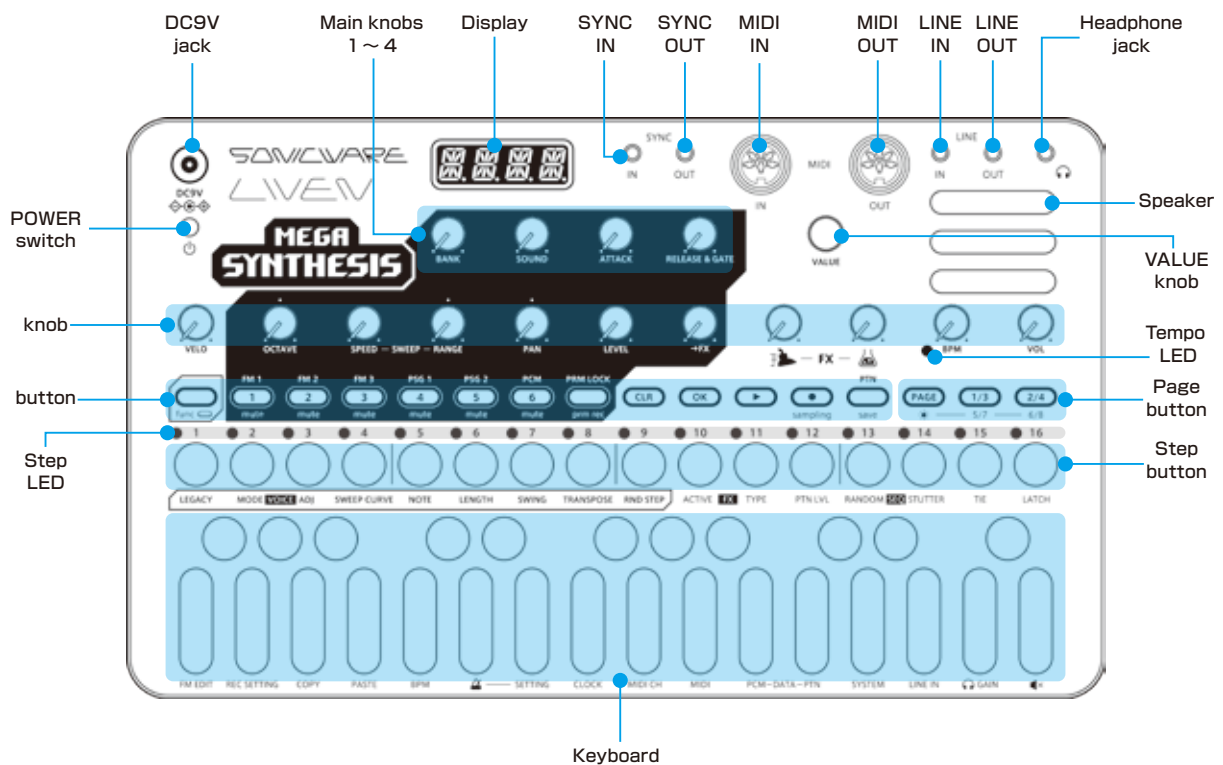
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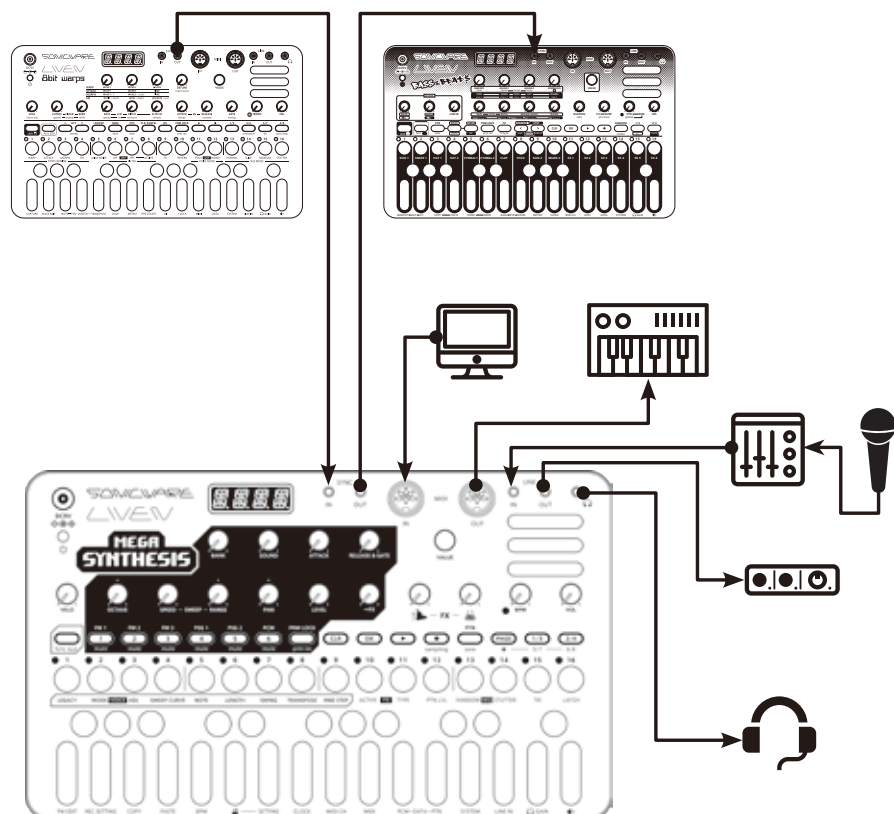
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# Names of parts



# Connection example



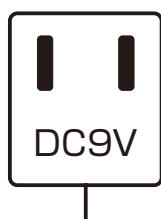
※ Use connection cables that are 3m or shorter.



# Starting up and shutting down

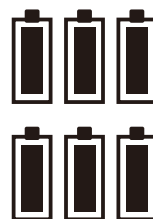
## Preparing a power supply

AC adapter (sold separately)



or

6 AA batteries



**Only use AC adapters that conform to the specifications. Using an AC adapter with different specifications could cause damage.**

### AC adapter specifications\*

Voltage : 9V output

Current : 1A or higher

Connector : EIAJ-03 compliant

(1.7mm inner diameter, 4.75mm outer diameter)

Polarity : center+

\*Equivalent to Korg Volca KA350 adapter

BT.LO will appear on the display if the remaining battery charge is low. Replace the batteries immediately.



When using nickel-metal hydride batteries or lithium batteries, change the battery setting. (→ P.99)

## Starting up

- 1 Press and hold the POWER switch until MEGA (LIVEN MEGA SYNTHESIS) appears on the display.



## Turning the unit off

- 1 Press and hold the POWER switch until the display turns off.



Recently made changes will be lost when the unit is turned off. Save the changes if necessary.

# Basic operations

---

This section explains basic operations.

## Adjusting the overall volume

The volume from the speaker, headphones and the LINE OUT can be adjusted.



Volume
0 ~ 127
This can be adjusted from $-\infty$ to +6 dB with 0 dB as the middle value (63-64).

## Turning on/off the speaker

The built-in speaker can be turned off manually if you want to mute it without connecting headphones (when only using the LINE OUT, for example).



Speaker	
MUTE	Speaker off
SPK	Speaker on

# Basic operations


---

## Using the func button

Some LIVEN MEGA SYNTHESIS buttons have two functions



In the example above, the secondary functions of the  and  buttons are “save” and “RANDOM” .

Pressing these buttons while pressing the  button will activate their secondary functions.

In this manual, operations while pressing the  button will be shown as follows.

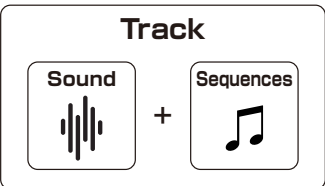


# Tracks and patterns

## Track overview

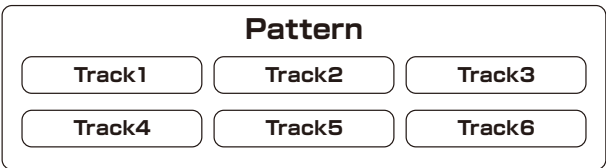
The LIVEN MEGA SYNTHESIS is a groovebox that has a 6-track sequencer.

**Tracks** contain both **sound** settings and **sequences** (performance data). The 6 tracks of the LIVEN MEGA SYNTHESIS can each have different sounds and individual sequences created for them.



## Pattern overview

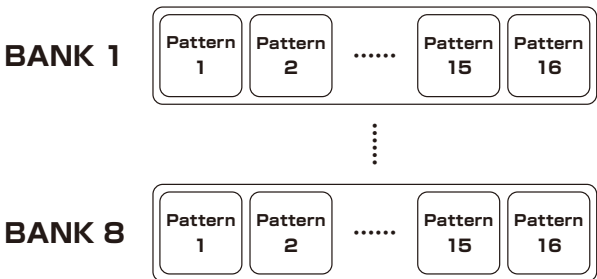
A **pattern** is a combination of the 6 tracks described above. With lengths of 1-8 bars, patterns can be used as the smallest units in making songs.



## Patterns and banks

16 patterns can be stored together in a single **bank**.


The LIVEN MEGA SYNTHESIS has 8 banks enabling 128 patterns to be saved in total.



- BANK 1 contains preset patterns. Following the instructions on the next page, try playing them.

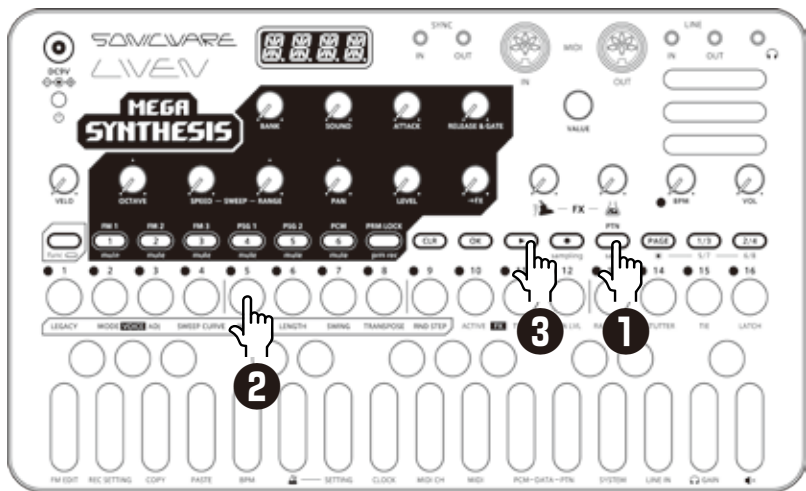
# Tracks and patterns

## Selecting patterns




- 1 Press 
- 2 Press  $\circ \sim \circ^{16}$   
→ The pattern is selected.  
(STEP1=pattern 1...STEP16=pattern 16)

























## Playing patterns

- 3 Press  .  
Press it again to stop.





## Selecting pattern 17 and higher

Press    after procedure 1 to change the bank, enabling selection of pattern 17 and higher.

  	Bank1	  	Bank5
  	Bank2	  	Bank6
  	Bank3	  	Bank7
  	Bank4	  	Bank8





- If a different pattern is selected during pattern playback, it will be readied but will not start playing immediately.  
Playback will switch to the selected pattern after the playing pattern completes.
- After pressing  ,  VALUE can also be used to select pattern

# Tracks and patterns

---

## Changing the tempo



BPM
40 ~ 250
When the tempo is shown on the display,  VALUE can be turned to change it in 0.1-beat increments. When you want to set the BPM lower than 80 or higher than 160, use  VALUE to achieve this too

## Reloading patterns

**1** Press .





**2** Press .

This is useful for restoring sounds to their original states during live performances, for example.




# Pattern chain playback




## Selecting multiple patterns and playing them in order (chain playback)

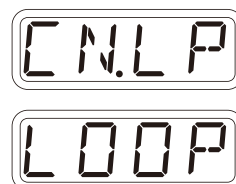
- 1 Press  twice (lights orange).
- 2 Press  ~ .
- Select patterns in the order that you want them to play.  
Press 1- 16 again to deselect.
- 3 Press .
- The patterns will play in the selected order.






- Press  again to end chain playback.
- Stutter mode (→ P.77) cannot be used during chain playback.

## Looping the chain playback

- 1 Press  +  and select CN.LP.
- 2 Select LOOP by .



## Adjusting the volume of individual patterns

- 1 Press  + .
- 2 Adjust parameter by .

Pattern Level
0 ~ 127
Pattern levels can be set in a range of $-\infty$ - +6 dB.



# Track selection and basic adjustments

---

MEGA SYNTHESIS has a total of 6 tracks that reproduce the FM sound chip "YM2612" with 3 FM synth tracks, 2 PSG sound tracks, and 1 PCM sound track.

Switch between the 6 tracks of the MEGA SYNTHESIS to work with them.

## **Tracks 1, 2, 3:**

FM synth engine with maximum 6 voices polyphony.

Suitable for creating melodies and chord sections.

Select and adjust sounds created in FM EDIT mode.

You can make more detailed sound in a dedicated edit mode.

See FM EDIT mode (→ P.30)

## **Tracks 4, 5:**

PSG sound engine with maximum 4 voices polyphony.

Suitable for creating chiptune sounds and simple drum sounds.

The PSG sound source allows you to adjust the sound by selecting preset square wave, pulse wave, and noise waveforms.

For detailed editing of PSG sounds, see Editing PSG sounds (→ P.48)

## **Track 6:**

PCM sound engine with maximum 3 voices polyphony.

Suitable for creating rhythm sections such as drums.

Select and edit a preset PCM sample.

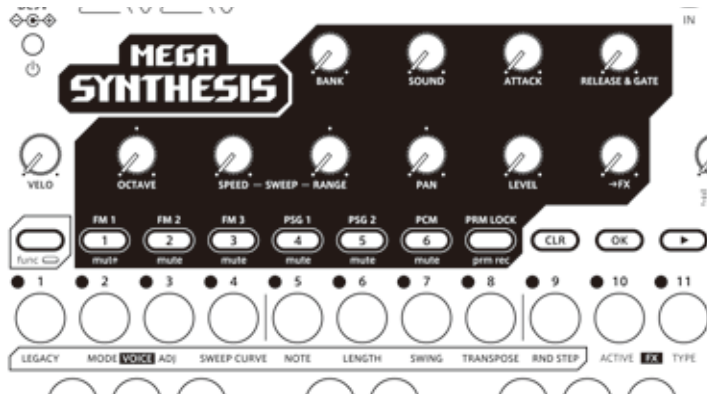
You can also capture any sound by using the sampling mode.

