

RIVERA®

FS8M

External MIDI Interface



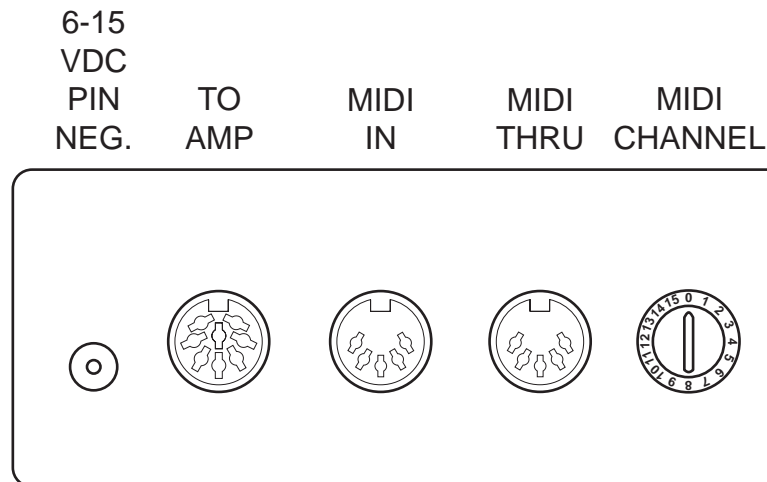
OWNERS MANUAL

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INTRODUCTION

The FS8M External MIDI interface replaces the FS8 footswitch and allows MIDI control of the amplifier. You cannot use the footswitch and the interface at the same time.

CONNECTORS ON THE PANEL



6-15 VDC PIN NEG.

The interface requires DC power to operate. This power can be obtained from a wall-wart style power supply, or from the 12VDC POWER OUT connector on the Rivera Head Master.

Depending on which model you ordered, you should have received a power supply or a cable.

If it ever becomes necessary to replace the power supply, here are a few guidelines:

Because it is internally regulated and does not draw much current, the interface is very tolerant of voltage. Any DC voltage from about 6 to 15V will work. The size and polarity of the connector was deliberately chosen to be compatible with commonly available stomp box power supplies of the wall-wart variety. Supplies made by Roland or Korg should work fine.

WARNING!

There is no agreement among power supply manufacturers on the polarity of connectors. You **MUST** select a power supply with the center contact **NEGATIVE** and the outer barrel **POSITIVE** or the unit will not work! Also, you must use a DC supply. An AC supply **WILL NOT** work! **DO NOT** assume that just because the connector fits, it will work. Read the label on the power supply, and if it is not labeled, use a voltmeter.

TO AMP

Use a cable with 8 pin male DIN connectors on each end. You should have received a cable with your unit. Be careful with this cable. It **IS NOT** commonly available in most music or electronic stores.

If it ever becomes necessary to replace it, you can order one from Rivera or make it yourself. It does not require shielded cable, and the pins are wired straight through. (1-1, 2-2 etc.)

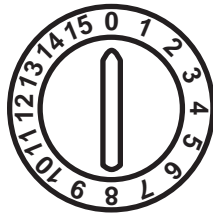
MIDI IN

Standard MIDI input. Use this to connect any standard MIDI controller.

MIDI THRU

Standard MIDI thru, passes data from the MIDI IN to additional MIDI gear.

The Midi Channel Selector Switch



The Interface uses a rotary switch to select the MIDI channel. It is a high quality switch, and is much easier to use than the DIP switches used by some manufacturers.

Unfortunately, it is numbered in a way that can create confusion.

As shown on the diagram, the switch is numbered from 0-15. Most MIDI devices define the MIDI channels as 1-16

So, it is necessary to add 1 to the number on the switch to get the MIDI channel

SWITCH POSITION 5 = MIDI CHANNEL 6

So, why is the switch labeled wrong?

In the world of electronics and programming, it is not labeled wrong.

It selects one of 16 four digit binary numbers, 0-15 is 0000-1111 in binary.

It is labeled correctly for what it does.

Internally, MIDI gear uses channels 0-15.

Long ago, MIDI manufacturers decided that musicians would be uncomfortable. with channel zero, so they decided to add a 1 to the actual value.

Counting From Zero

As you may or may not know, computer programmers start counting from zero instead of one.

Most people would count a list of items like this:

One, two, three, I have three items.

A programmer would do the same if he was counting the items, but if he was using numbers as names he would name the first item "item number zero," the second would

be called "item number one" and the third "item number two." Programmers call this process enumerating the items.

