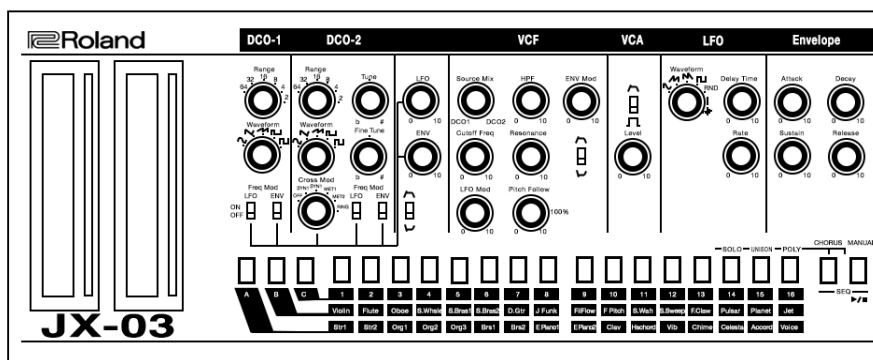


# PROGRAMMABLE POLYPHONIC SYNTHESIZER

# JX-03

## A USER'S GUIDE TO THE ROLAND JX-03





## Acknowledgements:

This manual was assembled, illustrated, and written by Sunshine Jones. All of the contents 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 JX-03 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 JX-03 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 undertaken in a moment of fury, and 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 BANK 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 a bank of patches may be found within the non-fiction section of the site.

While no rights are reserved for the copyrighted materials, nor the registered trademarks discussed or absorbed into this manual, the assemblage itself and subsequent sound examples, illustrations, and concept are offered exclusively under the Creative Commons license of share and share alike. This is and shall always be free of charge to the reader, and user of the Roland JX-03 synthesizer module, and must never be offered for sale or barter. This is freeware, and free information for all.

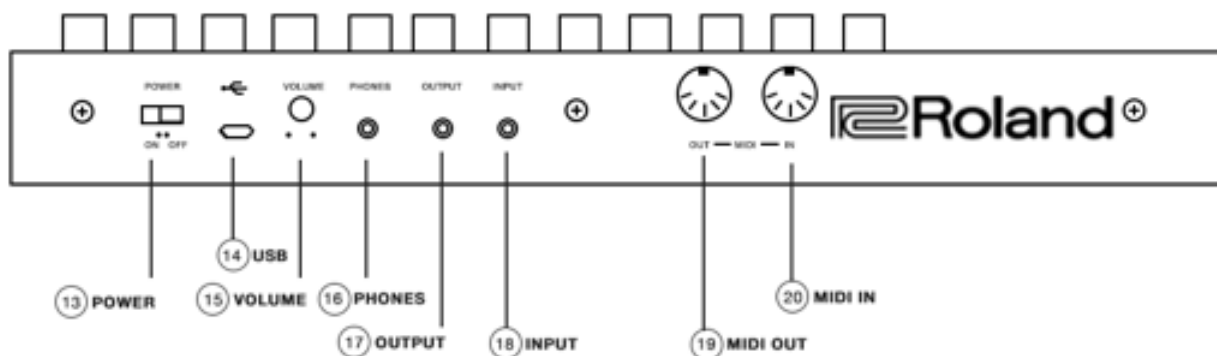
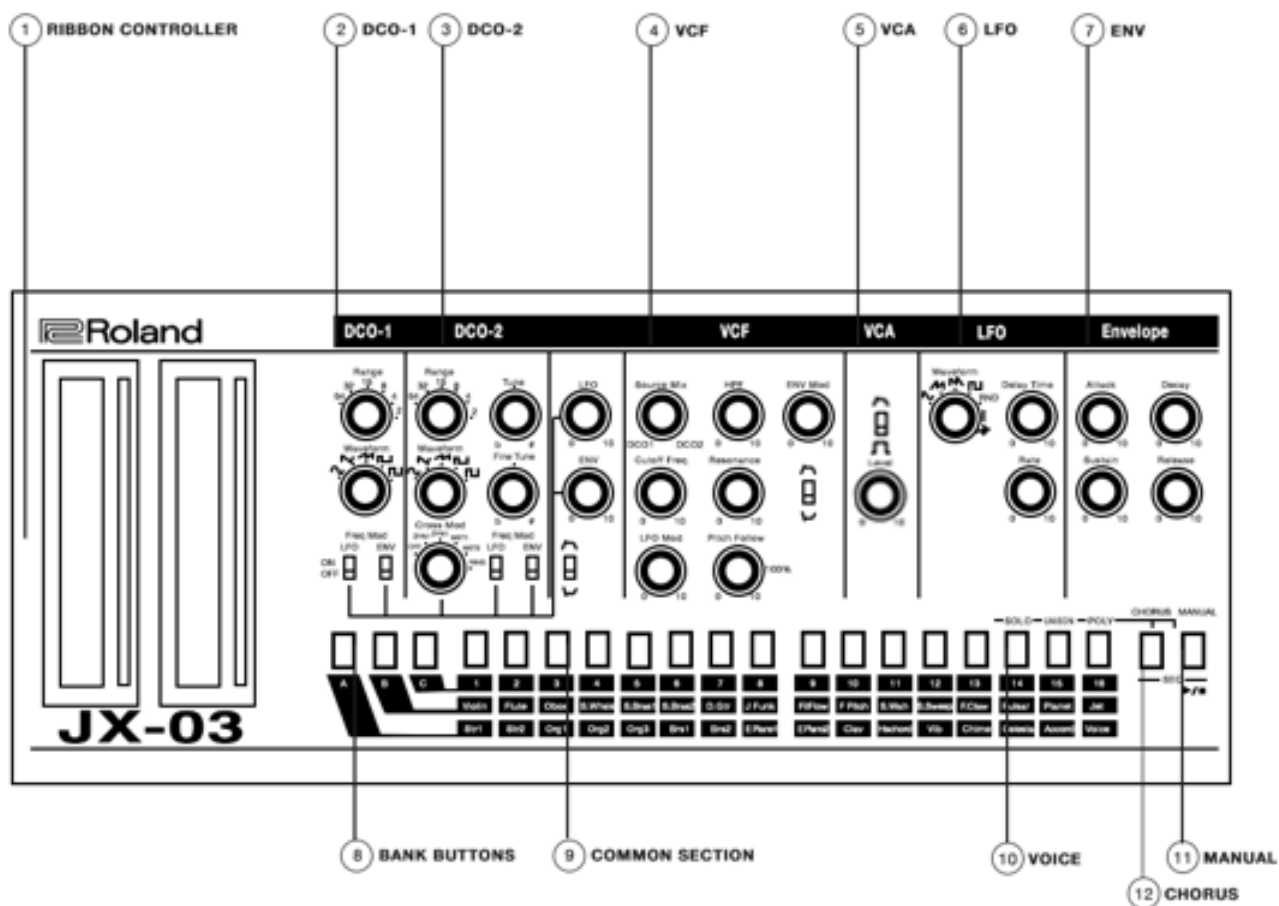
**With Love**

Sunshine Jones  
July 2017  
San Francisco, California

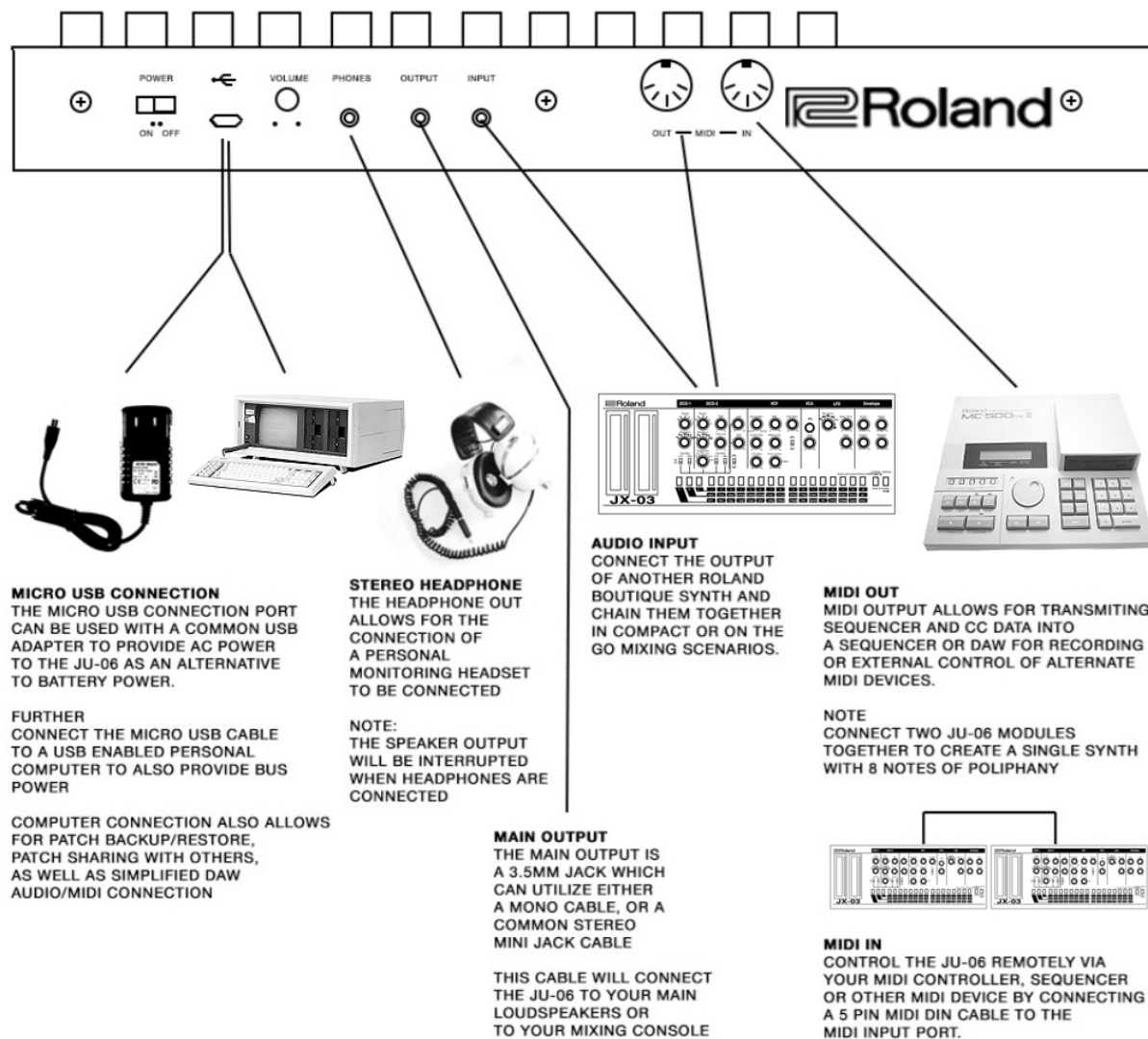
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# Basic Connections



**NOTE** - the use of the Compaq Portable™ for the purposes of illustrating a personal computer in this diagram does not suggest that a Compaq Portable™ will work in this instance. The fact is, the Compaq Portable™ doesn't even have a USB port on it, nor do we know of a currently produced or functional ADB to USB adaptation technique. The Compaq Portable™ 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.