For details on editing PCM sounds, see Editing PCM sounds (→ P.50)

# Track selection and basic adjustments

## Selecting tracks

- 1 Press **1** ~ **6** for the track you want to select.  
The selected TRACK button will light red and its track number will be shown on the display. (The unselected TRACK buttons will light green.)  
The parameters shown in the gray areas on the top of the unit can be controlled separately for each track.



## Muting tracks


- 1 Press **func** + **1** ~ **6** for the track you want to mute.  
The muted TRACK buttons will light orange.  
Press **func** + the button that is lit orange to unmute the track.




- By default, MT.MD (mute mode) is set to SEQ, allowing you to play even if the track is muted.  
If you want to completely mute the sound of a track, select **SND** in **MT.MD** in **func** + **SYSTEM**.  
Regarding mute mode (→ P.100)

# Track selection and basic adjustments



## Adjusting track levels

- 1 Turn  **LEVEL** .  
The level of the selected track can be set in a range of 0 – 127 (  $-\infty$  – +6 dB).

## Adjusting track panning


- 1 Turn  **PAN** .  
The panning of the selected track can be set in a range of L63 – CNTR – R63.

## Changing the sound of tracks

Turn  **BANK** and  **SOUND** to select the sound for each track.  
The sound sources that can be selected differ depending on the track.

TRACK	TYPE	BANK	SOUND
1、 2、 3	FM	1 ~ 32 Banks	1 ~ 16 Sounds
4、 5	PSG	11 Types	Pitch adjustment Decay adjustment for noise type
6	PCM	1 ~ 6 Banks	1 ~ 16 Samples



- BANK and SOUND operations can also be performed using  **VALUE** .

# Track selection and basic adjustments

## Adjusting the attack and release of a sound

⊖ ATTACK adjusts the attack feel at the beginning of the sound, and  
⊖ RELEASE & GATE adjusts the extension at the end of the sound.

1 Turn ⊖ ATTACK , ⊖ RELEASE & GATE



### ATTACK

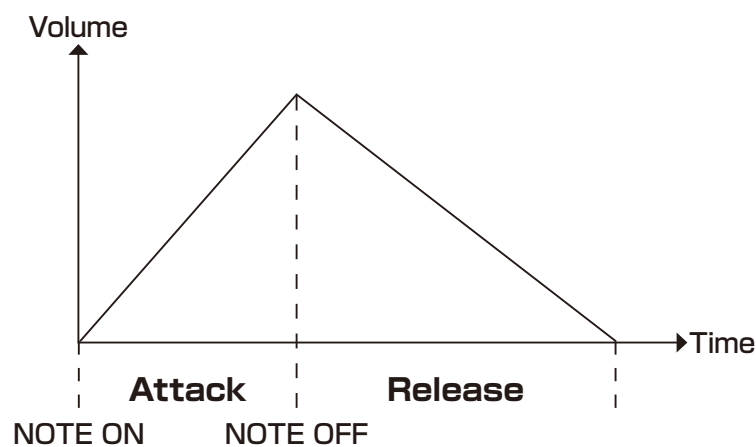
attack (EG)		
FM	PSG	PCM
-10 ~ 10	0 ~ 127	0 ~ 127
Changes within a range of $\pm 10$ based on the setting value of the selected sound.	Attack time changes. If you select Noise → Square wave or Pulse wave, adjusts the time that noise is heard.	Attack time changes.

# Track selection and basic adjustments



## RELEASE & GATE









RELEASE & GATE (EG)		
FM	PSG	PCM
0 ~ 127	0 ~ 127	0 ~ 127
<p>The release time will be longer in the range 103 to 127 (Varies from 0 to -10 from the sound's original release rate).</p> <p>The release time will be shorten in the range 103 to 80 (varies from 0 to +10 from the sound's original release rate).</p> <p>79 to 0: Shorten gate time (90 to 10%) (+10 from the original release rate of the sound)</p>	Gate time changes from 0 to 41 (10 to 90%), release time changes from 42 to 127	Gate time changes from 0 to 41 (10 to 90%), release time changes from 42 to 127







# Track selection and basic adjustments




## Adjusting the send amount to the FX

⊖→FX allows you to adjust the send amount to the effect for each track.  
Set the effect as follows.

- 1 Press  +  and turn ON the effect.
- 2 Press  +  and select the effect.  
You can also select the effect type with VALUE.
- 3 Turn   and   to adjust the parameters

 + 		 - FX	 - FX
S.DLY	Send Delay	Time	Amount
I.DLY	Insert Delay	Time	Amount
REV	Reverb	Decay	Mix
CRSH	Crusher	Sample rate	LPF Cut off
DIST	Distortion	Gain	Tone
COMP	Compressor	Ratio	Threshold
LPF	Low pass filter	Cut off	Resonance
HPF	High pass filter	Cut off	Resonance
ISO	Isolator	Frequency	Balance
R.MIX	Remix	Length	Amount



- Send Delay and Reverb are send type FX whose send amount can be adjusted using the ⊖→FX.  
Other FXs are insert type that apply effects when the ⊖→FX is set to 1 or higher.
- R.MIX repeats the sound at the moment when pressing  +  FX to activate if the ⊖→FX is set to 1 or higher.  
The FX will continue to sound until  is turned OFF.




# Track selection and basic adjustments

---

## LEGACY mode

MEGA SYNTHESIS has a LEGACY mode that recreates the character of the original YM2612 and SN76489 chips for each track.

Turn it **OFF** for a modern sound.

- 1 Press  +  to select.  
Legacy mode is set to **ON** by default.  
Press multiple times or turn  VALUE to set.

The FM tracks can be set to three different modes to more faithfully reproduce the sound of the "YM2612" chip.

FM:

**FILTER:** Reproduces the frequency response of the sound chip.

**LADDER:** Reproduces the behavior of the DAC of the sound chip.

**FILTER + LADDER:** Use both FILTER and LADDER at the same time.

The PSG tracks can be turned FILTER ON and OFF.

The PCM track can be set to the 4BIT mode for a low fidelity sound with an even lower bit rate.

PCM:

**FILTER:** Same as FM track

**4BIT:** In addition to FILTER, the sound will have a lower bit rate.

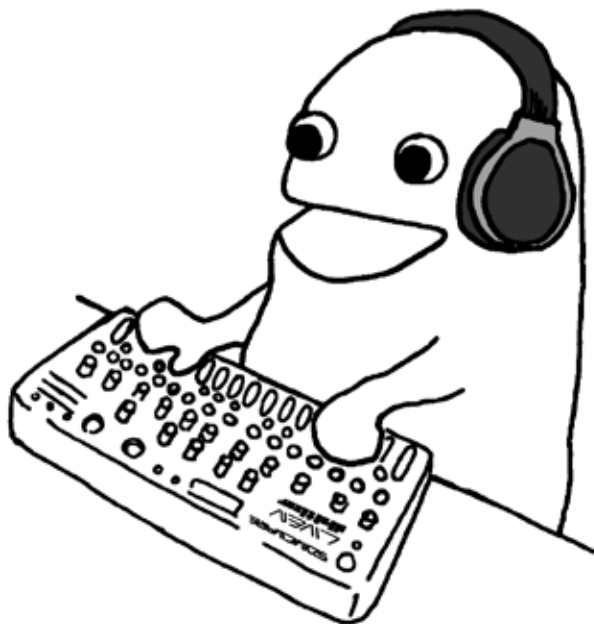


# Performing with the keyboard and voice modes

---

## Performing

- 1 Play the keyboard.



## Holding keyboard notes

- 1 Press **OK** + keys to hold them.



- Press the same key again to stop holding it.
- Press **CLR** + **OK** to stop holding all keys.

## Changing the velocity

The velocity value used when playing keys can be set.



Velocity
0 ~ 127
The higher the value, the louder the notes will be played.

# Performing with the keyboard and voice modes

---

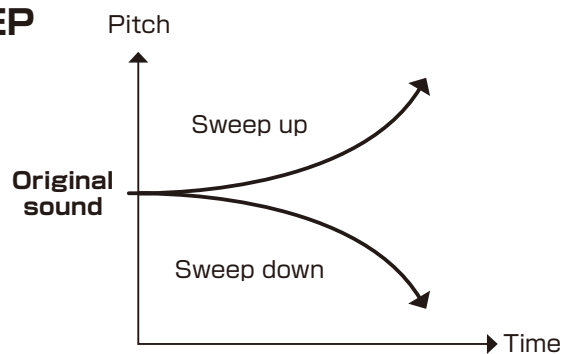
## Changing the octave range

- 1 Turn  OCTAVE.  
It can be changed by  $\pm 3$  octave range.

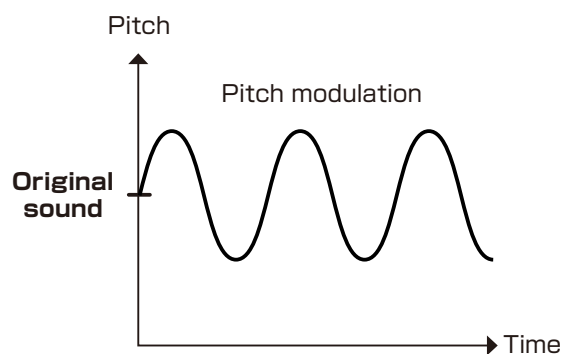
## Sweeping notes while playing

- 1 Press  +  buttons to select curve type.





### **SWEEP**



### **LFO**






# Performing with the keyboard and voice modes

<div> +  SWEEP CURVE</div>		<div> SPEED – SWEEP</div>	<div> RANGE – SWEEP</div>	
Curve		Speed	Range	
Curve type		Sweep speed	Sweep amount	
<b>LINE</b>	LINEAR	0 ~ 31  The higher the value is, the slower Sweep speed becomes.	1 ~ 11	1 ~ 11 semitones
After input, the note changes linearly to the range amount.			+10T -10T	1 octave
<b>EXP</b>	EXP		+20T -20T	2 octaves
After input, the note changes gradually at first and then rapidly in the latter half until it reaches the range amount.				
<b>LOG</b>	LOG			
After input, the note changes rapidly at first and then gradually slows until it reaches the range amount.				
<b>SINE</b>	SINE	0 ~ 127  The higher the value is, the faster LFO speed becomes.	0 ~ 127  The higher the value is, the deeper LFO pitch modulation becomes.	
Sine wave LFO for pitch modulation				
<b>SQWP</b>	SQUARE			
Square wave LFO for pitch modulation				
<b>TRI</b>	TRIANGLE			
Triangle wave LFO for pitch modulation				
<b>SAW</b>	SAW			
Sawtooth wave LFO for pitch modulation				
<b>RSAW</b>	R.SAW			
Reversed sawtooth wave LFO for pitch modulation				
<b>RNDM</b>	RNDM			
Random wave LFO for pitch modulation				


# Performing with the keyboard and voice modes


## Changing the voice mode

- 1 Press  + .  
This selects the voice mode

  
func

+

  
MODE

  
VALUE

Voice Mode (FM、PSG)		
<i>POLY</i>	Polyphonic	FM: Up to 6 voices can be output simultaneously in this mode  PSG: Up to 4 voices can be output simultaneously in this mode
<i>MONO</i>	Mono	In this single voice mode, each note retriggers the sound.
<i>LGT</i>	Legato	In this single voice mode, notes do not retrigger the sound.
<i>ARP</i>	Arpeggiator	In this mode, each note played on the keyboard is played one by one.

Voice Mode (PCM)		
<i>DRUM</i>	Drums	A sample can be sliced and played across the keyboard. (Slices can be played simultaneously up to 3 voices)
<i>SHOT</i>	One Shot	A sample can be played one shot.

# Performing with the keyboard and voice modes

---

## Changing the glide (in MONO/LEGATO mode)

**1** Press  + .

**2** Use  **VALUE** to set the speed.

 +   
func ADJ

  
**VALUE**




Glide
0 ~ 127
The time can be changed in a range of 0 - 10000 ms.













# Performing with the keyboard and voice modes

## Changing the arpeggiator type (in ARP mode)

1 Press  + .

2 Use  VALUE to select the arpeggiator type.

 +   
  
VALUE

Arpeggiator		
UP	UP	
DOWN	DOWN	
U.D	UP DOWN	
D.U	DOWN UP	
U.A.D	UP&DOWN	
D.A.U	DOWN&UP	
RNDM	RANDOM	
UP+1	UP+1	
UP+2	UP+2	
DN-1	DOWN-1	
DN-2	DOWN-2	
P.O	PLAY ORDER	 Notes are sounded in the order played on the keyboard

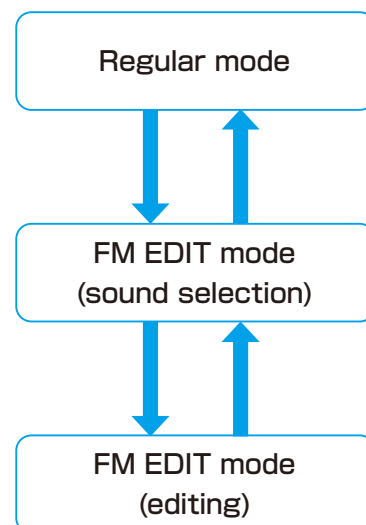
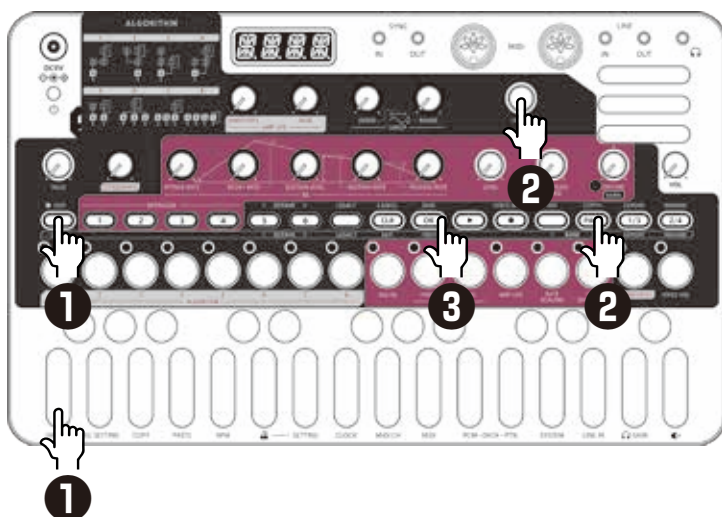
# Activating and deactivating FM EDIT mode

## Activating FM EDIT mode (sound selection)

- 1 Press **func** + **FM EDIT**.

