

pittsburgh
modular
synthesizers
lifeforms
kb-1
user
manual
v.1

pressure sensitive keyboard controller

The Lifeforms KB-1 provides a multi-function, expressive, capacitive touch keyboard designed for performance. The KB-1 contains a powerful one octave adjustable, pressure sensitive keyboard complete with arpeggiator, step sequencer, four voltage memory pads and two trigger pads. Eleven outputs and a deep feature set enable you to explore new sonic territory with an unprecedented level of control.

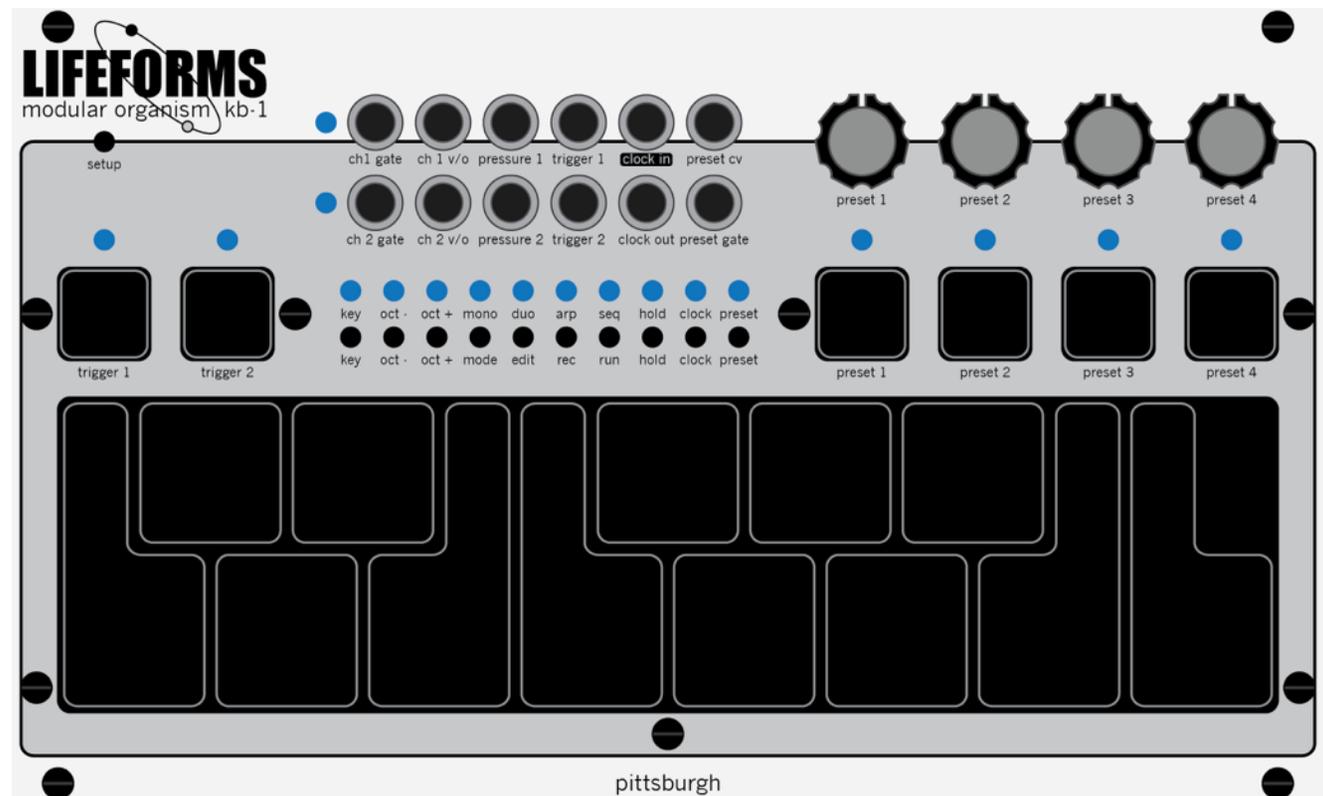


table of contents

table of contents

1 important information - page 3

2 user interface - page 4

3 pressure sensitive keyboard - page 5

3.1 keyboard overview - page 5

3.2 select keyboard mode - page 5

3.3 keyboard controller calibration - page 5

3.4 monophonic keyboard mode - page 6

3.5 duophonic keyboard mode - page 8

3.6 arpeggiator keyboard mode - page 10

3.7 sequencer keyboard mode - page 12

4 clock source - page 15

5 global burst settings - page 16

6 gate triggers - page 17

7 preset voltage memory sequencer - page 18

8 troubleshooting - page 20

9 eurorack specs - page 21

10 warranty - page 22

11 service and other information - page 23

1. important information

1.1 important power information

Read Instructions:

Please read the Liforms KB-1 manual completely before use and retain for future reference.

IMPORTANT Ribbon Cable Power Information:

The Liforms KB-1 is a eurorack format synthesizer module. The module can be installed, rearranged, removed, and replaced in any compatible eurorack enclosure from Pittsburgh Modular or other manufacturers.

The Liforms KB-1 uses a standard 10 to 16 pin eurorack ribbon cable to connect the module to a bipolar +/-12v power supply. Please pay very close attention to the orientation of the ribbon cable when adding and removing modules. The stripe on the ribbon cable marks -12v. This stripe needs to line up with the -12v pins on the power rail and the -12v pins on the module. The Liforms KB-1 includes reverse polarity protection so it will not be damaged when plugged in incorrectly; however, as a general rule, failure to match up the pins correctly can result in damage to one or all the modules in a case. On a Pittsburgh Modular enclosure power rail, the -12v pins are clearly labeled. On the Liforms KB-1 module, the positive side of the pin connector is on top, and the negative sides of the pin connector is on the bottom so the red stripe should be toward the bottom of the module.

Do NOT remove the Liforms KB-1 module from any case while it is plugged in.

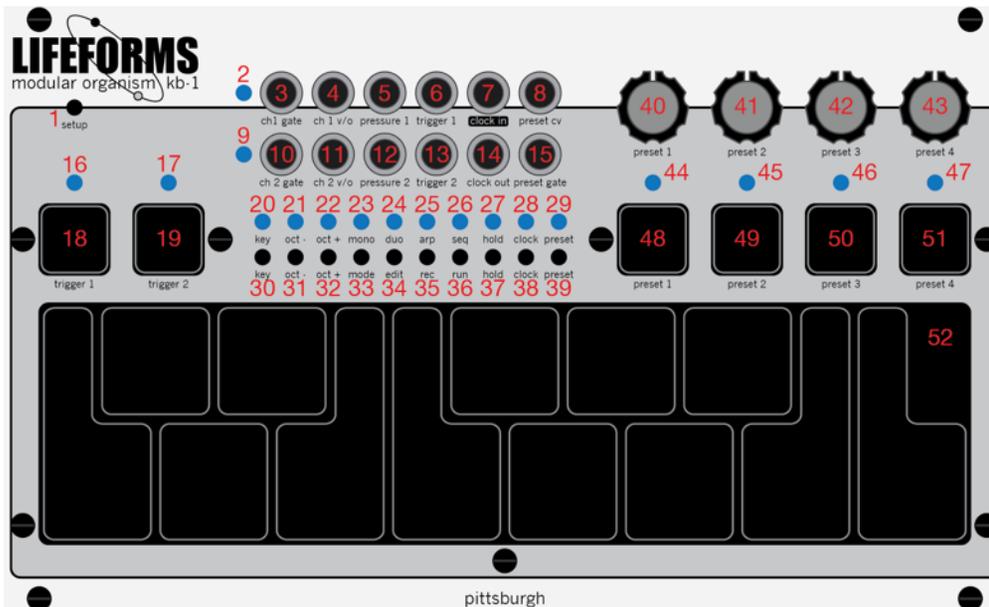
Do NOT unplug ribbon cables from the Liforms KB-1 or case while the case is plugged in.



2. user interface

1. **setup button** - modify global parameters.
2. **channel 1 gate led** - indicates the status of the channel 1 gate output jack.
3. **channel 1 gate jack** - channel 1 output jack.
4. **channel 1 volt per octave jack** - channel 1 calibrated cv output jack.
5. **pressure 1 jack** - channel 1 pressure cv output jack.
6. **trigger 1 gate jack** - trigger 1 gate output jack.
7. **clock in jack** - external clock input jack.
8. **preset cv jack** - preset voltage memory cv output jack.
9. **channel 2 gate led** - indicates the status of the channel 2 gate output jack.
10. **channel 2 gate jack** - channel 2 gate output jack.
11. **channel 2 volt per octave jack** - channel 2 calibrated cv output jack.
12. **pressure 2 jack** - channel 2 pressure cv output jack.
13. **trigger 2 gate jack** - trigger 2 gate output jack.
14. **clock out jack** - clock signal output jack.
15. **preset gate jack** - preset voltage memory gate output jack.
16. **trigger 1 led** - indicates the status of the trigger 1 gate output jack.
17. **trigger 2 led** - indicates the status of the trigger 2 gate output jack.