# Introduction

The Roland Boutique JX-03 module continues the legacy of the JX-3P synth. The original model was launched when button-driven interfaces were popular, so it was designed to give immediate access to preset sounds. It was actually highly programmable though, especially when used with the optional PG-200 controller that added 24 rotary knobs for instant sonic sculpting. The limited-edition 4-voice JX-03 inherits all 24 knobs from the PG-200, as well as the distinctive JX tonal character. We've also added some extras not present in the JX-3P including new waveforms, expanded DCO range and cross modulation options. You can even slide the JX-03 into the optional K-25m keyboard unit for a self-contained, go-anywhere synth experience.

## **JX-3P Sound. Built In Controller.**

Often described as a forgotten classic, the JX-3P was all about instant access to big sounds, with a simple button-driven interface rather than lots of knobs and sliders. When used with the optional PG-200 controller however, the power of the highly programmable engine was revealed. The new JX-03 module recreates the panel layout of the PG-200 – including all 24 knobs - giving direct and instant access to the versatile synth architecture.

## **Additional Sound-Shaping Options**

Like the other members of the Roland Boutique range, we also added a few subtle improvements that weren't found on the original models. The JX-03 benefits from extra waveforms and extended range for both DCOs as well as extra waveforms for the LFO. The second DCO also gets extra cross modulation options. These additions further expand the sound creation possibilities of the battle-tested JX engine.

## **Develop Your Ideas with A 16-Step Sequencer**

The onboard 16-step sequencer is a sonic scratchpad that lets you try out new ideas without bringing lots of gear – it can even be used without a keyboard. And if there's no keyboard connected, the ribbon controller lets you preview the sound, making it an ideal way to program patches quickly and easily.

## **Optional K-25m Keyboard Unit**

The JX-03 works especially well with the K-25m, an optional 25-key velocity sensitive keyboard that takes your music making to the next level. Once docked in the keyboard, the module's front panel can be tilted for convenient access to the knobs and sliders.

## **Chain Mode**

The original JX-3P was a powerful synth featuring 2 digitally controlled oscillators for each of its 6 voices. The JX-03 features a chain mode that allows you to connect two JX-03 modules using the MIDI ports and create one, 8-voice synthesizer. Adding additional modules adds another 4 voices of polyphony with each module. This is especially great when controlling the JX-03 from a larger external keyboard. You can even edit the sound from the master module and control both units. Great for realtime filter sweeps and envelope adjustments.

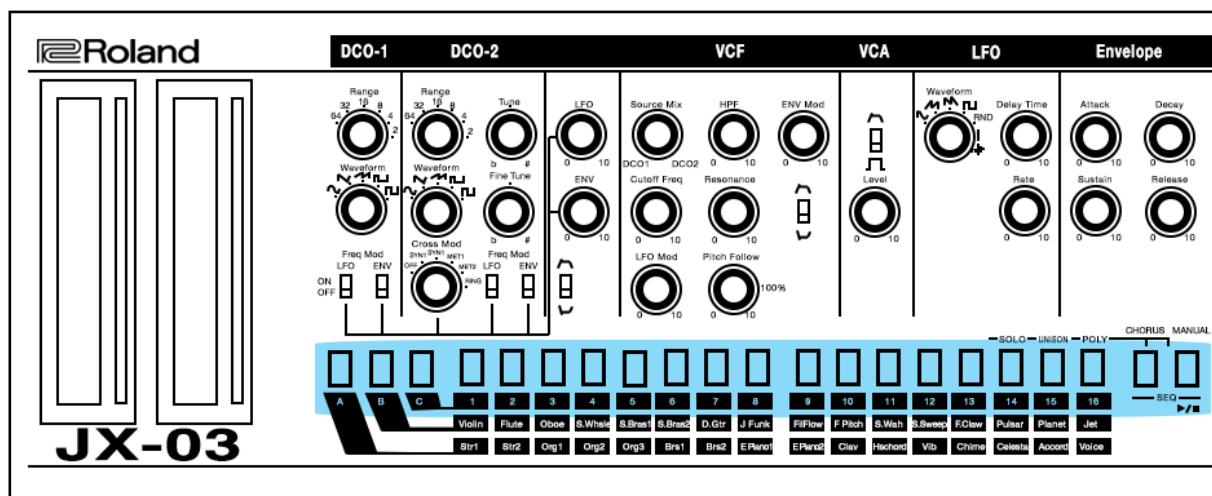
## **Battery or USB Bus Power**

Some of the best music is made away from the studio, so the module runs on 4 x AA batteries, ready for when inspiration strikes. Alternatively, you can power the JX-03 via USB bus power.

## **USB Audio Interface for Direct Recording into Your DAW**

The built-in USB port also functions as a high-quality 24bit, 44.1 kHz audio interface, for a fast, simple and reliable way of recording directly to your DAW application. You can keep your favorite patches and sequencer patterns safe too, via the USB data backup function.

# I. General Functions



## Common Section

The Common Section of the JX-03 is where bank and patch information is stored and recalled for performance.

The first set of 3 buttons marked A,B and C are the BANK selection buttons

The second set of 16 buttons are the PATCH selection buttons

To select a bank choose the bank from the A, B or C section and then select the patch.

To select a patch use the corresponding number button for the patch you'd like to call up.

For example: To Call up patch B 11 (S Wah) simply press BANK B, and then Button 11.

To store a patch is equally as straightforward.

To store a patch first double-check that you are not about to overwrite a patch you really love.

But be careful not to lose the patch your working on in order to check.

This causes a conundrum doesn't it?

Well, not always, but it certainly can. It's a good idea to consider using MANUAL mode - a mode where what you see on the panel is what you are hearing in the speakers. This way you are free to call up a patch and make sure it's one you aren't worried about overwriting before you lose precious sounds you might need.

From MANUAL checking a patch is as simple as pressing BANK C, and then PATCH 11 and play a note or two to see if patch C11 is something you could do without. If it is, simply press MANUAL again and you'll be transported as if by magic back to the patch you were working so hard on. Nothing is lost, and you can be absolutely sure of where you'd like to put it.

To write this patch to BANK C Patch 11 press BANK C, and then long press PATCH 11 and hold it until you see the button flash. Once it flashes you know your patch has been stored.

The common section is also the location of many interesting settings for effects, the sequencer, swing, portamento, midi channel, tuning, velocity, clock source, and more features. In various modes these same buttons perform all sorts of other functions.

See system settings (page 19) for more details about everything the common section buttons can do.



## USB Interface

In the past many synthesizers came equipped with various interfaces. Connection methods like CV and Gate, Din Sync, S Trig, 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.)

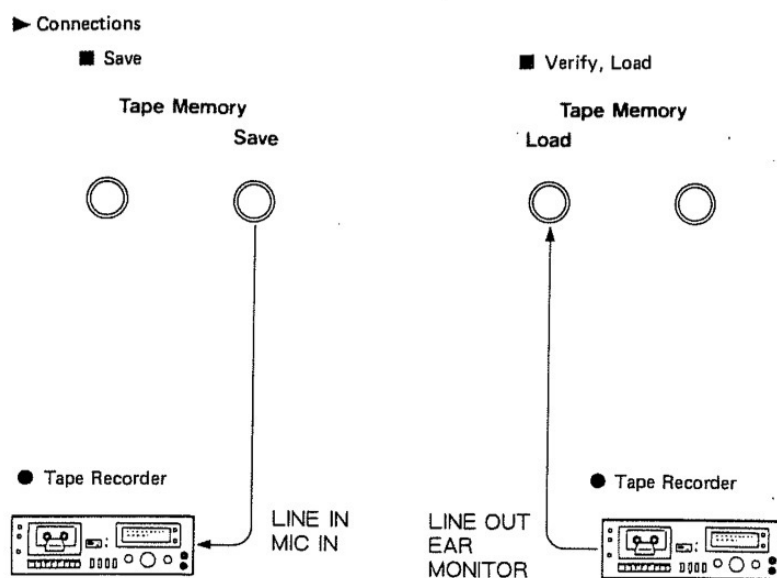
Both will work, but make sure that whichever you've chosen can provide sufficient power to run the JX-03.

If the JX-03 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

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 JX-03 to your desktop follow this procedure:**

1. Holding down the 2 button, power up the JX-03
2. Connect your computer to the JX-03 USB port via USB cable
3. Open the JX-03 drive which has mounted to your desktop

**To create a backup of your patches:**

1. Follow the above procedure for mounting the JX-03
2. Copy the backup files from the JX-03 drive into an appropriately named folder on your computer
3. Once you're done, eject the JX-03 drive, disconnect the USB cable and you're done.

**To bring patches from your computer into the JX-03:**

1. Follow the above procedure for mounting the JX-03
2. Copy the backup files, or the new patches you'd like to check out into the "RESTORE" folder on the JX-03 drive
3. When copying is completed, eject the JX-03 drive.
4. **IMPORTANT** - Before power cycling the module press the MANUAL button
5. Once the lights stop blinking you may power cycle the JX-03 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 JX-03 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 JX-03 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 Richard Barbieri, or someone I've never heard of does it.