## Selecting sounds

- 2 Press **<BANK>** **PAGE** to select BANK, and turn **VALUE** to select sounds.
- 3 Press **OK** **→EDIT**.  
→ This activates FM EDIT mode (editing).



Place the included FM EDIT overlay on the unit.



- sound can be auditioned by playing the keyboard.

## Deactivating FM EDIT mode (returning to Regular mode)

- 1 Press **CLR** **EXIT**.  
This returns to slot selection.
- 2 Press **CLR** **EXIT**.  
This returns to regular mode.



# FM Synthesizer

FM synthesis is a synthesis method that uses frequency modulation to combine multiple operators, which are waveform sound sources, to complexly transform the waveform and generate sound.

Operators are like oscillators in subtractive synthesis, but each one has an independent envelope generator.

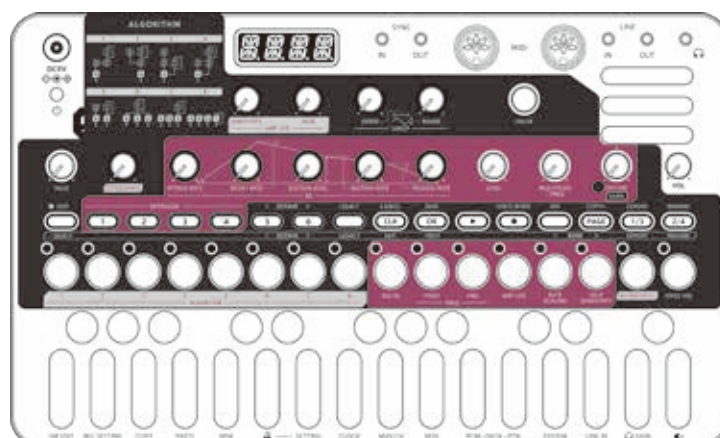
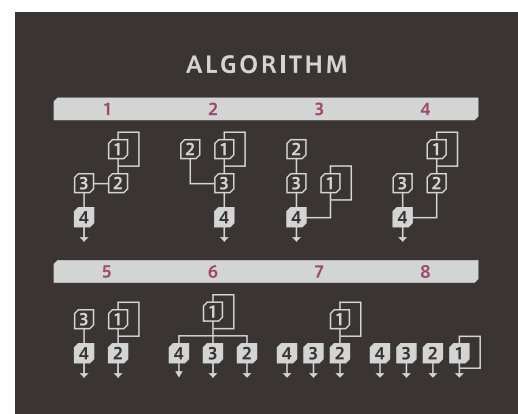
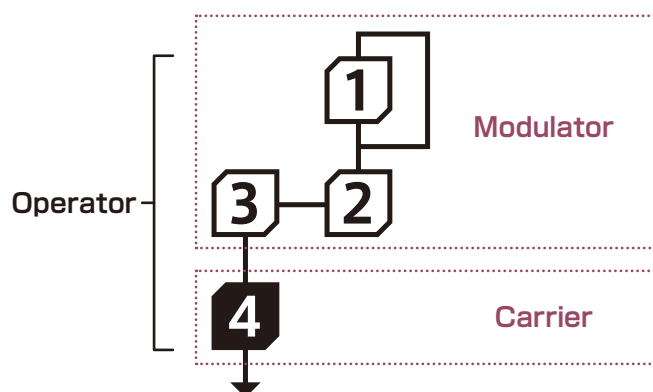
Also, the modulation side is called a "modulator" and the output side is called a "carrier", and various modulation paths can be created by combining them.

This combination of modulation paths is called an "algorithm" in FM synthesis.

Complex overtone changes over time are realized by changing operator parameters and selecting algorithms.

MEGA SYNTHESIS uses a 4-operator-8-algorithm FM synth engine, similar to the YM2612 sound chip that was used in game consoles that were a big hit from the late 80's to the 90's.

You can create a wide range of sounds from nostalgic game sounds, glittering bells, chaotic noises, and acoustic percussion.



# FM EDIT mode (Edit) - Operator settings -




## Editing parameters

1 Press      to select operators










2 Turn knobs



Operators volume	Operators frequency	Operators detune
 LEVEL	 MULTIPLIER / FREQ	 DETUNE
Level	MULTIPLIER/FREQ	Detune
0 ~ 127	0.50 ~ 15.00/1.0 ~ 9831Hz	-3 ~ 3
Setting the maximum volume for the selected operator. Setting it to 0 will silence the operator.	Setting the frequency of the selected operator. When FIXED is off, you can set it in 1.00 increments using the MULTIPLIER/FREQ knob. When FIXED is on, you can set the frequency in 76.5Hz increments by turning the MULTIPLIER/FREQ knob. When FIXED is on, the set frequency will always be sounded regardless of the keyboard you play.	Setting the detune of the selected operator.



- You can temporarily mute the target operator by holding down  and pressing     .  
Muted operators will be lit orange.  
To unmute, hold down the  key and press the muted operator button again or turn muted operator's  .
- Mute settings are not saved with the sound.

### Setting FEEDBACK

Operator 1 has its own feedback circuit.。



**FEEDBACK**

Feedback
0 ~ 127
Setting the amount of feedback. The higher the value, the closer the sound becomes to noise.





# FM EDIT mode (Edit) - Operator settings -



## Setting parameters

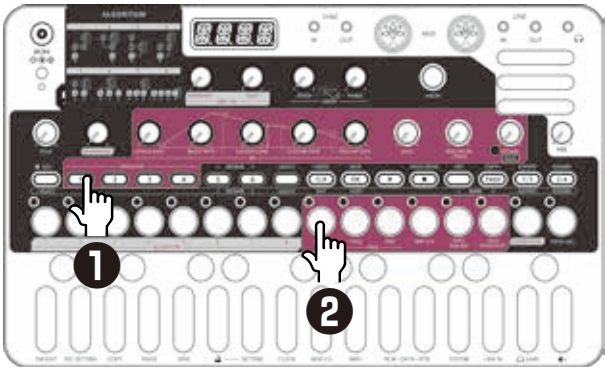
1 Press  to select operators.

2 Press STEP buttons to select an operator for editing.



SSG EG	Fixed	Fine	Amp LFO
OFF, 8 SSG types	OFF, ON	1 ~ 9831Hz, 0.50 ~ 15.00	OFF, ON
Selecting SSG EG type. About SSG EG (→ P.35)	Fixed operator frequency. With FIXED turned on, only the set frequency will be sounded even when you play the keyboard.	Fine-tune the operator frequency. When FIXED is off, it changes in increments of 0.1.	Setting whether to apply AMP LFO to the operator. About AMP LFO (→ P.37)
 VALUE	 VALUE	 VALUE	 VALUE

Rate Scaling	Velocity Sensitivity
0 ~ 3	0 ~ 127
The higher value, the longer envelope time will be for lower notes, and the shorter the envelope time will be for higher notes.	The higher value, more velocity will be reflected in the operator's level. Parameters can be adjusted in increments of 10 by pressing the VELO SENSITIVITY button.
 VALUE	 VALUE



 **VALUE**= Parameters that allow precise adjustment

# FM EDIT mode (Edit) - Operator settings -

## Editing envelopes

The YM2612 has a slightly unusual envelope that differs from a typical synthesizer that controls ATTACK time and DECAY time. The higher RATE knob value, faster envelope time will be. SUSTAIN LEVEL sets volume when decay time ends.

## Editing parameters

1 Press **OPERATOR** **1** **2** **3** **4** to select operators.

2 Turn knobs.



Envelope Generator			
ATTACK RATE	DECAY RATE	SUSTAIN LEVEL	SUSTAIN RATE
The speed at which volume rises after note-on. The volume will amplified to the level set with the LEVEL knob.	Decay speed to SUSTAIN LEVEL during note-on. Volume will decrease from volume set with the LEVEL knob to volume set with SUSTAIN LEVEL.	SUSTAIN volume during note-on. When SUSTAIN RATE is 0, the sound will continue at the set volume until note-off.	The speed at which SUSTAIN LEVEL reaches 0 during note-on. If set to 1 or higher, volume will gradually decrease even if a key is pressed.
0 ~ 31	0 ~ 31	0 ~ 127	0 ~ 31

RELEASE RATE
Speed until LEVEL reaches 0 after note-off.
0 ~ 31

# FM EDIT mode (Edit) - Operator settings -

## SSG-EG

SSG-EG is a special envelope waveform that can be used like a complex LFO by repeating, inverting, and holding the envelope. When SSG-EG is set, AR (Attack Rate) is fixed at 31, and DR (Decay Rate), SL (Sustain Level), and SR (Sustain Rate) adjust the EG operation during note-on.


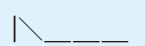

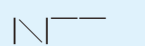

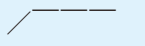

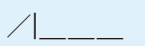
The operation of each knob changes depending on selected SSG-EG type.

## Setting SSG-EG

1 Press  to select operators.



2 Press .

OFF	OFF	-
	Repeat	During note-on, the envelope set by DR, SL, and SR repeats between TOTAL LEVEL-0.
	Hold(MIN)	During note-on, when the envelope set by DR, SL, and SR ends, the volume will be held at 0.
	Repeat(alternate)	During note-on, the envelope set by DR, SL, and SR repeats between TOTAL LEVEL and 0. From 0 to TOTAL LEVEL, the EG waveform will be inverted.
	Hold(MAX)	During note-on, when the envelope set by DR, SL, and SR ends, the volume will be held at the volume set by LEVEL.
	Inverted repeat	During note-on, the inverted envelope set by DR, SL, and SR repeats between TOTAL LEVEL-0.
	Invert hold(MAX)	During note-on, when the inverted envelope set by DR, SL, and SR ends, the volume will be held at the volume set by LEVEL.
	Inverted repeat (alternate)	During note-on, the inverted envelope set by DR, SL, and SR repeats between TOTAL LEVEL-0. From 0 to TOTAL LEVEL, it becomes a normal EG waveform.
	Invert hold(MIN)	During note-on, when the inverted envelope set by DR, SL, and SR ends, the volume will be held at 0.

# FM EDIT mode (Edit) - Setting the sound -

## Selecting algorithm

You can freely created tones ranging from crystal-clear bell sounds, heavily distorted electric guitars and simple organ sounds by making full use of each algorithm.

**1** Press STEP buttons ① ~ ⑧ to select algorithms



<b>ALGO1</b>	<b>ALGO2</b>	<b>ALGO3</b>	<b>ALGO4</b>
e.g.Guitar、 Bass Guitar	e.g.Harp	e.g.Piano	e.g.Strings、 Acoustic Guitar
Modulator : ①、②、③			
Carrier : ④			



<b>ALGO5</b>	<b>ALGO6</b>	<b>ALGO7</b>	<b>ALGO8</b>
e.g.Bells、 Woodwind	e.g.Wind Brass	e.g.Xylophone	e.g.Organ
Modulator : ①、③	Modulator : ①		Modulator : None
Carrier : ②、④	Carrier : ②、③、④		Carrier : ①、②、③、④



# FM EDIT mode (Edit) - Setting the sound -


## Adjusting AMP LFO

AMP LFO is a common setting for all operators.

 SENSITIVITY – AMP LFO	 AMP LFO – RATE
Sensitivity	Rate
0 ~ 3	0 ~ 7
Adjusting the depth of AMP LFO. If set to 0, LFO will not be applied even if the operator's Amp LFO parameter is on.	Adjusting the speed of AMP LFO.

## Adjusting Sound level

SOUND LEVEL allows you to adjust the overall volume of the sound you create.



**1** Press  SOUND LEVEL .








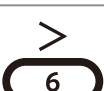






**2** Turn  VALUE .

  
VALUE

Sound Level
0 ~ 127

## Changing octave ranges

- 1 Press    
This lowers/raises the range by an octave.

		+3 OCT
		+2OCT
		+1 OCT
		
		-1 OCT
		-2OCT
		-3 OCT

## FM EDIT mode (Edit) - Checking the sound -

---

### Checking various sound parameters

FM EDIT mode has some sound check parameters that are not saved in the sound settings.

Using these when editing, you can check how does it sounds in regular mode.

### Adjusting Velocity



Velocity
0 ~ 127

### Changing LEGACY mode

LEGACY 	LEGACY 	LEGACY 	LEGACY 
OFF	FILTER	LADDER	FILTER, LADDER





- 
- The sound changes depending on the LEGACY mode you use.
  - About LEGACY mode in regular mode (→ P.22)
-

## FM EDIT mode (Edit) - Checking the sound -

---

### Adjusting Pitch sweep.

 SPEED - SWEEP	 SWEEP - RANGE
Speed	Range
0 ~ 127	0 ~ 127
Adjusting speed of SWEEP	Adjusting depth of SWEEP



- SWEEP waveform is fixed SINE.
  - About SWEEP in regular mode (→ P.24)
-

## FM EDIT mode (Edit) - Checking the sound -

---

### Changing Voice mode.


- 1 Press  .  
Selecting voice mode.

Voice Mode	
<i>POLY</i>	Polyphonic
<i>MONO</i>	Mono
<i>LGT</i>	Legato



- About VOICE MODE in regular mode (→ P.26)
- 

### Changing glide (when VOICE MODE set to MONO / LEGATO )


- 1 Press  .

- 2 Turn  VALUE .


  
VALUE

Glide
0 ~ 127





- By pressing  repeatedly ,Parameters can be adjusted in steps of 10.
  - About glide in regular mode (→ P.27)
-

### Saving sound setting

- 1 Press  twice.  
It will be saved and you will return to Sound Select.



### Canceling sound editing



- 1 Press  twice.  
Returns to Sound Select without being saved editing.  
If  button is be blinked green, please press it twice.