18. **trigger 1 pad** - pressure sensitive controller pad.
19. **trigger 2 pad** - pressure sensitive controller pad.
20. **key transpose led** - indicates the status of the key transpose button.
21. **oct - led** - indicates the selected octave used by the keyboard controller.
22. **oct + led** - indicates the selected octave used by the keyboard controller.
23. **monophonic led** - indicates monophonic mode selected.
24. **duophonic led** - indicates duophonic mode selected.
25. **arpeggiator led** - indicates arpeggiator mode selected.
26. **sequencer led** - indicates sequencer mode selected.
27. **hold led** - indicates hold mode status.
28. **clock led** - indicates the status of the internal or external clock signal.
29. **preset led** - indicates the status of the preset gate output jack.
30. **key transpose button** - enable/disable key transpose mode.
31. **oct - button** - modify the selected octave used by the keyboard controller.
32. **oct + button** - modify the selected octave used by the keyboard controller.
33. **mode button** - cycle between mono, duo, arp, and seq modes.
34. **edit button** - modify selected mode parameters.
35. **record button** - enable/disable sequencer record mode.
36. **run button** - start/stop arpeggiator or sequencer .
37. **hold button** - enable/disable hold mode.
38. **clock button** - tap tempo clock button.
39. **preset button** - modify preset voltage parameters.
40. **preset 1 voltage knob** - select preset 1 voltage.
41. **preset 2 voltage knob** - select preset 2 voltage.
42. **preset 3 voltage knob** - select preset 3 voltage.
43. **preset 4 voltage knob** - select preset 4 voltage.
44. **preset 1 selection led** - indicates preset 1 selected.
45. **preset 2 selection led** - indicates preset 2 selected.
46. **preset 3 selection led** - indicates preset 3 selected.
47. **preset 4 selection led** - indicates preset 4 selected.
48. **preset 1 pad** - controller selector pad.
49. **preset 2 pad** - controller selector pad.
50. **preset 3 pad** - controller selector pad.
51. **preset 4 pad** - controller selector pad.
52. **keyboard controller pad** - pressure sensitive controller pad.



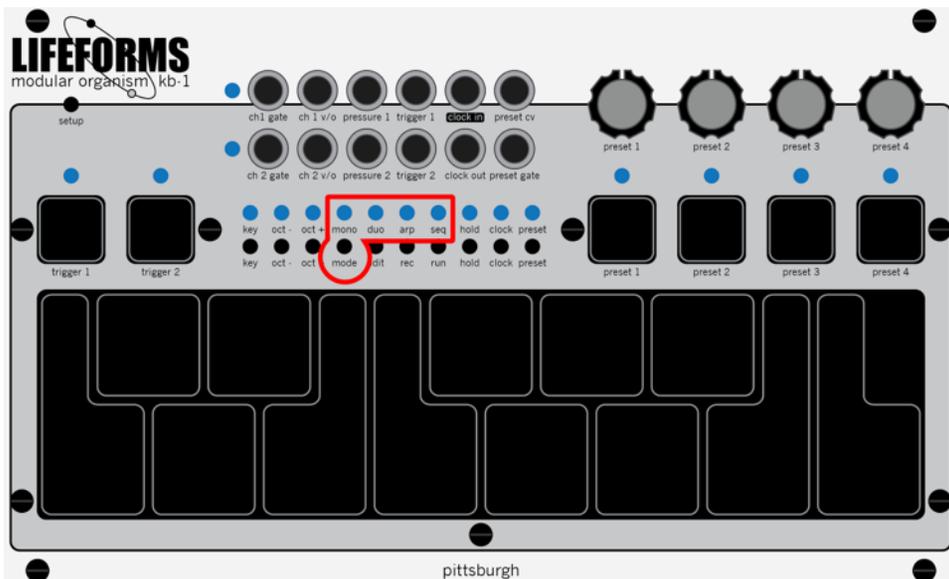
3. pressure sensitive keyboard

3.1 overview

The Pittsburgh Modular Lifeforms KB-1 utilizes a multi-function, pressure sensitive keyboard to control an array of functions and outputs. The keyboard controller pad can be used in one of four main modes: monophonic, duophonic, arpeggiator, and sequencer. Each of the four main modes has a wide variety of additional features to expand and fine tune the keyboard functionality.

3.2 select keyboard mode

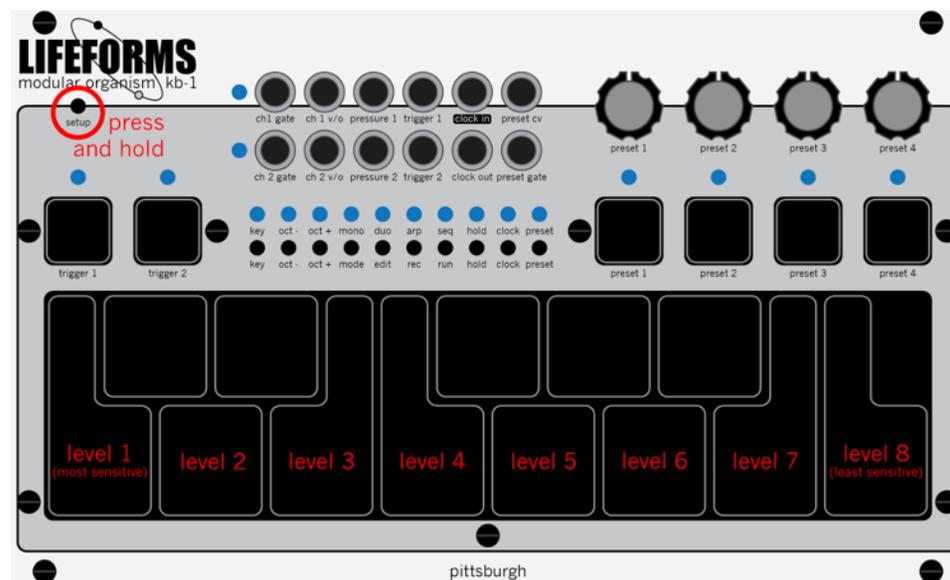
To cycle through the four available keyboard modes: monophonic, duophonic, arpeggiator, and sequencer, press the mode button. The led representing the active mode will illuminate.



3.3 keyboard controller pad calibration

Capacitive touch circuitry is sensitive to many outside variables. Different power sources can create a different capacitive touch sensitivity response. The variation can be caused by both the +12v power supplied by the eurorack case and the power mains the case is plugged into. Also, because capacitive touch measures the capacitance of the human body and the performer becomes part of the circuit, response can vary from person to person.

The pressure response of the keyboard controller pad can be easily modified by selecting one of 8 available pressure levels. To choose a pressure, press and hold the setup button. Next, touch one of the whole note keys on the keyboard controller pad. C0 is the most sensitive and C1 is the least sensitive.

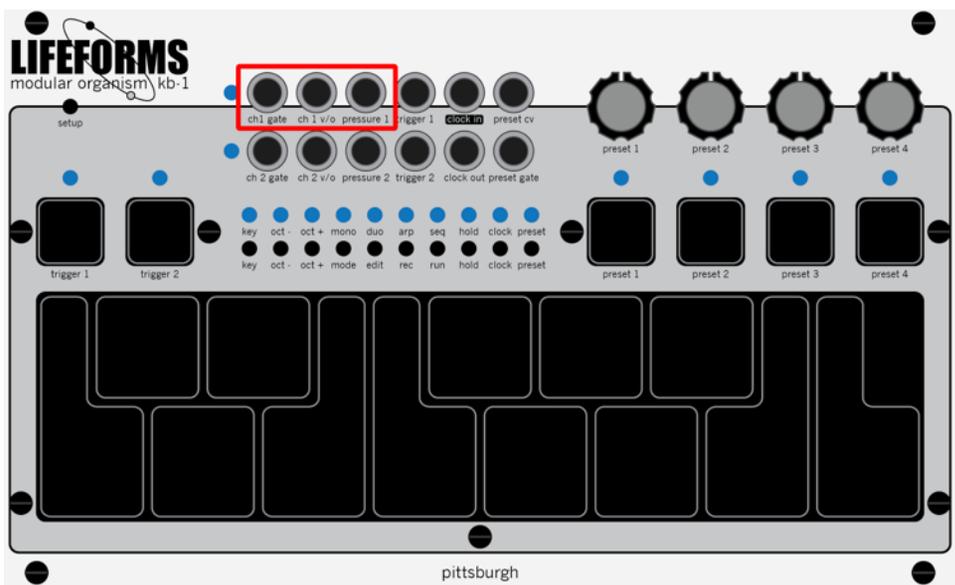


3.4 monophonic keyboard mode

Monophonic keyboard response allows for full control over a monophonic synthesizer voice. The keyboard controller creates a single set of pitch, gate, and pressure voltages to play one note at a time. The individual keys of the keyboard controller pad modify the ch 1 v/o and ch 2 v/o output at a scale of 1 volt per octave. This is the standard for pitch control for the eurorack modular format.

3.4.1 basic monophonic patch example

Ch 1 v/o can be patched into the volt per octave or pitch cv input of an oscillator to control the frequency of the synthesizer voice. Ch 1 gate can be patched into an envelope or ADSR then into VCA CV input to shape the note on and note off gate signals generated by the keyboard controller. The pressure 1 output can be patched into the cutoff frequency cv input of a filter. This patch will allow the monophonic response to control the note on/off state and pitch of a synthesizer voice as well as using pressure to control the filter cutoff.

