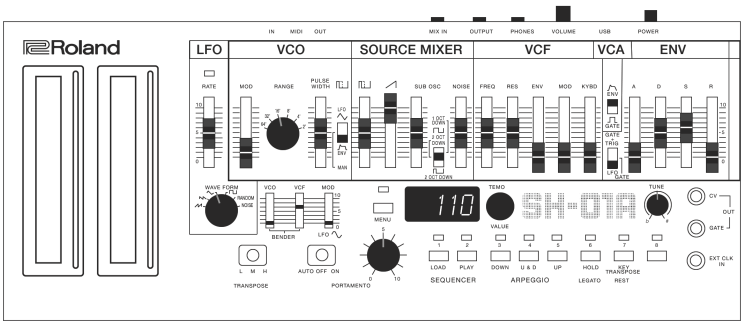
MONOPHONIC / POLYPHONIC / CHORD MACHINE SYNTHESIZER

SH-01A

ローランドSH-01Aのユーザーガイド
A USER'S GUIDE TO THE ROLAND SH-01A



ACKNOWLEDGEMENTS:

This manual was assembled, illustrated, and written by Sunshine Jones. All of the content is taken from either his personal experience, existing documentation, and techniques submitted and found in the public domain. The document is intended as a companion guide for the Roland SH-01A Synthesizer Module. It is in no way offered as a criticism, or intended to be an authoritative guide to replace the official documentation which accompanies the commercial purchase of Roland Boutique, or Roland AIRA musical instruments.

Rather, this manual is intended to support the musician, the user of these and other synthesizer modules and inspire them to create music, share sounds, and fully realize the synthesizers in front of them.

In the tradition of owner's manuals, rarely are they opened until problems arise. We tell you over and over again to RTFM, but do you listen? No, no you don't. Manuals should be both tools for reference and instruction, as well as inspirational guides to possibility. An owner's manual should be equally a pre purchase discovery, meant to inspire the curious with capability and possibility, and a post purchase celebration of depth, technique, guidance, and surprises. But this is by no means the last word. So many people have read and re read a manual only to still have no idea what the manual was attempting to suggest. This owner's manual is offered free of charge to anyone curious, or frustrated by the tiny little leaflet which covers the operations of the SH-01A in several languages, as a legible alternative to the official documentation.

This manual is not associated in any way, personally or professionally with anyone connected to the Roland Corporation. The task was initially undertaken in a moment of fury, but has continued, been assembled, proof read, and then hastily produced exclusively for love, and pleasure.

It is our hope that as the result you will begin to explore and discover layers of sound and joy which were previously overlooked. We hope and trust that you will use these PATCH and SEQUENCE worksheets to document your discoveries, and our extensive encouragement to share, and import patches of your own into a thriving community of exploration and delight.

If you wish to correspond with the author of this manual you may do so by navigating your web browser to the following destination:
http://sunshine-jones.com
The original article and an enthusiastic love letter video may be found within the non-fiction section of the site.

With **Love**

Sunshine Jones
November 2017
San Francisco, California

Version 0.1Ha

RIBBON CONTROLLER
ENTER NOTES PITCHBEND, MODULATION CONTROLLERS

LFO
RATE SELECTION WAVEFORM SHAPE OF THE LOW FREQUENCY OSCILLATOR

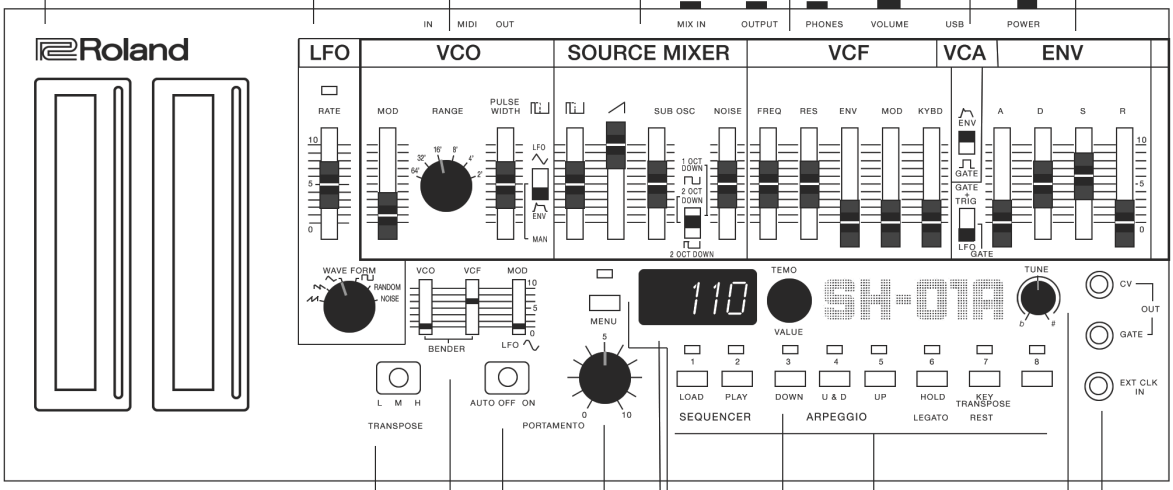
VCO
MODULATION AMOUNT, RANGE SELECTOR, AND PULSE WIDTH SETTINGS

SOURCE MIXER
MIXES PULSE, SAW SUB AND NOISE WITH A SUB OCTAVE SELECTION

VCF
FREQUENCY, RESONANCE ENVELOPE, MODULATION, AND KEYBOARD AMOUNTS FOR THE VOLTAGE CONTROLLED FILTER

VCA
SELECT ENV/ GATE AND TRIGGER/LFO AMP SETTINGS

ENV
ENVELOPE SHAPE ADJUSTMENTS FOR ATTACK, DECAY, SUSTAIN AND RELEASE



TRANSPOSE
SWITCH PITCH BETWEEN LOW, MID AND HI

PORTAMENTO AMOUNT

PORTAMENTO SELECTOR

MOD SELECTOR
ADJUST THE AMOUNT PITCHBEND/MODULATION CONTROLS HAVE

DISPLAY

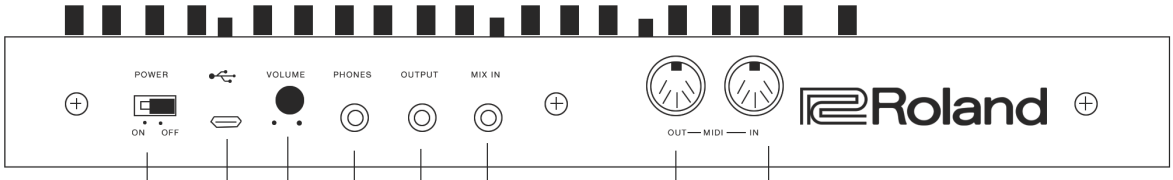
TEMPO
MAIN TEMPO AND ENCODER ADJUSTMENT

SEQUENCER/ ARPEGGIATOR
STEP SEQUENCER AND ARPEGGIO CONTROLS

CV/GATE CLOCK OUT
OUTPUT FOR KEYBOARD SEQUENCER AND ARPEGGIO TO CV/GATE EXTERNAL CLOCK INPUT

MENU
ADJUST VARIOUS VOICE AND SYSTEM SETTINGS

TUNE
MASTER TUNE ADJUSTMENT



POWER
MAIN POWER SWITCH

MICRO USB PORT
POWER SUPPLY CONNECTOR AND INTERFACE WITH THE COMPUTER FOR AUDIO/MIDI CONNECTION WITH A DAW

VOLUME
MAIN VOLUME ADJUSTMENT

HEADPHONE OUT
CONNECT HEADPHONES

OUTPUT
MAIN OUTPUT FOR CONNECTION WITH A MIXER OR SPEAKERS

MIX IN
INPUT FOR MIXING EXTERNAL SOURCES THROUGH THE SH-01A

MIDI OUT - IN
FOR RECEIVING AND TRANSMITTING CONTROL/NOTE DATA WITH SEQUENCERS AND KEYBOARD CONTROLLERS

CONTENTS

INTRODUCTION

The SH-01A is a meticulous reproduction of the iconic Roland SH-101, one of the most popular classic synthesizers of all time. Our Analog Circuit Behavior (ACB) technology reproduces the SH-101's legendary sounds by faithfully recreating the actual behavior of the original analog circuits, right down to the fine details and odd quirks that have endeared the synth to musicians and producers for decades. The SH-01A builds on the great sounds and creative immediacy of the original, now in the Roland Boutique format—offering exciting new polyphonic capabilities, new performance features, and a level of authenticity.

BEAUTY THROUGH SIMPLICITY

The now-legendary SH-101 was a seemingly simple monophonic synthesizer launched in 1982. Unlike more complex synthesizers available at the time, the SH-101 quickly became popular for its characteristic tone and simple one-VCO → one-VCF → one-VCA → one-LFO structure. A legion of artists found it quick to program and adept at bright edgy tones and exciting sound effects. Its bass sounds are universally revered, and somehow any sound it produces always just fits perfectly in a mix. More than thirty years later, the SH-101's sounds continue to be sought after by artists the world over. It's a staple of vintage synth collectors and well-equipped, world-class studios, and now returns as the inspiration for the SH-01A.

A IS FOR AUTHENTIC

Original SH-101s are becoming increasingly rare, making them ever more expensive on the used market. Because of this, many have resorted to sample packs, hardware knockoffs, or software plug-ins loosely inspired by the SH-101. The SH-01A accurately recreates what makes the original so special, and the interface, while more compact, is 100% authentic. The sound is vibrant and alive thanks to Analog Circuit Behavior (ACB) technology. ACB is used to recreate all the details and quirks of the original hardware by modeling each analog circuit, right down to the component level. Face-to-face consultation with the original designers and relentless research beyond the original schematics provides meticulously recreated oscillator, filter, and envelope behavior—a perfect foundation to build upon for a new generation of "101" fans.

AN INSPIRED, ICONIC SEQUENCER REVISITED

One of the most creative features of the original SH-101 was its 100-note step sequencer. Press Load, add sequential notes with legato and rests, and press Play. Easy. Designed to inspire through simplicity, the SH-101 sequencer has been the source of countless bass lines and lead melodies on legendary tracks. But the limitation of playing one sequence back at a time has been resolved with the SH-01A. Now you can save and access 64 sequence patterns, perfect for any performance situation. Recall any pattern at any time, and use the sequencer to control your modular rig, hardware synthesizers, and software plugins via CV/Gate, MIDI, and USB.

DID YOU SAY POLYPHONIC?