## FM EDIT mode (Edit) - Renaming and Copying -


---

### Renaming sound


**1** Press  in Sound Edit.

**2** Press   to move the cursor left or right, and turn VALUE to select characters.



**3** Press .  
DONE will appear on the display to confirm.



- 
- Pressing  in Sound Select, it can rename the bank name in the same way.
-

# FM EDIT mode (Edit) - Renaming and Copying -

---

## Copying sound

**1** Select an initial sound in Sound Select.


**2** Press  to enter EDIT.

**3** Press .



**4** Turn  to select a sound to copy.



- You can also select sounds by pressing the step buttons.
  - While selecting sounds, you can audition sounds by playing the keyboard.
- 

**5** Press .  
This completes the setting.  
DONE will appear on the display.




- After completing copying, please press  twice to store sound that has been copied.
  - Press  during each procedures to cancel it.
-





## FM EDIT mode (Edit) - Clearing -

---

### Clearing sounds

- 1 In editing mode, press .  
This clears the sound.



- After completing a procedure, press  twice to save the initialized sound.
  - Press  during a procedure to cancel it.
-


## FM EDIT mode (editing) — Exporting/Importing sounds—

---

FM sounds can be exported to or imported from a PC, Mac or similar device by MIDI. See (→ P.95) for details about connection.

### Exporting a single sound

**1** Use sound selection to select the sound you want to export.

**2** Press  to enable editing.

**3** Press .

**4** Set your PC to receive MIDI data.



**5** Press .

This starts sound data transmission  
The step LEDs will show the progress.




When finished, DONE will appear on the display.

### Importing a single sound

**1** Use Sound Select to select the sound you want to import to.

**2** Press  to enable editing.


**3** Start transmitting data from the transmitting device.

**4** After receiving data has completed, press  twice to save it.

### Exporting sound banks

**1** In Sound Select, press   to select the bank you want to export.

**2** Press .



**3** Set your PC to receive MIDI data.

**4** Press  .





This starts sound data transmission.

The step LEDs will show the progress. When finished, DONE will appear on the display.

### Importing sound banks

**1** In Sound Select, press   to select the bank you want to export.

**2** Start transmitting data from the transmitting device.

**3** When BK.SV is shown, press  .



# Editing PSG sound

## Editing PSG sound

For PSG tracks, use the  **BANK** knob and  **SOUND** knob to edit dedicated parameters.

## Selecting Waveforms

- 1 Turn  **BANK** to select waveforms.

  
**BANK**

Select Wave		
<i>SQAR</i>	SQUARE	Square wave
<i>NL:S</i>	NOISE LOW > SQUARE	Low freq noise to Square wave
<i>NM:S</i>	NOISE MID > SQUARE	Mid freq noise to Square wave
<i>NH:S</i>	NOISE HIGH > SQUARE	High freq noise to Square wave
<i>PULS</i>	PULSE	Pulse wave with a duty ratio of approximately 9:1.
<i>NL:P</i>	NOISE LOW > PULSE	Low freq noise to Pulse wave
<i>NM:P</i>	NOISE MID > PULSE	Mid freq noise to Pulse wave
<i>NH:P</i>	NOISE HIGH > PULSE	High freq noise to Pulse wave
<i>NSLO</i>	NOISE LOW	Low freq noise
<i>NSMD</i>	NOISE MID	Mid freq noise
<i>NSHI</i>	NOISE HIGH	High freq noise

# Editing PSG sound

---

## Editing waveforms

**1** Turn  SOUND to edit parameter.



Wave Edit		
Detune	SQAR,NL>S, NM>S,NH>S PULS,NL>P,NM>P, NH>P	-63 ~ 63
Decay	NS.LO,NS.MD,NS.HI	0 ~ 127

# Editing PCM sound

---

## Editing PCM sound

For PCM tracks, you can select and edit 6 banks and 16 slots, for a total of 96 samples.

The presets include a variety of drum samples assigned to 6 slices in advance for easy to use as rhythm tracks.

Additionally, you can freely create samples by using the sampling function.

For sampling, refer to PCM sampling (→ P.51)

## 2 Voice Modes

By setting the voice mode to SHOT, you can use the PCM tracks as a non-drum track.

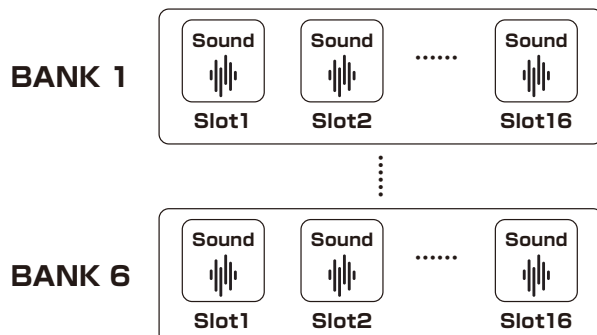
**1** Press  +  **VOICE** to select Voice Mode.

SHOT	You can play a single sample in a scale on the keyboard. Maximum polyphony 1
DRUM	You can play a drum kit (or a slice of a single sample) using the keyboard. Maximum polyphony 3

# Sampling PCM

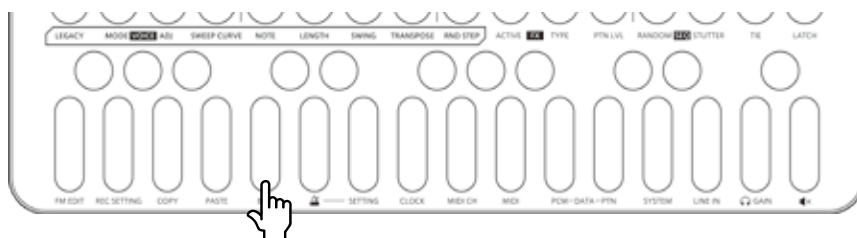
## Sampling overview

The PCM sound source on track 6 of MEGA SYNTHESIS has 16 slots in each of 6 banks, allowing you to save recorded samples in a total of 96 slots.



## Selecting samples

- 1 Turn BANK and SAMPLE to select samples.  
You can audition samples by playing keyboard.



If you play this key when VOICE MODE is SHOT, you will hear the sample's original pitch/length.



- BANK and SOUND operations can also be performed with VALUE .

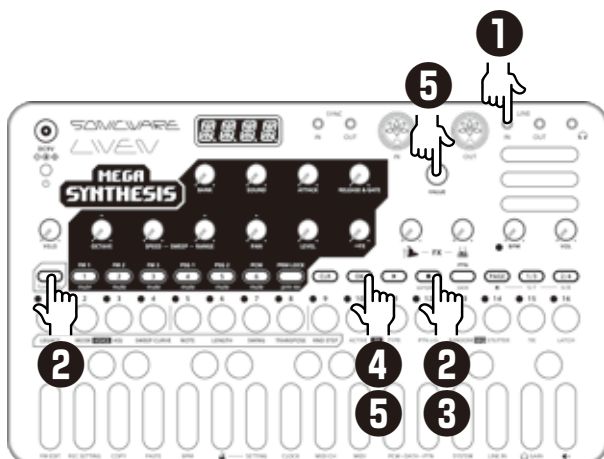
# Sampling — Recording—

- 1 Connect the output of the equipment you want to record to the MEGA SYNTHESIS LINE IN.



- Mics and guitars cannot be connected directly. Use a mixer or other equipment to convert their outputs to line signals.

- 2 Press **func** + **sampling**. **sampling** will blink red. Use the step LEDs to check the recording level. (STEP12 is -6dB, STEP16 is 0dB)



- 3 Press **sampling** again. **sampling** will light red and recording will automatically start when a signal is input.



The step keys show the recording progress. When step 16 lights, recording will stop automatically.

- 4 Press **OK** and use **BANK** and **SOUND** to select the slot to save the sample. You can also use the **VALUE** to select the slot. Before saving the sample, you can audition the sample of the selected slot by playing it with the keyboard.



- Press **stop** to stop recording immediately while recording.
- Press **CLR** to cancel the operation.

- 5 Press **OK** the blinking to save.



# Sampling settings

The following settings are used for sampling.

## Setting auto recording

- 1 Press  +  to select A.R.LV.



- 2 Turn  VALUE.

This can be set to OFF, or to an input signal level that starts recording automatically ( -60 ~ -20 dB).

If auto recording is off, press  when in recording standby to start recording manually.

## Setting the sampling frequency



- 1 Press  + , and select S.FRQ.

- 2 Turn  VALUE to select one.

The sampling depth for each is 8 bit.

Sample quality	Sampling frequency	Maximum recording time
Low	12kHz	8 seconds
Mid	24kHz	4 seconds
Hi	48kHz	2 seconds



- Use  +  to adjust the LINE IN input gain.
- About adjusting LINE IN GAIN (→ P.83)
- Monaural recording will be performed even if MONO is OFF in the LINE IN setting.
- After recording completes, the volume of the sample will be normalized automatically.

# Slicing

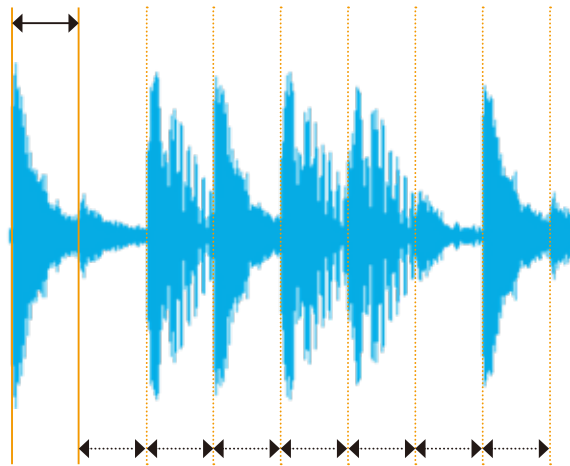
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MEGA SYNTHESIS has an autoslice function that divides the entire sample into equal lengths by setting the length of one beat.

The included preset PCM samples are initially set so that the drum kit sound is assigned to 6 slices.

You can use these immediately without changing the settings.

By setting the length of this one beat...



dividing the entire sample evenly over the same length.

# Slicing

## Slicing a sample

1 Press .

2 Turn BANK and SOUND to select a sample.

3 Press + to select DRUM.

DRUM

4 Press + .  
The value of slice length is displayed.

205



- Each time you press + , it switches between 175, 205, and 255, automatically slicing the sample into 8, 6, and 4.

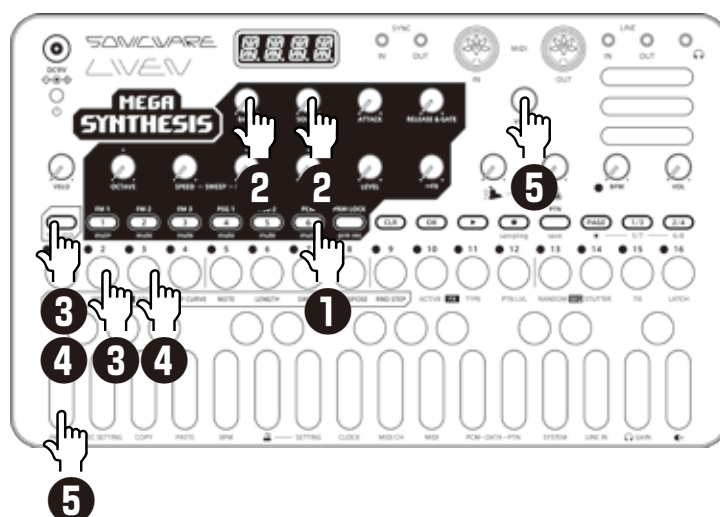
5 While playing the leftmost key (F), set the length of one beat using the VALUE .

The entire sample will be sliced evenly by the length set by the + parameter.

In most cases, the first 4 to 8 keys will be usable sounds.

Find just the right length by playing the first 2 or 3 keys and fine tuning the + setting if necessary.

One slice has a maximum length of 2 second.



# Renaming a sample

---



## Renaming a sample

**1** Press , and turn  **BANK** and  **SOUND** select a sample you want to rename.

**2** Press  +  and select S.N.ED.



**3** Press .


**4** Use ,  to move the cursor left and right, and turn to select characters.

**5** Press .

This completes the setting.

DONE will appear on the display.



- During step 2, **B.N.ED** can be selected to rename a bank in the same way.
  - Press  to cancel renaming while editing a sample or bank name.
-

# Exporting/Importing samples

---

Recorded samples can be exported to or imported from a PC, Mac or similar device by MIDI. See (→ P.95) for details about connection.

## Exporting a single sample

**1** Press , and use  BANK and  SOUND to select the sample you want to export.

**2** Press  +  and select S.EXP.



**3** Press .



**4** Set your PC to receive MIDI data.

**5** Press .



This starts sample data transmission.

The step LEDs will show the progress.

When finished, DONE will appear on the display.

## Importing a single sample

**1** Press , and use  BANK and  SOUND to select the slot you want to overwrite.



**2** Press  +  and select S.IMP.



**3** Press .





**4** Start transmitting data from the transmitting device.

**5** After receiving data has completed, press  to save it.

# Exporting/Importing sample banks

---

## Exporting sample banks

**1** Press , and use  BANK to select the sample bank you want to export.

**2** Press  +  and select B.EXP.



**3** Press .

**4** Set your PC to receive MIDI data.

**5** Press .



This starts sample bank data transmission.

The step LEDs will show the progress.

When finished, DONE will appear on the display.



## Importing sample banks

**1** Press , and use  BANK to select the sample bank you want to overwrite.


**2** Press  +  and select B.IMP.



**3** Press .

**4** Start transmitting data from the transmitting device.



**5** When BK.SV is shown, press . DONE will appear on the display to exact importing.



# Step sequencer overview

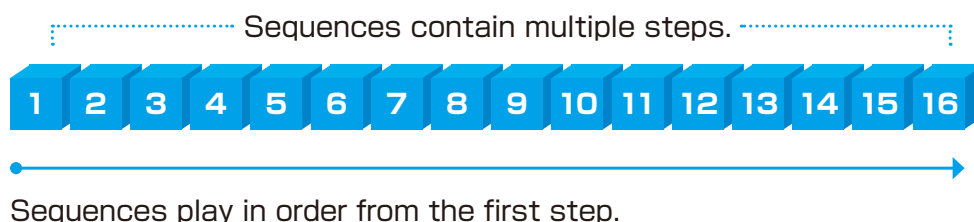
---

## Overview

The MEGA SYNTHESIS step sequencer can play **multiple steps** in order (a sequence) with performance and parameter data.



Steps contain **note data** and **parameter data**.