**Restore the JX-03 to factory settings:**

This is the procedure for resetting your JX-03 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 1 button, turn on the power.
2. The MANUAL 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 JX-03 and then turn it back on.
3. To execute the rest press the MANUAL button
4. When all the buttons blink, restart the JX-03 and it'll be just the way it was the day you got it.

## Auto Off

You can set the JP-08 to automatically shut off - to save batter power - after 30 minutes. You can also switch this off so that the synthesizer doesn't turn off.

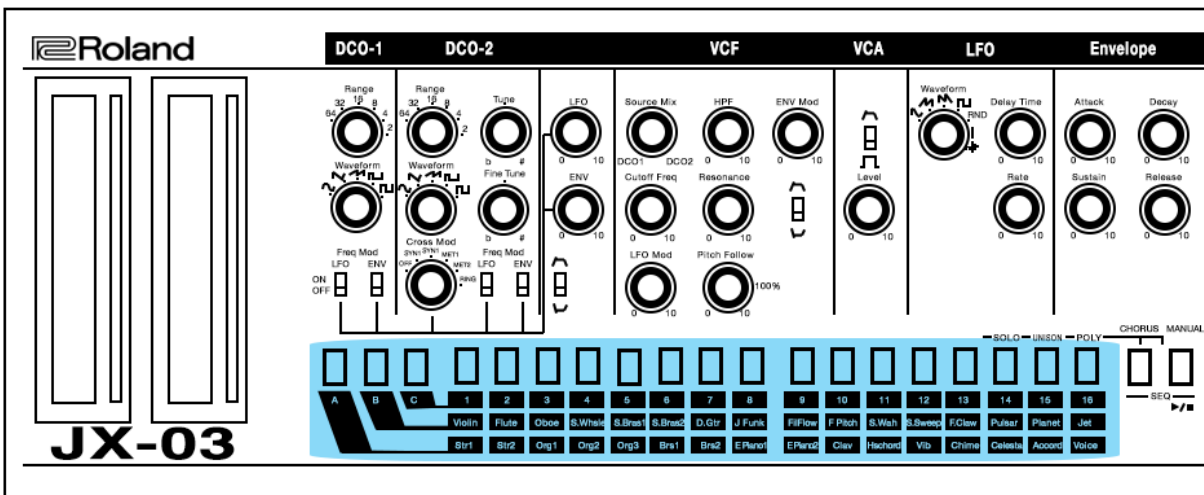
**To adjust the auto off functions:**

While holding down the MANAUL button, press the number 9 button.

- 1 - OFF - the power will not turn off
- 2 - 30 - the power will automatically switch off after 30 minutes.

**NOTE** - While in USB operation mode with a computer, auto off will not occur regardless of the settings.

## Preset Section



Unlike the other Roland Boutique synthesizers, the JX-03 has programmed presets. While all of the Boutique synths arrive with all of their preset destinations filled with sound examples to show what the synthesizers can do, the JX-03 hosts permanent banks of sounds.

### BANK A

- |             |              |               |            |                 |                |
|-------------|--------------|---------------|------------|-----------------|----------------|
| 1. String 1 | 2. String 2  | 3. Organ 1    | 4. Organ 2 | 5. Organ 3      | 6. Brass 1     |
| 7. Brass 2  | 8. E Piano 1 | 9. E Piano 2  | 10. Clav   | 11. Harpsichord | 12. Vibraphone |
| 13. Chime   | 14. Celesta  | 15. Accordion | 16. Voice  |                 |                |

### BANK B

- |             |            |             |             |             |             |
|-------------|------------|-------------|-------------|-------------|-------------|
| 1 Violin    | 2 Flute    | 3 Oboe      | 4 S Whistle | 5 S Brass 1 | 6 S Brass 2 |
| 7. D Guitar | 8. J Funk  | 9. Fil Flow | 10. F Fifth | 11. S Wah   | 12. S Sweep |
| 13. F Clav  | 14. Pulsar | 15. Planet  | 16. Jet     |             |             |

### BANK C

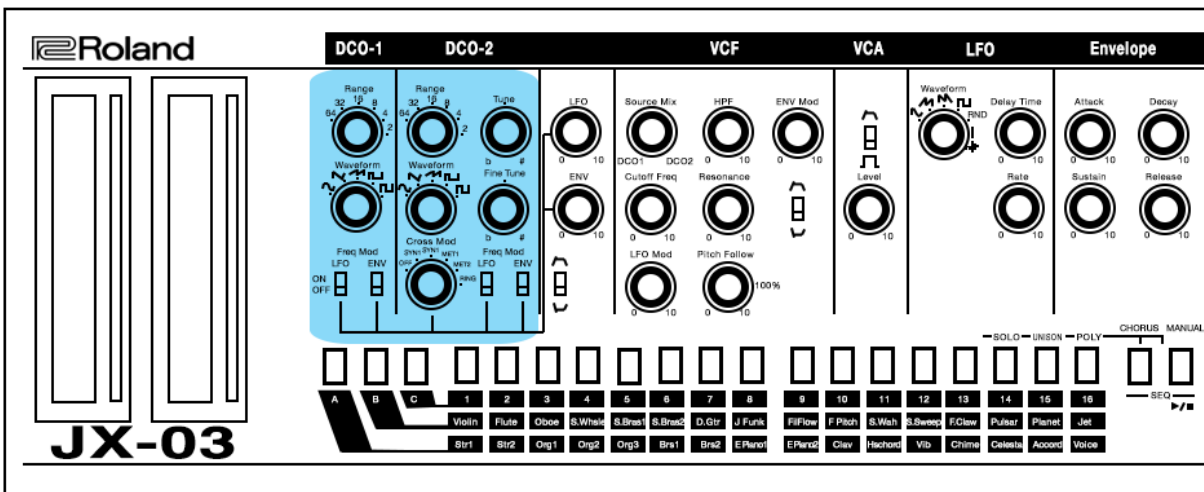
16 user programmable patches. As with all of the boutique synths, each of these 16 patch destinations have sounds in them, but they can be overwritten by the user to store 16 patches for later use, and exchange with other JX-03 users.

### PHILOSOPHY

Consider that before the open architecture of the synthesizer was well established, the very idea of a “patch” meant that cables were physically connected between modules to create a sound, like in a modular synthesizer. This is where the word “patch” comes from. In early digital synthesizers, the possibility to save and later recall a patch was a revolutionary concept which was previously impossible. So the JX-3P, and subsequently the JX-03 shipped with a basic set of presets to give users some idea of what a crazy, futuristic synthesizer might be capable of. While these are a wide array of sounds demonstrating what the synth can do, rather than begrudge this lack of space to save your own variations, consider them a helpful (or at least a thoughtful) starting point from which to create your own version of these sounds. Mercifully the backup and restore features of the JX-03 is so easy, that when you find you need more than 16 slots for your sounds, you can simply follow the procedure for backing up, and then freely overwrite the sounds with new ones, drag and drop to re arrange, and refine the patch order and contents of BANK C.

While in the modern world it seems kind of “stupid” to throw in an Oboe patch, and a variety of strings for users to call up and play, but think of them as a starting point, as if a friend came over and showed you how they make oboe sounds, and then when they go home you can freak it out however you’d like.

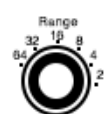
## II. Functions for Sound Creation



### DCO-1 / DCO-2

DCO is the digitally controlled oscillator that controls the pitch and creates two types of waveforms which are the sound source of the synthesizer. Compared to VCO (Voltage Controlled Oscillator), DCO has superior stability. The operations and functions of the DCO are virtually the same as those of the VCO.

**DCO-1** This is Oscillator 1 in your synth voice.



#### RANGE SELECTION

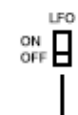
This is to change the pitch range of the DCO in one octave steps from 2' to 64' (2', 4', 8', 16', 32', 64') 8' is standard.



#### WAVEFORM SELECTION

This is to change the output waveform of the DCO

Select from sine wave, triangle wave, sawtooth wave, asymmetrical pulse wave, square wave, pink noise, and white noise.



#### FREQUENCY MODULATION

##### LFO SWITCH

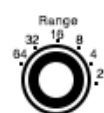
This allows the LFO to modulate the pitch of DCO-1. It is useful for vibrato and other pitch effects. Turn it on, and adjust the LFO shape, rate and speed. Listen to the results. A little creates subtle and natural results, where as a lot can create freaky weirdo sounds.



##### ENV SWITCH

This allows the Envelope to control the pitch of DCO-1. It is useful for sound shaping over time based on the wave shape of the envelope. Slow attack will produce a slow rise in pitch. A long release will produce a slow pitch change after the key is released. Turn this on and play with the envelope of a sound and listen to the changes.

**DCO-2** This is Oscillator 2 in your synth voice.



#### RANGE SELECTION

This is to change the pitch range of the DCO in one octave steps from 2' to 64' (2', 4', 8', 16', 32', 64') 8' is standard.



### TUNE

This is how to adjust the tuning of Oscillator 2 in your synth voice with a range of approx. 1200 cent + or -. Not only for adjusting the tune to be accurate as compared to DCO-1 but also for offset effects such as waveform shaping, and harmonic adjustments. Try tuning your DCO-2 up a 5th from DCO-1 and listen to the two part chord. Explore this.



### WAVEFORM SELECTION

This is to change the output waveform of the DCO

Select from sine wave, triangle wave, sawtooth wave, asymmetrical pulse wave, square wave, pink noise, and white noise.



### FINE TUNE

This adjusts the pitch of DCO-2 in a fine tune manner. With a range of + or - 50 cent, it is useful to more accurately adjust the tuning for smaller incremental changes (for example shifting a voice flat to correct tuning.)



### CROSS MODULATION

**Sync 1-2** - This is oscillator sync. It generates a complex waveform by forcibly resetting DCO-2 to the beginning of its cycle in sync with DCO-1. Setting 2 increases this effect.

**Metal 1-2** - This produces a metallic sound by using the DCO-2 waveform to modulate the DCO-1 frequency. Setting 2 increases this effect.

**Ring** - This is a ring modulation setting. It generates a complex waveform by multiplying DCO-1 by DCO-2



### LFO

Adjusts the depth by which the LFO modulates the DCO in total. This is enabled with the Frequency Modulation switches, and the amount is adjusted with this knob.