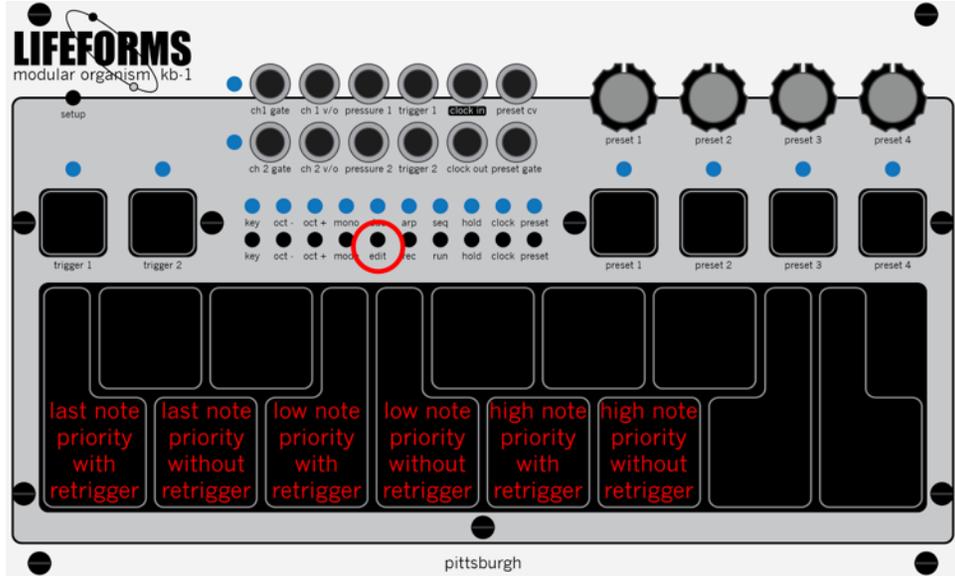


3.4.2 monophonic response modes

There are 6 unique monophonic keyboard responses available. To select a monophonic keyboard response, press and hold the edit button and then press one of the keys listed below.

Note priority refers to the note that is used if multiple keys are pressed at once. Retrigger means there is a unique gate signal for each note regardless of the number of active notes.

- C key** - Last note priority with retrigger (default)
- D key** - Last note priority without retrigger
- E key** - Low note priority with retrigger
- F key** - Low note priority without retrigger
- G key** - High note priority with retrigger
- A key** - High note priority without retrigger



3.4 monophonic keyboard mode (cont.)

3.4.3 monophonic controls

Ch 1 gate and ch 2 gate output responses are identical. Press a keyboard controller note to generate a 5v gate signal. Depress the key to return to 0v.

Ch 1 v/o and ch 2 v/o output responses are identical. Press a keyboard controller note to generate a scaled 1 volt per octave signal. Output remains the same until a new key is pressed.

Pressure 1 and pressure 2 output responses are identical. Pressure can vary from 0 to 6v.

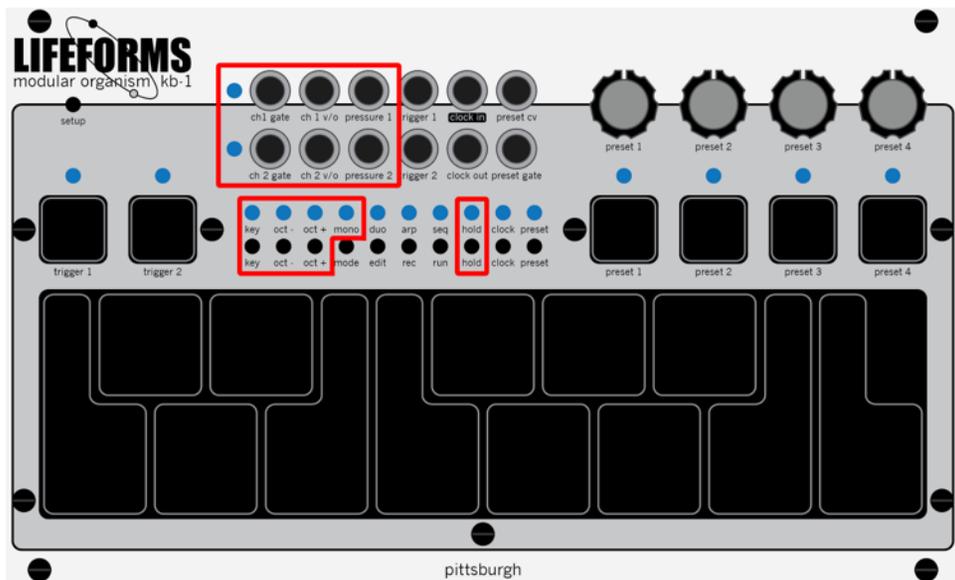
Key edit button - Pressing the key edit button enables a pressure based stutter keyboard response. The more pressure applied to the key creates an increasingly dense burst of gates. Stuttered gate density is always a multiple of the active clock source. The density pressure levels available are x0, x2, x4.

Octave buttons - Pressing the octave down button shifts the keyboard one octave lower and pressing the octave up button shifts the keyboard one octave higher. A range of 7 octaves is available.

Hold button - Pressing the hold button latches the ch 1 gate and ch 2 gate outputs high when a key is pressed. Pressing the hold button a second time disables this feature.

Record button does nothing in monophonic mode.

Run button does nothing in monophonic mode.



3.5 duophonic keyboard mode

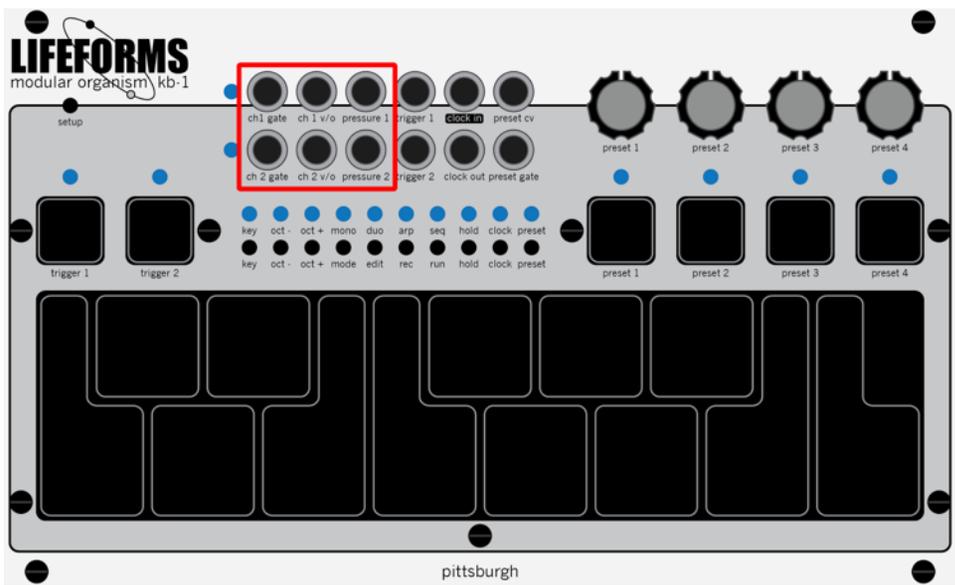
Duophonic keyboard response allows for full control over two synthesizer voices. The keyboard controller creates two sets of pitch, gate, and pressure voltages to play two notes at a time. The individual keys of the keyboard controller pad modify the ch 1 v/o and ch 2 v/o output at a scale of 1 volt per octave. This is the standard for pitch control for the eurorack modular format.

3.5.1 basic duophonic patch example

This patch will allow the duophonic response to control the note on/off state and pitch of two synthesizer voices as well as using two channel independent pressure to control the filter cutoffs of each oscillator voice. Enough modules to create two unique voices are necessary to patch up this duophonic patch.

Ch 1 v/o can be patched into the volt per octave or pitch cv input of oscillator 1 to control the frequency of the synthesizer voice. Ch 1 gate can be patched into envelope or ADSR 1 then into VCA 1 CV input to shape the note on and note off gate signals generated by the keyboard controller. The pressure 1 output can be patched into the cutoff frequency cv input of filter 1.

Ch 2 v/o can be patched into the volt per octave or pitch cv input of oscillator 2 to control the frequency of the synthesizer voice. Ch 2 gate can be patched into envelope or ADSR 2 then into VCA 2 CV input to shape the note on and note off gate signals generated by the keyboard controller. The pressure 2 output can be patched into the cutoff frequency cv input of filter 2.



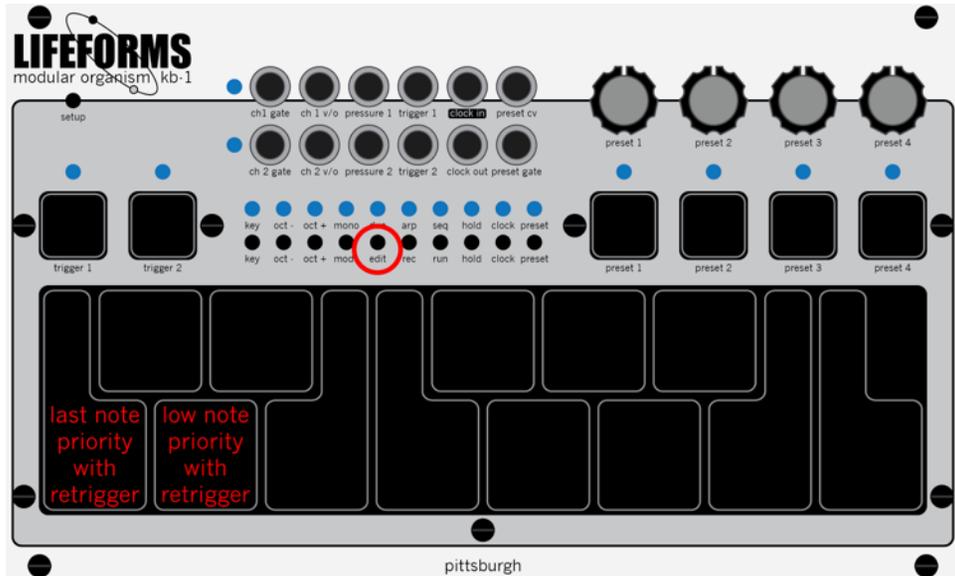
3.5.2 duophonic response modes

There are 2 unique duophonic keyboard responses available. To select a duophonic keyboard response, press and hold the edit button and then press one of the keys listed below.