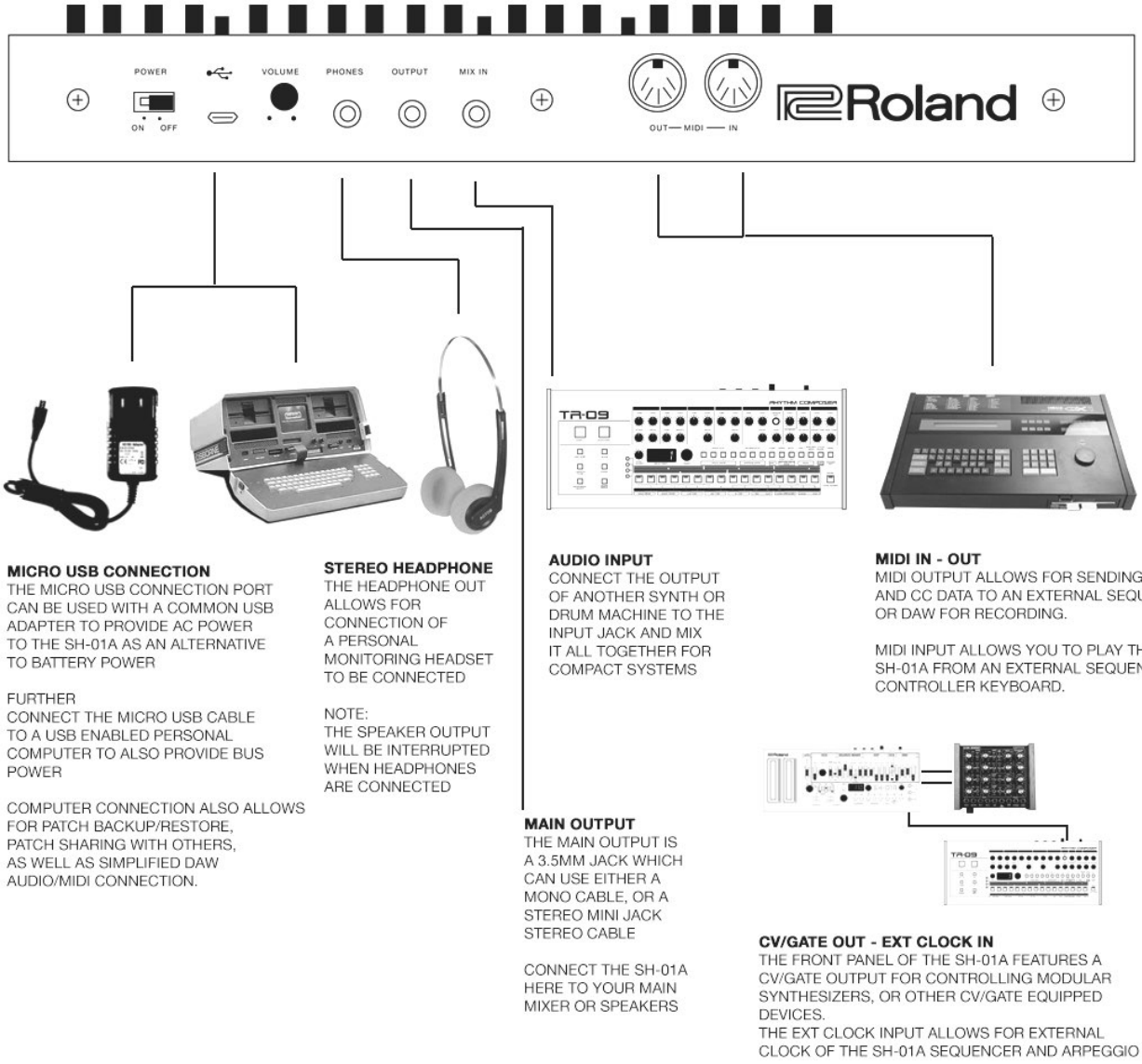
The SH-101 found its power in a monophonic voice for a wide variety of sounds. The SH-01A now has four voices, allowing for more modes to expand upon the original's sound palette. On top of Mono mode, you can stack the four voices in Unison mode to add some punch. Chord mode layers any four notes, and can be shifted up and down in semi-tone intervals. Poly mode allows for four notes to be played simultaneously, making the mono synth now capable of pads and chords.

PORTABLE. PERFORMER.

The simple design of the SH-101 made patch creation immediate, with sounds quickly forming under the movement of each key and slider. But that inspiring sound could vanish as quickly as it appeared due to its lack of patch memory. The SH-01A adds 64 writeable patches that can serve as presets for different tracks or quick starting points for experimenting with new sound designs, making inspiration only a button press away.

The SH-01A takes the original SH-101's portability and stage prowess to a whole new level. It's small enough to take just about anywhere, yet ruggedly built with sturdy knobs, metal-shaft sliders, and solid silver buttons like the original. It has several tilt options for easy viewing in various live and studio scenarios, and can serve as a low-latency, portable audio interface. In addition, it has a built-in speaker, and even runs on batteries. And when mounted in the optional K-25m Keyboard Unit, it can be used as a compact, all-in-one synth with 25 velocity-sensitive keys. You might actually be in a better position to rock out with this on your skateboard, or moped than the original SH-101 was advertaised as being good for. I wouldn't do that myself, but I think you could proably pull it off if you really wanted to.

BASIC CONNECTIONS



MICRO USB CONNECTION
THE MICRO USB CONNECTION PORT CAN BE USED WITH A COMMON USB ADAPTER TO PROVIDE AC POWER TO THE SH-01A AS AN ALTERNATIVE TO BATTERY POWER

FURTHER
CONNECT THE MICRO USB CABLE TO A USB ENABLED PERSONAL COMPUTER TO ALSO PROVIDE BUS POWER

COMPUTER CONNECTION ALSO ALLOWS FOR PATCH BACKUP/RESTORE, PATCH SHARING WITH OTHERS, AS WELL AS SIMPLIFIED DAW AUDIO/MIDI CONNECTION.

STEREO HEADPHONE
THE HEADPHONE OUT ALLOWS FOR CONNECTION OF A PERSONAL MONITORING HEADSET TO BE CONNECTED

NOTE:
THE SPEAKER OUTPUT WILL BE INTERRUPTED WHEN HEADPHONES ARE CONNECTED

AUDIO INPUT
CONNECT THE OUTPUT OF ANOTHER SYNTH OR DRUM MACHINE TO THE INPUT JACK AND MIX IT ALL TOGETHER FOR COMPACT SYSTEMS

MIDI IN - OUT
MIDI OUTPUT ALLOWS FOR SENDING SEQUENCE AND CC DATA TO AN EXTERNAL SEQUENCER OR DAW FOR RECORDING.

MIDI INPUT ALLOWS YOU TO PLAY THE SH-01A FROM AN EXTERNAL SEQUENCER OR CONTROLLER KEYBOARD.

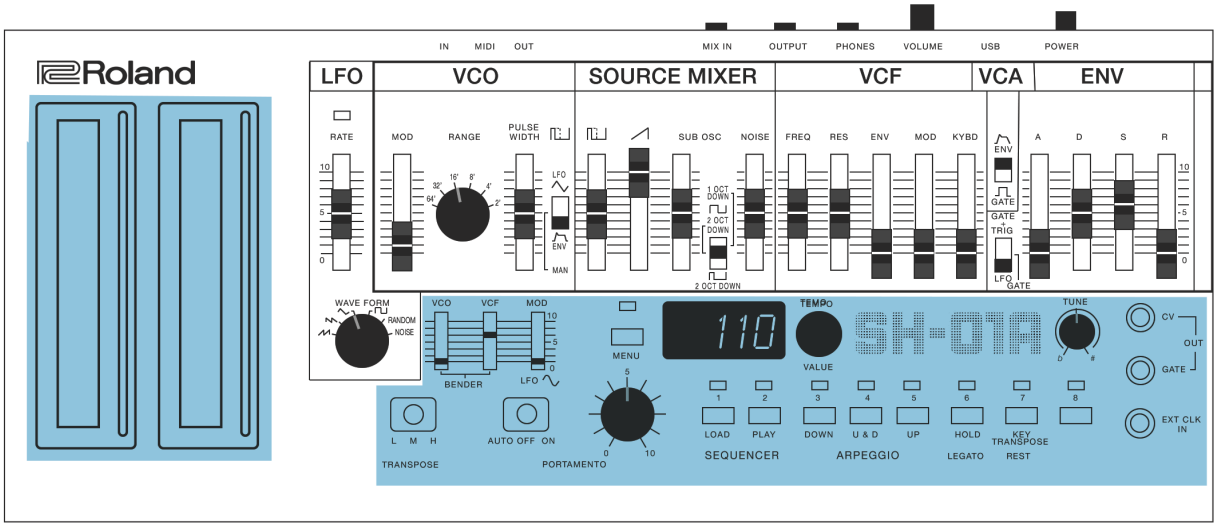
MAIN OUTPUT
THE MAIN OUTPUT IS A 3.5MM JACK WHICH CAN USE EITHER A MONO CABLE, OR A STEREO MINI JACK STEREO CABLE

CONNECT THE SH-01A HERE TO YOUR MAIN MIXER OR SPEAKERS

CV/GATE OUT - EXT CLOCK IN
THE FRONT PANEL OF THE SH-01A FEATURES A CV/GATE OUTPUT FOR CONTROLLING MODULAR SYNTHESIZERS, OR OTHER CV/GATE EQUIPPED DEVICES.
THE EXT CLOCK INPUT ALLOWS FOR EXTERNAL CLOCK OF THE SH-01A SEQUENCER AND ARPEGGIO

NOTE - the use of the Osbourne 1™ for the purposes of illustrating a personal computer in this diagram does not suggest that an Osbourne 1™ will work in this instance. The fact is, the Osbourne 1™ doesn't even have a USB port on it, nor do we know of a currently produced or functional serial to USB adaptation technique. The Osbourne 1™ was used in this illustration because it looks cool, it fit into the graphic nicely, and also perhaps to subconsciously introduce the idea that perhaps a computer is less of an inspirational musical instrument in the end than we might have originally hoped it would be. The idea of computers and music was once a thrilling concept - what sequencer isn't a computer of sorts, right? And yet as the world funnels down into tiny screens, and distraction it seems that our focus might be better placed into a more diverse and authentically inspirational tools which give back in a deeper and broader way.

I. GENERAL FUNCTIONS



COMMON SECTION

ORIENTATION
If you're familiar with the other Roland Boutique synthesizers then you'll notice right away that the SH-01A is a different machine. The traditional "Common Section" for choosing patches, banks, and sequences is not here. The SH-01A is a truly lovely recreation of the SH-101 and in the spirit of "putting things where they go" the format has been dispensed in favor of something true to the ergonomics of the original synthesizer it's a modern version of. Personally I love this, and couldn't be happier, but this doesn't mean that there aren't a lot of very cool features to be accessed in a little bit different way.

TRANSPOSE SWITCH
Shifts the pitch up and down by one octave.
L - 1 OCT DOWN
M - 0 OCT DOWN
H - 1 OCT UP

PORTAMENTO SWITCH
Sets the portamento type
OFF - Turns off portamento entirely
AUTO - Portamento only when overlapping notes are played (this is what they mean when they say "legato")
ON - Portamento is always on

PORTAMENTO KNOB
Adjusts the time for the glide between notes

DISPLAY
Indicates the tempo or sequencer step. When the SH-01A is being clocked externally the display reports —-
When selecting a patch or pattern, the display indicates the bank and number of the patch.
A decimal point appears before the display numbers to indicate a pattern is being edited and has not been saved.
A decimal point appear after the display numbers to indicate that a patch is being edited and has not yet been saved.

TEMPO / VALUE KNOB
Adjusts the tempo of the internal sequencer.
When selecting a patch the TEMPO knob selects the bank.
Hold the SEQUENCER [LOAD] button and turn the TEMPO KNOB to adjust the SHUFFLE value of the sequencer
Hold the ARPEGGIO button and turn the TEMPO KNOB to adjust the SCALE value.