### ENV

Adjusts the depth by which the Envelope modulates the DCO in total. This is enabled with the Frequency Modulation switches, and the amount is adjusted with this knob. The shape of the modulation is controlled with the actual Envelope section of the JX-03.



### POLARITY

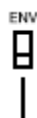
This switch selects the polarity of the envelope modulation for the DCO. Positive (up) is a typical ADSR envelope response. Negative (down) is an upside down envelope, and can produce unexpected and interesting results.



### FREQUENCY MODULATION

#### LFO SWITCH

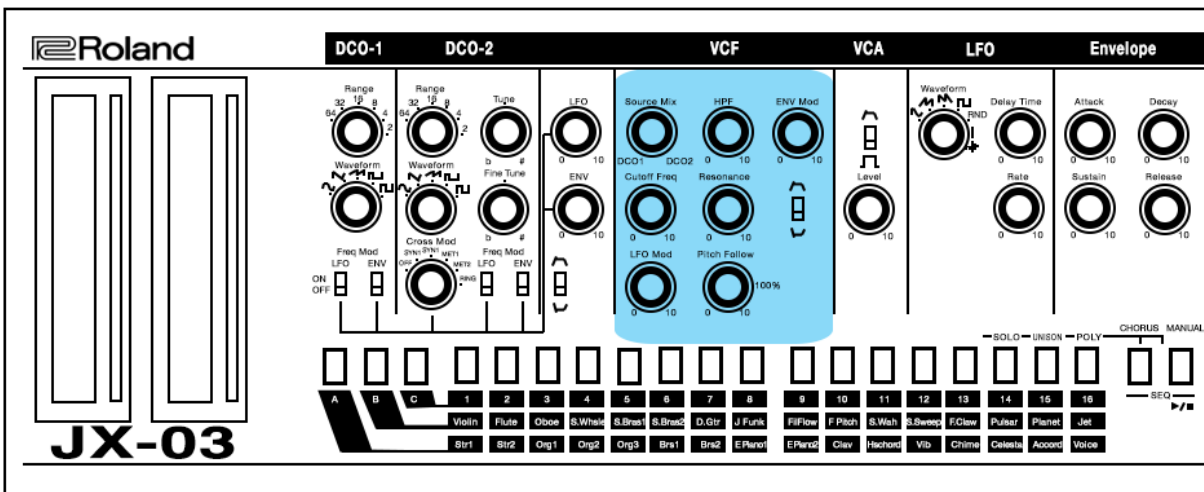
This allows the LFO to modulate the pitch of DCO-1. It is useful for vibrato and other pitch effects. Turn it on, and adjust the LFO shape, rate and speed. Listen to the results. A little creates subtle and natural results, where as a lot can create freaky weirdo sounds.



#### ENV SWITCH

This allows the Envelope to control the pitch of DCO-1. It is useful for sound shaping over time based on the wave shape of the envelope. Slow attack will produce a slow rise in pitch. A long release will produce a slow pitch change after the key is released. Turn this on and play with the envelope of a sound and listen to the changes.

# Voltage Controlled Filter



## VCF

This is the filter to change the tone color of your patch by cutting or emphasizing harmonics. This filter, however, lets the low frequency harmonics pass and blocks the high frequency harmonics, and the cutoff point is controlled by voltage - thus it is a low pass voltage controlled filter.

### SOURCE MIX



This is to adjust the balance between DCO-1 and DCO-2. When the knob is at 12 o'clock the result is an equal balance between DCO-1 and DCO-2. Counter clockwise will increase DCO-1, whereas clockwise rotation will increase DCO-2. Mess around with it and see how you like it. Sometimes setting this up to change during a performance can be a pretty cool trick.

### HPF



This is to set the cutoff point of the HPF (High Pass Filter.) The HPF is a filter that passes the high frequency harmonics and cuts off the low frequency harmonics. Take a sound you like and increase the HPF until there's nothing left of it. Consider how that might be super useful when you've made a really muddy sound that won't sit well in a mix.

### CUTOFF FREQUENCY



This sets the cutoff point of the VCF (Low Pass Filter). As you lower the frequency, the high frequency part of the signal is cut off. Try taking a sound you like, and lowering this knob until the sound seems to be gone. Consider how this could be a sick effect in a performance, or perhaps a great way to take a very bright sound and bring it into control in a mix.

### LFO MODULATION



The LFO output signal controls the VCF cutoff point using this control knob. This allows for automatic modulation of the filter cutoff. So for example if you want the filter to rise and fall rhythmically in a patch, you can set up the LFO to pulse in a cool way, and then adjust how much this will effect the cutoff frequency using this knob. Try it. Everything from an aggressive was type effect to a very subtly rising and falling of the frequency can be swiftly accomplished.



### PITCH FOLLOW

The VCF cutoff point alters depending on which key is played on the keyboard. This pitch follow can be used to prevent any inconsistency in the harmonic content caused by pitch alteration. So effectively it is a scale effect for the 1 Volt/Oct pitch tracking supplied to the filter. It's nice to be able to choose between full tracking, and no tracking at all. Play an arpeggio and adjust this and notice how it changes. It may seem subtle to you now, but this can be very useful to a crucial sound.



### RESONANCE

This is the filter resonance used to emphasize the cutoff point of the cutoff frequency. Lowering this will allow more bass to pass through. Raising it will freak out the sound and it will begin to wail, or shriek. It's a wonderful thing.



### ENV MODULATION

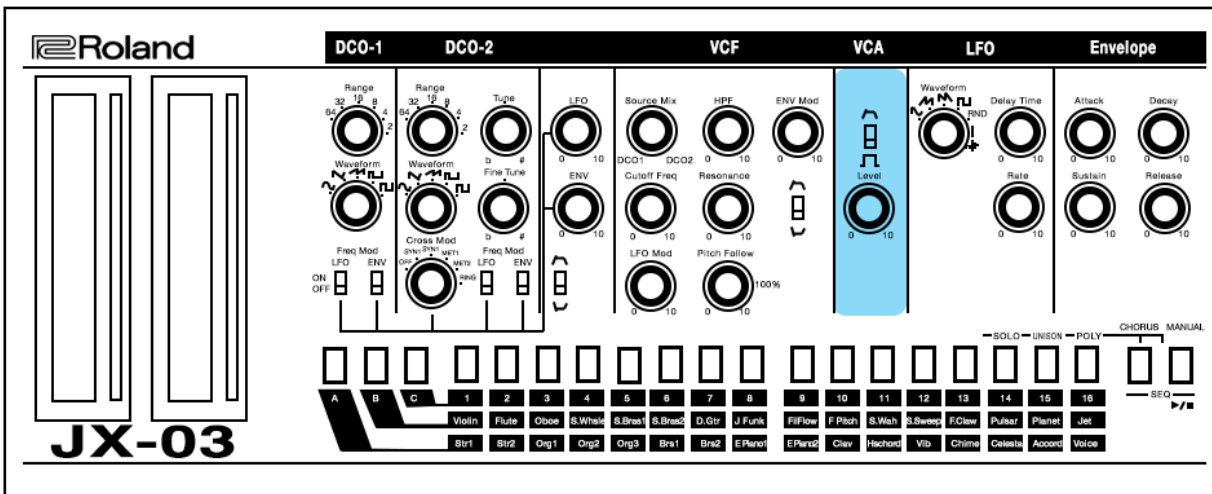
The ENV output signal will control the VCF cutoff point. Thus providing a filter envelope for each key played. The ADSR will provide this Envelope, and you can adjust the response by changing things around on the Envelope. Try it. A filter envelope is a wonderfully useful thing. Adjust the attack while the cutoff frequency is quite low, and listen to how the filter changes over time while keys are played. This is central to creating your own patches. Explore this. You might need it later.



### POLARITY

This switch is to select the polarity of the envelope curve. Positive (up) means the ADSR will control the frequency of the filter in a standard ADSR manner. Negative (down) indicates that the ADSR control will be inverted. This can get strange, so flip the switch and play around with the envelope and see how it works. It's nice to be able to have a positive VCA envelope, and a negative VCF envelope, and/or the other way around. Mess with this and learn.

## VCA



This is where the volume (amplitude) of the sound is controlled. Normally it is controlled by the voltage from the Envelope. But there is a switch to choose between Envelope and Gate as well as a level control.



### VCA MODE

This is to select whether to control the VCA by the signal from the Envelope or by the Gate signal. Up selects the ENV, and down selects the GATE.



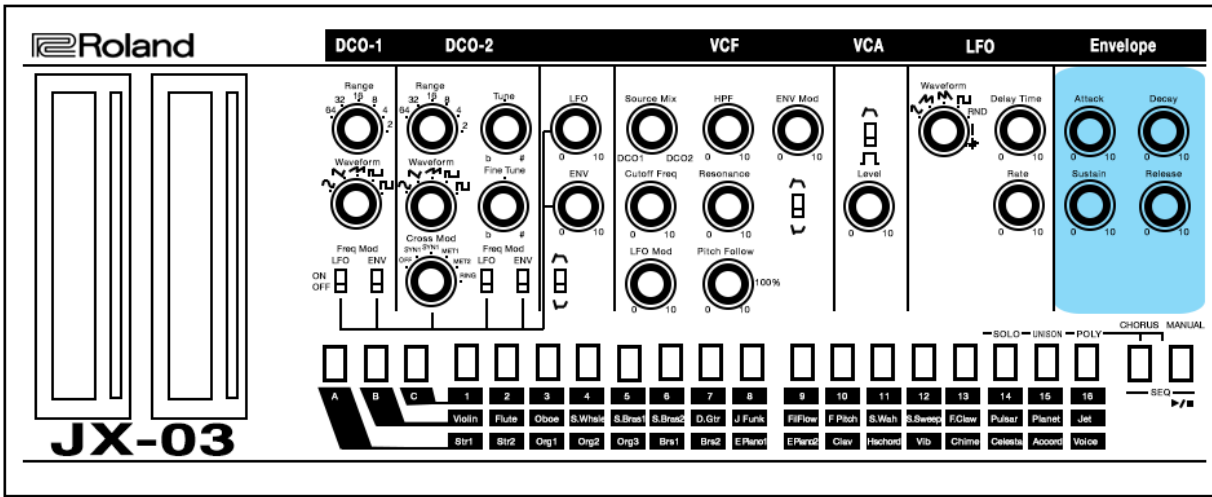
### VCA LEVEL

This adjusts the volume level in the writing mode.