Note priority refers to the note that is used if multiple keys are pressed at once. Retrigger means there is a unique gate signal for each note regardless of the number of active notes.

C key - Last note priority with retrigger

D key - Low note priority with retrigger (default)



3.5 duophonic keyboard mode (cont.)

3.5.3 monophonic controls

Ch 1 gate and ch 2 gate output responses are unique. Press a keyboard controller note to generate a 5v gate signal. Depress the key to return to 0v.

Ch 1 v/o and ch 2 v/o output responses are unique. Press a keyboard controller note to generate a scaled 1 volt per octave signal. Output remains the same until a new key is pressed.

Pressure 1 and pressure 2 output responses are unique. Pressure can vary from 0 to 6v.

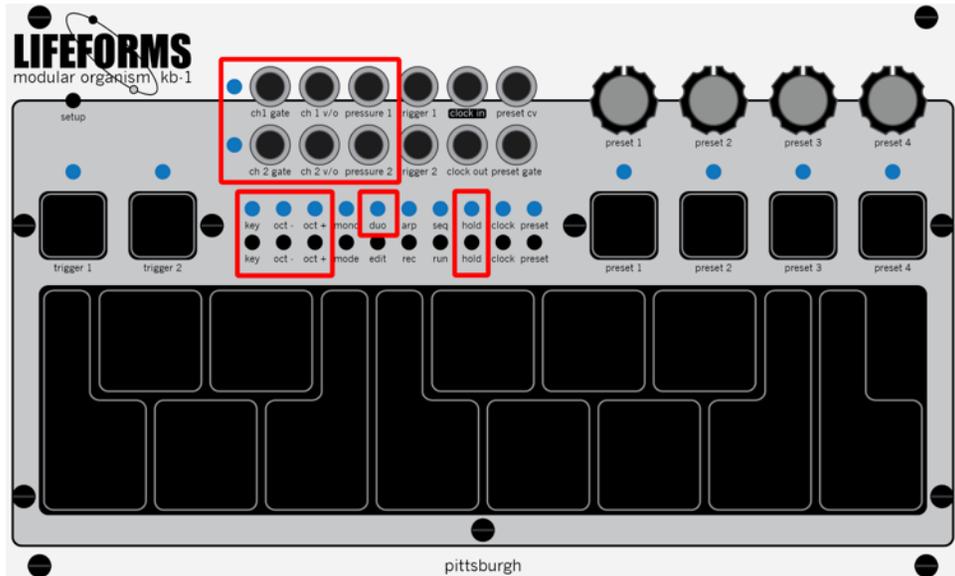
Key edit button - Pressing the key edit button enables a pressure based stutter keyboard response. The more pressure applied to the key creates an increasingly dense burst of gates. Stuttered gate density is always a multiple of the active clock source. The density pressure levels available are x0, x2, x4.

Octave buttons - Pressing the octave down button shifts the keyboard one octave lower and pressing the octave up button shifts the keyboard one octave higher. A range of 7 octaves is available.

Hold button - Pressing the hold button latches the ch 1 gate and ch 2 gate outputs high when a key is pressed. Pressing the hold button a second time disables this feature.

Record button does nothing in duophonic mode.

Run button does nothing in duophonic mode.

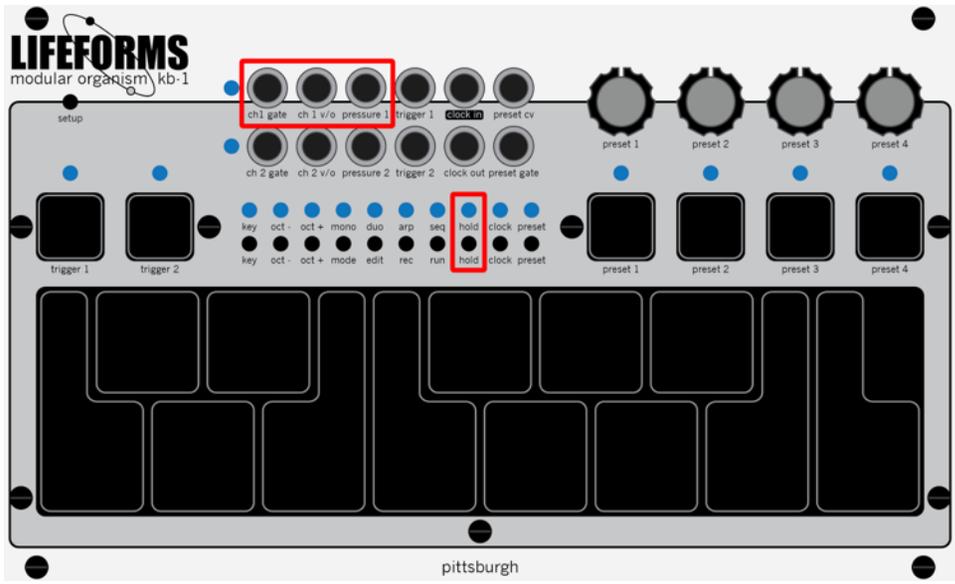


3.6 arpeggiator keyboard mode

Arpeggiator keyboard mode repeats a monophonic pattern of notes in sync with the active clock source. Notes pressed on the keyboard controller create a sequence of pitch, gate, and pressure voltages that are played in a loop. The arpeggiator pattern can be up to 10 notes in length (one for each finger). The pattern is cleared and a new pattern is created when 1 or more fingers are removed from the keyboard followed by a key press. The arpeggiation is played back in the order the keys are pressed on the keyboard.

3.6.1 basic arpeggiator patch example

Ch 1 v/o can be patched into the volt per octave or pitch cv input of an oscillator to control the frequency of the synthesizer voice. Ch 1 gate can be patched into an envelope or ADSR then into VCA CV input to shape the note on and note off gate signals generated by the keyboard controller. The pressure 1 output can be patched into the cutoff frequency cv input of a filter. This patch will allow the monophonic response to control the note on/off state and pitch of a synthesizer voice as well as using pressure to control the filter cutoff. Pressing and holding a few notes on the keyboard will create an arpeggiation. The hold button can be enabled to allow the arpeggiation to continue after the notes are depressed.



3.6.2 arpeggiator response modes

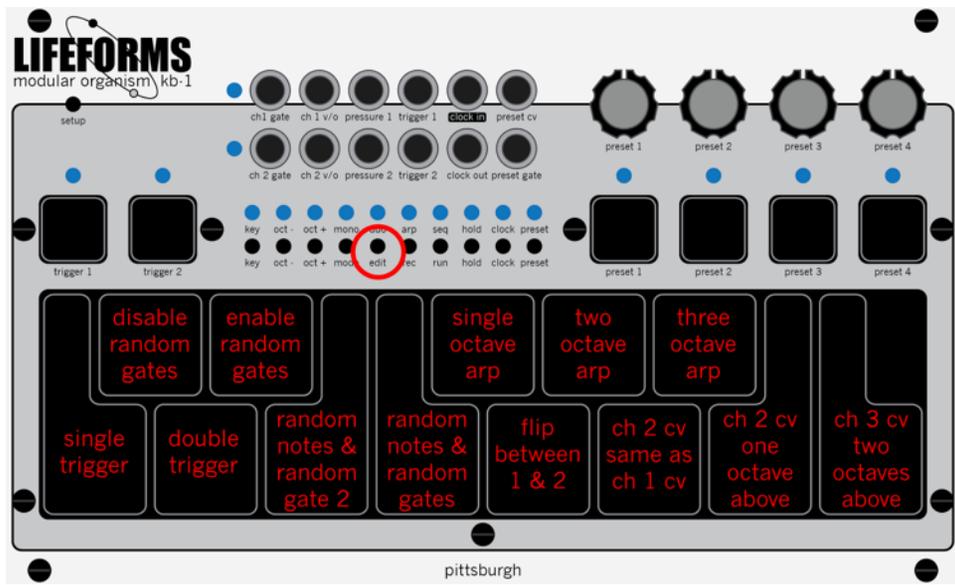
There are 4 sets of responses available to control note order, probability gate bursts, arpeggiator range, and channel 2 output octave. To select a arpeggiator response, press and hold the edit button and then press one of the keys listed below.

- C key** - Single trigger. Each note triggers once in the order it was played.
- D key** - Double trigger. Each note triggers twice in the order it was played.
- E key** - Notes trigger randomly with a random gate 2 output response.
- F key** - Notes trigger randomly with random gate 1 and gate 2 output response.
- G key** - Active note and gate outputs flip between channel 1 and channel 2.

- C# key** - Disables probability based gate bursts.
- D# key** - Enables probability based gate bursts.