## MEGA SYNTHESIS step sequencer features

The sequencer in the MEGA SYNTHESIS has the following features.

### Three input methods

#### Step recording

Record notes to each step with the sequencer stopped

#### Real-time recording

Record notes to steps by playing the keyboard

#### Direct recording

Record notes to steps directly during sequencer playback

### Flexible sequencing

#### Sequences with up to 128 steps

The number of steps can be set from 1 – 128 as desired for each track

#### Support for various note lengths

The length of each step can be set from 1/32nd note to 1 bar.

# Creating sequences – Preparation

---

## Selecting tracks and setting sounds

**1** Press one  ~  button to select the track for sequence creation.

**2** Turn  **BANK** and  **SOUND** to select the sound to use.

 **BANK** and  **SOUND** operations can also be performed with  **VALUE** .



- The maximum polyphony of LIVEN MEGA SYNTHESIS varies depending on the track type.

It is as follows.

Tracks 1, 2, 3: Total 6 voices

Tracks 4, 5: Total 4 voices

Track 6: 3 voices (when VOICE MODE is set to DRUM)

- If the maximum polyphony is exceeded, notes will be turned off starting with notes on the lowest priority track. (Priority is FM: Track 3 > Track 1, PSG: Track 5 > Track 4 is the order. However, sounds that are being released will be turned off first in track priority order.)
-



# Creating sequences – Settings

## Setting the note length of one step

**1** Press  + .


**2** Use  VALUE to select the note length.

  
VALUE

Note	
1/1	Whole note
1/2	Half note
1/4	Dotted quarter note
1/4	Quarter note
1/8	Dotted 8th note
1/2T	Half note triplet
1/8	8th note
1/16	Dotted 16th note
1/4T	Quarter note triplet
1/16	16th note
1/32	32nd note

## Changing the sequence length

**1** Press  + .

**2** Use  VALUE to set the sequence length.



  
VALUE

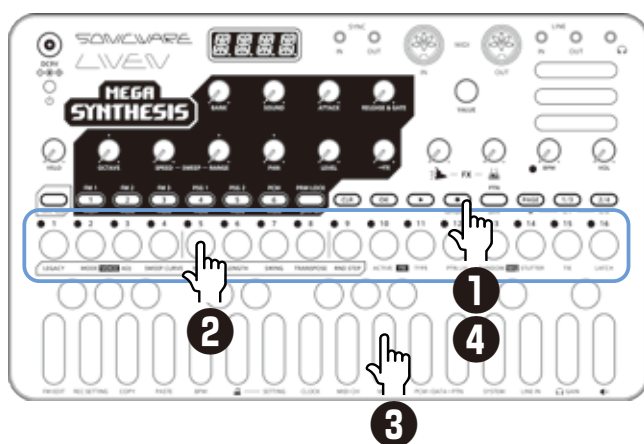
Length
1 – 128 (steps)

# Creating sequences – Step recording

Using step recording, sequences can be created in great detail while playback is stopped.

## Basic operations




- 1** When stopped, press  (lights red).
- 2** Press  $\circ^1$  –  $\circ^{16}$  at the step where you want to input a note.  
The LED for the current step will blink. The LEDs for steps that already have notes will light.
- 3** Play a note on the keyboard to input it at the step.  
Press the same note again on the keyboard to remove it from the step.  
Repeat steps 2 – 3 to create the sequence.
- 4** Press  to end step recording.



# Creating sequences – Step recording

---

## Selecting steps 17 and higher

While step recording, if the sequence length is longer than 16 steps press 、 and  to select steps 17 and higher.

To select steps 1–16, press the 1/3 button.



To select steps 17–32, press the 2/4 button.



To select steps 33–48, press the 1/3 button twice.



To select steps 49–64, press the 2/4 button twice.





To select steps 65–96, press the  and  button.





To select steps 81–96, press the  and  button.




To select steps 97–112, press the , and press  button twice.



To select steps 113–128, press the , and press  button twice.





- During step recording, pressing a step will cause the stored note to sound continuously. This is by design.
-  VALUE can also be used to move between steps.
- Page buttons are enabled or disabled according to the length of the sequence.

# Creating sequences – Step recording

---

## Clearing steps


- 1 Press  +  .  
During step recording, only the note information for that step will be cleared.

## Copying steps

- 1 During step recording, press  to select the step to copy.

- 2 Press  +  .



- 3 Press  to select the paste destination step.

- 4 Press  +  .



The note and parameter lock data from the copy source step will be pasted to the destination step.



---

• Data for ties cannot be copied.

---

## Automatically advancing steps during step recording (Auto Step mode)

In step recording mode, the step can be advanced automatically each time a key of the keyboard is pressed.

- 1 Press  +  to select A.STEP.



- 2 Turn this mode on/off.

# Creating sequences – Step recording

Tied-notes (long sounds) can be input with the MEGA SYNTHESIS.

## Enabling tied-note (long sound) input

- 1 Press  + .



The button will light red, and tied-note input will be enabled.

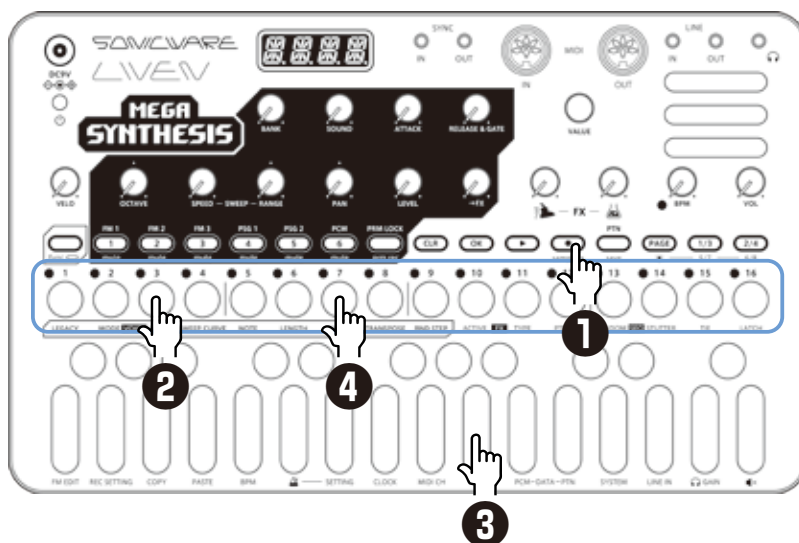
## Inputting tied-notes (long sounds)

- 1 When stopped, press  (lights red) to start step recording.

- 2 Press  ~  at the step where you want to start note input.




- 3 Press and hold a key on the keyboard.

- 4 Press  ~  at the step where you want to stop the note.  
This inputs a tied-note from the starting step to the stopping step.



In the example above, a note (A) is input that starts on step 3 and ends on step 7.





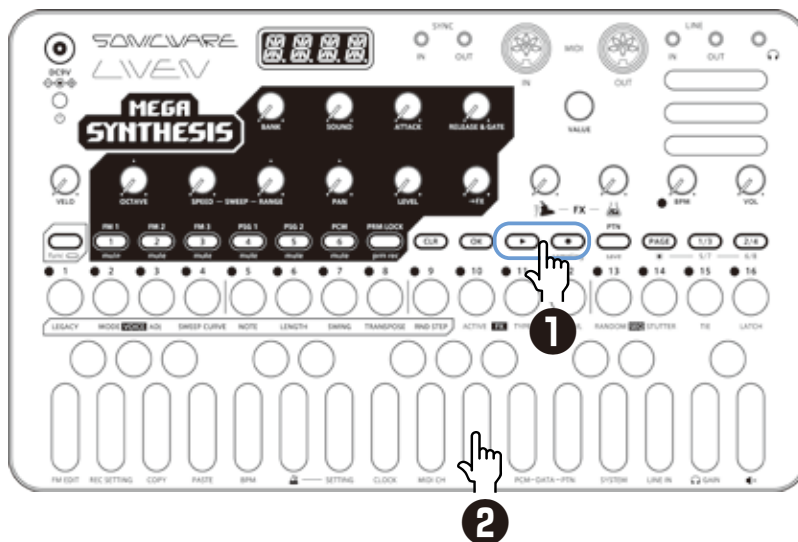
- By pressing , ,  during procedure 4, tied-notes that span pages can be input.
- It is not possible to enter tied notes that span from the end of a sequence to the beginning.



# Creating sequences - Real-time recording

Sequences can be created in real time while playing the keyboard.

## Basic operations

- 1 After pressing , press .
- 2 The pattern will start playing, so play the keyboard when you want to input notes.



- By pressing  +  to enable the input of tied-notes, long notes that span steps can be input.

# Creating sequences - Real-time recording

## Turning the metronome ON/OFF


- 1 Press  +  to turn ON/OFF.



## Adjusting the metronome volume

- 1 Press  +  to select VOL.



- 2 Turn  VALUE to adjust the metronome volume.

  
VALUE

Metronome
0 ~ 15

## Setting a pre-count

- 1 Press  +  to select PR.CT.



- 2 Turn  VALUE to change the pre-count.

  
VALUE

Metronome
OFF, 1 ~ 8



- When a pre-count is set, recording and playback will start after the pre-count.
- By setting VOL to a value other than OFF and turning off the metronome, only the pre-count can be heard during real-time recording.

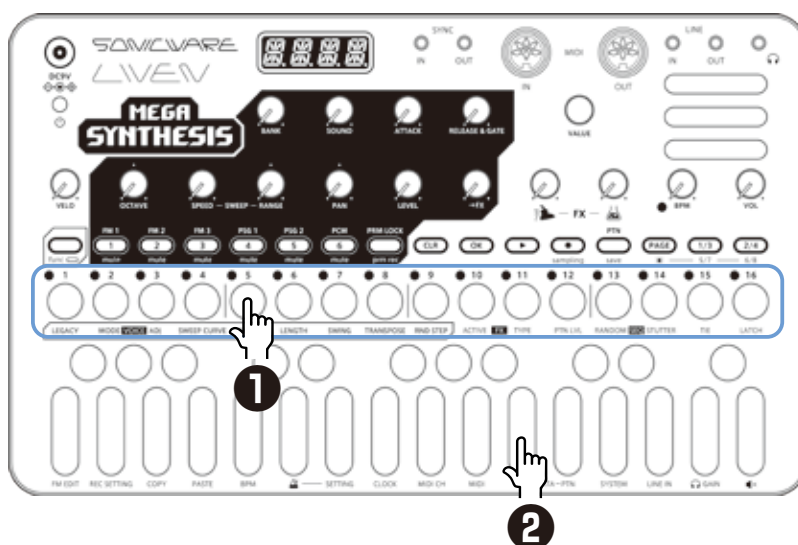
# Creating sequences – Direct recording

With direct recording, notes can be input on steps directly when both stopped and during playback.

This is particularly suitable for building up sequences while performing by directly inputting notes during playback.

## Basic operations

- 1 Press and hold ① ~ ⑯ for the position where you want to input a note.
- 2 Play a note on the keyboard to input it at the step.  
Notes can also be input if procedures 1 and 2 are done in reverse order.





# Creating sequences - Direct recording

---



- By pressing **PAGE**、**1/3** and **2/4** while step recording, pages with steps 17 and higher can be selected if the sequence is longer than 16 steps.

To select steps 1-16, press the 1/3 button.



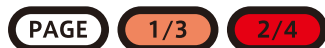
To select steps 17-32, press the 2/4 button.



To select steps 33-48, press the 1/3 button twice.



To select steps 49-64, press the 2/4 button twice.



To select steps 65-96, press the **PAGE** and **1/3** button.



To select steps 81-96, press the **PAGE** and **2/4** button.



To select steps 97-112, press the **PAGE** ,and press **1/3** button twice.



To select steps 113-128, press the **PAGE** ,and press **2/4** button twice.




- During playback, pressing **PAGE** , **1/3** or **2/4** will lock the page shown.

Press **OK** to unlock the page.

# Creating sequences – settings

## Setting swing

1 Press  + .

2 Turn  VALUE to adjust it.  
Every even step (2nd, 4th, 6th, etc.) will be delayed.



## Transpose

1 Press  + .

2 Turn  VALUE to transpose KEY.

  
VALUE

**Transpose**

-12 ~ 12 (in semitone)



- If you use the Transpose function while the pattern is playing, changes will not take effect until the beginning of the pattern is reached.

# Parameter locking

---

The MEGA SYNTHESIS has a **parameter locking** function that can record knob operations to steps.

This allows sounds to be changed over time and is useful for creating patterns with great expressiveness.

Parameter locking data can be input in the following three ways.

## Direct input

Turn knobs while pressing ① ~ ⑯ in this fundamental method of direct input.

## Real-time input

Record knob movements during playback in real-time.



## Sound locking input




When recording notes to steps by pressing keys on the keyboard, the state of the sound currently playing is simultaneously recorded to the step as parameter lock data in this input method.

# Basic parameter locking operations

---

## Turning parameter locking on

- 1 Press  .  
Pressing  cycles through the following states.

<b>PRM LOCK</b> 	Parameter locking off	Parameters do not change automatically
<b>PRM LOCK</b> 	Parameter locking on	Parameters change automatically based on parameter lock data
<b>PRM LOCK</b> 	Sound locking on	Sound lock recording enabled (→ P.75)

## Clearing parameter lock data

- 1 Press  +  .  
This clears parameter lock data.

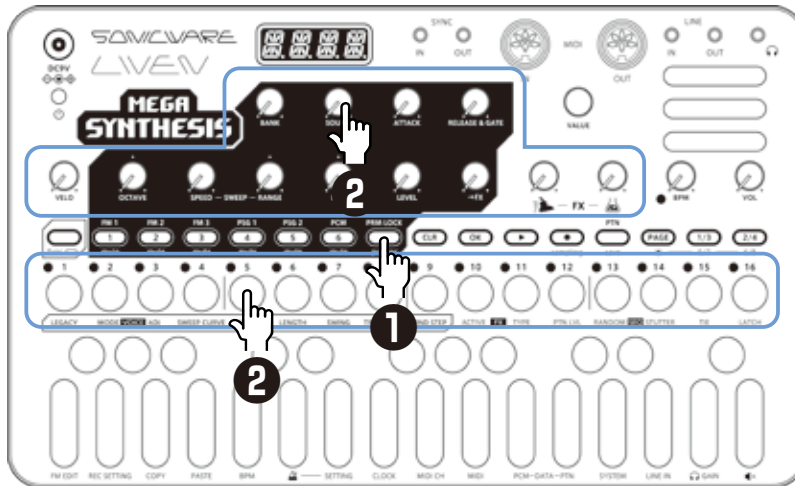
# Parameter locking – Direct input

## Turn parameter locking on

- 1 Press **PRM LOCK** (lights green).