NOTE - Setting this knob too high may cause sound distortion.



## ENV (Envelope Generator)



This generates a control voltage (CV) envelope which controls the VCF and VCA, therefore, alters the tone color and volume in each note by way of Attack, Decay, Sustain and Release knobs. It works with and is triggered by the keyboard gate input which is generated by a key played on the keyboard, or a MIDI note arriving which then emulates one. Attack is the timing of the envelopes beginning, Decay and Sustain are the behavior of the envelope while the gate occurs, and Release is what happens in the voltage once the gate stops.



### ATTACK

This determines the time required for the voltage to reach its maximum from the moment the key is pressed down, or a MIDI note on message arrives.



### DECAY

This determines the time required for the voltage to drop from maximum to the level set by Sustain.



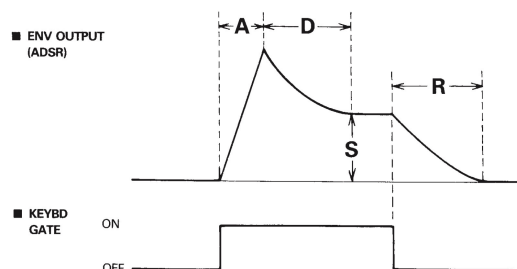
### SUSTAIN

This sets the sustain level to which the voltage falls at the end of the decay time.



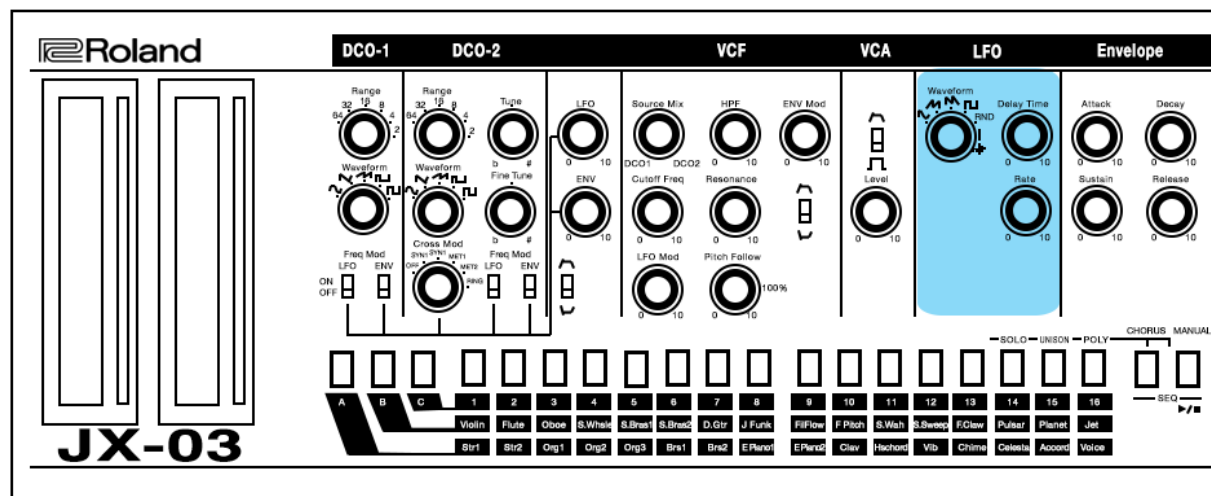
### RELEASE

This sets the time needed for the voltage to reach zero after a key is released, or a MIDI note off message is received.



**NOTE** - When all the ADSR are set to zero, the waveform will be an extremely short pulse wave, and only a short “click” is heard.

# LFO



The Low Frequency Oscillator (LFO) generates an extremely low frequency, so it produces a vibrato or growl effect by controlling the DCO or VCF frequency. As a modulation source, the LFO can shape volume, filter frequency, cross modulations in order to produce lovely, and even ugly results. Try assigning the LFO to the filter and select a shape, and then listen to the results. In a way it allows sounds to take on a life of their own, and also the LFO can act as alternate pairs of hands to create regular changes while you focus on keyboard playing, or other duties during a performance.



## WAVEFORM

This is to select the LFO output waveform (wave shape.)

Select from Sine, Sawtooth, Reverse Sawtooth, Square Wave, Random Wave, and Noise.



## DELAY TIME

This sets the time needed for the LFO modulation to begin. Set this to delay the waveform from having an effect.



## RATE

This sets the frequency (rate) of the LFO.

# SOLO/UNISON/POLY

The JX-03 has three methods of voicing:

- SOLO - Monophonic mode, where only once voice will sound at a time.
- UNISON - All voice available will play back at the same time.
- POLY - Four voices will be played polyphonically

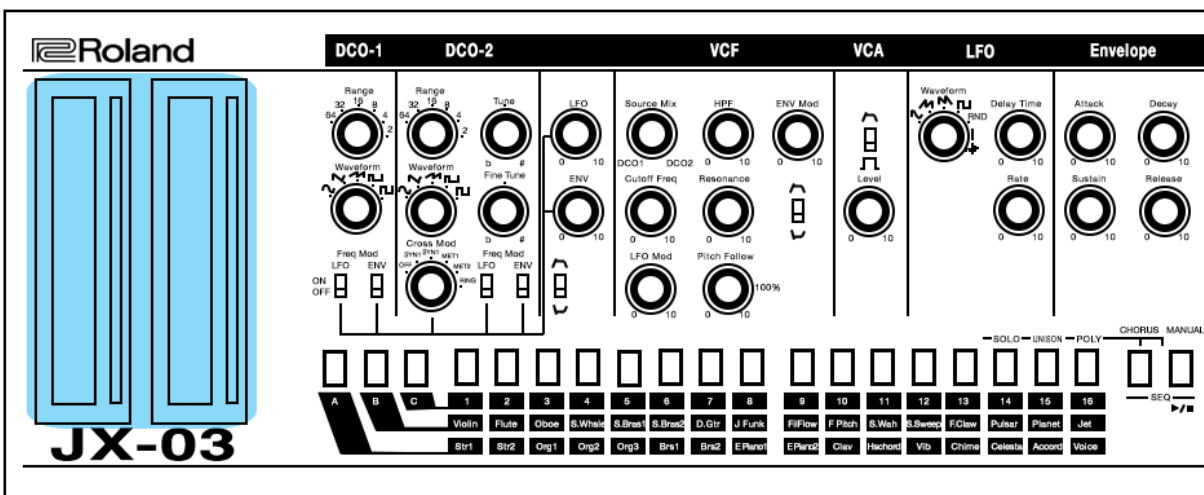
## To set the voice mode:

1. Press and hold CHORUS + [14 - 16]



- [14] SOLO
- [15] UNISON
- [16] POLY

### III. Functions for Performance Ribbon Controller



These are touch-type "light strip" ribbon controllers.

C1 (left) is pitch bend, and C2 (right) is modulation like a traditional keyboard's pitch bender and modulation wheel. These controllers transmit midi data through the midi out and can be used to capture performances when recording a midi sequence.

When using without midi, usb or a K-25M keyboard, C1 can be used to preview notes, and also to enter sequencer note information.

#### To adjust the notational scale of the ribbon controller input:

Press and hold the MANUAL button and press 10

Select from 1-16 on the common keys to choose which scale you would like to use for note input

1. Chromatic (default)
2. Major
3. Natural Minor
4. Harmonic Minor
5. Ascending Melodic Minor
6. Bluenote
7. Bluenote (with grace note)
8. Dorian
9. Mixolydian
10. Diminished
11. Wholetone
12. Altered
13. Hungarian Minor
14. Insenpo
15. Ryukyu
16. Persian

## Bender Range

The C1 ribbon controller operates as a pitch bend, and the range can be set and stored with each patch. There is not a global pitch bend range setting, so each patch can have its own range set and recalled with each patch.

### To adjust the bender range:

Hold MANUAL and press Preset 13

Select from 1-16

1 - 12 (0 - 1 Octave / 1 note per incremental step)

13 - 2 Octaves

16 - OFF

The default setting is 2

## Portamento

The ribbon controller can also be used to set the portamento (or glide) amount between played notes.

Portamento is a common feature of synthesizers, sliding from the last note played to the next. You can then change portamento timing using the right hand ribbon controller. The bottom of the ribbon controller gives you a faster slide between notes. As you go further up the ribbon controller, the synth will transition at a slower pace.

### To adjust the portamento:

Hold MANUAL and touch the C1 ribbon controller. The options are ON or OFF

Touch the C2 ribbon controller to adjust the portamento amount.

**NOTE** - Portamento is a global setting for the JX-03. The settings made for any particular patch will also be set for all of the other patches.

## Velocity Sensitivity

The JX-03 input via the common keys as well as the ribbon controller are not velocity sensitive, however, if you are using the K-25M keyboard or a MIDI controller which is velocity sensitive you can take advantage of it.

### Adjust velocity sensitivity as follows:

Holding the MANUAL key, press Preset 5

Select from 1-3

1. Velocity sensitivity on

2. All key presses set to a velocity value of 64 (half velocity)

3. All key presses set to a velocity value of 127 (full velocity)

### Adjust Velocity curve as follows:

Holding the MANUAL key, press Preset 6

Select from 1-3

1. Light

2. Medium

3. Heavy

## Octave Switch

The keys available for programming sequences, and the one octave ribbon control input method is only 12 notes at a time. Further, with a K-25M keyboard attached the keys are still limited to two octaves. Sometimes in performance, or composition is it desirable to shift the octave of the keyboard up or down to access other notes which may not be readily available with the current keyboard. The available range is -4 to +5.