- F# key** - Single octave arpeggiator range.
- G# key** - Two octave arpeggiator range.
- A# key** - Three octave arpeggiator range.

- A key** - Channel 2 CV output matches channel 1 output.
- B key** - Channel 2 CV output is one octave above the channel 1 CV output.
- C2 key** - Channel 2 CV output is two octaves above the channel 1 CV output.



3.6 arpeggiator keyboard mode (cont.)

3.6.3 arpeggiator controls

Ch 1 gate and ch 2 gate output responses can be the same or unique depending on the selected arpeggiator response mode. Gate outputs can switch between 0 and 5v.

Ch 1 v/o and ch 2 v/o output responses are can be the same or unique depending on the selected arpeggiator response mode. Ch 1 v/o and ch 2 v/o outputs generate a scaled 1 volt per octave signal based on the active arpeggiator note.

Pressure 1 and pressure 2 output responses can be the same or unique depending on the selected arpeggiator response mode. Pressure can vary from 0 to 6v.

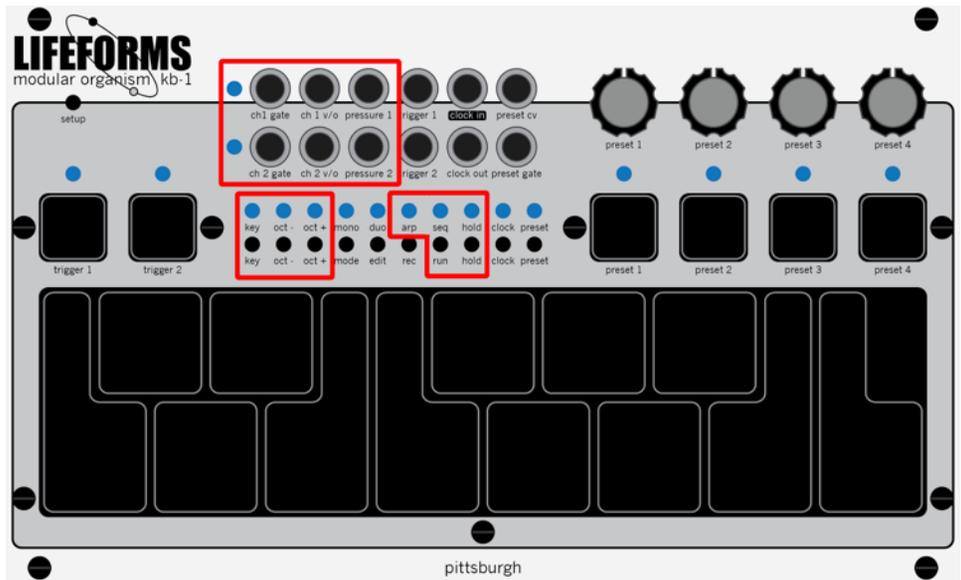
Key edit button - This button enables 2 functions: arpeggio transpose and gate stutter. Pressing lightly transposes the arpeggiation. Transposition is based on the first note of the arpeggiation. This functionality requires the hold feature to be enabled. Additional pressure applied to the key creates an increasingly dense burst of gates. Stuttered gate density is always a multiple of the active clock source. The density pressure levels available are x0, x2, x4.

Octave buttons - Pressing the octave down button shifts the keyboard one octave lower and pressing the octave up button shifts the keyboard one octave higher. A range of 7 octaves is available.

Hold button - Pressing the hold button latches the ch 1 gate and ch 2 gate outputs high when a key is pressed. Pressing the hold button a second time disables this feature.

Record button does nothing in duophonic mode.

Run button starts and stops the arpeggiator. Run is enabled by default when the arpeggiator mode is selected.

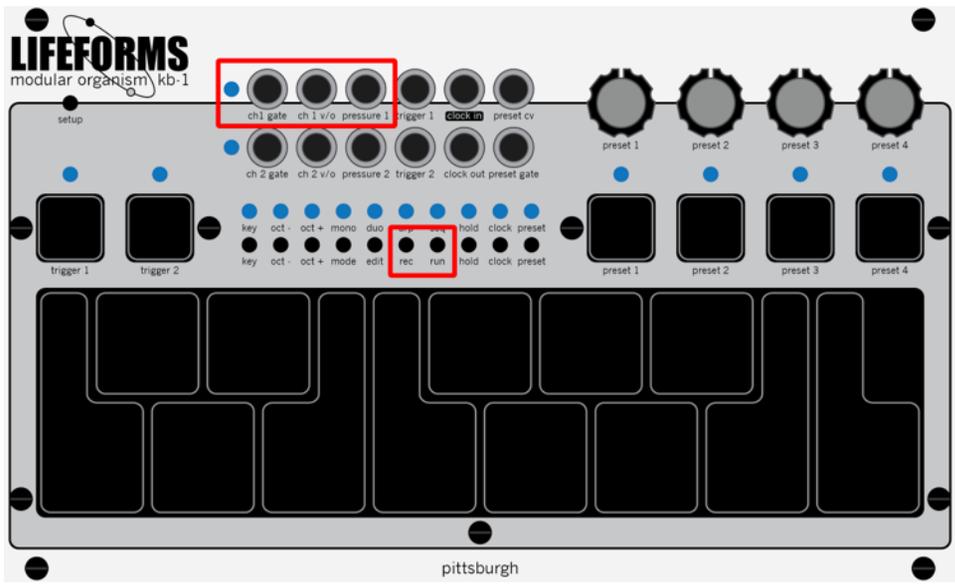


3.7 sequencer keyboard mode

Sequencer keyboard mode repeats a step programmed pattern of notes and note modifiers in sync with the active clock source. Notes and note modifiers programmed on the keyboard controller create a sequence of pitch, gate, and pressure voltages that are played in a loop. Four separate patterns can be up to 64 notes in length. The pattern is cleared and a new pattern is created when record is enabled and the first note is pressed.

3.7.1 basic sequencer patch example

Ch 1 v/o can be patched into the volt per octave or pitch cv input of an oscillator to control the frequency of the synthesizer voice. Ch 1 gate can be patched into an envelope or ADSR, then into VCA CV input to shape the note on and note off gate signals generated by the keyboard controller. The pressure 1 output can be patched into the cutoff frequency cv input of a filter. This patch will allow the monophonic response to control the note on/off state and pitch of a synthesizer voice, as well as using pressure to control the filter cutoff. Press record to enable record mode. Press a few keys, one at a time, on the keyboard. Press record to disable record mode. Press play to play the basic sequence.



3.7.2 sequencer response modes

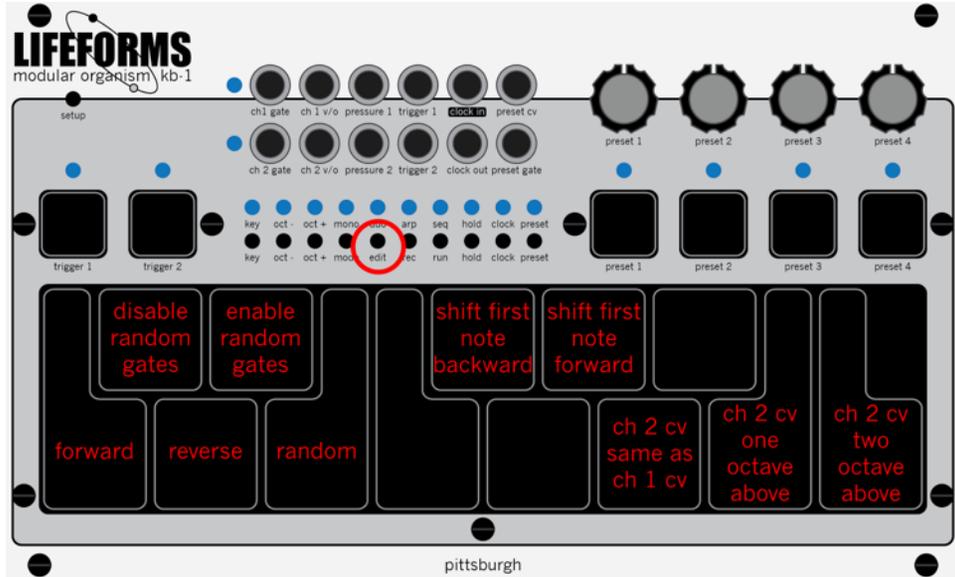
There are 4 sets of responses available to control note order, probability gate bursts, sequence first note, and channel 2 output octave. To select a sequencer response, press and hold the edit button and then press one of the keys listed below.

- C key** - Forward. Sequencer plays notes in order.
- D key** - Reverse. Sequencer plays notes in reverse order.
- E key** - Random. Sequencer plays notes in random order.

- C# key** - Disables probability based gate bursts.
- D# key** - Enables probability based gate bursts.

- F# key** - Shift sequence first note back one step.
- G# key** - Shift sequence first note forward one step.

- A key** - Channel 2 CV output matches channel 1 output.
- B key** - Channel 2 CV output is one octave above the channel 1 CV output.
- C2 key** - Channel 2 CV output is two octaves above the channel 1 CV output.



