MIDI Solutions

Event Processor Plus

OPERATING INSTRUCTIONS

MIDI Solutions Event Processor Plus Operating Instructions M429-101

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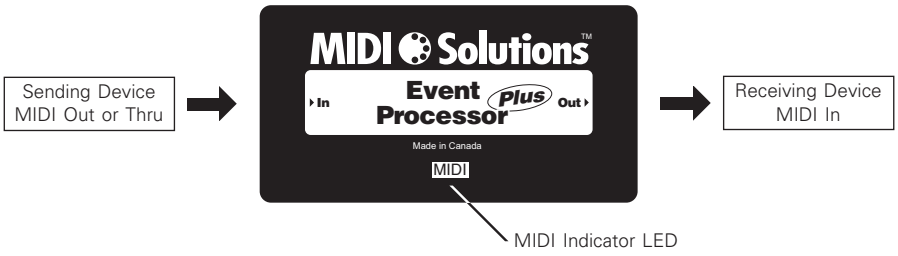
MIDI Solutions Inc.
PO Box 3010
Vancouver, BC Canada
V6B 3X5

www.midisolutions.com

INTRODUCTION

Thank you for purchasing the MIDI Solutions Event Processor Plus.

The MIDI Solutions Event Processor Plus offers 32 settings, each of which can be programmed to perform a different MIDI processing function. The Event Processor Plus is MIDI-powered and requires no batteries or power supply to operate.



CONNECTIONS

To program the Event Processor Plus connect the MIDI Out from your MIDI interface to the MIDI **In** of the Event Processor Plus. The MIDI **Out** can be left disconnected during programming.

Once the Event Processor Plus is programmed, it can be inserted wherever it is required in your MIDI setup. Connect the MIDI Out or Thru of the sending device to the MIDI **In** of the Event Processor Plus, and the MIDI **Out** of the Event Processor Plus to the MIDI In of the receiving MIDI device. It is recommended that the number of MIDI Solutions products powered by a single MIDI Out or Thru be limited to four.

PROGRAMMING

The Event Processor Plus offers 32 settings, each of which can be programmed with a unique MIDI processing function. The Event Processor Plus is programmed by sending it MIDI System Exclusive programming commands from a computer with a MIDI interface. These commands are described in detail on the MIDI Solutions website, however **the Programming Tools software creates these commands automatically** (see www.midisolutions.com/support.htm).

Upon receipt of a programming command, the Event Processor Plus's MIDI indicator LED flashes rapidly for about one second to indicate that the setting has been stored. Settings are retained after power is removed, and the unit can then be inserted wherever it is required in your MIDI setup.

OPERATION

The Event Processor Plus's MIDI Indicator LED will light as soon as the sending device is turned on, and flashes whenever MIDI data passes through the unit. Each MIDI event received is compared with each of the Event Processor Plus's 32 settings, beginning with setting #1. If a MIDI event matches a setting, the event is processed according to that setting. All unprocessed MIDI events are sent unchanged to the MIDI Out.

PROGRAMMING COMMANDS

CLEAR SETTINGS

To clear all of the Event Processor Plus's settings, send it the following System Exclusive command:

- **F0 00 00 50 29 00 F7**

To clear a single setting of the Event Processor Plus, send it the following System Exclusive command:

- **F0 00 00 50 29 00 ss F7**

  ss = setting to be cleared (00 - 1F)

FILTER MIDI EVENT

To program the Event Processor Plus to filter "MIDI Event A", send it the following System Exclusive programming commands:

- **F0 00 00 50 29 01 ss (aa bb cc dd) F7** followed by **"MIDI Event A"**

  All bytes must be in Hexadecimal format (see hexadecimal conversion table at end)

  ss = setting to be programmed (00 - 1F)

  (aa bb cc dd) is optional, specifies value ranges and variables (see description at end of instructions)

  "MIDI Event A" can contain a maximum of 32 bytes

Example

To program setting #3 to filter all Program Change events on MIDI channel 16, send the Event Processor Plus the following programming commands:

F0 00 00 50 29 01 **02 00 02 00 7F** F7

CF 00

MAP MIDI EVENT

To program the Event Processor Plus to map "MIDI Event A" to "MIDI Event B", send it the following System Exclusive programming commands:

- **F0 00 00 50 29 02 mm (aa bb cc dd) F7** followed by **"MIDI Event A"** followed by **"MIDI Event B"**

  All bytes must be in Hexadecimal format (see hexadecimal conversion table at end)

  ss = setting to be programmed (00 - 1F)

  (aa bb cc dd) is optional, specifies value ranges and variables (see description at end of instructions)

  "MIDI Event A" and **"MIDI Event B"** combined can contain a maximum of 32 bytes

Example

To program setting #7 to map the System Exclusive message F0 00 11 22 33 F7 to the System Exclusive message F0 44 55 66 77 F7, send the Event Processor Plus the following commands:

F0 00 00 50 29 02 **06** F7

F0 00 11 22 33 F7

F0 44 55 66 77 F7

TRIGGER MIDI EVENT

To program the Event Processor Plus to trigger "MIDI Event B" when the specified values of "MIDI Event A" move into a selected range, send it the following System Exclusive programming commands:

- **F0 00 00 50 29 03 ss (aa bb cc dd) F7** followed by **"MIDI Event A"** followed by **"MIDI Event B"**

  All bytes must be in Hexadecimal format (see hexadecimal conversion table at end)

  ss = setting to be programmed (00 - 1F)

  (aa bb cc dd) specifies value ranges and variables (see description at end of instructions)

  "MIDI Event A" must contain at least one value range

  "MIDI Event B" cannot contain any value ranges.