**To shift the octave of the keyboard and ribbon control input strip in one octave steps:**

1. Hold MANUAL and press Preset 1
2. Preset 4 - Preset 13

The default setting of +/- 0 is the 8 key

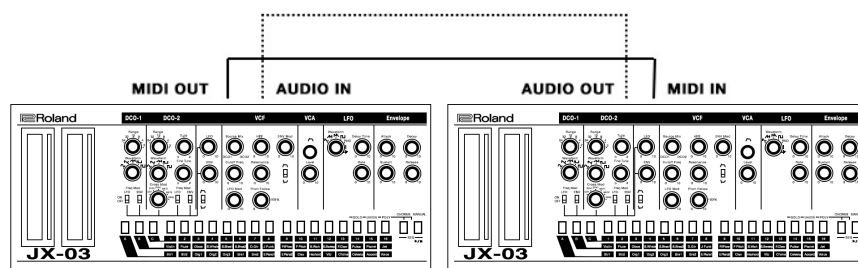
## Chain Mode

Although the JX-03 is four-note polyphonic, you can increase the polyphony by using a MIDI cable to connect two of more JX-03 modules together and turning chain mode on.

When using two JX-03 units together it is recommended to match their respective patch settings by using the backup and restore procedure. This way all the patches in both modules will be the same.

This allows for 8 note polyphonic performance from two JX-03 modules. When in this mode, and the same module is being used, all control of both modules will be handled by the first module in the chain. Thus, calling up patch A11 will automatically call up the same patch on the second module, and the results will be an 8 note polyphonic version of patch A11.

While increased polyphony works between the JX-03 and other Roland Boutique modules (ex: JU-06 or JP-08) the results will be slightly different. Control of the two synths will remain relative. Only the additional notes called for will be accessed by the second unit. While this is different from having all the same patch with 8 possible notes to play, it can also produce very interesting layers and at times unpredictable results. It's also possible to connect other synthesizers to the MIDI OUT port and achieve interesting results using all sorts of sound sources for the notes beyond the first 4 played.



**To set the JX-03 into chain mode:**

1. Connect the MIDI OUT of the master module to the MIDI IN port of the secondary unit
2. Hold the MANUAL key and press Preset 9
3. Select 1-2

1. ON
2. OFF

NOTE: If chain mode is on, the 5th note will be passed through to the MIDI OUT

## Layering and Split

In addition to chain mode for extended polyphony, it is also possible to connect two Boutique modules together in precisely the same way and leave chain mode off. This allows for independent operation, patch selection, but simultaneous play of each synthesizer at the same time.

If your midi controller allows for setting up note ranges you can set the modules to different midi channels and allocate key spans across your controller and separate the sounds.

While this is not exclusively a JX-03 or even a Roland Boutique technique, it is an often overlooked result of using MIDI enabled synthesizers creatively to produce pads and drones, or leads and performance combinations which go far beyond what a mono timbral synthesizer can do.

## Dual Voice Mode

There is an undocumented ability for the JU-06 to operate in DUAL VOICE mode. This mode can only be accessed by way of MIDI CC commands, but it allows for two independent voices to be played, and edited on the front panel simultaneously.

To Set the JU-06 to operate in DUAL MODE:

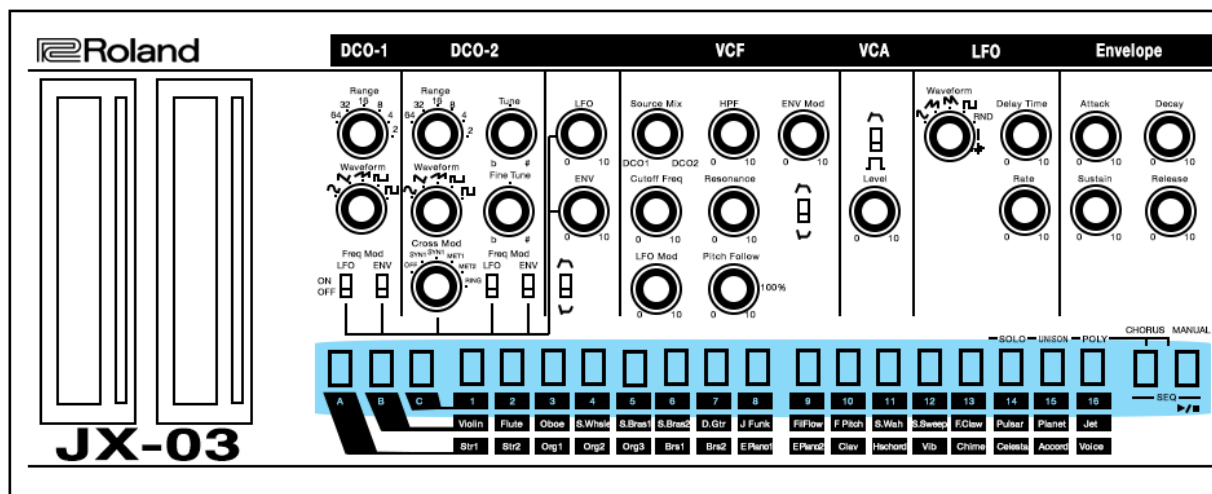
MIDI CC 80 - Sending any value greater than 63 (64-128) will activate DUAL MODE

MIDI CC 81 - Sending any value less than 64 (0-63) will allow front panel access to the secondary voice.

The secondary voice may be edited just as any other voice would.

NOTE: When in DUAL MODE the voices are split at the output, and Voice 1 will come out the left output of the mains as well as the headphone outs.

## Step Sequencer



The Step Sequencer allows you to input notes in patterns of up to 16 steps and play them back as selectable loops. You can change the length of each pattern, and address the way steps are taken. 16 patterns can be stored and recalled.

### To access the sequencer:

Press CHORUS and MANUAL keys simultaneously.  
The Play / Stop button will blink

### To exit the sequencer:

Press CHORUS and MANUAL keys simultaneously again.  
The steps in each sequence use the 16 Preset keys. These are expressed as steps 1-16.

### Inputting Steps:

1. Hold down a step button (1-16) where you'd like to add or change a note.
2. While holding down the step button, either play a note on your controller keyboard, or touch the C1 ribbon controller and move your finger up and down until you have located the note you'd like to play.
3. Release the step button
4. Repeat this until you have added the notes to the steps you would like to add.
5. Press the PLAY / STOP button to listen to your pattern
6. If you have made a mistake, or don't like what you did simply hold the step and make your corrections
7. To delete a note simply turn the step off by pressing it.
8. If you love your pattern and want to keep it, don't forget to write the pattern to memory [Hold CHORUS, select the destination 1-16 and hold the destination button down until it flashes.]

## Sequencer Mode Functions:

**PLAY / STOP** - [MANUAL + PLAY/STOP]

This starts and stops the sequencer

**TEMPO** - [CHORUS + C1 RIBBON CONTROLLER]

If you aren't receiving sync externally, this button combination will allow you to set the internal tempo of the sequencer.

**ON/OFF STEP** - [1-16]

To turn notes on and off, simply press the corresponding buttons.

**ENTER NOTE** - [1-16 + C1 NOTE INPUT OR KEYBOARD]

To enter note information for each step.

**TIE NOTES** - [STEP BUTTON + NEXT STEP BUTTON ex: 1 + 3 for a 3 step tie]

In order to enter note data which plays for longer than one step, tie notes together for more expressive patterns. To un-tie notes, simply press the buttons again and the tie is gone. Associated steps illuminated from the tie must also be pressed again in order to clear them from the pattern.

**GATE TIME** - [1-16 + C2 RIBBON CONTROLLER]

This button combination allows you to set the individual gate time of each individual step.

**ALL GATE TIMES** - [CHORUS + C2 RIBBON CONTROLLER]

This button combination allows you to set the gate time for the entire pattern and each of its steps.

**PATTERN SELECT** - [CHORUS + 1-16]

This is the process of selecting which pattern you wish to play.

**PATTERN WRITE** - [CHORUS + 1-16 LONG PRESS]

This is the button combination for saving your pattern to one of 16 destinations for recall and later playback.

**PATTERN LENGTH** - [MANUAL + 1 - SELECT 1-16]

This button combination allows you to set the length of a pattern. This can be done while the sequencer is playing for real time "last step" type of performance, or for simply setting various lengths for polymetric patterns.

**SHUFFLE/SWING** - [MANUAL + 2 - SELECT 4-12 - Default is 8]

This combination allows the user to establish a swing or shuffle feel to the pattern's playback. The default setting [8] approximates the traditional 50% swing feel (or none.)

**SCALE** - [MANUAL + 3 - SELECT 1-4 - Default is 2]

**SCALE GUIDE** - [1] - 16th Note [2] - 8th Note [3] - 16th Note Triplet [4] - 8th Note Triplet  
Default is [2]



Scale is the rhythmic meter with which the sequencer plays. 16th note is equal to one step per beat in a bar. 8th Note will slow this down to half as many beats. Triplets are for more complex playback signatures. The default scale is [2].

**STEP ORDER TYPE -** [MANUAL + 15 - SELECT 1-7]  
**STEP ORDER GUIDE**  
 [1] Normal  
 [2] Even/Odd Reverse  
 [3] Odd Only  
 [4] Even Only  
 [5] Odd Only/Even Only  
 [6] Even Only/Odd Only  
 [7] Random

Step order is the way in which the sequence itself will play back.

[1] Normal is a typical forward loop, starting over again when the sequence comes to an end.

[2] Plays in reverse.

[3] Only plays the odd steps (1,3,5,9,11, 13 and 15.)

[4] Plays only the even steps (2,4,6,8,10,12, 14 and 16.)

[5] First plays only the odd steps, followed by only playing the even steps.

[6] First plays only the even steps, followed by only playing the odd steps.

[7] Plays the steps in a random order

**OFF STEP MODE** - [MANUAL + 16 - SELECT [1] REST - [2] SKIP

Off step mode tells the sequencer how to handle steps which you have turned off.

[REST] Treats the step as if it is actually there, but the step is intended to be silence.

[SKIP] Operates as if the step which is muted does not exist at all and the next active step will play at the next clock pulse.