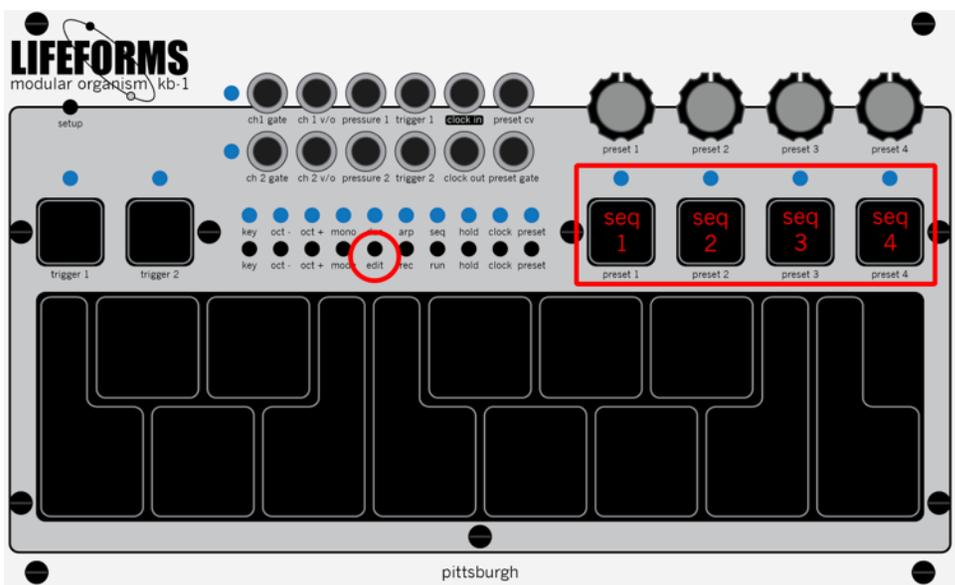
3.7 sequencer keyboard mode (cont.)

3.7.3 selecting sequence

The Lifeforms KB-1 can store 4 sequences in memory. The 4 preset touch pads (preset 1, preset 2, preset 3, preset 4) are used for selecting a sequence.

Press and hold the edit button to show which of the 4 sequences is active. The selected sequence will be highlighted with a lit LED. While the edit button is depressed, touch one of the preset touch pads to select a new sequence.

New sequences can be selected while the sequencer is running. The new sequence will begin at the end of the active sequence.



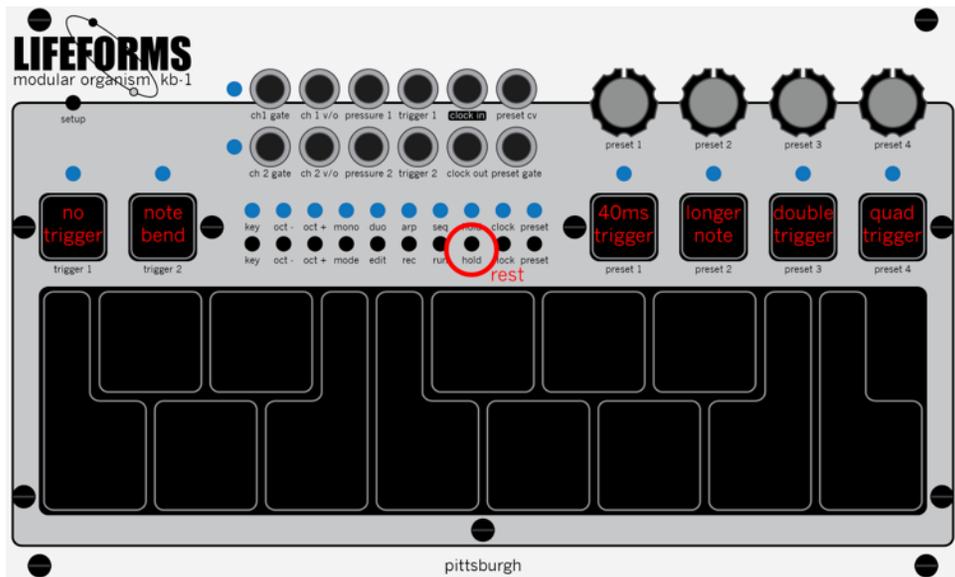
3.7.4 recording sequences

If the sequencer is running, press run to stop the sequence. Press rec (record) to enter record mode. The KB-1 will erase and start a new sequence after the first note is pressed. Press a note to begin recording a new sequence. After each note is pressed, a sequence modifier can be added to the note by pressing one of the trigger or preset touch pads. If no modifier is selected, the note will be automatically modified with a default 40ms trigger. The hold button is used to create a rest during recording. Once the sequence is complete, press rec (record) to exit record mode and press run to play the sequence.

3.7.5 sequence note modifiers

There are 6 sequence modifiers available to enhance a sequence during step recording. Every note can have one modifier. Apply a modifier by pressing one of the trigger or preset buttons after the sequence note is pressed.

- trigger 1** - No retrigger between notes.
- trigger 2** - Bend pitches between notes.
- preset 1** - 40ms trigger (default).
- preset 2** - Longer 7/8 beat length trigger.
- preset 3** - Double trigger note.
- preset 4** - Quad trigger note.



3.7 sequencer keyboard mode (cont.)

3.7.6 sequencer controls

Ch 1 gate and ch 2 gate output responses are identical. Press a keyboard controller note to generate a 5v gate signal. Depress the key to return to 0v.

Ch 1 v/o and ch 2 v/o output responses can be the same or unique depending on the selected sequencer response mode. Ch 1 v/o and ch 2 v/o outputs generate a scaled 1 volt per octave signal based on the active sequencer note.

Pressure 1 and pressure 2 output responses can be the same or unique depending on the selected sequencer response mode. Pressure can vary from 0 to 6v.

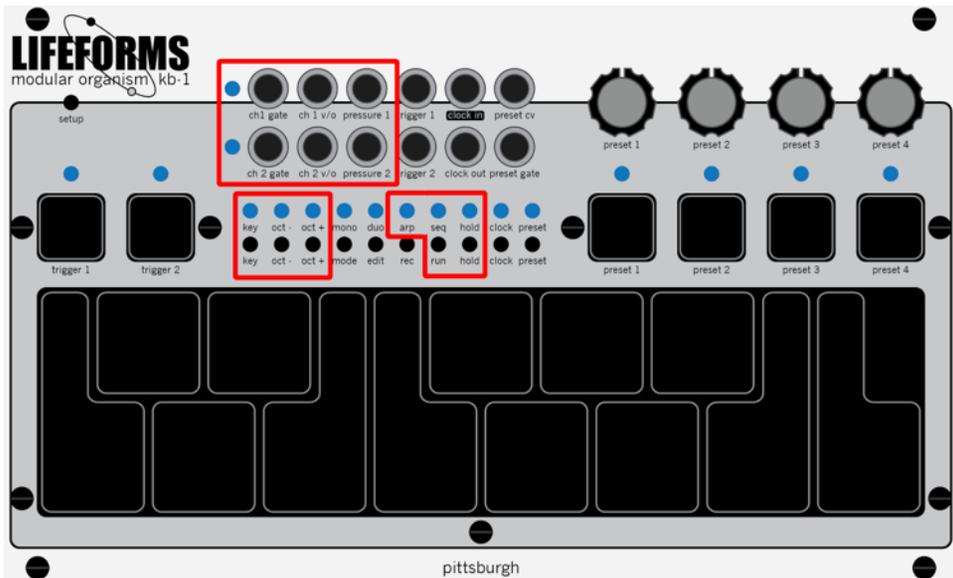
Key edit button - This button enables 2 functions: sequencer transpose and gate stutter. Pressing lightly transposes the sequencer. Transposition is based on the first note of the sequencer. This functionality requires the hold feature to be enabled. Additional pressure applied to the key creates an increasingly dense burst of gates. Stuttered gate density is always a multiple of the active clock source. The density pressure levels available are x0, x2, x4.

Octave buttons - Pressing the octave down button shifts the keyboard one octave lower and pressing the octave up button shifts the keyboard one octave higher. A range of 7 octaves is available.

Hold button - Pressing the hold button while recording a sequence creates a rest in the sequence. Pressing the hold button while a sequence is playing causes the active note to repeat until the hold button is unpressed.

Record button enables or disables record mode.

Run button starts and stops the sequencer.



4. clock source

4.1 clock source

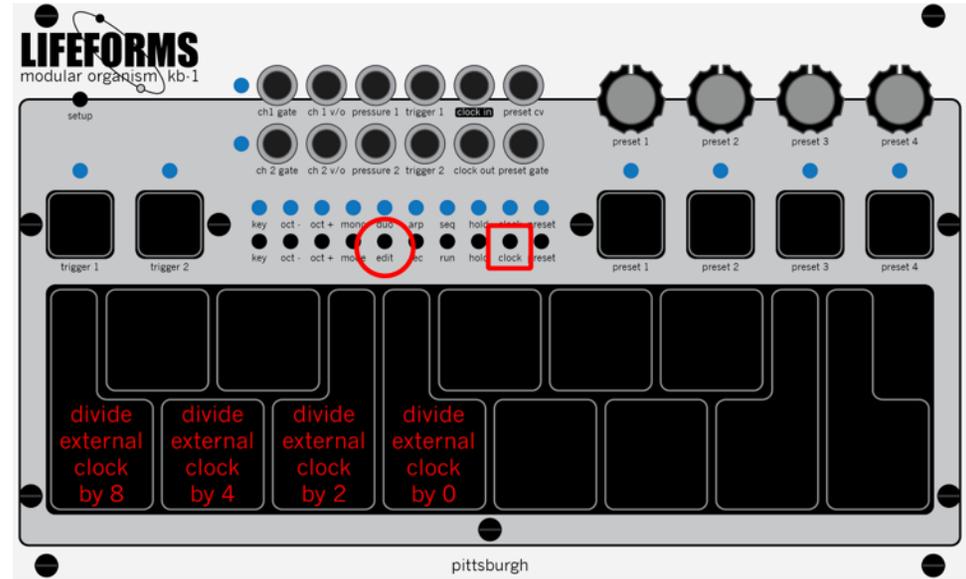
The clock is used to control the arpeggiator, sequencer, gate bursts, triggers, and the preset voltage memory sequencer. The Lifeforms KB-1 can be clocked using an internal tap-tempo clock or external clock signal. To switch between internal and external mode, press and hold the edit button and then tap the clock button. The clock LED will blink once to verify internal clock mode is selected or twice to verify external clock mode is selected.