TUNE KNOB
Adjust the master tune of the synth with this knob

SEQUENCER [LOAD] BUTTON
Enter sequence write mode

SEQUENCER [PLAY] BUTTON
Starts/Stops the current sequence

ARPEGGIO [DOWN] BUTTON
Selects TYPE “DOWN” and turns the arpeggio on.

ARPEGGIO [U&D] BUTTON
Selects TYPE “U&D” and turns the arpeggio on.

ARPEGGIO [UP] BUTTON
Selects TYPE “UP” and turns the arpeggio on.

[HOLD / LEGATO] BUTTON
Turns HOLD on.
If ARPEGGIO is on, the arpeggio continues playing even after you release the keyboard.

[KEY TRANSPOSE / REST] BUTTON
Transposes the pitch. This lets you perform in a different key without changing your fingering.

CV / GATE OUT JACKS
You can connect an analog synthesizer equipped with CV/GATE input jacks, and control its note on/off or pitch.

EXT CLK IN JACK
The arpeggiator or sequencer can play in synchronization with a clock signal that is input from this jack.

RIBBON CONTROLLERS (C1/C2)
These are touch-type ribbon controllers. C1 (left) is pitch bend, and C2 (right) is modulation.
You can select either one octave or two octaves as the octave range of the arpeggiator. While you hold down the [DOWN] [U&D] [UP] buttons, the LED indication of C1 changes.

TAP THE LOWER HALF OF C1
Selects one octave (the bottom LED blinks)

TAP THE UPPER HALF OF C1
Selects two octaves (the top LED blinks)

NOTE - If a K-25m keyboard unit, USB, or MIDI are not connected, touching the C1 controller plays a preview sound.

BENDER [VCO] [VCF] SLIDERS
Set the amount of pitch change [VCO] and the amount of filter frequency change [VCF] that changes when the pitch bend is touched.

MENU
The MENU button accesses a select for the menu items. See System Settings section on page xx for a detailed description of each function and how to adjust them.

USB Interface

In the past many synthesizers came equipped with various interfaces. Connection methods like CV and Gate, Din Sync, Synch Jones, DCB, Tape I/O allowed synthesizers to connect to clocks, tape machines, sequencers and drum tracks. Thanks to the universal serial bus with which most personal computers are equipped today we have a number of interesting ways to handle these once complicated and tedious operations.

The USB connection port can be used to:

• Power the Synthesizer
• Both power and pass midi as well as audio data to and from a computer based DAW
• Mount the Synthesizer to the desktop of a computer and backup and/or restore and share your patches.

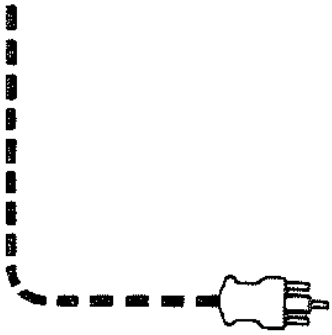
To connect the USB port to power:
Use an optional micro USB cable which is either the type with a wall plug on the end (like a wall wart adapter) or the type with another USB to power block on the end (like a phone charger.)
Both will work, but make sure that whichever you've chosen can provide sufficient power to run the SH-10A.

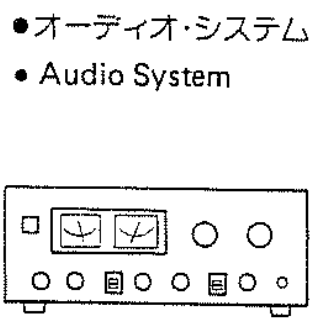
If the SH-01A goes to sleep while you believe you're plugged into the wall, then your power supply is either faulty, or it isn't powerful enough to run the synth (and you're running off the batteries.)

Typically you will want to look at the tiny print on those phone chargers and ensure that it's at least 5 Volts and 1 Amp and preferably a switchable 100-240 transformer, because then (with the right plug connectors) it will work anywhere in the world.

Data Backup & Restore

It may not be important to you, but I wanted to make a note here and share that there is no method of sequence, or patch storage on the SH-101. The original synthesizer didn't have a tape interface for backing up patches or sequences, nor did it offer a memory cartridge of any kind. The synth was very much a here and now, hands on instrument which with batteries installed could allow you to save your cool sequence between sessions, but in order to make a good sound, you needed to make notes and remember what you'd done, and as for the patterns in the sequencer once you over wrote the one in the memory, you were on your own. So notes and diagrams became very important.





That said, one of the coolest things about the boutique line of modules is their ability to mount onto the desktop of any USB enabled computer and you can drag and drop your patches in order to save them. This is much handier than the old fashioned midi librarian software, or the ancient and rarely reliable tape backup interface (although that actually is a thrill and you might want to try it sometime.)

To mount the SH-01A to your desktop follow this procedure:

1. Holding down [MENU] button, power up the SH-01A
2. Connect your computer to the SH-01A USB port via USB cable
3. Open the SH-01A drive which has mounted to your desktop

To create a backup of your patches:

1. Follow the above procedure for mounting the SH-01A
2. Copy the backup files from the SH-01A drive's "BACKUP" folder into an appropriately named folder on your computer
3. Once you're done, eject the SH-01A drive, disconnect the USB cable and you're done.

To bring patches from your computer into the SH-01A:

1. Follow the above procedure for mounting the SH-01A
2. Copy the backup files, or the new patches you'd like to check out into the "RESTORE" folder on the SH-01A drive
3. When copying is completed, eject the SH-01A drive.
4. **IMPORTANT** - Before power cycling the module press the [MENU] button
5. Once the lights stop blinking you may power cycle the SH-01A and disconnect the USB cable and you're done.

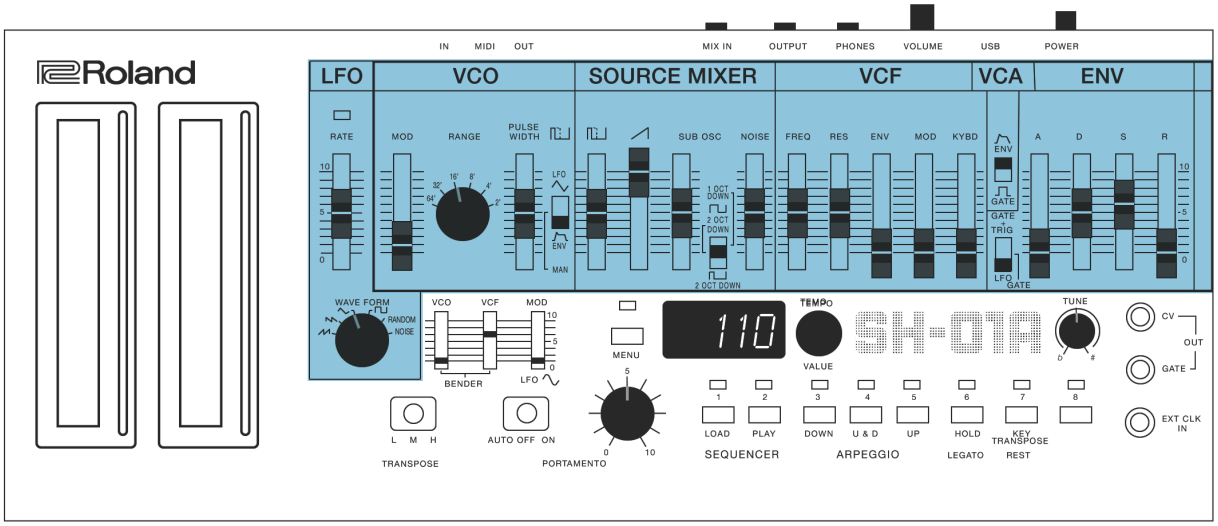
What's so big about that? Any system exclusive file utility can do the same thing, why is this important?
Well, the simplicity and visual aspect of this process is so novel that really anyone with basic computer skills can do it. This makes the process of file/patch sharing very easy. It's surprising that there aren't many amazing JU-06 or other Roland Boutique patches out there for the sharing and contributing to isn't it? It's possible that this process is just so easy, and painless to do that people still believe they need to connect a cassette deck, and record the sysex audio to tapes and then ship them to friends in order to share their files. Or many people are afraid to give away their precious patches? I'm not sure, but I think it's pretty cool, and I plan to come up with a bank of patches or two and offer them up for anyone interested in them. I'd also be very keen to see how others have undertaken the SH-01A in their own situations. Can you tell I think that patch exchanges are awesome? I do. And while I rarely use patches from other sound designers, I love to explore what synthesizers are capable of, and sometimes the best way to do that is by seeing how Billy Currie, or someone I've never heard of does it.

Restore the SH-01A to factory settings:

This is the procedure for resetting your SH-01A back to it's factory state. Remember that if you do this, all your settings and all your sounds will be overwritten with the out of the box, factory fresh programming.

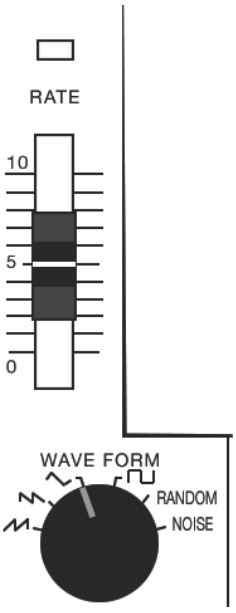
1. While holding down the [2] button, turn on the power.
2. The [MENU] button will blink. If it doesn't try that again. If you change your mind and decide not to go through with the reset, just power off the SH-01A and then turn it back on.
3. To execute the rest press the [MENU] button
4. When all the buttons blink, restart the SH-01A and it'll be just the way it was the day you got it.

II. FUNCTIONS FOR SOUND CREATION



LFO

The low frequency oscillator (LFO) is the modulation source for the SH-01A. Here you can create cyclic changes to various destinations on the synthesizer. You can make the filter frequency rise and fall, or create a vibrato like gate, or even set a pitch that rises and falls. The shape of this modulation can be set to six different settings, and adjust the amounts with three different attenuators and two different switches. The behavior of the LFO can be addressed in the system settings where a choice between the classic SH-101 style is default, and an advanced setting can be selected. See page XX for more details about how to choose this setting.



LFO CONTROLS

[RATE] SLIDER	-	Determines the speed of the LFO modulation
WAVEFORM KNOB	-	Selects the waveform/shape of the LFO
	-	SAWTOOTH
	-	REVERSE SAWTOOTH
	-	TRIANGLE
	-	SQUARE
	-	RANDOM
	-	NOISE

EXPERIMENT:

1. Select a patch, or adjust the settings on the front panel to create a sound you like.
2. Raise the MOD slider in the VCF section and listen to what happens to the sound.

NOTE - If you don't hear any change, try lowering the FREQ slider until you start to hear a cyclic change in the sound.

3. Now adjust the LFO RATE slider and see how this changes the way the sound feels.
4. Select a different WAVEFORM shape for the LFO.
5. Do you like this? Does a cyclic change make things start to happen for you? Or do you prefer a steady sound?

NOTE - You can attenuate the amount of effect the LFO has on any given destination by lowering the MOD slider from all the way up (very intense) to almost completely off (very subtle.) Mess around with this.

