

JX-3P MIDI Expansion Kit

User manual



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Introduction

Thank you for choosing the River JX-3P MIDI Expansion Kit. This manual explains how to use the kit in your 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 (available through: <http://www.riversynths.com>).

Features

When installed, the JX-3P MIDI expansion 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

River Creative Technology 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 Expansion kit!

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

Chapter 1. MIDI Channel select

After installation of the River JX-3P MIDI expansion kit, the memory protect function will be always off. The function of the PG200 / MIDI switch on the backside will also have changed, and this switch now serves as a MIDI channel selection switch.

Switch position	MIDI channel
PG200	1
PG200 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.

After powering up the expanded JX-3P, the OMNI mode is off by default. You can turn it on by sending a MIDI controller 125 message to the JX-3P. After that the JX-3P will listen to all MIDI channels. OMNI mode can be turned off by sending a MIDI controller 124 message to the JX-3P. This setting is not maintained when the JX-3P is turned off.

Chapter 2. Velocity sensitive mode

To get into the 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 expansion 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 expansion 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 Expansion kit, is it possible to use Sysex to control the JX-3P?

A: No, the JX-3P MIDI Expansion 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 expansion 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 PG200 be reduced after installation of the JX-3P MIDI Expansion 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 expansion kit. Please refer to the installation manual (FAQ section) for possible solutions.

Chapter 5. MIDI Specifications

MESSAGE TYPES

➤ **Note event**

Note off

<u>Status</u>	<u>Second</u>	<u>Third</u>
8nH	kkH	vvH
9nH	kkH	00H

kkH: Note number 24H – 60H (36 – 96) C2 – C7

vvH: Don't care

Note on

<u>Status</u>	<u>Second</u>	<u>Third</u>
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

<u>Status</u>	<u>Second</u>	<u>Third</u>
BnH	40H	vvH

vvH: Hold Pedal Off 0H – 3FH (0 – 63)

Hold Pedal On 40H – 7FH (64 – 127)

Synthesizer parameter

<u>Status</u>	<u>Second</u>	<u>Third</u>
BnH	ppH	vvH

ppH: Parameter controller number *

vvH: Value 0H – 7FH (0 – 127)

* see "Parameter address table" for detailed information.

➤ **Program change**

<u>Status</u>	<u>Second</u>
CnH	ppH

ppH: Program number 0H – 40H (0 – 64)

➤ **Pitch bender**

<u>Status</u>	<u>Second</u>	<u>Third</u>
EnH	mmH	nnH

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

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

PARAMETER ADDRESS TABLE

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	0 0	0 0	A preset velocity of 64 is transmitted. Velocity values are only received in the velocity mode.
Pitch Bend	0	0	
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	0	0	
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 0 X X	X X X 0 X X	