## Recording knob operations

- 2 While pressing **1** ~ **16**, turn **VALUE** knobs.



- By pressing **PAGE**、**1/3** and **2/4** before directly inputting parameter lock data, pages with steps 17 and higher can be selected if the sequence is longer than 16 steps.
- By turning the knobs while pressing multiple step buttons, you can enter multiple parameter locks at once (Excluding BANK and SAMPLE).
- Parameter locking cannot be used on FX, BPM, VOL.
- While pressing **OK** , press **1** ~ **16** and turn. **VALUE** to set the trigger probability for that step.  
You can set the probability between 25 ~ 100%.

## Inputting in real time (parameter recording)

-

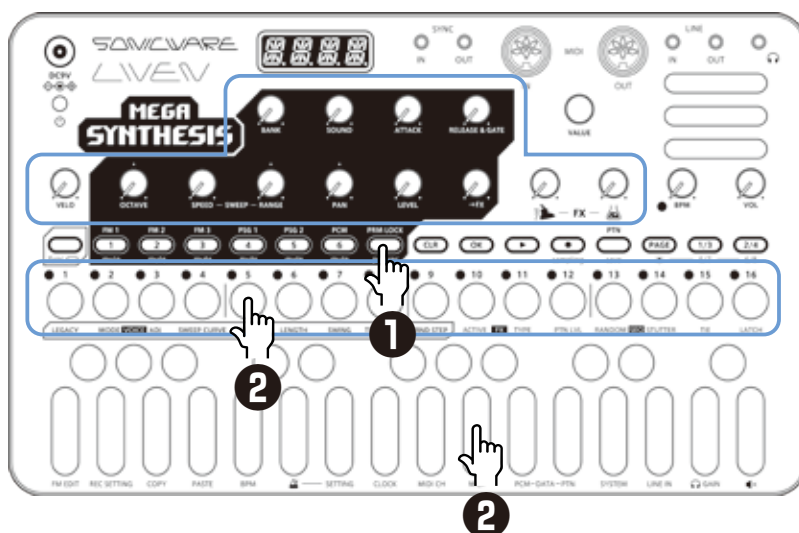
# Parameter locking – Sound locking input

## Turn sound locking on

- 1 Press  $\text{PRM LOCK}$  twice (lights orange).

## Recording note input and parameter lock data at the same time

- 2 While pressing  $\text{O} \sim \text{O}$ , play the keyboard.



- In this example, direct recording is used for note input. The sound locking function can also be used with step recording and real-time recording in the same manner.
- The parameter lock data that is recorded using the sound locking function includes BANK and SOUND.




# Sequence effects

The MEGA SYNTHESIS has sequence effect functions, **Random** that can randomize phrases, and **Stutter** that repeats playback of pressed steps.

## Random

1 Press  +  .

When this is on, a randomized sequence will be played back

Press  +   again to turn the random function off.

## Random settings

The smallest unit used for randomization during random playback can be set (for example, 1 step or 4 steps).

1 Press  +  , and use  to adjust.

  
VALUE

Random step unit
OFF, 1, 2, 4, 8, 16, 32 (steps)
If set to OFF, randomization will not occur even if the random playback function is on.

The random on/off setting is saved with the pattern, but random unit settings can be saved per track.





# Sequence effects

---

## Stutter

- 1 Press  +  .  
Turning this on enables stutter mode.

- 2 Press  -  .  
Only the pressed steps will be played.



Press  +  again to turn stutter mode off.

# Deleting sequences

---


## Clearing steps


- 1 Press **CLR** +  $\circ^1 \sim \circ^{16}$ .  
The note and parameter lock data from that step will be cleared.



- While pressing **CLR**, steps that have parameter lock data blink red.
  - When recording notes (**NOTE** button lit red), only note data will be cleared.
  - When parameter recording (**prm rec** lit red), only parameter lock data will be cleared.
  - Normally, when **NOTE** and **prm rec** buttons are lit red, both note and parameter data will be cleared.
- 


## Clearing all note data in a sequence

- 1 Press **CLR** + **1** ~ **6** for the track with the sequence to be cleared. 

- 2 Use **VALUE** to select NOTE, and press **OK**.   
This clears all notes on all steps of the sequence.

## Restoring only track sounds to the last saved state

- 1 Press **CLR** + **1** ~ **6** for the track with the sound to be restored.

- 2 Turn **VALUE** to select SND, and press **OK**. 
-

# Copying tracks



---

## Sequence extending copy function (duplicate)

You can duplicate a sequence you've created to double it's length.

- 1 Select the track of the sequence you want to make an extended copy of by pressing **1** ~ **6**.
- 2 Press **func** + **LENGTH**.
- 3 While pressing **func**, turn **VALUE** to duplicate it 2x

## Copying a track to another track

- 1 Press **1** ~ **6** to select the track of the pattern to be copied.
- 2 Press **func** + **COPY**.  

- 3 Press **1** ~ **6** to select the destination track.
- 4 Press **func** + **PASTE**.  




- Track copying is only valid between tracks of the same type (between tracks 1, 2, and 3, and between tracks 4 and 5).
-


# Pattern saving

---

Sequences created on every track can be saved as patterns.

## Saving patterns

1 Press  + .



2 Press .  
DONE will appear, and it will be saved.






Changing the save destination or **copying the pattern**

1 Press  + .

2 Use , ,  to select the save destination bank.

3  ~  to select the save destination pattern.  
DONE will appear, and it will be saved.





- In step 2,  VALUE can also be used to select the save destination (execute with ).
- Press  during a procedure to cancel it.

---

## Initializing patterns

1 Select the pattern to be initialized.  
(→ P.80)

2 Press  + .  
CLR will be shown, and pattern settings along with note and parameter lock data will all be cleared.



3 Save the pattern.

# Pattern renaming




---

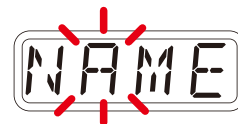
## Renaming patterns

- 1** Press  +  multiple times to select P.N.ED (pattern name editing).





- 2** Use  VALUE to select the pattern for renaming, and press .

- 3** Use  /  to move the cursor left and right, and turn  VALUE to select characters.



Cursor position blinks

- 4** Press .
- This saves the name and returns to pattern selection.
- To rename other patterns, repeat from step 2.
- To end renaming, press .



# Tempo overview

---

The MEGA SYNTHESIS has two BPM modes.

## Pattern BPM mode

Whenever a different pattern is selected, the BPM is reset using the tempo saved in that pattern.

## Global BPM mode

The current global BPM value will continue to be used even when a different pattern is selected.

Select global BPM mode to maintain a consistent tempo during the jam session.

Use pattern BPM mode when you want the tempo to change with each pattern.

## Setting the BPM mode

**1** Press  + .

BPM	
BPM mode	
<i>PTN</i>	Pattern BPM mode
<i>GLBL</i>	Global BPM mode


For BPM settings, see Changing TEMPO (→ P.14)

# LINE IN settings

## Changing the gain

1 Press  +  to select GAIN.

GAIN

2 Turn  VALUE to change the gain.

  
VALUE

Gain	
MUTE	- 127

## Setting mono/stereo

1 Press  +  to select MONO.

MONO

2 Turn  VALUE to switch between ON and OFF.

  
VALUE

Monophonic	
ON	Mono
OFF	Stereo

## Setting the send amount to the effect

1 Press  +  and select → FX.

- : FX

2 Turn  VALUE to change the send amount.

  
VALUE

FX SEND	
OFF	FX is not applied to LINE IN.
1 ~ 127	Adjust the send amount to FX.

### Overview

The MEGA SYNTHESIS has the following synchronization capabilities.

### SYNC

Use the SYNC IN/OUT jacks to connect and synchronize with devices that support SYNC (including the Korg Volca series).

### MIDI

Use the MIDI IN/OUT jacks to connect and synchronize with devices that support MIDI.

### Audio Sync

Use the LINE IN and headphone jacks to connect and synchronize with devices that support Audio Sync (including the Teenage Engineering Pocket Operator series).

When using Audio Sync, the audio exchanged will be mono.

The MEGA SYNTHESIS can act as a clock master or receive clock from an external device.




## Setting the clock source

When set to INT (internal), the MEGA SYNTHESIS acts as a clock master.

When not set to INT, the external device will be treated as the clock master.

**1** Press  +  to select SRC.



**2** Turn  VALUE to set the clock source.

  
VALUE

Clock Source	
INT	Use internal clock of LIVEN MEGA SYNTHESIS
MIDI	Use clock from MIDI IN
SYNC	Use clock from SYNC IN
LN.IN	Use clock from LINE IN

## Setting Audio Sync output

Audio Sync output uses the headphone jack.

For this purpose, make the following setting to use Audio Sync output.

**1** Press  +  and select A.OUT.



**2** Turn  VALUE to select ON.



- The sync signal will be output from the left channel and a mono mix of the audio will be output from the right channel of the headphone jack.

### Setting SYNC IN polarity

1 Press  +  and select S.I.P.O.

S.I.P.O

2 Turn  VALUE to set the polarity.

  
VALUE

Polarity - Sync In	
FALL	Synchronize with falling of sync signal
RISE	Synchronize with rising of sync signal

### Setting SYNC OUT polarity

1 Press  +  and select S.O.P.O.

S.O.P.O

2 Turn  VALUE to set the polarity.

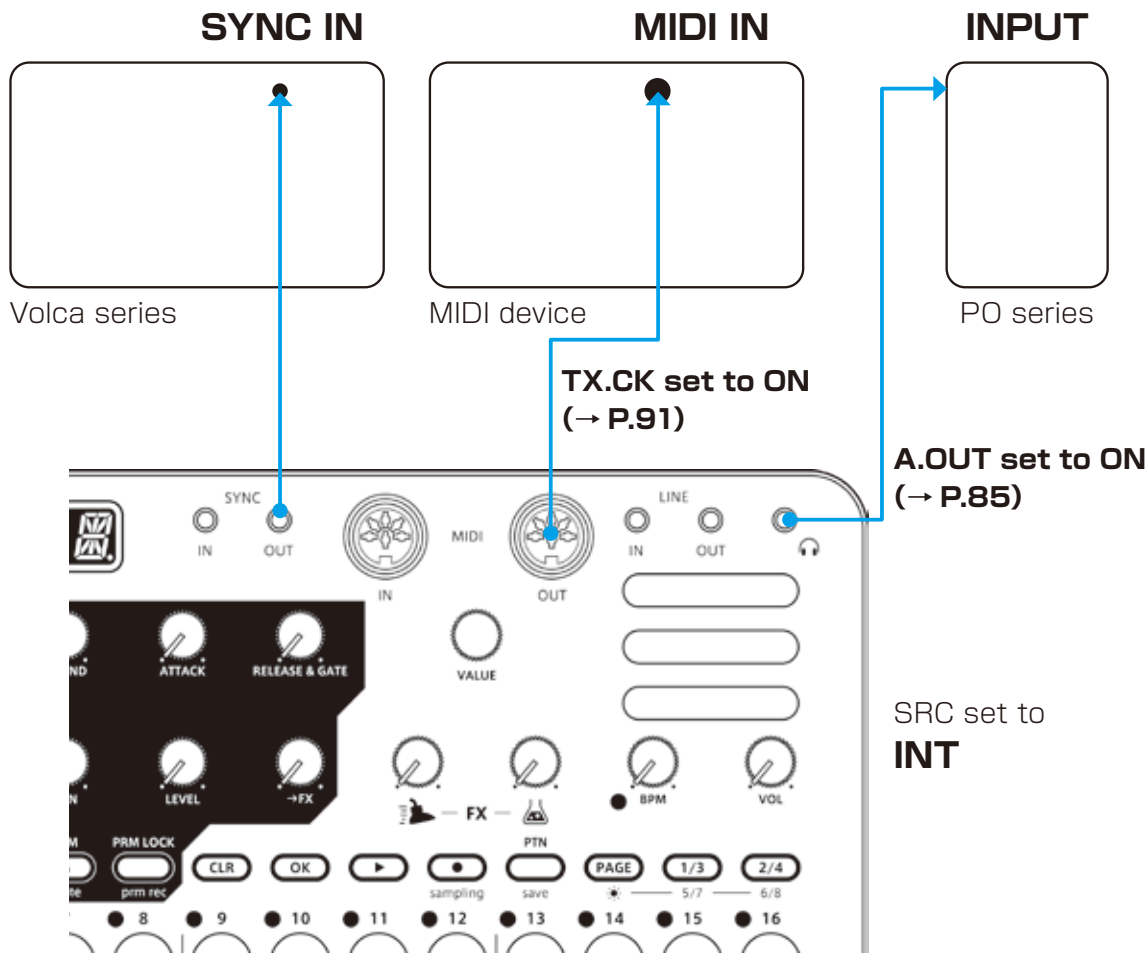
  
VALUE

Polarity - Sync Out	
FALL	Synchronize with falling of sync signal
RISE	Synchronize with rising of sync signal