LFO - ADVANCED MODE

LFO Advanced Mode may seem like a strange option, and considering we are looking at a modern iteration of a classic monosynth which is not widely celebrated for it's LFO or deep modulation options it's easy to ovelook this feature. But when you place the SH-10A into LFO Advanced more, the audio-rate speed of the LFO mode opens up a world of sound design options that get even better in UNI/POLY modes.
It is only mentioned in the official manual, but its potential will be missed by many who are unfamiliar with audio-rate modulation., or otherwise underestimating the depth of this synth. The power of the SH-01A is not completely understood until you dig deep into LFO advanced mode. So I encourage you to explore and discover for yourself how deep this can go.

To enter advanced LFO mode press the MENU button and scroll to the following and choose AdU

LFO MODE

LFOn	-	LFO MODE	-	Or0	-	Original
			-	AdU	-	Advanced

For more about the system settings on the SH-01A see page 23

FREQUENCY MODULATION [FM]
The audio-rate of the Advanced LFO in the SH-01A can modulate the pitch of the VCO from slight vibrato to harmonic-rich sidebands reminiscent of the FM synthesis made famous by the Yamaha DX7. The six waveforms of the LFO will produce different effects and tuning of an arpeggio or sequence in octaves and fifths (via LFO RATE) will produce pleasant musical results. Use snappy envelopes and disharmonic intervals for FM percussion patches.

PULSE-WIDTH AUDIO RATE MODULATION [PW-ARM]
Modulating the width of the pulse wave of the VCO is a go-to sound in the original SH-101. This movement gives this mono-oscillator SH-01A a similar sound to the detuning of two oscillators. Typically, this is modulated with a slow LFO rate for a pronounced sweeping effect. However, when pulse width is modulated by the audio-rate Advanced LFO, interesting harmonics are created resulting in a much thicker tone. In UNISON mode, the added movement and output may knock your headphones off. Beware!

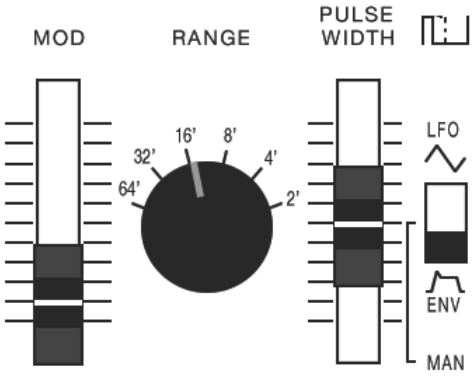
FILTER FREQUENCY FM [VCFFM]
FREQ in the VCF section is the cutoff frequency of the filter, that can be modulated by either ADSR (ENV) or LFO (MOD). A slow LFO modulation will sweep the frequency of the filter for that iconic synth sound. But modulating the VCF at audio-rate can lead to some unique textures that can easily escape to the wild side! By utilizing a slow envelope and subtle MOD values, a hard-sync, zipper-like effect can be had taking the SH-101 to places never heard before.

AMPLITUDE MODULATION [AM]
Amplitude Modulation is best known for slow, pulsing, tremolo like effects when the LFO raises and lowers the volume of the VCA. But when the LFO extends into audio-rate, ring modulation like textures are created that can add some serious beef to a single oscillator. The different LFO waveforms will each have a different effect on these textures.

SINE WAVE FM [SINEFM]
A hidden waveform in the SH-01A is a sine wave created by raising the resonance of the VCF to full and tuning the FREQ. With full KYBD tracking, the sine wave can be played via the keyboard to pitch. In this sine wave mode, no oscillator is required to produce the purest of tones. This sine wave can be frequency modulated by raising the Advanced LFO to audio-rate and tuning the harmonics via the MOD slider. With an arpeggio, sustaining envelope and POLY Mode, you can recreate a series of clanging bells or tuned FM percussion with a snappy envelope.

VCO

The voltage control oscillator (VCO) is the source of the sound of the synthesizer. Here is where the section of the keyboard the sound is set at (RANGE), the amount of modulation applied to the pitch of the oscillator (MOD) and the source, and the shape and amount of pulse width modulation.



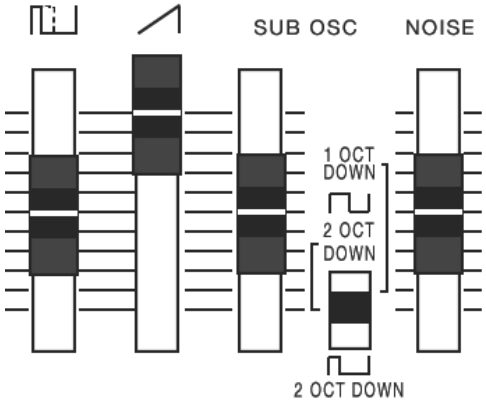
VCO CONTROLS

[MOD] SLIDER	-	Adjusts the depth to which the LFO modulates the VCO
[RANGE] KNOB	-	Specifies the octave of the oscillator
[PULSE WIDTH] SLIDER/SWITCH	-	MANUAL The slider adjusts the pulse width value
	-	LFO / ENV The slider adjusts the depth of modulation

NOTE - What is pulse width?
Pulse width is a value indicating the percentage occupied by the upper segment of a square wave. If the upper and lower segments are unequal, the result is an asymmetrical square wave.
The best way to get to know pulse width and pulse width modulation is to set the PULSE WIDTH switch to MANUAL and then move the slider up and down and listen to it. But consider that PWM only applies to the width of a square/ pulse wave. So if you are only using a saw waveform you won't enjoy the effects of pulse width modulation at all.

SOURCE MIXER

The mixer section is where the output of the voltage control oscillator is mixed together to create the basic sound of the patch. Mix the pulse/square and the sawtooth waveforms together with the sub oscillator and adjust the behavior of the sub oscillator (1 octave down, 2 octaves down) and introduce noise into the mix for texture (and ocean sounds.)



SOURCE MIXER CONTROLS

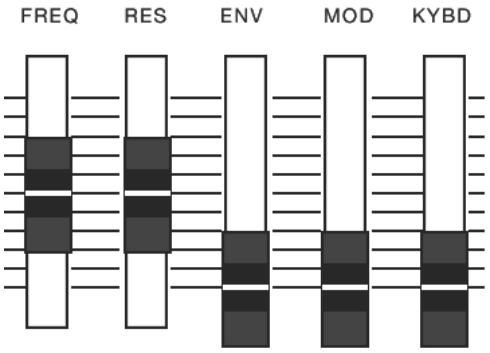
[SQUARE] SLIDER	-	Square waveform level
[SAW] SLIDER	-	Sawtooth waveform level
[SUB OSC] SLIDER	-	Sub oscillator level
[SUB OSC] SWITCH	-	Specifies the SUB OSC type: 1 OCT DOWN - One octave lower 2 OCT DOWN - Two octaves lower 2 OCT DOWN - Two octaves lower (narrow pulse width)

EXPERIMENT: Let's see what this mixer is all about. Try this:

First choose a sound you like, and then adjust all the sliders in the mixer section to 0.
Now play some notes and bring up the pulse (square) wave slider.
Adjust the range in the VCO setting and listen to this chubby sound.
Adjust the PWM settings in the VCO. Hear that? Set PWM to MANUAL and explore a little.
Now slide that fader to 0 and bring up the SAW fader. Hear that? Sharper, and different, right?
Slide that back to 0 and bring up the SUB OSC fader. Switch the octave switch from 1 to 2
Adjust the range in the VCO section again and see what that does to the SUB OSC.
Ok, bring that back down and raise the NOISE slider. Hear that? You can make hi hats, snare drums, hand claps, and wave sounds with that!
Now bring everything back to 0 and mix some PULSE with some SAW. Sitch back and forth between the PULSE and the SAW and mix them together. Bring in some SUB. These wavefroms have curious relationships, and small amounts of changes make a huge difference sometimes. The better you know your waves, and how they relate to one another, the deeper your your ability to control them to get the sound you'e looking for becomes.

VCF

The voltage control filter (VCF) determines the brightness, thickness and resonance of the sound. The filter can take a huge, ugly VCO and shape it into a beautifully thumping bass. Further, a filter can take a ragged bass sound and shape it into the basis of a crowd stopping lead patch. In the VCF section of the SH-01A you can adjust the frequency, resonance, envelope control, modulation control, and keyboard control over the filter. A little goes a long way here, and once you're done making your first wild screaming thumps, take the time to make small adjustments and discover that nearly all of the original Roland SH and TR sounds can be dialed in with just the SH-01A. It takes patience, and practice but it's all in here.



VCF CONTROLS

[FREQ] SLIDER	-	Sets the cutoff frequency of the low-pass filter
[RES] SLIDER	-	Resonance boosts the sound in the region of the filter's cutoff frequency
[ENV] SLIDER	-	Sets the depth of control when using the envelope generator signal to Control the VCF's cutoff frequency
[MOD] SLIDER	-	Control the amount of LFO modulation.
[KYBD] SLIDER	-	Allows the filter frequency to vary according to the key that you play

EXPERIMENT: To learn more about the VCF and how a Filter works, try this:
Choose a sound you like by either adjusting the sliders, and knobs or selecting a preset.
Now move all of the VCF section sliders to 0
The sound is probably gone now, right?
Begin by raising the FREQ slider and listen to the sound change. Set it somewhere you like.
Now bring up the RES slider a little bit. Hear how this changes the sound? Add more. Add less. See?
Now bring up the ENV slider and see how the envelope changes the sound as notes are played.
Now adjust the KYBD slider and see what effect this has as you play on the keyboard.
It's easy to turn everything all the way up, or all the way down, but explore the middle areas, and see how these relate to one another. For example, a low FREQ setting with a low RES setting gets interesting with a nigher ENV setting. Look at the ADSR and adjust it. See how they relate to one another.
Finally bring up the MOD slider just a little. Now adjust the LFO rate and bring up the MOD slider a l little bit more. See what's happening? The LFO is cycling the filter frequency. Isn't that sick?

VCA

The voltage control amplifier (VCA) is an overlooked aspect of the SH-01A. The compact settings make it seem like perhaps it isn't a full fledged VCA and without the ability to switch between linear and exponential, or the lack of level controls or input access to patch the VCA to different places on the synth that's it's not a proper VCA. This is not necessarily true. The basic switch between triggering the output from a simple gate or the envelope is a dramatic option both for the fine tuning of a sound, as well as a live performance technique.

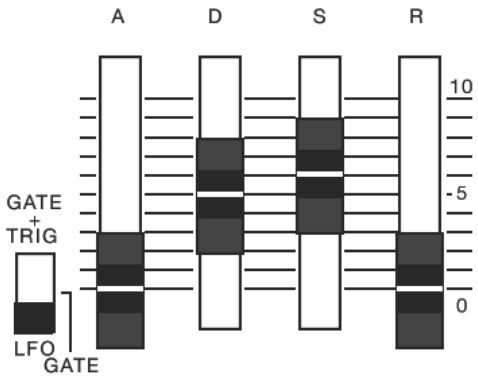
VCA CONTROLS

[ENV / GATE] SWITCH	**ENV**	-	The note is sounded according to the envelope
	GATE	-	The note is sounded at a fixed volume only while the key is held down

EXPERIMENT: There is actually a VCA experiment for you, but it isn't here. It's in the next section on the ENV. Check it out!