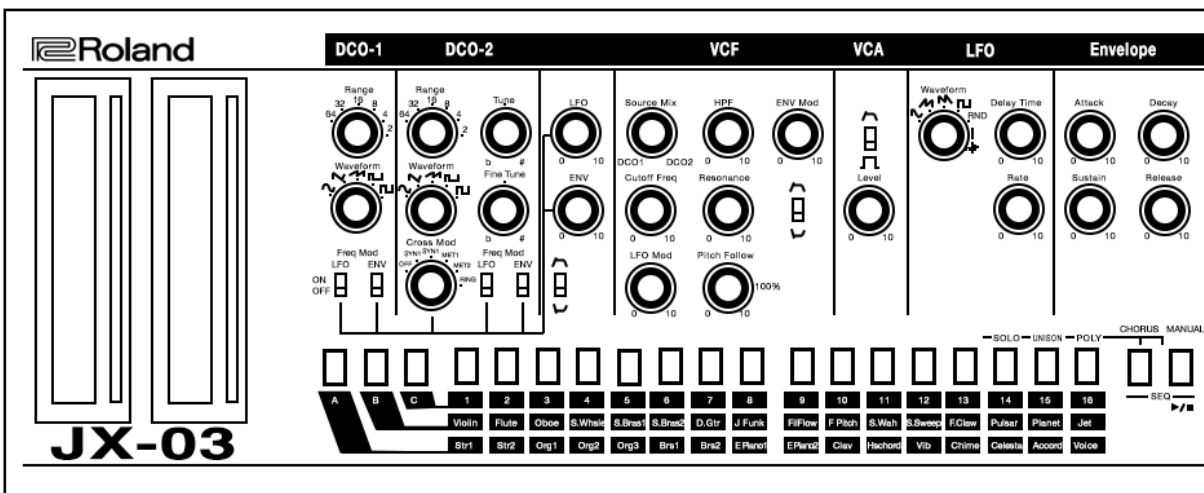
**NOTE** - While operating the sequencer it is possible to exit sequencer mode and adjust your patch. The patch number can be changed, and the various knobs and sliders may be adjusted. To return to the sequencer simply press CHORUS and MANUAL at the same time.

Remember that saving your sequence will not assign a particular patch to your sequence. The sequencer is operated, and the sequences are saved completely independently of the synthesizer section.

Further, When programming sequences there is not way to ask the sequencer to not play when a midi clock is received at the JX-03's MIDI IN port. Thus if you program a sequence and save it into pattern [1] then this pattern will begin to play every time you send a midi clock to the module (from a DAW, or a hardware sequencer.)

This may not be exactly what you'd like to have happen. So It is recommended that you reserve Pattern [1] in your sequencer to a blank pattern. This way upon power up and initial reception of MIDI clock from any source, the sequencer will not helplessly begin playing back some sequence which may not be needed. This is particularly helpful for live performances where everyone is watching, and each mistake or unwanted sounds may interfere with other musicians, or your over all serenity and confidence. It is well worth sacrificing that first sequence location in order to know for sure your Boutique synth isn't going to suddenly begin playing a pattern when you would like it to be quiet.

## IV. Effects



## Chorus

The chorus effect of the JX-03 is intended as an accurate replica of the classic chorus effect found on the Roland JX-3P. Because of the ACB replica of the Roland R3109 chip the actual components of these effects and circuits are remarkably well reproduced here.

### To activate the chorus effect:

1. Press Chorus button.

### To deactivate the chorus effect:

1. Press Chorus button again

## Undocumented Chorus

There is an undocumented CHORUS effect which has received a lot of attention on the Roland Boutique JP-08. This effect also works with the JX-03 (and I presume the JU-06 as well.)

With an eternal MIDI controller, send CC#93 and choose from 0-3

- [0] OFF
- [1] Chorus 1
- [2] Chorus 2
- [3] Chorus 3

There is not method of accessing these choices from the JX-03 itself, you must use an external Midi Control Surface, Keyboard which can send CC data, or your hardware sequencer, or DAW.

NOTE - The CHORUS button will still switch off and on the chorus effect when using alternate forms of the chorus via MIDI, however, when switched back on, only the default chorus effect is available from the synthesizer. MIDI commands are required in order to access these extra iterations of the chorus effect.

---

## Delay

The delay effect for the JX-03 is adjustable, and the settings are saved with each patch. There are no global delay settings for the module. Each patch must be set to your preferences and these settings are then saved with your patches respectively.

To adjust the delay settings in a patch:

### DELAY VOLUME

1. Press and hold MANUAL + PATCH 14
2. Select from 1-16 (OFF = 1)

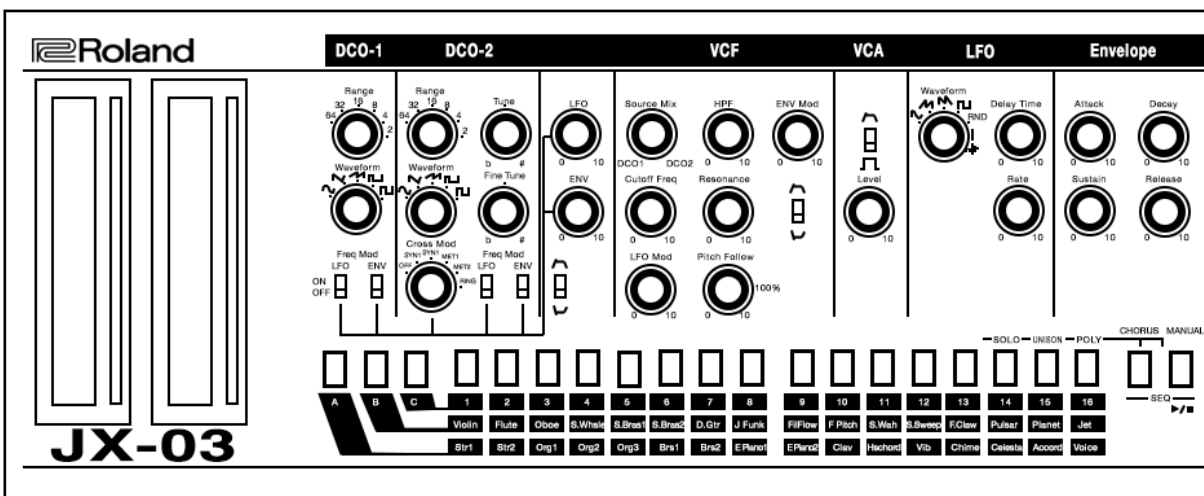
### DELAY TIME

1. Press and hold MANUAL + PATCH 15
2. Select from 1-16

### DELAY FEEDBACK

1. Press and hold MANUAL + PATCH 16
2. Select from 1-16

## V. System Settings



## Settings Overview

### Numeric Buttons [1] - [16]

in settings mode, the 16 buttons of the common section are called the [1] - [16] buttons.

### SOLO/UNISON/POLY/OCTAVE SHIFT/PORTAMENTO

While holding down the **CHORUS** button, specify the value by using the numeric buttons or the C1/C2 ribbon controller to make adjustments.

SOLO	[14]	Plays Monophonically
UNISON	[15]	Plays all sounds in unison
POLY	[16]	Plays polyphonically
Octave Shift	[4] - [13]	Shifts the keyboard range in steps of one octave. Default Setting is [8]
Portamento	C1- ON/OFF	Creates a smooth change in pitch between one key and the next key played
Portamento Time	C2 - 0 - 100	Adjusts the time required for the pitch change.

### SYSTEM SETTINGS

While holding down the **MANUAL** button, press one of the numeric buttons to select the parameter

MASTER TUNE	[1]	1-16	Sets the master tune of the module - 440 Hz is [8]
MIDI CHANNEL	[2]	1-16	Sets the MIDI channel for the module - 1-16
MIDI CLOCK	[3]	1-2	[1] AUTO [2] INTERNAL
TRANPOSE	[4]	2-13	Transposes the keyboard range in semitones. 0 = [8]
KEY VELOCITY	[5]	1-3	[1] TOUCH [2] 64 [3] 127
VELOCITY CURVE	[6]	1-3	[1] Light [2] Medium [3] Heavy
AUTO OFF	[7]	1-2	[1] OFF [2] ON - Power will switch off after 30 minutes * Auto off does not occur when USB is connected.
LED DEMO	[8]	1-4	[1] OFF [2] 1 Minute [3] 3 Minutes [4] 10 Minutes
CHAIN MODE	[9]	1-2	[1] OFF [2] ON
NOTE SCALE	[10]	1-16	See Pg 21 for scale information

**PATCH SETTINGS**

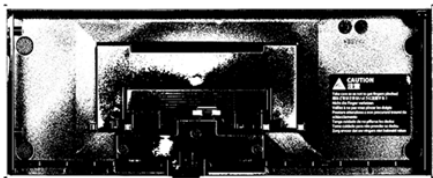
While holding down the **MANUAL** button, press one of the numeric buttons to select the parameter

BEND RANGE	[13]	1-12,13,16	Specifies the pitch bend range in semitones - Default is [2] OFF is [16]
DELAY LEVEL	[14]	1-16	Adjusts the volume of delay (OFF = 1)
DELAY TIME	[15]	1-16	Adjusts the delay time
DELAY FEEDBACK	[16]	1-16	Adjusts the delay feedback

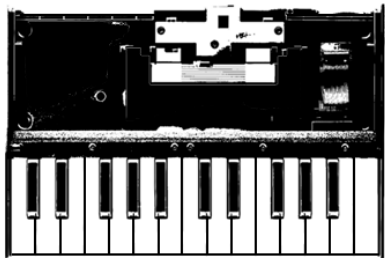
**Main Specifications**

MAXIMUM POLYPHONY	4 Voices
POWER SUPPLY	Rechargeable Ni-MH Battery (AA, HR6) x 4 Alkaline battery (AA, LR6) x 4, USB Power
CURRENT DRAW	500 mA (USB Bus Power)
DIMENSIONS	300 (W) x 128 (D) x 45 (H) mm   11 13/16 (W) x 5 1/16 (D) x 1 3/4 (H) inches
WEIGHT	940 g   2 lbs 2 oz
ACCESSORIES	Owners Manual, leaflet “using the unit safely”, Alkaline battery (AA) x 4

**Options**



**ROLAND DK-01**  
BOUTIQUE MODULE DOCK



**ROLAND K-25M**  
BOUTIQUE MODULE KEYBOARD



**MICRO USB POWER SUPPLY**  
WALL ADAPTER UNIT FOR STAND  
ALONE OPERATION

## VI. 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](http://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 JX-03 are cable of transmitting via MID for recording into a DAW or MIDI sequencer.

