MIDI Solutions

Router

OPERATING INSTRUCTIONS

MIDI Solutions Router
Operating Instructions M201

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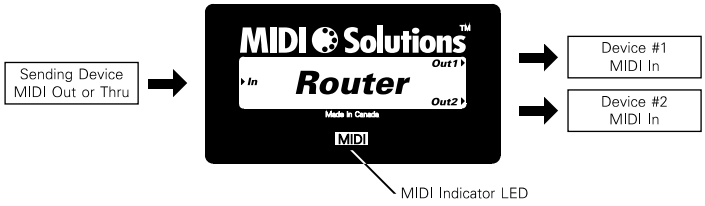
INTRODUCTION

Congratulations on your purchase of the MIDI Solutions Router. The MIDI Solutions Router has the capability of routing selected MIDI messages to either of two MIDI outputs. Routing capabilities include Note, Polyphonic Key Pressure, Control Change, Program Change, Channel Pressure, Pitch Bend, and System messages, on all or selected MIDI channels. Up to 10 settings may be stored by the Router. Programmed settings are retained in non-volatile memory until cleared or overwritten with new settings. The Router is MIDI-powered and requires no batteries or power supply to operate.



CONNECTIONS

To program the Router, connect the **In** of the Router to the MIDI Out of the device that is sending the programming commands. **Out1** and **Out2** can be left disconnected during programming. Once the Router is programmed, it can be inserted anywhere in your MIDI setup. Connect the **In** of the Router to the MIDI Out or Thru of the sending MIDI device. Connect **Out1** of the Router to the MIDI In of the first receiving MIDI device. Connect **Out2** of the Router to the MIDI In of the second receiving MIDI device. It is recommended that the number of MIDI Solutions products chained together between any two MIDI devices be limited to five.

OPERATION

The Router's MIDI Indicator LED will light as soon as the sending device is turned on, and flashes whenever MIDI data passes through the unit. MIDI messages are routed according to the Router's programmed settings as described on the following pages. All unrouted messages are sent to both outputs.

PROGRAMMING

The routing functions of the Router are programmed by sending it MIDI System Exclusive programming messages from a device capable of creating System Exclusive messages, such as a computer-based sequencer. These messages are described in detail on the following pages. For decimal to hexadecimal conversions, see the chart on page 25. Upon receipt of a System Exclusive programming message, the MIDI indicator LED flashes rapidly for about one second to indicate that the setting has been stored. Settings are retained in non-volatile memory until cleared or overwritten with new settings.

Router Setting Priority

The Router will accept up to 10 settings. If more than 10 settings are sent to the Router, the oldest setting is discarded to make room for the most recent setting. MIDI Solutions Router gives the most recent setting priority over all previous settings. For example, if the Router is first programmed to route all channel messages *on all channels* to Out2, and then programmed to route all channel messages *on channel 1* to Out1, the result is that incoming channel messages on channels 2 through 16 are sent to Out2, and incoming channel messages on channel 1 are sent to Out1. It is possible for the Router to ignore priority (see next page) .

Clear Settings

To clear all of the Router's settings, send it the following System Exclusive programming message:

F0 00 00 50 01 00 F7 (all values in Hexadecimal)

It is advisable to send the Clear Settings command to the Router prior to programming it to insure that all previous settings are cleared.

To set up the Router to process all of its settings, regardless of their priority, send it the following command in place of the above Clear Settings command:

F0 00 00 50 01 00 01 F7 (all values in Hexadecimal)

Dump Settings

To dump all of the Router's current settings, send it the following System Exclusive message:

F0 00 00 50 01 10 F7 (all values in Hexadecimal)

Upon receipt of this command the Router will dump its current settings to both MIDI Outs.

Route Setting

To program the Router to route an incoming MIDI message to a selected output, send it the following Sysex message:

F0 00 00 50 01 02 aa bb xx yy cc dd F7

aa = input data type (see p. 16)
bb = input MIDI channel (see p. 19)
xx yy = range of input values to route (see p. 16)
cc = output MIDI channel (see p. 19)
dd = output select: 00: neither output
01: Out1
02: Out2
03: both outputs

Input MIDI Data Type (aa)

00: Note range[1]
01: Poly Pressure range[1]
02: Control Change range[1]
03: Prog. Change range[1]
04: Chan. Pressure range[1]
05: Pitch Bend range (msb)[1]
06: Channel Message range[2]
07: System Message range[3] (**bb, cc** ignored)
08: Keyboard range[1, 4]

[1]range **xx yy** selected from 00 to 7F
[2]range **xx yy** selected from 00 to 05 in this table.
[3]range **xx yy** selected from the System Message table (p. 17).
[4]When a keyboard range is selected, channel messages are sent to both the selected and original outputs. This allows messages such as Sustain and Pitch Bend to affect notes in each range.

System Message Table (used when **aa** = 07)

00: System Exclusive
01: Song Position Pointer
02: Song Select
03: MIDI Time Code
04: Timing Clock
05: Start
06: Continue
07: Stop

MIDI channels (**bb** and **cc**) are ignored for System messages.