ENV

The envelope (ENV) is where the envelope is shaped for the sound

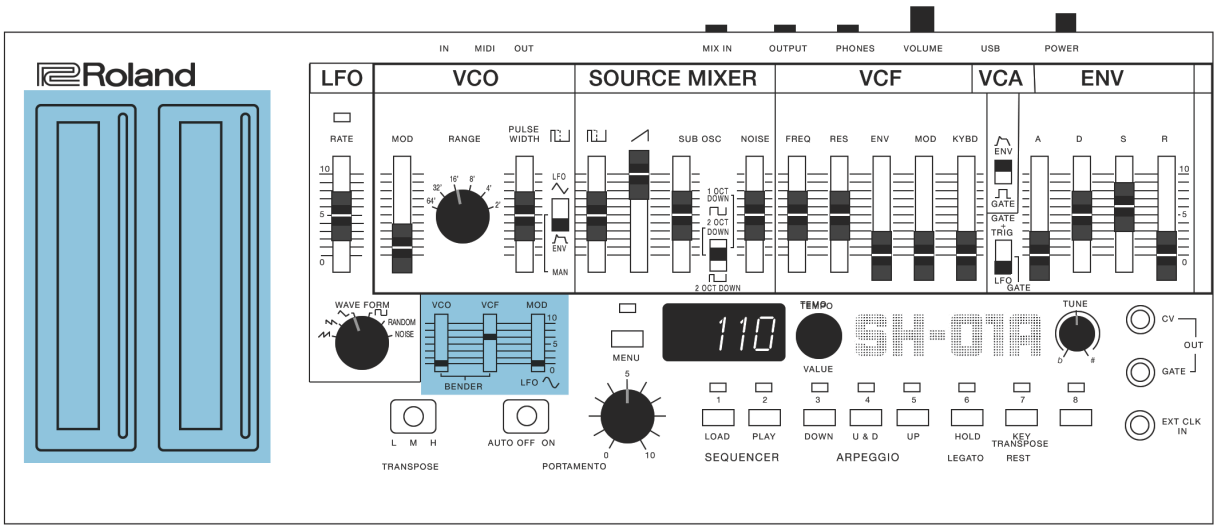


ENV CONTROLS

[A] SLIDER	-	**ATTACK TIME**		
[D] SLIDER	-	**DECAY TIME**		
[S] SLIDER	-	**SUSTAIN TIME**		
[R] SLIDER	-	**RELEASE TIME**		
[GATE / TRIG] SWITCH	-	**GATE + TRIG**	-	The envelope attacks each time a key is pressed
	-	**LFO**	-	When a key is held down, the envelope repeatedly attacks at each cycle of the LFO
	-	**GATE**	-	The envelope attacks each time a key is pressed from a state of no keys being held. The envelope does not attack when notes are played legato

EXPERIMENT: To get acquainted with the ADSR Envelope, try this:
Choose a sound you really like - either move the sliders around until you're into it, or select a preset.
Take a look at the VCA and make sure it's set to ENV instead of GATE. You wouldn't know what it was set to without trying the switch would you? So switch it to ENV and see if that changes the sound. Leave it set at ENV for now.
Now pull all the sliders on the ENV Section down to 0. See how all the sound is gone? That's because the envelope is not making a shape for the sound or the filter. It's just a click now.
Now bring up the D slider. Hear how the sound begins to come back?
Now bring up the R slider. See how the sound is lasting longer after notes are played?
Now adjust the A slider. See how this delays the start of the sound?
Exchange the D with the S amount, and compare. What's the difference? Is there any?

The envelope is a killer way to shape sounds. But try this too:
Once you have the ADSR set the way you like it, switch the VCA back to GATE.
Do you hear a difference? Pretty cool right? Explore. Try things. Learn more by experience.



CONTROL STRIPS

Traditionally keyboards offer some type of pitch bend/mod wheel combination and usually that's a kind of a sort of wheel with a spring loaded mechanism and if you push up or down on it it you can get some sort of vibrato or modulation effect on it. Old shcool keyboards have a pair of wheels and they scroll up and down. Sometimes these are spring loaded, and sometimes they aren't. the Original SH-101 not only had a pich bend/mod wheel on it, but it also featured an optional mod grip which attached to the synth and turned it into a kind of a keytar. Seriously. You could actually put a guitar strap on it and bite your lower lip while you played a solo. It was actually pretty funny.

The SH-01A offers two ribbon control strips and three attenuators to apply various results to their action.

RIBBON CONTROL 1	-	Controls the amount of VCO modulation and VCF modulation applied.
RIBBON CONTROL 2	-	Controls the amount of LFO modulation applied.
VCO FADER	-	Adjusts the amount of VCO modulation produced by Ribbon Control 1
VCF FADER	-	Adjusts the amount of VCF Frequency produced by Ribbon Control 1
MOD FADER	-	Adjusts the amount of LFO modulation produced by Ribbon Control 2

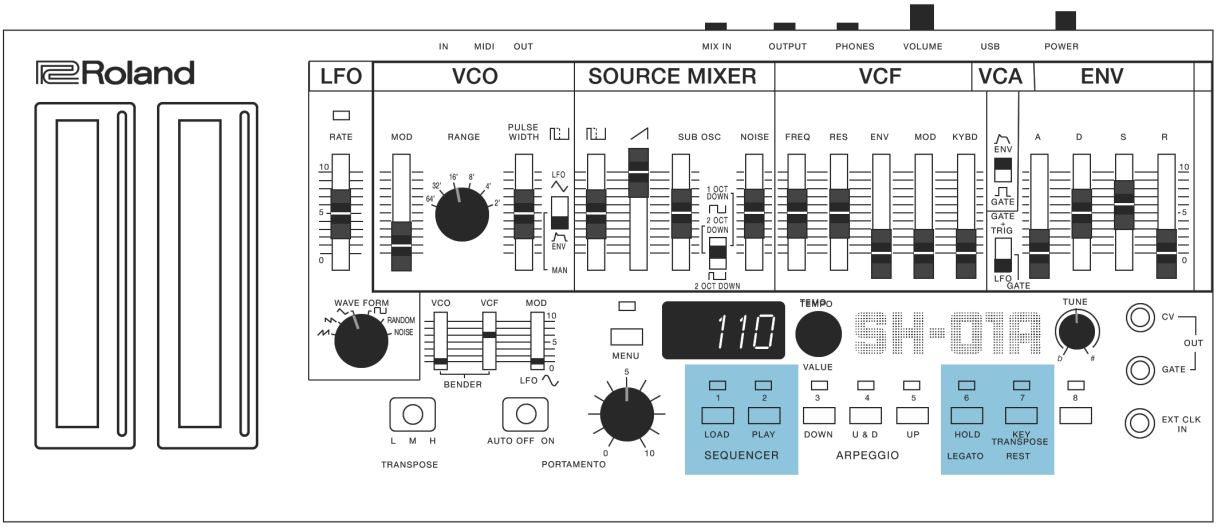
EXPERIMENT:
Ok, so try exactly this:
Set the VCF attenuator of the ribbon control section all the way up. Now turn the VCO attenuator all the way off. Play a note, and slide your finger up the length of ribbon controller 1 and back down again.
Hear that? Pretty cool right?

Now turn up the MOD attenuator and touch ribbon controller 2. Adjust the LFO to something a little snappier, and try that again. Dig?

Now play a wicked little lead and while you're holding that last note, bite your lower lip and run your finger up ribbon control 2, and maybe grab ribbon controller 1 and swipe another finger up and down it too.

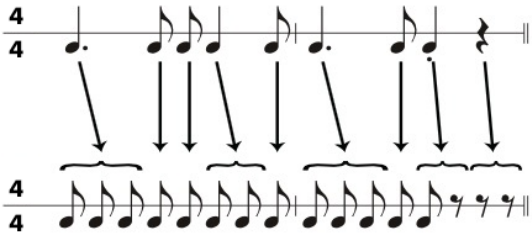
Now go get a bandana for around your head and let's get to work!

III. FUNCTIONS FOR PATTERN CREATION



SEQUENCER

The SH-01A contains a digital sequencer that can record up to 100 steps, allowing it to automatically play simple phrases. The operation of storing data in the sequencer is called “LOAD,” and the operation of making the sequencer play the data stored in the sequencer is called “PLAY.”
The SH-01A lets you easily and confidently load data into the sequencer by using the appropriate number of short notes or rests to represent notes and rests of various lengths.



Example when one step is an eighth note.

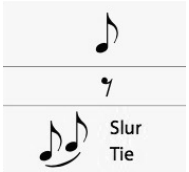
SEQUENCER CONTROLS

[LOAD] BUTTON	Start / Stop “load” or note input
[PLAY] BUTTON	Start / Stop Playback
[REST] BUTTON	Loads a rest instead of a note to occupy a “blank” step in the sequence
[LEGATO] BUTTON	Loads a tie (or legato, or slur) to connect two notes together

SEQUENCER LOAD

1. Press the [LOAD] button, and check to be sure the indicator light is on.
2. Play a connected midi keyboard, the attached K25M, or the Ribbon controller to input and select notes

A LITTLE EXAMPLE OF ONE STEP AS THE EIGHTH NOTE



No matter how you play the notes, all will be stored in the same time values.

Press the [REST] button, the shortest rest will be memorized.

Load the first note, then press the next note while holding the [LEGATO] button to tie notes together.

3. Press the [LOAD] button to make the light go out (stop loading up data.)

NOTES - the pitches are entered into the sequence in the order you play them. Performance during sequence loading doesn't have any effect on playback. Time and pitch are entered sequentially, and must be determined with note values, and rest and tie values to result in a performance playback.
That said, the clock feature is also a method of adjusting the sequence playback. Using the external clock input and manually programming an interesting loop of clock or gate pulses can help produce a really interesting pattern too.

- The sequencer on the SH-01A can store up to 100 steps, but the shortest time value is counted as one step and the longer time values cost more steps. This means that even though you have programmed a single D note to drone in a tie over the corse of a bar, this will still take up all the steps required to count out a bar (16.) So don't get confused about variety of notes played vs the number of steps required to produce playback. Like this even matters, right? Who sits around counting the number of steps and then getting crabby about getting 87 in a sequence because they've overlooked a long, held D note? Well… this language is here in the manual, so maybe we'd be surprised, right?

- If all 100 Steps are stored, the SH-01A will exit sequence load mode and return to the normal playback state.

SEQUENCER PLAY

1. Press the [PLAY] button, note the indicator light goes on.
   The loaded notes play back All notes are played non-legato except for the notes you recorded legato into.
   when playback reaches the end of the loaded notes, playback returns to the beginning and continues repeating (so it loops.)

2. Press the [PLAY] button again to stop playback.
   If slurs are recorded, make sure that the envelope generator's gate/trigger switch is set to GATE during playback. This is to prevent stuck or unwanted held notes after the sequence is stopped.