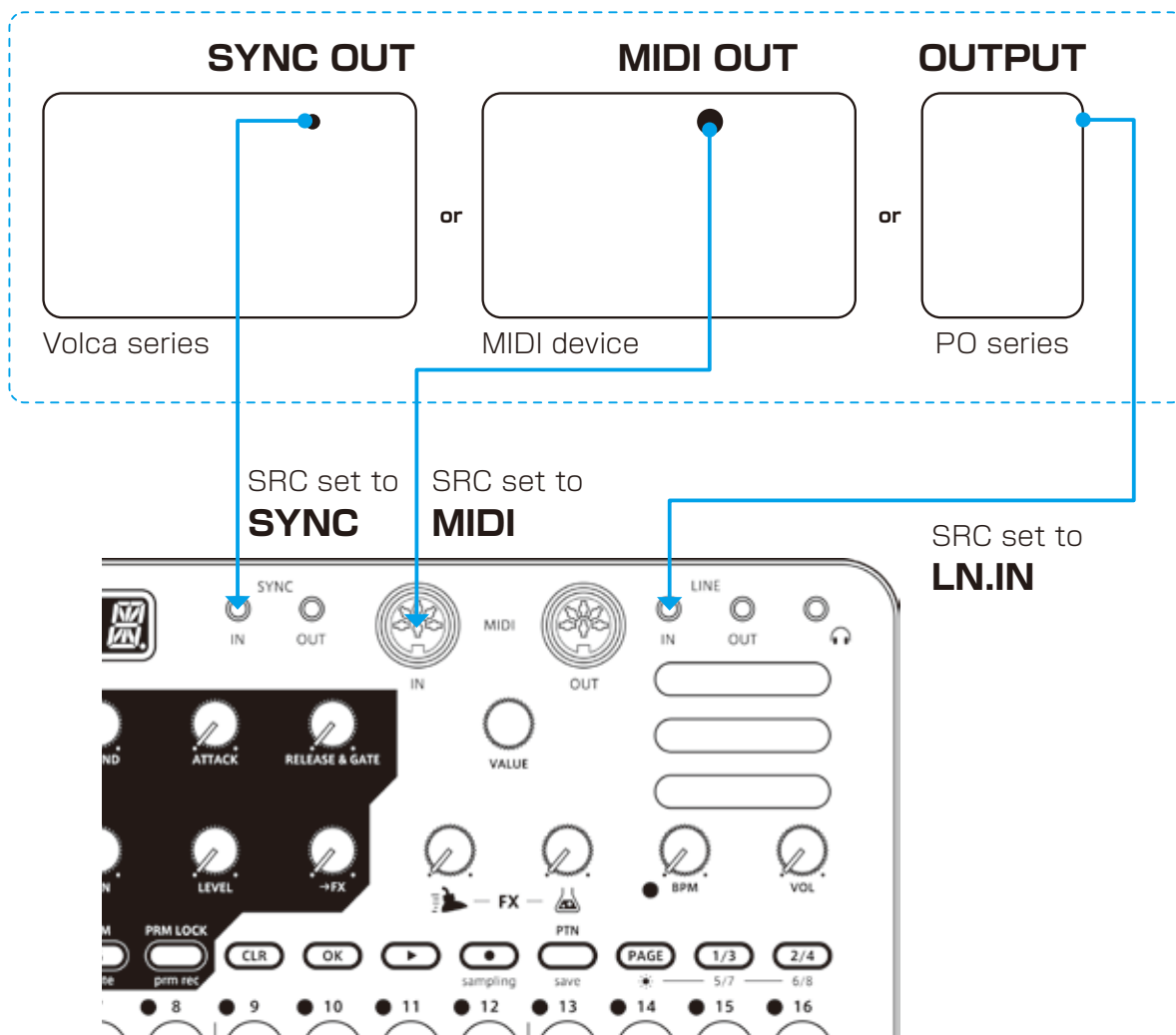
- See (→ P.91) for details about setting MIDI clock.

# LIVEN as clock master

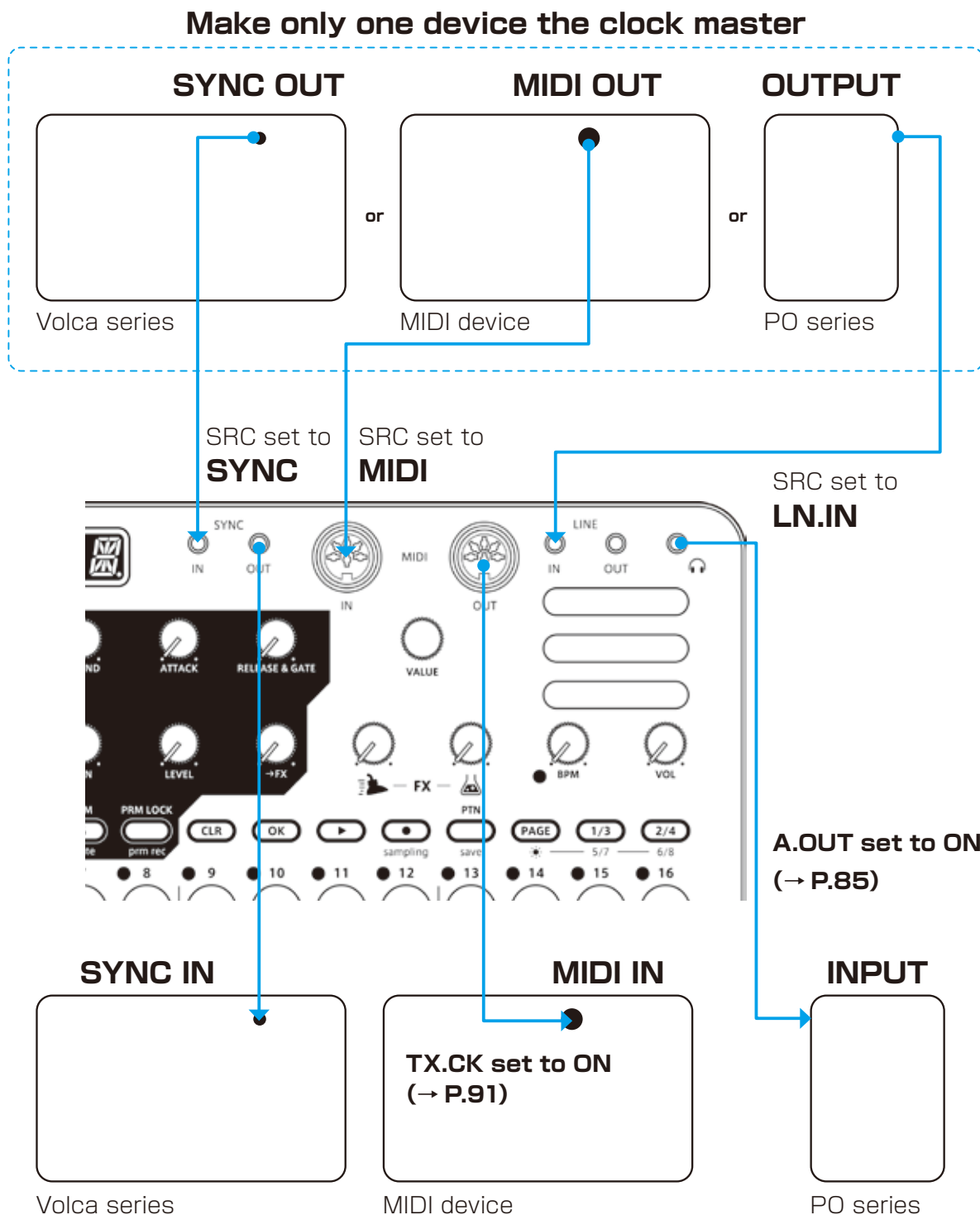


## External device as clock master

Make only one device the clock master





## Bridging clock signals to a different connector from an external device acting as the clock master



Using the bridging function, it is possible to synchronize devices with different connectors. For example, a Pocket Operator acting as a clock master can be used to synchronize a Volca or MIDI device connected to the MEGA SYNTHESIS.

# MIDI

## Setting channels for transmitting and receiving MIDI

- 1 Press  + , and select the track for which you want to set the MIDI channel.

T 1.CH

}

T 6.CH

- 2 Turn  VALUE to set the channel.

  
VALUE

**MIDI Channel - Track**

OFF, CH.01 - CH.16

## Setting the MIDI channel for pattern parameters

- 1 Press  + , and select PT.CH.

P T.CH

- 2 Turn  VALUE to set the channel.

  
VALUE


**MIDI Channel - Pattern**

OFF, CH.01 - CH.16

## Setting the MIDI channel for accessing the selected track (automatic channel)

- 1 Press  + , and select AT.CH.

A T.CH

- 2 Turn  VALUE to set the channel.

  
VALUE

**MIDI Channel - Auto**

OFF, CH.01 - CH.16

# MIDI

## Setting the MIDI channel used to output keyboard playing

1 Press  +  and select O.CH.



2 Turn  VALUE to set it.



**MIDI Channel - Out**

TRCK (track), AUTO

## Turning control change transmission on/off

1 Press  +  and select TX.CC.



2 Turn  VALUE to set it to on/off.



**Control Change**

ON, OFF



- Control change reception is always enabled.

## Turning MIDI clock output on/off

1 Press  +  and select TX.CK.



2 Turn  VALUE to set it to on/off.



**MIDI Clock**

ON, OFF

# MIDI

## Setting MIDI OUT

1 Press  +  and select M.OUT.

M.OUT

2 Turn  VALUE to set MIDI OUT.

  
VALUE

MIDI OUT
OUT, THRU

## Setting MIDI command transmitting and receiving

1 Press  +  and select M.CMD.

M.CMD

2 Turn  VALUE to set MIDI command transmitting and receiving.

  
VALUE

MIDI Commands	
OFF	Neither transmit nor receive
Rx	Only receive
Tx	Only transmit
Rx,Tx	Transmit and receive

## Turning active sensing transmission on/off

1 Press  +  and select TX.AS.

TX.AS

2 Turn  VALUE to set it to on/off.

  
VALUE

Active Sensing - Transmit
ON, OFF



# MIDI

## Turning on/off active sensing reception

- 1 Press  +  and select RX.AS.

RX.AS

- 2 Turn  VALUE to set it to on/off.

  
VALUE


Active Sensing - Receive

ON, OFF

## Setting the channel for transmitting and receiving program changes

- 1 Press  +  and select PC.CH.

PC.CH

- 2 Turn  VALUE to set the program change channel.

  
VALUE

Program Change - Channel

AUTO, CH.01 - CH.16

## Turning on/off program change transmission

- 1 Press  +  and select TX.PC.

TX.PC

- 2 Turn  VALUE to set it to on/off.

  
VALUE

Program Change - Transmit

ON, OFF

# MIDI

---

## Turning on/off program change reception

**1** Press  +  and select RX.PC.



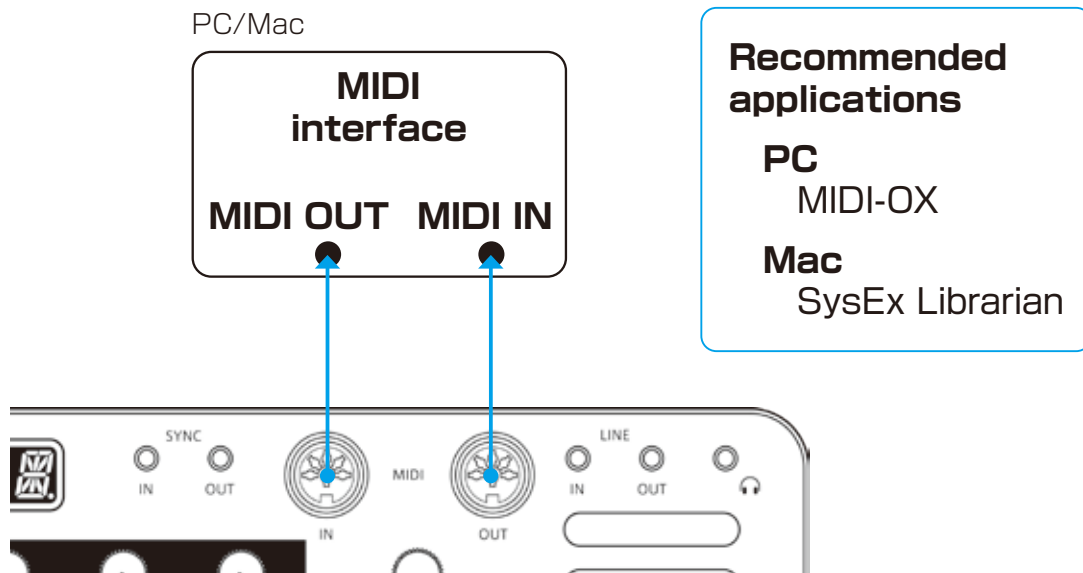
**2** Turn  **VALUE** to set it to on/off.

  
**VALUE**

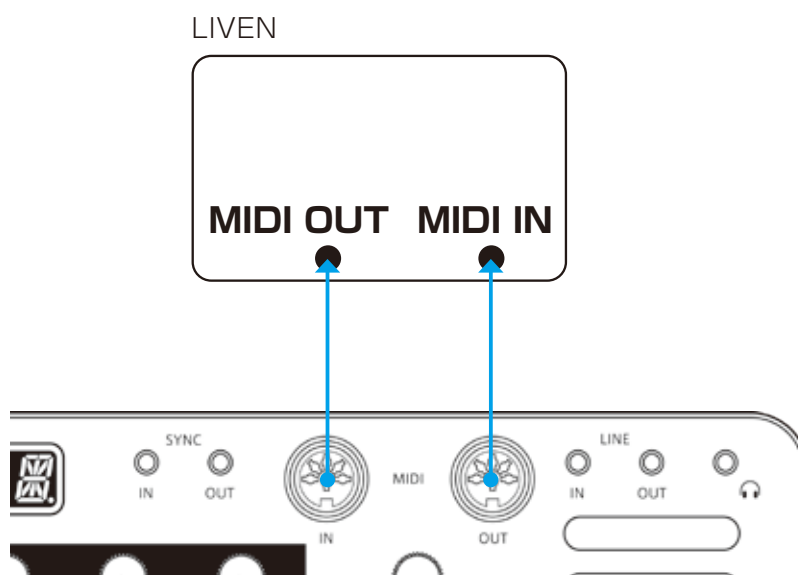
Program Change - Receive
ON, OFF

# Exporting/importing user data

## Connecting - Exporting/importing to/from a PC/Mac



## Connecting - Exporting/importing to/from another LIVEN



# Exporting/Importing user data

---

## Exporting a single pattern

**1** Select the pattern you want to export. (→ P.13)

**2** Press  +  and select P.EXP.



**3** Set your PC to receive MIDI data.

**4** Press .



---

• Press  to cancel.

---

## Importing a single pattern

**1** Put the unit into regular mode, and start transmitting data from the transmitting device.



---

• The received pattern will not be saved automatically. Save the pattern as necessary. (→ P.80)

---

# Exporting/Importing user data

---

## Backing up all user data at once

**1** Press  + the **POWER** switch to turn on the MEGA SYNTHESIS.




**2** Turn  VALUE to select EXPT.

EXPT

**3** Press .

DONE



- The step LEDs show the progress. (They light from 1 in order. Transmission is complete when 1 ~ 16 have all lit.)
  - Press  to cancel.
  - The size of the backup data is 17,476,311 bytes.
  - If the size of the data is different, the backup might have failed. If this occurs, before step 3, while pressing , turn  VALUE to increase the transmission interval. (The default value is 0.)
-

# Exporting/Importing user data


---


## Restoring (importing) user data

**1** Press  + the **POWER** switch to turn on the MEGA SYNTHESIS.


**2** Turn  VALUE to select IMPT.

A rectangular LCD display showing the text "IMPT" in a digital font.