Example: To program the Router to route all System Realtime messages to Out2, set **aa** = 07 for *System Message range,* set **xx** = 04 and **yy** = 07 to select the range of messages from *Timing Clock* to *Stop,* set **bb** = **cc** = 00 (channels ignored for System messages), and set **dd** = 02 for Out2. This results in the following Sys. Ex. command:

F0 00 00 50 01 02 **07 00 04 07 00 02** F7

MIDI CHANNEL TABLE

cc specifies the MIDI channels on which the message is mapped. **cc** must be set according to the following table:

Chan.	cc	Chan.	cc	Chan.	cc
1	00	7	06	13	0C
2	01	8	07	14	0D
3	02	9	08	15	0E
4	03	10	09	16	0F
5	04	11	0A	ALL	7F
6	05	12	0B		

MIDI CONTROL CHANGE TABLE

Decimal	Hex	Control Function
0	00H	Bank Select
1	01H	Modulation wheel or lever
2	02H	Breath Controller
3	03H	Undefined
4	04H	Foot controller
5	05H	Portamento time
6	06H	Data entry MSB
7	07H	Main volume
8	08H	Balance

9	09H	Undefined
10	0AH	Pan
11	0BH	Expression Controller
12	0CH	Effect Control 1
13	0DH	Effect Control 2
14-15	0E-0FH	Undefined
16-19	10-13H	General Purpose Controllers (#'s 1-4)
20-31	14-1FH	Undefined
32-63	20-3FH	LSB values for 0-31
64	40H	Damper pedal (sustain)
65	41H	Portamento On/Off
66	42H	Sostenuto
67	43H	Soft pedal

68	44H	Legato Fsw (vv=00-3F: Normal, 40-7F: Legato)
69	45H	Hold 2
70	46H	Sound Controller 1 (default: Sound Variation)
71	47H	Sound Controller 2 (default: Timbre/Harmonic Content)
72	48H	Sound Controller 3 (default: Release Time)
73	49H	Sound Controller 4 (default: Attack Time)
74	4AH	Sound Controller 5 (default: Brightness)
75-79	4B-4FH	Sound Controllers 6-10 (no defaults)
80-83	50-53H	General Purpose Controllers (#'s 5-8)
84	54H	Portamento Control
85-90	55-5AH	Undefined
91	5BH	Effects 1 Depth (formerly External Effects Depth)
92	5CH	Effects 2 Depth (formerly Tremolo Depth)

93	5DH	Effects 3 Depth (formerly Chorus Depth)
94	5EH	Effects 4 Depth (formerly Celeste (Detune) Depth)
95	5FH	Effects 5 Depth (formerly Phaser Depth)
96	60H	Data increment
97	61H	Data decrement
98	62H	Non-Registered Parameter Number LSB
99	63H	Non-Registered Parameter Number MSB
100	64H	Registered Parameter Number LSB
101	65H	Registered Parameter Number MSB
102-119	66-77H	Undefined
120-127	78-7FH	Reserved for Channel Mode Messages

HEXADECIMAL CONVERSION TABLE

Dec/Hex															
0	00	16	10	32	20	48	30	64	40	80	50	96	60	112	70
1	01	17	11	33	21	49	31	65	41	81	51	97	61	113	71
2	02	18	12	34	22	50	32	66	42	82	52	98	62	114	72
3	03	19	13	35	23	51	33	67	43	83	53	99	63	115	73
4	04	20	14	36	24	52	34	68	44	84	54	100	64	116	74
5	05	21	15	37	25	53	35	69	45	85	55	101	65	117	75
6	06	22	16	38	26	54	36	70	46	86	56	102	66	118	76
7	07	23	17	39	27	55	37	71	47	87	57	103	67	119	77
8	08	24	18	40	28	56	38	72	48	88	58	104	68	120	78
9	09	25	19	41	29	57	39	73	49	89	59	105	69	121	79
10	0A	26	1A	42	2A	58	3A	74	4A	90	5A	106	6A	122	7A
11	0B	27	1B	43	2B	59	3B	75	4B	91	5B	107	6B	123	7B
12	0C	28	1C	44	2C	60	3C	76	4C	92	5C	108	6C	124	7C
13	0D	29	1D	45	2D	61	3D	77	4D	93	5D	109	6D	125	7D
14	0E	30	1E	46	2E	62	3E	78	4E	94	5E	110	6E	126	7E
15	0F	31	1F	47	2F	63	3F	79	4F	95	5F	111	6F	127	7F

WARRANTY

MIDI Solutions Inc. warrants this product to be free from defects in material and workmanship for a period of one (1) year from date of purchase. This warranty is void if the product has been damaged by accident, misuse, alteration, unauthorized repairs or other causes not arising out of defects in material or workmanship. Under no circumstances will MIDI Solutions be liable for any loss of profits, benefits, time, interrupted operation, commercial loss, or consequential damages arising out of the use or inability to use the product. MIDI Solutions specifically disclaims any implied warranties of merchantability and fitness for a particular purpose. If the product requires service, a Return Merchandise Authorization (RMA) number must be obtained from MIDI Solutions and the product must be shipped prepaid to a specified Service Center. MIDI Solutions will repair or replace the product at our discretion and will pay return shipping fees. The customer is responsible for any damage or loss sustained during shipment in any direction.