TRANSPOSE SEQUENCE

It's possible to transpose your sequences.
1. Playback a sequence
2. Hold the [KEY TRANSPOSE] button and select a key (or rotate the [VALUE] knob

CONDITIONS

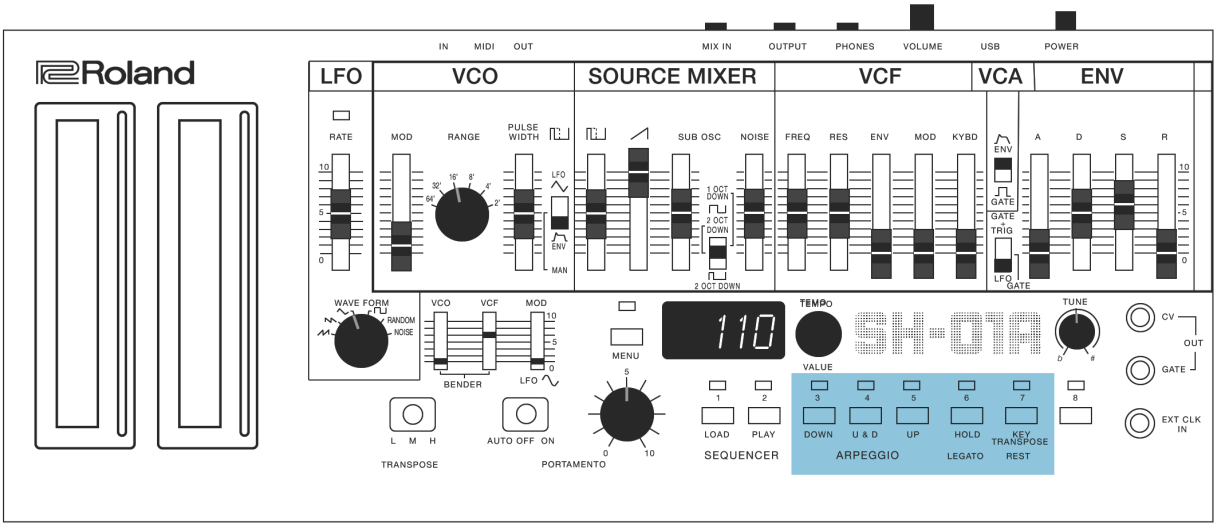
Once you've set the TRANSPOSE setting of the sequence, you can turn this function ON and OFF again by pressing the [TRANSPOSE KEY] button. You don't have to re set the transpose amount every time. Once set, the button becomes an instant transpose function for the amount last set.

NOTE - The Transpose setting of "0" (or no transposition) is middle C on the keyboard.

MIDI TRANSPOSE

It's also possible to control the transpose function of the SH-01A remotely from a midi controller or sequencer.
1. Load some notes into the Sequencer
2. Press [PLAY]
3. On your sequencer or controller keyboard send CC 77 with a value of 64 for the original pitch - Change the pitch in increments of 1 per controller number value.
   Example: UP 5 semi tones = CC 77 VALUE 69

ARPEGGIO (ARPEGGIATOR)



The SH-01A has an auto arpeggio function that automatically generates arpeggios according to the keys that you hold down. The act of playing notes in a sequence like this is an arpeggio, but the device which executes an automatic function of this nature is an arpeggiator. Language is fun, and I love words, so if you can, delight in the inconsistencies of how we say things and what we call them. I've never been so tickled as I was when someone was holding a 12" single of mine, beaming with enthusiasm, and told me "I just bought your new tape!" I love the world, and how we work. Don't you?

ARPEGGIO CONTROLS

[UP] BUTTON	Plays the arpeggio in a low to hi (or upward) direction
[U&D] BUTTON	Plays the arpeggio first upward, and then downward
[DOWN] BUTTON	Plays the arpeggio in a hi to low (or downward) direction
[VALUE] KNOB	Sets the internal tempo of the arpeggio
[HOLD] BUTTON	Holds the arpeggio in play mode even after you release the keys
SCALE FUNCTION	Hold the [UP], [U&D] or [DOWN] button and turn the [VALUE] knob to change the SCALE

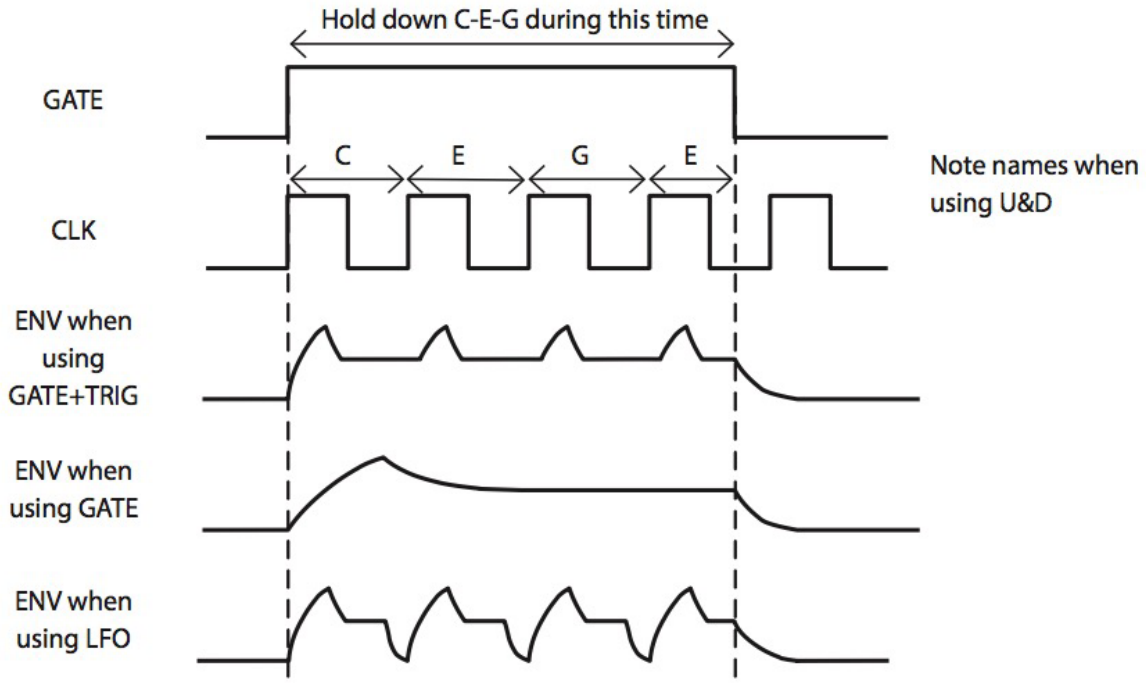
PLAYING ARPEGGIOS

1. Press the [UP], [U&D] or [DOWN] button (note the light goes on to report that the arpeggiator is active.)
2. Press two or more keys at the same time
3. Dig - the arpeggio plays

NOTE - it's not such a bad thing that we aren't able to arpeggiate a single note actually. I was immediately bummed that I wasn't going to be able to play my favorite duga-duga-duga arpeggios when I found this out, but consider this: Since the arpeggiator only kicks in when you play two or more notes, this leaves you free to do all sorts of cool things with one note at a time and then flourish with a little chord, or try all sort of interesting things. It's easy to be discouraged and complain about limitations, but consider that often a limitation is the source of a creative workaround which opens an entirely new world to us. Most of the best things out there come from the result of failed attempts at a workaround in a machine which didn't immediately do what we were expecting it to. The TB-303 is a brilliant example of just how priceless limitation in the face of convoluted instructions can be. Bleep!

STOP PLAYING ARPEGGIOS

1. Press the [UP], [U&D] or [DOWN] button (note the light goes out to report that the arpeggiator is now off.)
2. Resume playing normally.



TIMING NOTES

- If you press the notes of the chord at inconsistent timings, the beginning of the arpeggio might be disordered. Try to play the keys together at the same time for best timing results.
- Unless the [HOLD] button is pressed and on, the arpeggio will repeat only for as long as the keys are held down.
- The way the arpeggio plays depends on how you have the envelope set up to trigger notes:

If the switch is in the GATE position, and the ADSR is set to produce a decaying sound (S=0) the sound stops when the envelope ends.

HOLD

You can hold the sound even after the key is released, by pressing the [HOLD] button. The level of the sound is determined by the sustain (S) level of the envelope (ENV.)

OCTAVE SWITCH

The SH-01A Arpeggiator has a 2 octave range selection.
To adjust the range, select UP, DOWN or U&D and slide the C! Ribbon Control Strip to select 1 or 2 octaves.
Arpeggiator settings are saved with the patch.

TRANSPOSE ARPEGGIO

It's possible to transpose your arpeggios.

1. Play and hold an arpeggio
2. Hold the [KEY TRANSPOSE] button and select a key (or rotate the [VALUE] knob

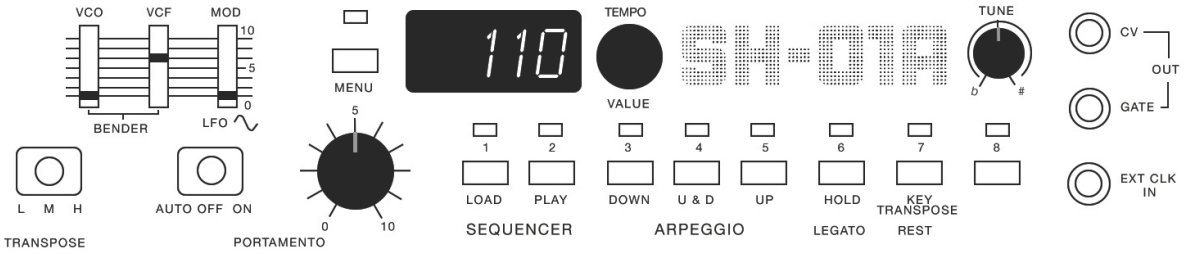
CONDITIONS

Once you've set the TRANSPOSE setting of the arpeggio, you can turn this function ON and OFF again by pressing the [TRANSPOSE KEY] button. You don't have to re set the transpose amount every time. Once set, the button becomes an instant transpose function for the amount last set.
NOTE - The Transpose setting of "0" (or no transposition) is middle C on the keyboard.

MIDI TRANSPOSE

It's also possible to control the transpose function of the SH-01A remotely from a midi controller or sequencer.

