Series Circuits

JX-3P MIDI Upgrade Kit

User Manual

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Website: http://seriescircuits.com

Email: oliver@seriescircuits.com

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Introduction

Thank you for purchasing the Series Circuits JX-3P MIDI Upgrade Kit, this manual explains how to use the kit in your Roland JX-3P.

If you are looking for information on how to install the kit into your JX-3P, please refer to the separately available installation manual (see http://seriescircuits.com).

Features

The JX-3P MIDI Upgrade Kit adds the following new features to your JX-3P:

- Real-time control over all JX-3P parameters with standard MIDI CC messages (from a sequencer or MIDI controller)
- Loading new patches into the JX-3P via MIDI (CC)
- Selectable MIDI receive channel (1-3)
- Velocity sensitivity (via MIDI-input, not the keyboard)

Additional features for owners of a PG-200 (or DT-200) programmer:

- Simultaneous control over the JX-3P via MIDI input and programmer
- Transmission of MIDI CC messages from programmer, for recording in sequencer, or controlling other MIDI devices

Please note

- This kit only works with the JX-3P (not the MKS-30)
- This kit does not change the sound of your JX-3P, it only adds new ways of controlling it

Disclaimer

Series Circuits cannot be held responsible for, but not limited to, any personal injury, injury to other people, damage, or loss of data, caused during installation or the use of the JX-3P MIDI Upgrade Kit!

Installing and using the JX-3P MIDI Upgrade Kit means that you accept and understand these terms.

Chapter 1. MIDI Channel select

After installation of the Series Circuits JX-3P MIDI Upgrade Kit, the memory protect function will be always off. The function of the PG-200 / MIDI switch on the backside will also have changed, and this switch now serves as a MIDI channel selection switch.

Switch Position	MIDI Channel
PG-200	1
PG-200 Protect	2
MIDI	3

The expanded JX-3P selects its (new) MIDI channel at power up. Changing the position of the switch will therefore not immediately affect the MIDI channel but come into effect once the power has been turned off and back on.

Chapter 2. Velocity sensitive mode

To get into velocity sensitive mode, hold down '7' while power up the JX-3P. The keyboard and sequencer will be disabled in this mode. The JX-3P will now receive MIDI velocity values.

Chapter 3. Sending and receiving parameters

With the JX-3P MIDI Upgrade Kit, you can now control the instruments' parameters with MIDI CC messages. Since this approach is generic to any MIDI-CC capable instrument, this manual will not cover the details of how to set this up. The mapping of MIDI CC numbers to the parameters of your expanded JX-3P can be found in the tables below.

Chapter 4. Patch loading and storage

With the JX-3P MIDI Upgrade Kit installed, all parameters of the JX-3P sound engine are now under MIDI CC control. Because of this, you can now load new patches into your JX-3P from an external device (e.g. a computer), or store patches you made on the JX-3P externally. This works on a per-patch basis via the JX-3Ps edit buffer.

Loading a patch from your computer into JX-3P

- You need a computer program capable of transmitting MIDI CC data. Most DAWs (Cubase, ProTools, Logic) can, but there are also dedicated editors for the JX-3P that can transmit MIDI CCs, such as the JOX'3P editor.
- In this computer program you can load up a file containing all MIDI CCs for a specific JX-3P patch. This could be a patch that you saved previously, or one that you received via the Internet.

- Transmit this data to your JX-3P with the program (make sure MIDI channel on PC matches MIDI channel on JX-3P).
- The patch is now loaded into the 'edit buffer' of the JX-3P. That means you can play it already, but if you turn off the power you lose the patch. Using the saving function of the JX-3P itself you can store it in the JX-3Ps internal memory for later use (see JX-3P manual if you don't know how).

Storing a patch from you JX-3P in your computer

- Again, you need a program capable of working with MIDI CC data, in this case receiving it.
- Set the program up to receive the incoming stream of MIDI CC data. In a DAW this means pressing 'record' (make sure MIDI channel on PC and JX-3P match).
- Press the 'manual' button on your PG-200 or DT-200 programmer. This button transmits all CC's for the current patch.
- Your computer should now have received the data, and you can save it to file.

Chapter 5. Troubleshooting and FAQ

Q: After installing the JX-3P MIDI Upgrade Kit, is it possible to use SysEx to control the JX-3P?

A: No, the JX-3P MIDI Upgrade Kit uses standard MIDI CC messages rather than SysEx. It is much easier to achieve real-time control with MIDI CCs (compared to SysEx), and many MIDI controllers and sequencers interface more reliably via CCs than via SysEx.

Q: Why is the LFO Delay not working when I play a note through MIDI?

A: This bug is a classic in the original JX-3P firmware, and since the JX-3P MIDI Upgrade Kit acts as a supplement to this firmware, this original bug cannot be corrected. There is nothing I can do about it, I'm afraid. Fortunately, the bug was fixed in velocity mode. But in normal mode, it is still there.

Q: I know that parameters on the PG-200 work at a resolution of 8-bit. Since MIDI usually only utilizes 7 bits, will the resolution of my PG-200 be reduced after installation of the JX-3P MIDI Upgrade Kit?

A: No, the PG200 still sends parameters into the JX-3P with its original 8-bit resolution. Only parameters sent from the PG-200 to the MIDI-OUT, or parameters received from the MIDI-IN are in 7-bit resolution.