Why do programmers do this?

Here is an example:

If you are standing in front of your house, how far do you have to walk to get to your neighbor? You have to walk ONE house unit away.

How far do you have to walk to get to your OWN house? Since you are already standing in front of your house, you have to walk ZERO house units away.

Zero is the starting point, you move from zero some number of units.

Programmers frequently deal with lists of things. The same logic applies to these lists. If you are looking at the first item in a list, how far do you have to move to look at the second? You have to move ONE unit.

How far do you have to move to look at the first item? Since you are already looking at it, you move ZERO.

Another way of looking at it is to ask the question, "How many single digit numbers are there?" There are 10. They are: 0, 1, 2, 3, 4, 5, 6, 7, 8 and 9. You don't get to the number 10 until you add another digit. Programmers can't afford to be wasteful, they use ALL of the digits, especially zero.

This is also the root of the controversy over the year 2000. If you start counting at zero, 2000 is the millennium.

MIDI is a computer communication protocol, and internally, it starts from zero. MIDI Channels are actually numbered 0-15 and Program Changes are numbered 0-127.

But, since most people are not comfortable counting from zero, MOST MIDI instruments add an extra one and define MIDI Channels 1-16 and Program Changes 1-128. NOT ALL MIDI instruments do this!

We debated long and hard over which philosophy to adopt. In the end we chose to follow the de-facto standard and number from one. We believed that this decision would result in less confusion and fewer problems.

One problem we could not avoid was the numbering of the MIDI Channel Selector switch. The manufacturer of the switch numbered it from 0-15. These are in fact the actual numbers the switch uses. We had no control over the labeling.

The unfortunate result of this mismatch is that you have to set the MIDI Channel Selector Switch to 0 to select MIDI Channel 1.

MIDI Control

Overview

The MIDI interface takes the place of the FS8 pedal, and controls all functions that were originally controlled by the pedal. No more. No less. In other words, the interface does not provide any additional control beyond that which the FS8 provides.

The interface responds to MIDI Program Change Commands only.

It can be controlled by the Rivera Head Master foot-operated MIDI controller or by any standard MIDI controller.

Combinations And Separate Functions

Two types of commands are provided - Combinations and Separate Functions.

Combinations

When the amp receives a Combination Command, ALL MIDI controllable values are changed.

For example Program Change 43 selects:

- Channel 2
- Boost 1 OFF
- Boost 2 ON
- Boost 3 OFF
- Effects Loop OFF

Separate Functions

Program Change commands for separate functions have also been defined. Separate functions change ONE value only, leaving all others unchanged.

Knucklehead Reverb Compatibility

The program change commands were chosen to be as identical as possible to the commands used by the Knucklehead Reverb. The only difference is that the FS8 does not control Reverb (because the Bonehead has no reverb). This design explains why there is a column marked UNUSED on the chart.

Contact Me

My name is Mike Peterson
My email address is mikep@rivera.com

I designed the FS8M and wrote the manual.
If you have any questions, comments, praise or criticism, please let me know.

BONEHEAD MIDI PROGRAM CHANGES COMBINATIONS

CHANNEL	BOOST1	BOOST2	BOOST3	UNUSED	FX	
1	OFF	OFF	OFF	OFF	OFF	1
1	OFF	OFF	OFF	OFF	ON	2
1	OFF	OFF	OFF	ON	OFF	3
1	OFF	OFF	OFF	ON	ON	4
1	OFF	OFF	ON	OFF	OFF	5
1	OFF	OFF	ON	OFF	ON	6
1	OFF	OFF	ON	ON	OFF	7
1	OFF	OFF	ON	ON	ON	8
1	OFF	ON	OFF	OFF	OFF	9
1	OFF	ON	OFF	OFF	ON	10
1	OFF	ON	OFF	ON	OFF	11
1	OFF	ON	OFF	ON	ON	12
1	OFF	ON	ON	OFF	OFF	13
1	OFF	ON	ON	OFF	ON	14
1	OFF	ON	ON	ON	OFF	15
1	OFF	ON	ON	ON	ON	16
1	ON	OFF	OFF	OFF	OFF	17
1	ON	OFF	OFF	OFF	ON	18
1	ON	OFF	OFF	ON	OFF	19
1	ON	OFF	OFF	ON	ON	20
1	ON	OFF	ON	OFF	OFF	21
1	ON	OFF	ON	OFF	ON	22
1	ON	OFF	ON	ON	OFF	23
1	ON	OFF	ON	ON	ON	24
1	ON	ON	OFF	OFF	OFF	25
1	ON	ON	OFF	OFF	ON	26
1	ON	ON	OFF	ON	OFF	26
1	ON	ON	OFF	ON	ON	28
1	ON	ON	ON	OFF	OFF	29
1	ON	ON	ON	OFF	ON	30
1	ON	ON	ON	ON	OFF	31
1	ON	ON	ON	ON	ON	32