1. Enable the Arpeggiator
2. Play some notes and hold them
3. On your sequencer or controller keyboard send CC 77 with a value of 64 for the original pitch - Change the pitch in increments of 1 per controller number value.
   Example: UP 5 semi tones = CC 77 VALUE 69



IV. SYSTEM SETTINGS

MENU
The system is accessed in the SH-01A using the MENU button and entering the section you wish to adjust. The MENU button accesses a select for the menu items:

PATCH SELECT
1. Press MENU
2. Press [1] Button

[VALUE] KNOB - Select Bank
[1] - [8] BUTTON - Select Patch
[1] - [8] LONG PRESS - Write Patch
[MENU] - Exits the MENU Mode and returns to Sequencer Mode

MANUAL MODE
1. Press [Menu]
2. Press [8]

ASSIGN MODE - MONO / UNISON / POLY / CHORD
1. Press [MENU]
2. Press [3]
3. SELECT

[1] mono - The classic Monophonic mode
[2] UnISon - Layers multiple notes (all four) and plays them as a single monophonic note
[3] POLY - Plays polyphonically (four note polyphony)
[4] CHOrd - Plays up to four notes of a configurable chord

CHORD CONFIGURATION
[5] VOICE 1 of the chord is always on (note played)
[6] VOICE 2 ON / OFF
[7] VOICE 3 ON / OFF
[8] VOICE 4 ON / OFF

SELECT CHORD KEY PITCH
1. Hold [VOICE] button - Current value is shown
2. Play a key, or adjust the VALUE knob to set the pitch of the voice

NOTE - All settings are saved with the patches

SELECTING AND SAVING A PATTERN
PATTERN SELECT / WRITE

1. Press [MENU]
2. Press [2]
3. Select

[VALUE] KNOB - Switches between banks
[1] - [8] - Switches between patterns
[1] - [8] - LONG PRESS - Writes the pattern
[MENU] - Exits pattern menu and returns to the main mode

SYSTEM SETTINGS

1. Press [MENU]
2. Press [4]
3. Turn [TEMPO / VALUE] knob and select the SYSTEM setting to edit
4. Press [1] to confirm the SYSTEM item (value is displayed)
5. Use the [TEMPO / VALUE] knob to edit the value
6. Press [MENU] button to exit the system and return to the main mode

SYSTEM PARAMETERS

NOISE MODE						
nSnd	-	NOISE MODE	-	Or0	-	Original
			-	uAr 1	-	Variation
LFO MODE						
LFOn	-	LFO MODE	-	Or0	-	Original
			-	AdU	-	Advanced
MASTER TUNE						
tUnE	-	MASTER TUNE	-	4400	-	Sets the master tune from 430.0 - 450.0 Hz
MIDI CHANNEL						
Ch	-	MIDI CHANNEL	-	1- 16	-	Set the MIDI channel from 1 -16
			-	OFF	-	Midi is turned OFF
MIDI CLOCK SOURCE						
SYnC	-	Set the clock source		AUtO	-	MIDI Sync/Internal Sync
				Int	-	Internal Clock
			-	LFO	-	Tempo is set by the LFO Rate
KEY VELOCITY						
UELO	-	Select Key Velocity		On	-	Played keyboard velocity is transmitted/received
				64	-	64 - Fixed Velocity
				127	-	127 - Fixed Velocity
VELOCITY CURVE						
UCru	-	Set Velocity Curve		L	-	LIGHT
			-	d	-	MEDIUM
			-	H	-	HEAVY
CC OUTPUT MODE						
CCnd		ON/OFF	-	OFF	-	CC is not transmitted
			-	On	-	All CC parameters are output upon patch selection
CV SCALE						
CUSC		Adjust CV Scale	-	63	-	-63 - 63
CV FINE TUNE						
CUtn	-	Fine adjustment for CV		100	-	Set a fine adjustment to the CV voltage -100 - 100

CV REF NOTE

CUrF	-	Sets the note value of 0V	C 1	-	C0 - C4

AUTO OFF

AOFF	-	Auto Off Settings	OFF	-	The power does not turn off automatically
			30	-	Power turns off automatically after 30 minutes
			nOtE	-	Auto Off does not occur while USB connected.

LED DEMO

dEMO	-	Settings for LED demo	OFF	-	SH-01A does not enter LED demo mode
			1-3- 10	-	Sets the time in minutes before the demo begins

RIBBON CONTROLLER INPUT SCALE

rSCL - Sets the note scale type of the ribbon controller. The default is Chromatic

-	CHrO	-	CHROMATIC
-	n2U	-	MAJOR
-	nn In	-	NATURAL MINOR
-	Hn In	-	HARMONIC MINOR
-	mn In	-	ASCENDING MELODIC MINOR
-	bLn 1	-	BLUENOTE
-	bLn2	-	BLUENOTE (with grace note)
-	dOr	-	DORIAN
-	n IHO	-	MIXOLYDIAN
-	d In	-	DIMINISHED
-	WHOL	-	WHOLETONE
-	ALt	-	ALTERED
-	Hn9	-	HUNGARIAN MINOR
-	InSn	-	INSENPO
-	rYuY	-	RYUKU
-	PEr5	-	PERSIAN

C2 MODULATION HOLD

C2nd - C2 Performance Setting - Hold keeps touch settings until manually reset

-	OFF	-	OFF
-	HOLd	-	HOLD

NOTE - These parameters are not global. They are saved with each individual patch

FIXED BATTERY OPERATION MODE

This mode prevents the unit from switching to bus power even if it is connected to a USB port. This allows the unit to be used even with a USB port that does not supply power.

1. While holding down the [7] button, turn on the power.

FIRMWARE UPDATE

UPDATE PROCEDURE:

1. Connect the computer to the SH-01A's USB port by a USB cable.
2. Hold down [8] and switch on the power.
3. Open the "SH-01A" drive folder in your personal computer.
4. Copy BQ3_UPD.BIN file into the "SH-01A" drive by dragging and dropping it.

   NOTE - Don't copy the whole folder, only copy the .BIN file. Also the name of the file might be different because it could be a new update since writing this user's guide. But you get the idea, right?

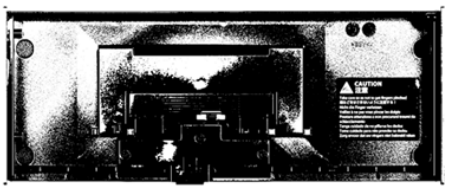
5. After copying the file is completed, remove the USB drive from the personal computer.
   With Windows
   Right-click on the "SH-01A" icon in My Computer and execute "Eject."
   With Mac
   Drag the "SH-01A" icon to the Trash icon in the Dock.
6. Press the [8] button to start updating the file.
   The progress (%) is shown on the display.
   When "OK" appears on the display, the update is complete.
7. Turn the SH-01A power off.

* At the initial startup after the update, all indicators might remain unlighted for about 10 seconds. Continue waiting until the unit starts normally.

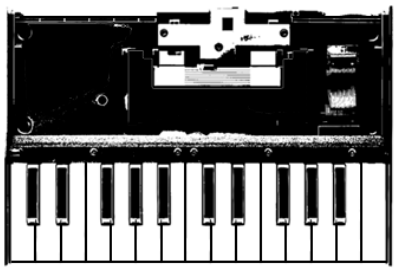
MAIN SPECIFICATIONS

Maximum Polyphony	4 voices
Power Supply	Rechargeable Ni-MH battery (AA, HR6), Alkaline battery (AA, LR6), USB bus power
Current Draw	500 mA (USB bus power)
Dimensions	300 (W) x 128 (D) x 46 (H) mm 11-13/16 (W) x 5-1/16 (D) x 1-13/16 (H) inches
Weight	965 g (including batteries) 2 lbs 3 oz
Accessories	Owner's Manual, Leaflet "USING THE UNIT SAFELY," Alkaline battery (AA, LR6) x 4
Options (sold separately)	Keyboard unit: K-25m Boutique Dock: DK-01

OPTIONAL ACCESSORIES



ROLAND DK-01
BOUTIQUE MODULE DOCK



ROLAND K-25M
BOUTIQUE MODULE KEYBOARD

MICRO USB POWER SUPPLY
WALL ADAPTER UNIT FOR STAND ALONE OPERATION

V. MIDI

A WORD ABOUT MIDI

MIDI is an acronym that stands for Musical Instrument Digital Interface. It is a technical standard that describes a communications protocol, digital interface and electrical connectors and allows a wide variety of electronic musical instruments, computers and other related music and audio devices to connect and communicate with one another.

A single MIDI link can carry up to sixteen channels of information, each of which can be routed to a separate device. MIDI carries event messages that specify notation, pitch and velocity (loudness or softness), control signals for parameters such as volume, vibrato, audio panning from left to right, cues in theatre, and clock signals that set and synchronize tempo between multiple devices. These messages are sent via a MIDI cable to other devices where they control sound generation and other features. A simple example of a MIDI setup is the use of a MIDI controller such as an electronic musical keyboard to trigger sounds created by a sound module, which is in turn plugged into a keyboard amplifier and speaker. This MIDI data can also be recorded into a hardware or software device called a sequencer, which can be used to edit the data and to play it back at a later time.

Advantages of MIDI include file compactness (an entire song can be coded in a few hundred lines of code, i.e. in a few kilobytes), ease of modification and manipulation and a wide choice of electronic instruments and synthesizer or digitally-sampled sounds. Prior to the development of MIDI, electronic musical instruments from different manufacturers were generally not compatible with each other, and they could not communicate with each other. With MIDI, any MIDI-compatible keyboard (or other controller device) can be connected to any other MIDI-compatible music sequencer, sound module, drum machine, synthesizer, or computer, even if they are made by different manufacturers.

MIDI technology was standardized in 1983 by a panel of music industry representatives, and is maintained by the MIDI Manufacturers Association (MMA). All official MIDI standards are jointly developed and published by the MMA in Los Angeles, California, US, and for Japan, the MIDI Committee of the Association of Musical Electronics Industry (AMEI) in Tokyo. In 2016, the MMA established The MIDI Association (TMA) to support a global community of people who work, play, or create with MIDI, establishing the www.MIDI.org website as the central repository of information about anything related to MIDI technology, from early MIDI technology to future developments.

ROLAND BOUTIQUE MIDI

Starting with firmware 1.10 the boutique line of modules from Roland are capable of sending CC data. This means that all the slider and knob movements performed on the front panel of the SH-10A are cable of transmitting via MIDI for recording into a DAW or MIDI sequencer.

The MIDI Implementation chart included with the SH-01A presents the depth of control the user can have over the programming, and operation of the synth via MIDI.

An excellent example of this is the TRANSPOSE function for either a sequence, or an arpeggio. Just by sending MIDI CC 77 and a particular value, we are able to take a rudimentary looping sequence and freely transpose the pattern from a remote location, or a DAW in either real time for a performance, or in a studio environment this can carefully be programmed to follow along in a song and make full use of the sequence melodically while we free up our hands to do other cool things (like play with the filter, or envelope) without having to sit there playing “transpose machine” while everyone else is having all the fun.

If you wonder if you can do something, chances are that at this point you can. Take a close look at the MIDI implementation chart and see what options are available and make use of what you find. The world is yours!

MIDI IMPLEMENTATION CHART

Version 1.0 August 2017

SOUND MODULE
Model: SH-01A

Date: Aug. 8, 2017
Version 1.00

Function...		Transmitted	Recognized	Remarks
Basic Channel	Default Changed	1-16	1-16	
Mode	Default Messages Altered	Mode 3	Mode 3	
Note Number :	True Voice	0-127	0-127	
Velocity	Note On Note Off	o x	o x	
After Touch		x	x	
Pitch Bend		o	o	
Control Change	1 3 5 11 12–31 64, 65 71–87	o o o x o x o	o o o o o o o	For details, refer to "Control change list."
Program Change		0-63	0-63	
System Exclusive		x	x	
System Common	: Song Position : Song Select : Tune Request	x x x	x x x	
System Real Time	: Clock : Start : Continue : Stop	o o x o	o o o o	
Aux Messages	: All Sound Off : Reset All Controllers : Local On/Off : All Notes Off : Omni Mode Off : Omni Mode On : Mono Mode On : Poly Mode On : Active Sensing : System Reset	x x x x x x x x x x	o o x o o o o o o x	*1 *1 *1 *1 *1
Notes		*1 Same process as All Note Off.		