**3** Press . This makes the unit ready to receive data.  
Start exporting from the sending device.

**4** When SAVE appears on the display after receiving completes, press  to restore (load) the received data.

A rectangular LCD display showing the text "SAVE" in a digital font.A rectangular LCD display showing the text "DONE" in a digital font.

- 
- The step LEDs show the progress. (They light from ① in order. Transmission is complete when ① ~ ⑩ have all lit.)
  - Press  to cancel.
-

# System settings

## Setting the battery type

1 Press  +  to select BATT.

BATT

2 Turn  VALUE to select the battery type.

  
VALUE

Battery	
ALKL	Alkaline dry cell
NIMH	Nickel-metal hydride rechargeable
LTHM	Lithium dry cell



- Please set this correctly because it effects operation time.
- The remaining charge shown could be higher than the actual amount depending on the type of rechargeable battery.

## Setting the automatic power down function

1 Press  +  and select A.PWR.

A.PWR

2 Turn  VALUE to select the automatic power down time.

  
VALUE

Automatic power down time	
OFF	Automatic power down is disabled.
0.5H	Power will turn off automatically after 30 minutes without operation.
1H	Power will turn off automatically after 1 hour without operation.
3H	Power will turn off automatically after 3 hours without operation.
6H	Power will turn off automatically after 6 hours without operation.

# System settings

## Changing mute mode

1 Press  +  to select MT.MD.

MT.MD

2 Turn  VALUE to change mute mode.

MT.MD	
SND	Mute all sound of muted track.
SEQ	Mute only notes from sequencer. Tracks can still be played by keyboard or external MIDI controllers. Also parameter locking will still be active.

## Setting the master tuning

1 Press  +  to select TUNE.

TUNE

2 Turn  VALUE to set the master tuning.

  
VALUE

Master Tune
-75 ~ 0 ~ +75 (cents)

## Setting the headphone gain

1 Press  + .



Headphone Gain	
LOUD	Louder output
NORM	Factory default
SOFT	Quieter output



# System settings

---

## Setting knob movement behavior

- 1 Press  +  to set whether or not latching is used for knob operation.

Latch		
OFF	Jump	When a knob is moved, the parameter changes immediately.
ON	Latch	The knob does not affect the parameter value until its position reaches the value saved in the pattern, after which the knob will change the parameter.



- When set to Latch, the dots on the display will be animated to show how much the knob position and parameter value differs to the left or right.

The dots will appear to flow to the left when the parameter value is lower than the knob position and to the right when the value is higher than the position. The flow will be faster for higher values.

---

# System settings

## Restoring to factory default settings (factory reset)

- 1 Press and hold **4** + **POWER switch** to turn on the MEGA SYNTHESIS.



- 2 Press **OK**.  
The step LEDs will show the progress.  
When finished, OK will appear on the display.



- Press **CLR** to cancel.
- This will not restore sample waveform data to the factory default. To restore the sample waveform data, download it from the SONICWARE website and import it.

## Checking the system versions

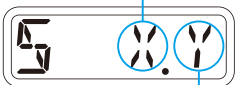
- 1 Press and hold **3** + **POWER switch** to turn on the MEGA SYNTHESIS.



- 2 Press **PAGE**, **1/3** and **2/4** to check the versions.

Firmware Versions		
<b>PAGE</b>	P X.Y	Preset version
<b>1/3</b>	S X.Y	System version
<b>2/4</b>	B X.Y	Boot version

Major version



Minor version




- Press the same **PAGE**, **1/3** or **2/4** again to show the build number.

# System settings

---

## Updating the firmware


- 1 Press and hold  + **the POWER switch** to turn on the MEGA SYNTHESIS.



- 2 Transmit the firmware (Sys Ex data) from a PC/Mac.



- The step LEDs show the progress of data transmission. (They light from 1 in order. Transmission is complete when 1 - 16 have all lit.)


- 3 After transmission completes, press  to execute the update.



- If the update occurred properly, OK will be shown. ( If a problem occurred, an error code will be shown.)

- 4 Restart the unit.



- Use new batteries or an AC adapter.
- Never interrupt the power during a firmware update.
- Press  to cancel the update and start up normally.

# System settings

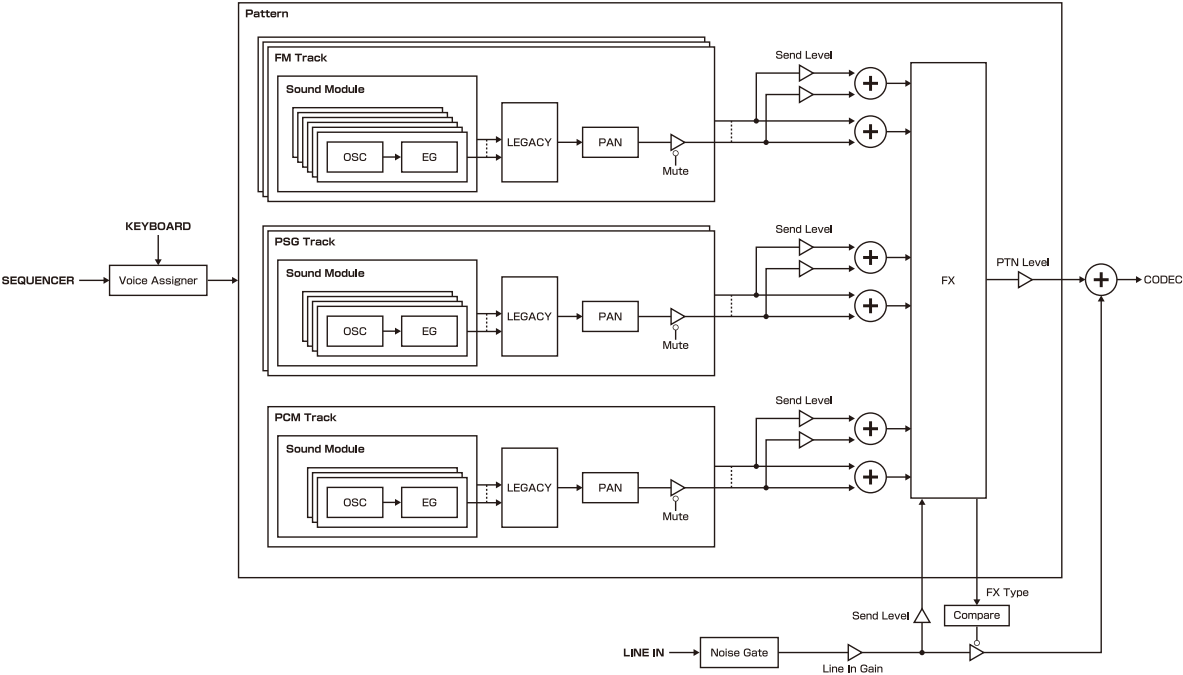
---

## Error codes

<i>ER.10</i>	System error
<i>ER.11</i>	Low battery
<i>ER.20</i>	Data receiving error
<i>ER.21</i>	Invalid data
<i>ER.22</i>	No need to update (Boot)
<i>ER.30</i>	Update Failed

# Appendix

Figure1. Sound architecture



# Specifications

Synth engine	<p>FM Sound Module [Track1,2,3]</p> <ul style="list-style-type: none"> <li>• 4 operators - 8 algorithms</li> <li>• 6 maximum voices (summed Track 1,2 and 3)</li> <li>• FM Edit mode to be editing sounds</li> </ul> <p>&lt; Voice mode &gt;</p> <ul style="list-style-type: none"> <li>• polyphonic mode</li> <li>• Mono mode with adjustable glide time</li> <li>• Legato mode with adjustable glide time</li> <li>• Arpeggiator modes (Up, Down, UpDown, DownUp, Up&amp;Down, Down&amp;Up, Up+1, Up-+2,Down-1, Down-2, Random, Play Order)</li> </ul> <p>PSG Sound Module [Track4,5]</p> <ul style="list-style-type: none"> <li>• 11 waveforms types</li> </ul> <p>Square wave Noise(Low/Mid/High) → Square wave Pulse wave Noise(Low/Mid/High) → Pulse wave Noise(Low/Mid/High) <ul style="list-style-type: none"> <li>• 4voices maximum polyphony (summed Track 4 and 5)</li> </ul> <p>&lt; Voice mode &gt;</p> <ul style="list-style-type: none"> <li>• polyphonic mode</li> <li>• Mono mode with adjustable glide time</li> <li>• Legato mode with adjustable glide time</li> <li>• Arpeggiator modes (Up, Down, UpDown, DownUp, Up&amp;Down, Down&amp;Up, Up+1, Up+2, Down-1, Down-2, Random, Play Order)</li> </ul> <p>PCM Sound Module [Track 6]</p> <ul style="list-style-type: none"> <li>• 8bit - 12,24 or 48 kHz (selectable) linear PCM sampling (mono)</li> <li>• Sampling up to 8 seconds (with 12kHz),4 seconds(with 24kHz) or 2 seconds (with 48kHz) per sample</li> <li>• Auto start sampling function with the input level (input level can be set)</li> <li>• Auto slice function (divided equally by count or length of one slice)</li> <li>• Maximum polyphony: 3 voices (1 voice when shot mode selected)</li> <li>• 96 sample memory slots (16 x 6 banks)</li> <li>• Import and export of a slot or banks of samples (via MIDI)</li> <li>• <b>* Importing audio files from PC/Mac is not supported.</b></li> </ul> <p>&lt; Voice mode &gt;</p> <ul style="list-style-type: none"> <li>• Drum mode (Polyphonic playback, set the length of one slice )</li> <li>• Shot mode (Play samples chromatically across the keyboard, set the start position)</li> </ul> <p>&lt; SWEEP &gt;</p> <ul style="list-style-type: none"> <li>• Sweep with adjustable speed, range, and curve</li> </ul> </p>
Effects	<p>Insetrt Effects &amp; Send Effects</p> <ul style="list-style-type: none"> <li>• Send Delay</li> <li>• Insert Delay</li> <li>• Reverb</li> <li>• Crusher</li> <li>• Distortion</li> </ul>

# Specifications

Effects	<ul style="list-style-type: none"> <li>• Compressor</li> <li>• Low pass filter</li> <li>• High pass filter</li> <li>• Isolator</li> <li>• Remix performance effect</li> </ul>
Sequencer	<ul style="list-style-type: none"> <li>• 6 tracks</li> <li>• Up to 128 steps per pattern</li> <li>• 128 patterns</li> <li>• Step length can be set from 1/1 to 1/32</li> <li>• Real-time recording</li> <li>• Directly enter notes for each step when sequencer is on or off</li> <li>• Enter longer notes (Tied notes)</li> <li>• Metronome and pre-count function</li> <li>• Step copy and paste function</li> <li>• Track copy and paste function</li> <li>• Duplicate to extend a sequence</li> <li>• Transpose function</li> <li>• Swing function</li> <li>• Pattern BPM / Global BPM can be set</li> <li>• Pattern chain function (Loop playback possible)</li> <li>• Track level and pan can be set independently</li> <li>• Parameter Lock function to record parameter settings for each step</li> <li>• Sound Lock function to record sound settings for each step</li> <li>• Function to set the note playback probability from 25 to 100%</li> <li>• RANDOM function to play back steps in random order</li> <li>• STUTTER function to play back only the step being pressed</li> </ul>
MIDI	<ul style="list-style-type: none"> <li>• Notes, control changes, clock input/output</li> <li>• IMPORT/EXPORT of user data</li> <li>• Firmware update via Sysex</li> </ul>
Main unit	<p>&lt; Keyboard &gt; 27 keys (with a hold function)</p> <p>&lt; Knobs &gt;</p> <ul style="list-style-type: none"> <li>• 15 physical control knobs</li> <li>• Optional LATCH function prevents jumps in value when knob position and parameter values do not match.</li> <li>• LCD dot indicates when a parameter value matches the saved value, or when the value has been changed.</li> <li>• One physical encoder for fine adjustments.</li> </ul> <p>&lt; Audio in &gt;</p> <ul style="list-style-type: none"> <li>• LINE IN (stereo 3.5mm mini-jack)</li> <li>• Compatible with Teenage Engineering Pocket Operator Series SYNC IN</li> </ul> <p>&lt; Audio out &gt;</p> <ul style="list-style-type: none"> <li>• Stereo line out (stereo 3.5mm mini jack)</li> <li>• Headphone out (stereo 3.5mm mini jack)</li> <li>• Compatible with Teenage Engineering Pocket Operator Series SYNC OUT</li> <li>• Built in speaker</li> </ul>

# Specifications

Main unit	<p>&lt; Interfaces &gt;</p> <ul style="list-style-type: none"><li>• MIDI IN connector (5-Pin DIN type)</li><li>• MIDI OUT connector (5-Pin DIN type)</li><li>• SYNC IN jack (monaural 3.5mm mini jack)</li><li>• SYNC OUT jack (monaural 3.5mm mini jack)</li></ul> <p>&lt; Size &gt;</p> <p>297mm (W) x 176mm (D) x 48mm (H)</p> <p>11.7 in (W) x 6.92 in (D) x 1.89 in (H)</p> <p>&lt; Weight &gt;</p> <p>790g</p> <p>1.74lb.</p> <p>&lt; Power supply &gt;</p> <ul style="list-style-type: none"><li>• 9V DC output AC adapter</li></ul> <p>Current: 1A or greater</p> <p>Plug Type: EIAJ3 Standard</p> <p>Inner Diameter: 1.7mm</p> <p>Outer Diameter: 4.75mm,</p> <p>Polarity: Center +</p> <ul style="list-style-type: none"><li>• Compatible with power supplies designed for the Korg Volca.</li><li>• 6 AA batteries</li></ul> <p><b>*The AC adapter and batteries are not included.</b></p>
Accessories	<ul style="list-style-type: none"><li>• Warranty</li><li>• Overlay sheet for FM editing</li></ul>