The tempo of the internal clock is changed by tapping on the clock button at least 2 times. Tapping more than twice will provide better results.

In external clock mode, the incoming clock signal can be divided to allow the KB-1 to respond to a division of the incoming clock signal. To modify the clock division, press and hold the Clock button and then press one of the keys listed below.

- C key** - /8 - Master internal or external clock divided by 8.
- D key** - /4 - Master internal or external clock divided by 4.
- E key** - /2 - Master internal or external clock divided by 2.
- F key** - = - Master internal or external clock.

Tapping the clock button in external clock mode will reset the arpeggiator or sequence to the first step. This is useful when trying to sync an arpeggiation or sequence with an external source.



5. global burst settings

5.1 changing global burst settings

The arpeggiator and sequencer utilize probability based gate bursts to randomize and enhance sequences and arpeggios. Whether or not the bursts include rests and the depth of the gate bursts are global settings controlled using the setup button and the keyboard controller pad. To select a arpeggiator response, press and hold the edit button and then press one of the keys listed below.

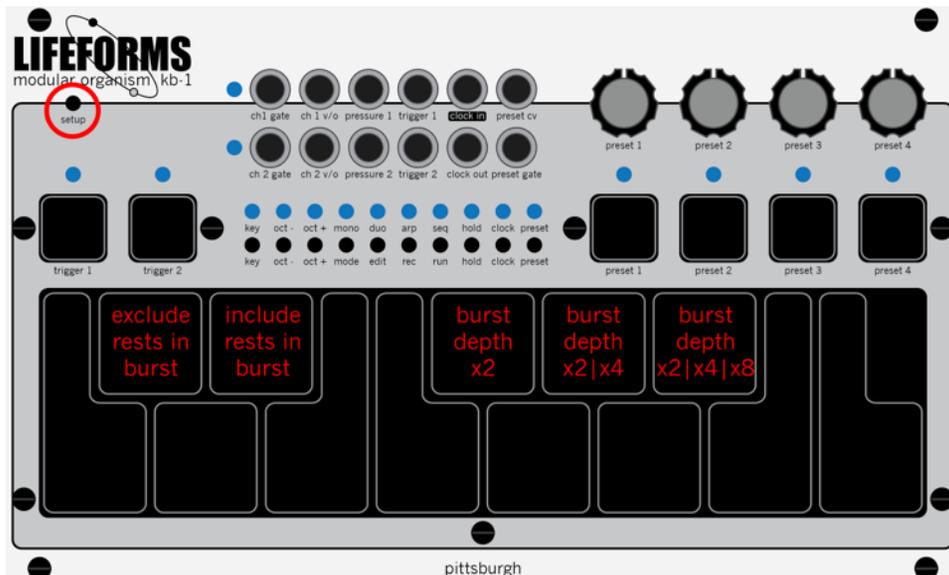
C# key - Disables probability based rests.

D# key - Enables probability based rests.

F# key - Depth of bursts includes half notes.

G# key - Depth of bursts includes half and quarter notes.

A# key - Depth of bursts includes half, quarter, and eighth notes.



6. pressure sensitive gate triggers

6.1 overview

Designed as a set of flexible performance tools, the two pressure sensitive gate triggers can be independently assigned to one of six functions. Pitch bend, gate, latch, trigger, pressure sensitive random gate generator, and pressure sensitive clock divider functions are available.

Pitch bender - Pressure sensitive 2 semitone pitch bend. Trigger 1 is pitch down and Trigger 2 is pitch up. Affects both ch 1 v/o output jack and ch 2 v/o output jack.

Gate pad - 5v gate sent to trigger output jack while trigger pad is pressed.

Latch pad - Press to enable 5v gate signal. Press again to disable 5v gate signal.

Trigger pad - 40ms long 5v gate sent to trigger pad output jack.

Random trigger burst generator - Chaotic 30ms long 5v gate sent to trigger pad output. Probability of trigger being created based on pressure applied to trigger pad. The more pressure, the more complex the output. Gates are always a division of the active clock. Complexity latches on to selected depth when trigger is depressed quickly.

Pressure sensitive clock divider - A division of the active clock determined by the amount of pressure applied to the trigger pad. Clock division latches on to selected division when trigger is depressed quickly.

6.1.1 selecting pressure sensitive gate trigger functions

To cycle through the pressure sensitive gate trigger functions, press and hold the edit button and then press one of the trigger pads. The trigger LED will blink to identify which function is selected.

1 blink - Pitch bender.

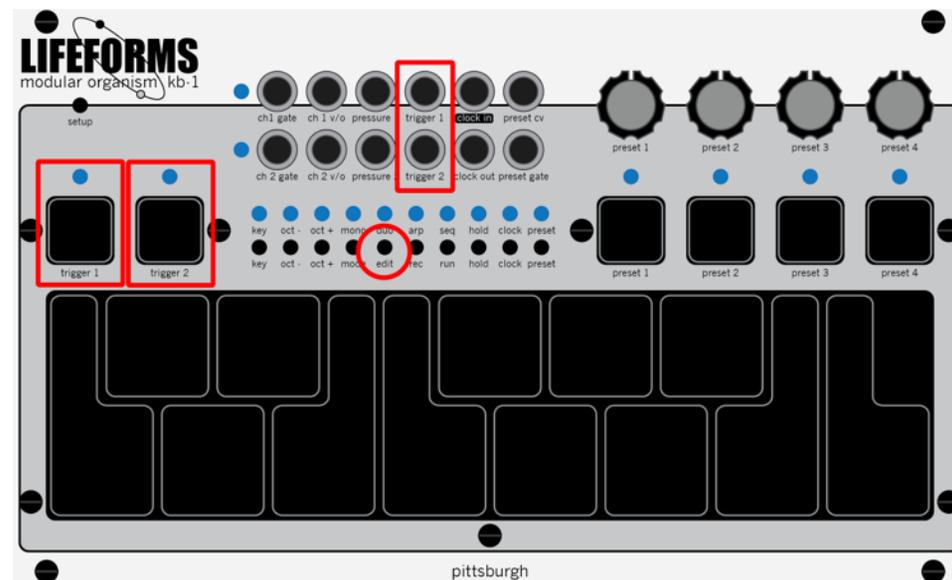
2 blinks - Gate pad.

3 blinks - Latch pad.

4 blinks - Trigger pad.

5 blinks - Random trigger burst generator.

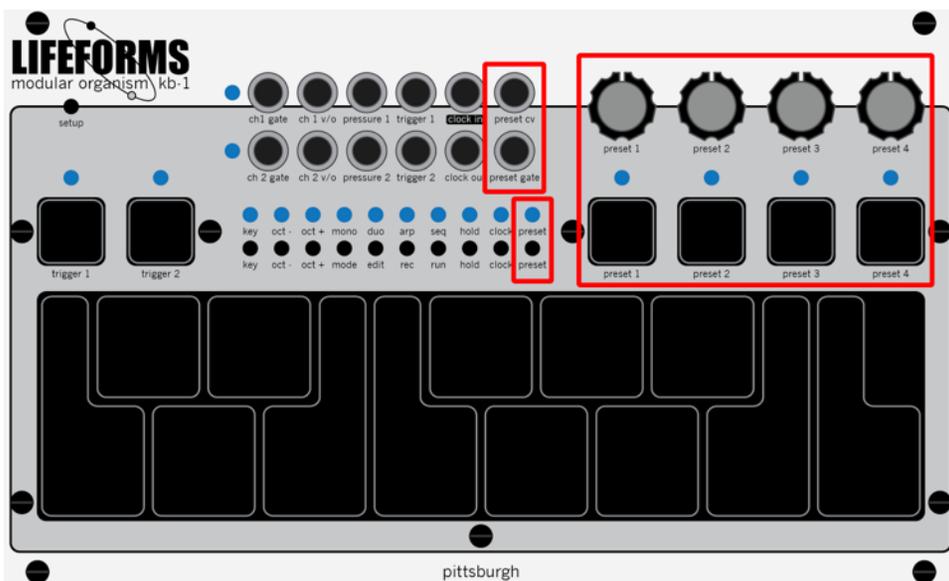
6 blinks - Pressure sensitive clock divider.



7. preset voltage sequencer

7.1 overview

The preset voltage memory sequencer includes 4 assignable voltages. Each preset channel can hold a single analog voltage between 0 and 5 volts. The preset pads are used to select the active channel. The voltage of the selected preset channel is sent to the preset cv jack. A 40ms trigger is sent to the preset gate jack when a new preset channel is selected. The active preset channel can be selected manually by pressing any one of the four preset voltage touch buttons or by enabling one of the 3 sequencer modes.