To enable transmission of MIDI CC data:

1. Hold the CHORUS button and press PATCH 9
2. 2. Select 1-4
  - 1 - OFF
  - 2 - Output only to USB
  - 3 - Output only to MIDI
  - 4 - Output to USB and MIDI

# MIDI Implementation Chart

JX-03 Firmware Version 1.01

SOUND MODULE  
Model: JX-03

## MIDI Implementation Chart

Date: Aug. 03, 2016  
Version 1.01

Function...	Transmitted	Recognized	Remarks
Basic Channel	1-16	1-16	
Mode	Mode 3	Mode 1, 2, 3, 4 (M=1)	
Note Number	0-127	0-127	
Velocity : Note On : Note Off	o x	o x	
After Touch	x	x	
Pitch Bend	o	o	
Control Change	1 o	o	MODULATION
	3 o	o	LFO RATE
	5 o	o	PORTAMENTO TIME
	9 o	o	LFO DELAY TIME
	11 x	o	EXPRESSION PEDAL
	12 o	o	LFO WAVE FORM
	13 o	o	DCO-1 RANGE
	14 o	o	DCO-1 WAVE FORM
	15 o	o	DCO-1 FREQ MOD LFO SW
	16 o	o	DCO-1 FREQ MOD ENV SW
	17 o	o	DCO-2 RANGE
	18 o	o	DCO-2 WAVE FORM
	19 o	o	DCO-2 TUNE
	20 o	o	DCO-2 FINE TUNE
	21 o	o	DCO-2 CROSS MOD SEL
	22 o	o	DCO-2 FREQ MOD LFO SW
	23 o	o	DCO-2 FREQ MOD ENV SW
	24 o	o	DCO LFO DEPTH
	25 o	o	DCO ENV DEPTH
	26 o	o	DCO ENV POLARITY
	27 o	o	VCF SOURCE MIX
	28 o	o	VCF LFO MOD DEPTH
	29 o	o	VCF PITCH FOLLOW
	30 o	o	VCF HPF CUTOFF
	31 o	o	VCF ENV MOD DEPTH
	35 o	o	VCF ENV POLARITY SW
	46 o	o	VCA MODE SW
	47 o	o	VCA LEVEL
	53 o	o	ENV SUSTAIN LEVEL
	64 x	o	HOLD
	65 o	o	PORTAMENTO
	71 o	o	VCF RESONANCE
	72 o	o	ENV RELEASE TIME
	73 o	o	ENV ATTACK TIME
	74 o	o	VCF CUTOFF
	75 o	o	ENV DECAY TIME
	82 o	o	DELAY TIME
	83 o	o	DELAY FEEDBACK
	86 o	o	ASSIGN MODE
	87 o	o	BEND RANGE
	91 o	o	DELAY LEVEL
	93 o	o	CHORUS SW
Program Change	0-47	0-47	
System Exclusive	x	x	
System Common : Song Position	x	x	
: Song Select	x	x	
: Tune Request	x	x	
System : Clock	o	o	
Real Time : Start	o	o	
: Continue	x	o	
: Stop	o	o	
Aux Messages	: All Sound Off	x	o
	: Reset All Controllers	x	o
	: Local On/Off	x	x
	: All Notes Off	x	o
	: Omni Mode Off	x	o
	: Omni Mode On	x	o
	: Mono Mode On	x	o
	: Mono Mode Off	x	o
	: Active Sensing	x	o
	: System Reset	x	x
Notes	*1 Same process as All Note Off.		

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

O : Yes  
X : No


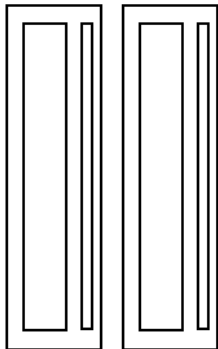
## MIDI CC List

The following is list of MIDI Control Change Data which can and can not be transmitted for reception remotely  
*The From Software Version 1.20 Supplementary Manual*


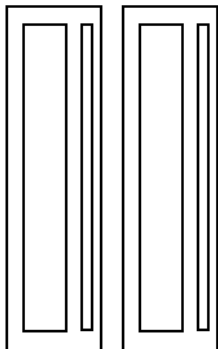
FUNCTION	MIDI CC#
MODULATION	[1]
LFO RATE	[3]
LFO DELAY TIME	[9]
DCO RANGE	[12]
DCO LFO MOD	[13]
DCO PWM LEVEL	[14]
DCO PWM SOURCE	[15]
DCO PWM SW	[16]
DCO SAW SW	[17]
DCO SUB LEVEL	[18]
DCO NOISE LEVEL	[19]
HPF CUTOFF	[20]
VCF ENV POLARITY	[21]
VCF LFO DEPTH	[22]
VCF ENV DEPTH	[23]
VCF KEY FOLLOW	[24]
VCA ENV SW	[25]
VCA LEVEL	[26]
ENV SUSTAIN	[27]
HOLD	[64]
PORTAMENTO	[65]
VCF RESONANCE	[71]
ENV RELEASE	[72]
ENV ATTACK	[73]
VCF CUTOFF	[74]
ENV DECAY	[75]
DELAY TIME	[82]
DELAY FEEDBACK	[83]
ASSIGN MODE	[86]
BEND RANGE	[87]
DELAY LEVEL	[91]
CHORUS SW	[93]




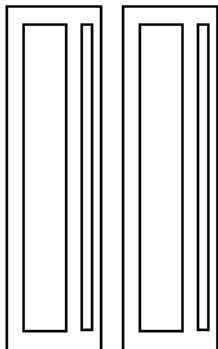
# Sound Synthesis Memo

  
  
**JX-03**

DCO-1			DCO-2			VCF			VCA		LFO		Envelope		
Range	Waveform	Freq Mod	Range	Waveform	Freq Mod	LFO	Source Mix	HPF	ENV Mod	Level	Waveform	Delay Time	Attack	Decay	
32 12 8 4 2	0 1 2 3 4 5 6 7 8 9 10	0 10	32 12 8 4 2	0 1 2 3 4 5 6 7 8 9 10	0 10	0 10	DCO1 DCO2	0 10	0 10	0 10	0 10	0 10	0 10	0 10	
Waveform	Waveform	Cross Mod	Waveform	Waveform	Cross Mod	ENV	Cutoff Freq	Resonance			Waveform	Rate	Sustain	Release	
0 1 2 3 4 5 6 7 8 9 10	0 1 2 3 4 5 6 7 8 9 10	0 10	0 1 2 3 4 5 6 7 8 9 10	0 1 2 3 4 5 6 7 8 9 10	0 10	0 10	0 10	0 10			0 10	0 10	0 10	0 10	
Freq Mod LFO ENV	Freq Mod LFO ENV	Freq Mod LFO ENV	LFO Mod	Pitch Follow											
ON OFF	ON OFF	ON OFF	0 10	0 10	100%										
A B C 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16															
Violin Flute Oboe S.Whole S.Brass1 S.Brass2 D.Str J.Funk FlFlow F.Pitch S.Wah S.Sweep F.Clav Pulsar Planet Jet															
Str1 Str2 Org1 Org2 Org3 Bra1 Bra2 E.Piano E.Piano2 Clav Harmond Vib Chime Celesta Accord Voice															

  
  
**JX-03**

DCO-1			DCO-2			VCF			VCA		LFO		Envelope		
Range	Waveform	Freq Mod	Range	Waveform	Freq Mod	LFO	Source Mix	HPF	ENV Mod	Level	Waveform	Delay Time	Attack	Decay	
32 12 8 4 2	0 1 2 3 4 5 6 7 8 9 10	0 10	32 12 8 4 2	0 1 2 3 4 5 6 7 8 9 10	0 10	0 10	DCO1 DCO2	0 10	0 10	0 10	0 10	0 10	0 10	0 10	
Waveform	Waveform	Cross Mod	Waveform	Waveform	Cross Mod	ENV	Cutoff Freq	Resonance			Waveform	Rate	Sustain	Release	
0 1 2 3 4 5 6 7 8 9 10	0 1 2 3 4 5 6 7 8 9 10	0 10	0 1 2 3 4 5 6 7 8 9 10	0 1 2 3 4 5 6 7 8 9 10	0 10	0 10	0 10	0 10			0 10	0 10	0 10	0 10	
Freq Mod LFO ENV	Freq Mod LFO ENV	Freq Mod LFO ENV	LFO Mod	Pitch Follow											
ON OFF	ON OFF	ON OFF	0 10	0 10	100%										
A B C 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16															
Violin Flute Oboe S.Whole S.Brass1 S.Brass2 D.Str J.Funk FlFlow F.Pitch S.Wah S.Sweep F.Clav Pulsar Planet Jet															
Str1 Str2 Org1 Org2 Org3 Bra1 Bra2 E.Piano E.Piano2 Clav Harmond Vib Chime Celesta Accord Voice															

  
  
**JX-03**

DCO-1			DCO-2			VCF			VCA		LFO		Envelope		
Range	Waveform	Freq Mod	Range	Waveform	Freq Mod	LFO	Source Mix	HPF	ENV Mod	Level	Waveform	Delay Time	Attack	Decay	
32 12 8 4 2	0 1 2 3 4 5 6 7 8 9 10	0 10	32 12 8 4 2	0 1 2 3 4 5 6 7 8 9 10	0 10	0 10	DCO1 DCO2	0 10	0 10	0 10	0 10	0 10	0 10	0 10	
Waveform	Waveform	Cross Mod	Waveform	Waveform	Cross Mod	ENV	Cutoff Freq	Resonance			Waveform	Rate	Sustain	Release	
0 1 2 3 4 5 6 7 8 9 10	0 1 2 3 4 5 6 7 8 9 10	0 10	0 1 2 3 4 5 6 7 8 9 10	0 1 2 3 4 5 6 7 8 9 10	0 10	0 10	0 10	0 10			0 10	0 10	0 10	0 10	
Freq Mod LFO ENV	Freq Mod LFO ENV	Freq Mod LFO ENV	LFO Mod	Pitch Follow											
ON OFF	ON OFF	ON OFF	0 10	0 10	100%										
A B C 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16															
Violin Flute Oboe S.Whole S.Brass1 S.Brass2 D.Str J.Funk FlFlow F.Pitch S.Wah S.Sweep F.Clav Pulsar Planet Jet															
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