Q: Help! I have installed the kit and my JX-3P randomly hangs, and after that the LED's are flickering and there is no sound.

A: This problem is typically caused by an incorrect installation of parts of the MIDI Upgrade Kit. Please refer to the installation manual (FAQ section) for possible solutions.

Chapter 6 – MIDI Specifications

Message Types

> ### Note event

Note off

Status	Second	Third
8nH	kkH	vvH
9nH	kkH	00H

  kkH: Note number 24H – 60H (36 – 96) C2 – C7
  vvH: Don't care

Note on

Status	Second	Third
9nH	kkH	vvH

  kkH: Note number 24H – 60H (36 – 96) C2 – C7
  vvH: Velocity 1H – 7FH (1 – 127). (Only in velocity mode.)

> ### Continuous Controller

Hold 1

Status	Second	Third
BnH	40H	vvH

  vvH: Hold Pedal Off 0H – 3FH (0 – 63)
     Hold Pedal On 40H – 7FH (64 – 127)

Synthesizer parameter

Status	Second	Third
BnH	ppH	vvH

  ppH: Parameter controller number *
  vvH: Value 0H – 7FH (0 – 127)

  * see "Parameter address table" for detailed information.

> ### Program change

Status	Second
CnH	ppH

  ppH: Program number 0H – 40H (0 – 64)

> ### Pitch bender

Status	Second	Third
EnH	mmH	nnH

  mmH: 0H – 7FH (0 – 127) Least significant byte
  nnH: 0H – 7FH (0 – 127) Most significant byte

Message Types

Parameters

CC number	Description	Value – Dec (Hex)
12 (0CH)	Fine Tune	0 – 127 (00H – 7FH)
13 (0DH)	Tune	0 – 127 (00H – 7FH)
14 (0EH)	DCO Envelope Mod.	0 – 127 (00H – 7FH)
15 (0FH)	DCO LFO Mod.	0 – 127 (00H – 7FH)
16 (10H)	Source Mix	0 – 127 (00H – 7FH)
17 (11H)	High Pass	0 – 127 (00H – 7FH)
18 (12H)	Resonance	0 – 127 (00H – 7FH)
19 (13H)	Cutoff Frequency	0 – 127 (00H – 7FH)
20 (14H)	VCF Envelope Mod.	0 – 127 (00H – 7FH)
21 (15H)	VCF LFO Mod.	0 – 127 (00H – 7FH)
22 (16H)	Pitch Follow	0 – 127 (00H – 7FH)
23 (17H)	VCA Level	0 – 127 (00H – 7FH)
24 (18H)	LFO Rate	0 – 127 (00H – 7FH)
25 (19H)	LFO Delay	0 – 127 (00H – 7FH)
26 (1AH)	Attack	0 – 127 (00H – 7FH)
27 (1BH)	Decay	0 – 127 (00H – 7FH)
28 (1CH)	Sustain	0 – 127 (00H – 7FH)
29 (1DH)	Release	0 – 127 (00H – 7FH)

Switches

CC number	Description	Value – Dec (Hex)
72 (48H)	DCO-1 Range	0 (00H) 16', 32 (20H) 8', 64 (40H) 4'
73 (49H)	DCO-1 Wave	0 (00H) ramp, 32 (20H) pulse, 64 (40H) square
74 (4AH)	DCO-2 Range	0 (00H) 16', 32 (20H) 8', 64 (40H) 4'
75 (4BH)	DCO-2 Wave	0 (00H) ramp, 32 (20H) pulse, 64 (40H) square, 96 (60H) noise
76 (4CH)	DCO-2 Cross Mod.	0 (00H) off, 32 (20H) sync, 64 (40H) metal
77 (4DH)	VCF Envelope Polarity	0 (00H) inverted, 64 (40H) normal
78 (4EH)	VCA Mode	0 (00H) gate, 64 (40H) envelope
79 (4FH)	DCO-2 Envelope Mod.	0 (00H) off, 64 (40H) on
80 (50H)	DCO-2 LFO Mod.	0 (00H) off, 64 (40H) on
81 (51H)	DCO-1 Envelope Mod.	0 (00H) off, 64 (40H) on
82 (52H)	DCO-1 LFO Mod.	0 (00H) off, 64 (40H) on
83 (53H)	LFO Wave	0 (00H) triangle, 32 (20H) square, 64 (40H) random, 96 (60H) fast random
84 (54H)	DCO Envelope Polarity	0 (00H) inverted, 64 (40H) normal
85 (55H)	Chorus	0 (00H) chorus off, 64 (40H) chorus on

MIDI Implementation Chart

Function		Transmitted	Received	Comments
Basic Channel		1, 2, 3	1, 2, 3, OMNI	User defined
Note Number		36 – 96	36 – 96	C2 – C7. Received note numbers outside the range will be transposed.
Velocity	Note ON Note OFF	O O	O O	A preset velocity of 64 is transmitted. Velocity values are only received in the velocity mode.
Pitch Bend		O	O	
Control Change		Parameters: 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27 Hold: 64 Switches: 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85	Parameters: 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27 Hold: 64 Switches: 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85	
Program Change		O	O	
System Exclusive		X	X	
System Common		X	X	
System Real Time		X	X	
Aux Message	All Sound Off Reset Controllers Local ON/OFF All Notes Off Active Sense Reset	X X X O X X	X X X O X X	