MIDI CONTROL CHANGE LIST

Version 1.0 August 2017

CONTROL CHANGE	EXPLANATION
1	MODULATION
3	LFO RATE
5	PORTAMENTO TIME
11	EXPRESSION PEDAL
12	LFO WAVE FORM
13	VCO MOD DEPTH
14	VCO RANGE
15	VCO PULSE WIDTH
16	VCO PWM SOURCE
17	VCO MOD SENS
18	VCO BEND DEPTH
19	VCO PWM LEVEL
20	VCO SAW LEVEL
21	VCO SUB LEVEL
22	VCO SUB TYPE
23	VCO NOISE LEVEL
24	VCF ENV DEPTH
25	VCF MOD DEPTH
26	VCF KEY FOLLOW
27	VCF BEND DEPTH
28	VCA ENV SW
29	VCA ENV MODE
30	ENV SUSTAIN
31	PORTAMENT MODE
64	HOLD
65	PORTAMENTO
71	VCF RESONANCE
72	ENV RELEASE
73	ENV ATTACK
74	VCF CUTOFF
75	ENV DECAY
76	TUNE
77	TRANSPOSE SW
78	NOISE MODE
79	LFO MODE
80	ASSIGN MODE
81	CHORD VOICE 2 SW
82	CHORD VOICE 3 SW
83	CHORD VOICE 4 SW
85	CHORD VOICE 2 KEY SHIFT
86	CHORD VOICE 3 KEY SHIFT
87	CHORD VOICE 4 KEY SHIFT

SH-01A PRESET PATCH LIST

Version 1.0 August 2017

BANK 1
1 BS BASS-IC
2 LD NAKED LEAD
3 PD SH SOFT PAD
4 PL 101 PLUCK
5 LD HARMONY LEAD
6 SY LOWNOISEDRONE
7 BS EUBASS
8 FX SWEEP M7

BANK 2
1 BS HOUSE BASS
2 BS 101 BASS 1
3 BS SOLID BASS
4 BS 101 BASS 2
5 BS LOW BRASS BS
6 BS SH LOW BASS
7 BS FUNKY BOX
8 BS 101 BASS 3

BANK 3
1 BS FACE BASS
2 BS ALEES BASS
3 BS FILTRSUPERLOW
4 BS DIRTYSYN BS
5 BS SUBSTATION
6 BS RANDOM LINE
7 LD PLAY TIME
8 LD RICH MELO

BANK 4
1 LD PW LEAD
2 LD 2OSC LEAD
3 LD FUNKY FLY
4 LD 101 HIGH LEAD
5 LD ATIMOT LEAD
6 LD 5TH SQR LEAD
7 LD FORMERLYKNOWN
8 LD LFO NZ LEAD

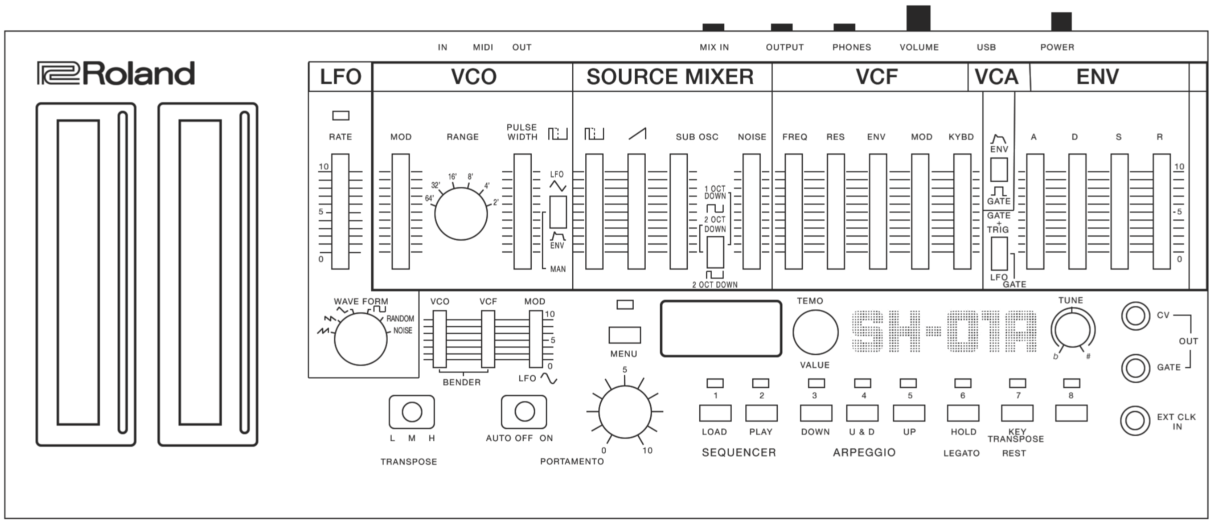
BANK 5
1 LD TRY ME
2 LD CHILL LEAD
3 LD NICE MACHINE
4 LD LASERS
5 LD 1UP
6 BL 80'S BELL
7 BL GLOCKEN
8 KY LOW CLAV

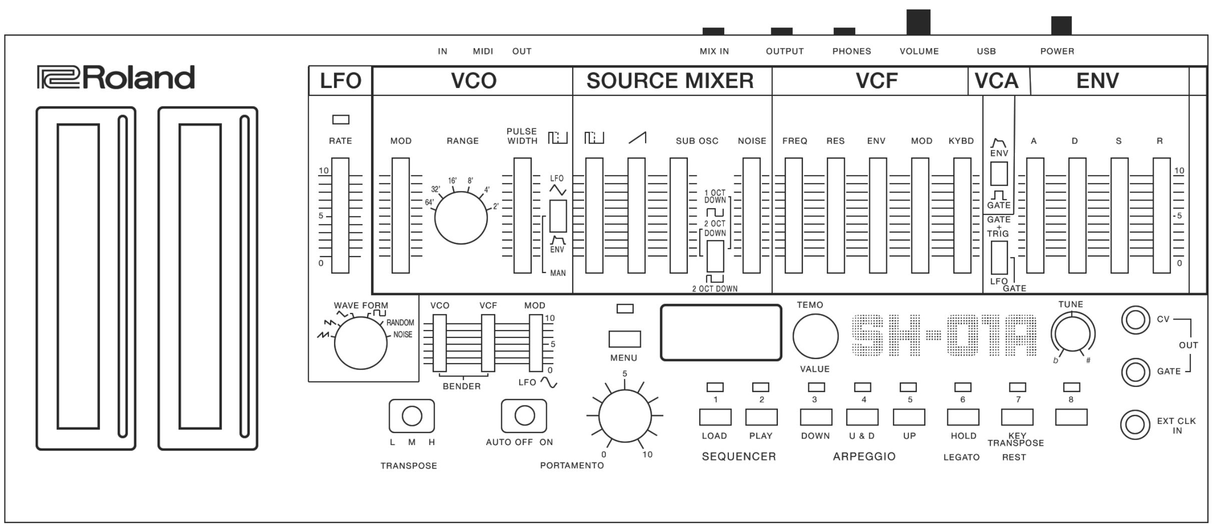
BANK 6
1 KY POLY SQUARE
2 KY SH ORGAN
3 KY JAZZ ORGAN
4 PD SWEEP PAD
5 PD NOSTALGIA
6 PD LFO PAD
7 BR LOW BRASS
8 BR SWEET BRASS

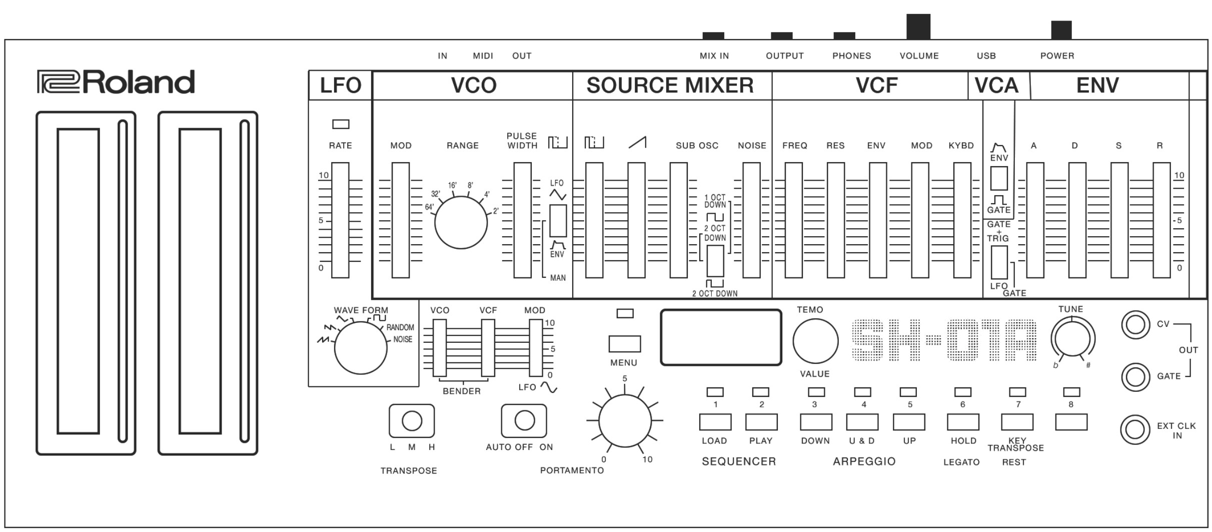
BANK 7
1 SY RESO CHORD
2 SY SQR CHORD
3 SY CUTTING M7
4 SY WORMHOLE
5 SY BITE UNISON
6 SY BEAM REACTOR
7 SY FUNKY NOISE
8 SQ RANDOM LFO

BANK 8
1 SQ GLITCH BEAT
2 SQ KICK&BASS
3 DR ANALOG KICK
4 DR SYNTHEDRUM
5 FX ZAP BOOM
6 FX COMPUTERWORLD
7 FX RISE&FALL 5TH
8 FX EXPLOSION

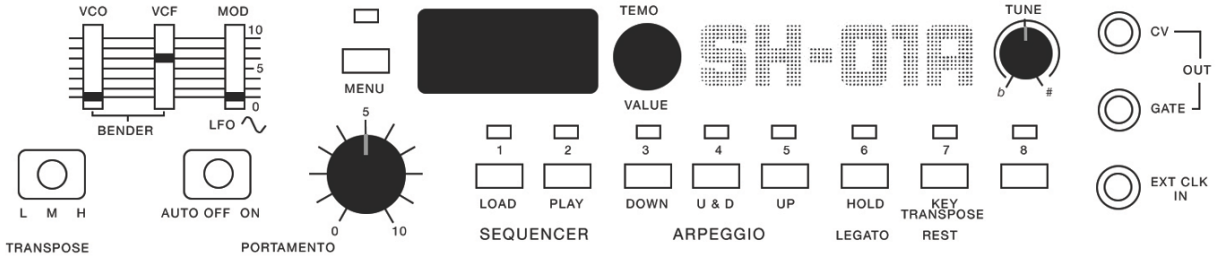
SOUND SYNTHESIS MEMO







96 STEP SEQUENCE MEMO



1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
33	34	35	36	37	38	39	40	41	41	43	44	45	46	47	48
48	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64
65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96

Each step: REST / LEGATO