7.1.1 selecting preset cycle mode

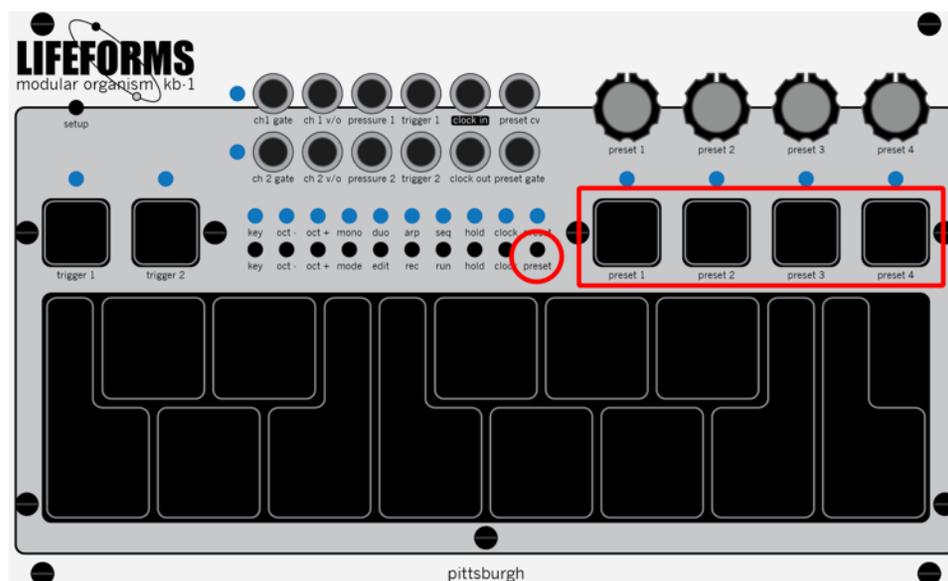
To select a preset mode, press and hold the preset button and then press one of the preset voltage touch buttons.

Preset 1 pad - Manual selection mode (sequencer not enabled).

Preset 2 pad - Forward cycling sequencer mode.

Preset 3 pad - Reverse cycling sequencer mode.

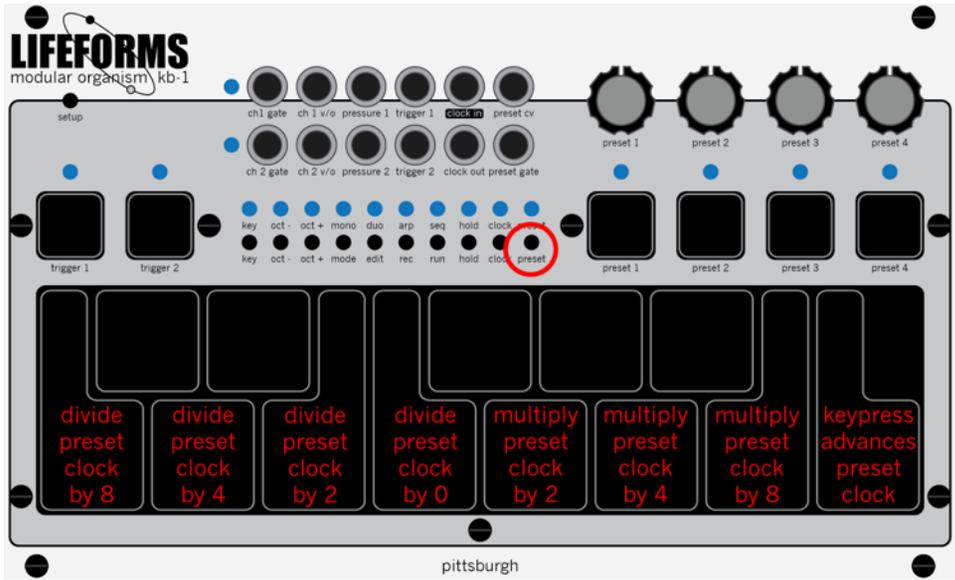
Preset 4 pad - Random cycling sequencer mode.



7.1.1 clocking the preset voltage memory sequencer

The sequencer in the Preset Sequencer is synced to the active clock. Using the preset button, different clock divisions can be selected. To modify the preset sequencer clock, press and hold the preset button and then press one of the keys listed below.

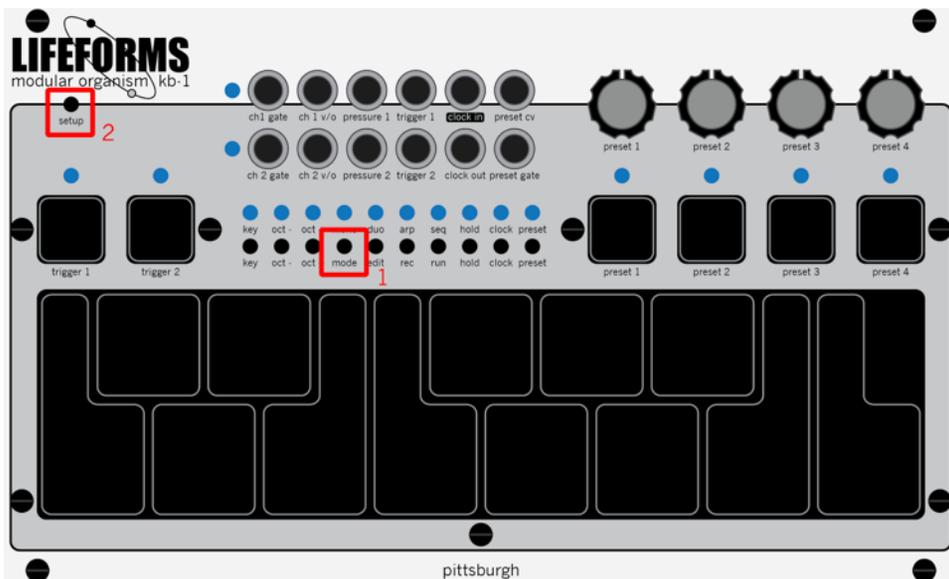
- C key** - /8 - Master internal or external clock divided by 8.
- D key** - /4 - Master internal or external clock divided by 4.
- E key** - /2 - Master internal or external clock divided by 2.
- F key** - = - Master internal or external clock.
- G key** - x2 - Master internal or external clock multiplied by 2.
- A key** - x4 - Master internal or external clock multiplied by 4.
- B key** - x8 - Master internal or external clock multiplied by 8.
- C1 key** - Keypress as clock source - Sequencer moves to next stage when a key is pressed on the keyboard controller pad.



8. troubleshooting

8.1 factory reset procedure

Performing a factory reset returns all of the stored settings to the default setting. Hold down mode first then hold down setup. Hold both for 4 seconds. The octave - LED will blink twice to show the reset is complete.



8.2 calibration procedure

The Lifeforms KB-1 ships fully calibrated. The following information is included for reference only.

The ch 1 v/o and ch 2 v/o outputs are individually calibrated to the eurorack 1 volt per octave standard. Below is the calibration procedure. Simply repeat the procedure on each channel.

The trimpots are located on the left side of the Lifeforms KB-1 module. The trimpots are labeled CH1 and CH2. The trimpots are precision 25 turn pots but adjust using small turns.

Attach a voltmeter to the output of the ch 1 v/o jack or ch 2 v/o jack. Place the Lifeforms KB-1 in mono mode. Touch the C key. The voltmeter should read 3 volts. Adjust the ch 1 or ch 2 trimmer until the C key outputs 3 volts.

9. eurorack specs

9.1 Lifeforms KB-1 module specs

Panel size 42hp.

Module depth 38mm.

Power consumption 160mA with reversed power polarity protection.

10. warranty

10.1 one year limited warranty

For a period of one year after the date of original purchase, the Lifeforms KB-1 manufactured by Pittsburgh Modular Synthesizers LLC, is warranted to function properly and be free of defects in materials and workmanship. Should a factory installed hardware fail during the warranty period, contact Pittsburgh Modular Synthesizers LLC. We will repair it (or at our option, replace it) at no charge, and pay the cost of shipping it back to you.

This warranty is void if in our opinion the Lifeforms KB-1 has been damaged by accident, mishandled, altered, improperly serviced, or repaired by the customer where such treatment has affected its performance or reliability. This includes but is not limited to damage related to incorrectly attaching power ribbon cables. In the event of such misuse/abuse by the customer, costs for repairs plus two-way shipping costs will be borne by the customer. Products found defective should be returned to the factory carefully packed, as the customer will be responsible for freight damage.

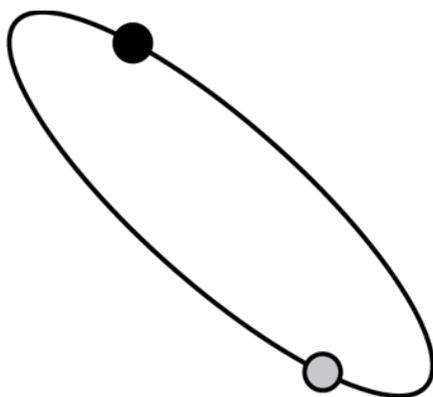
Incidental or consequential damages or costs incurred as a result of product malfunction are not the responsibility of Pittsburgh Modular Synthesizers LLC.

11. service and other information

11.1 contact info

Please contact us for service or other information related to the Lifeforms KB-1 or any other Pittsburgh Modular product.

www.pittsburghmodular.com/contact



pittsburgh modular synthesizers