BONEHEAD MIDI PROGRAM CHANGES COMBINATIONS

CHANNEL	BOOST1	BOOST2	BOOST3	UNUSED	FX	
2	OFF	OFF	OFF	OFF	OFF	33
2	OFF	OFF	OFF	OFF	ON	34
2	OFF	OFF	OFF	ON	OFF	35
2	OFF	OFF	OFF	ON	ON	36
2	OFF	OFF	ON	OFF	OFF	37
2	OFF	OFF	ON	OFF	ON	38
2	OFF	OFF	ON	ON	OFF	39
2	OFF	OFF	ON	ON	ON	40
2	OFF	ON	OFF	OFF	OFF	41
2	OFF	ON	OFF	OFF	ON	42
2	OFF	ON	OFF	ON	OFF	43
2	OFF	ON	OFF	ON	ON	44
2	OFF	ON	ON	OFF	OFF	45
2	OFF	ON	ON	OFF	ON	46
2	OFF	ON	ON	ON	OFF	47
2	OFF	ON	ON	ON	ON	48
2	ON	OFF	OFF	OFF	OFF	49
2	ON	OFF	OFF	OFF	ON	50
2	ON	OFF	OFF	ON	OFF	51
2	ON	OFF	OFF	ON	ON	52
2	ON	OFF	ON	OFF	OFF	53
2	ON	OFF	ON	OFF	ON	54
2	ON	OFF	ON	ON	OFF	55
2	ON	OFF	ON	ON	ON	56
2	ON	ON	OFF	OFF	OFF	57
2	ON	ON	OFF	OFF	ON	58
2	ON	ON	OFF	ON	OFF	59
2	ON	ON	OFF	ON	ON	60
2	ON	ON	ON	OFF	OFF	61
2	ON	ON	ON	OFF	ON	62
2	ON	ON	ON	ON	OFF	63
2	ON	ON	ON	ON	ON	64

BONEHEAD MIDI PROGRAM CHANGES COMBINATIONS

CHANNEL	BOOST1	BOOST2	BOOST3	UNUSED	FX	
3	OFF	OFF	OFF	OFF	OFF	65
3	OFF	OFF	OFF	OFF	ON	66
3	OFF	OFF	OFF	ON	OFF	67
3	OFF	OFF	OFF	ON	ON	68
3	OFF	OFF	ON	OFF	OFF	69
3	OFF	OFF	ON	OFF	ON	70
3	OFF	OFF	ON	ON	OFF	71
3	OFF	OFF	ON	ON	ON	72
3	OFF	ON	OFF	OFF	OFF	73
3	OFF	ON	OFF	OFF	ON	74
3	OFF	ON	OFF	ON	OFF	75
3	OFF	ON	OFF	ON	ON	76
3	OFF	ON	ON	OFF	OFF	77
3	OFF	ON	ON	OFF	ON	78
3	OFF	ON	ON	ON	OFF	79
3	OFF	ON	ON	ON	ON	80
3	ON	OFF	OFF	OFF	OFF	81
3	ON	OFF	OFF	OFF	ON	82
3	ON	OFF	OFF	ON	OFF	83
3	ON	OFF	OFF	ON	ON	84
3	ON	OFF	ON	OFF	OFF	85
3	ON	OFF	ON	OFF	ON	86
3	ON	OFF	ON	ON	OFF	87
3	ON	OFF	ON	ON	ON	88
3	ON	ON	OFF	OFF	OFF	89
3	ON	ON	OFF	OFF	ON	90
3	ON	ON	OFF	ON	OFF	91
3	ON	ON	OFF	ON	ON	92
3	ON	ON	ON	OFF	OFF	93
3	ON	ON	ON	OFF	ON	94
3	ON	ON	ON	ON	OFF	95
3	ON	ON	ON	ON	ON	96

SEPARATE FUNCTIONS

CH 1	97
CH 2	98
CH 3	99
TOGGLE BOOST 1	100
TOGGLE BOOST 2	101
TOGGLE BOOST 3	102
UNUSED	103
TOGGLE FX	104
TOGGLE ACTIVE BOOST	105