  "MIDI Event A" and **"MIDI Event B"** combined can contain a maximum of 32 bytes.

Example

To program setting #1 to trigger a middle C (Note-on #60) of velocity 127 on MIDI channel 1 whenever the value of Control Change #7 on MIDI channel 1 moves above 63 (i.e. into the range 64 - 127), send the Event Processor Plus the following programming commands:

F0 00 00 50 29 03 **00 01 03 40 7F** F7

B0 07 00

90 3C 7F

TURN SETTING ON/OFF

To program the Event Processor Plus to turn a setting on or off when the value of "MIDI Event A" moves into a specified range, send it the following System Exclusive programming commands:

- **F0 00 00 50 29 06 ss tt xx (aa bb cc dd) F7** followed by **"MIDI Event A"**

  All bytes must be in Hexadecimal format (see hexadecimal conversion table at end)

  ss = setting to be programmed (00 - 1F)

  tt is set according to table below

  xx = setting to turn On/Off (00 - 1F)

  (aa bb cc dd) specifies value ranges and variables (see description at end of instructions)

		If value is out of range:		
		Turn setting ON	Turn setting OFF	No action
If value is in range:	Turn setting ON	N/A	**tt** = 06	**tt** = 04
	Turn setting OFF	**tt** = 09	N/A	**tt** = 08
	No action	**tt** = 01	**tt** = 02	N/A

Example

To program setting #1 to turn setting #10 ON when Control Change #64 on MIDI channel 1 is in the range 64 - 127, and turn setting #10 OFF when the value is out of range, send the Event Processor Plus the following programming commands:

F0 00 00 50 29 06 **00 06 09 01 03 40 7F** F7

B0 40 00

DEFINE A SEQUENCE OF MIDI EVENTS

To program the Event Processor Plus to step through a sequence of MIDI events in response to "MIDI Event A", send it the following System Exclusive programming command:

- **F0 00 00 50 29 04 ss ff ee tt jj (aa bb cc dd) F7** followed by **"MIDI Event A"**

  All bytes must be in Hexadecimal format (see hexadecimal conversion table at end)

  ss = setting to be programmed (00 - 1F)

  ff = first setting of sequence (00 - 1F)

  ee = number of events per step (01 - 10)

  tt = total number of steps (02 - 1F)

  jj = jump to step number (01 - 1F), decrement step number (7E), increment step number (7F)

  (aa bb cc dd) is optional, specifies value ranges and variables (see description at end of instructions)

To define MIDI events within the sequence, send the Event Processor Plus the following System Exclusive programming commands:

- **F0 00 00 50 29 05 ss (aa bb cc dd) F7** followed by **"MIDI Event B"**

  All bytes must be in Hexadecimal format (see hexadecimal conversion table at end)

  ss = setting to be programmed (00 - 1F)

  (aa bb cc dd) is optional, specifies value ranges and variables (see description at end of instructions)

  Note: If ranges of values are specified, ensure that those values are also specified in the above programming command for "MIDI Event A". Failure to do so will result in unpredictable data.

  "**Event B**" is the event in the sequence.

Example

To program setting #1 to define a sequence that steps through Program Change 1 on MIDI channel 1 followed by Program Change 2 on MIDI channel 1 in response to Note-on #60 events on MIDI channel 1, send the Event Processor Plus the following programming commands:

F0 00 00 50 29 04 **00 01 01 02 7F 01 03 01 7F** F7

90 3C 40

F0 00 00 50 29 05 **01** F7

C0 00

F0 00 00 50 29 05 **02** F7

C0 01

(in this example, Program Change 1 and 2 are stored in settings #2 and #3 respectively)

STORE INCOMING VALUE IN A VARIABLE

To program the Event Processor Plus to store an incoming value in one of eight variable locations, send it the following System Exclusive programming command:

- **F0 00 00 50 29 07 ss (aa bb xx yy) F7** followed by **"MIDI Event A"**

  All bytes must be in Hexadecimal format (see hexadecimal conversion table at end)

  ss = setting to be programmed (00 - 1F)

  aa is related to the parameters **bb xx yy** as follows:

  aa = 00: **xx yy** specifies the incoming range of the first byte #**bb** of MIDI Event A to be processed

  aa = 01: **xx yy** specifies the incoming range of the second byte #**bb** of MIDI Event A to be processed

  aa = 02: **xx yy** specifies the range the first byte is scaled to before it is stored in Variable **bb** (00 - 07)

  aa = 03: **xx yy** specifies the range the second byte is scaled to before it is stored in Variable **bb** (00 - 07)

Example

To program setting #1 to store volume (CC#7) on MIDI channel 5 in Variable 1, with the incoming range 0 - 127 scaled to the stored range 0 - 100, send the Event Processor Plus the following programming commands:

F0 00 00 50 29 07 **00 01 03 00 7F 03 00 00 64** F7

B4 07 00

VALUE RANGE AND VARIABLE SPECIFICATION

Up to two values of each incoming and outgoing MIDI event can be qualified by parameters **aa bb cc dd** that specify value ranges or variables to be compared to. Incoming MIDI events are processed only if each value falls within the specified value range or matches the value stored in the specified variable. Values of outgoing MIDI events are scaled to the specified outgoing value ranges or assigned to the values stored in the specified variables.

For incoming MIDI events, **aa bb cc dd** is defined as follows:

First value of incoming MIDI event:

aa bb cc dd = 00 **bb cc dd**: Value of byte #**bb** qualified by range **cc dd**

aa bb cc dd = 1**x bb** 00 00: Value of byte #**bb** compared to variable **x** = 0 to 7

(if MIDI event is non-System Exclusive then **bb** = 02)

Second value of incoming MIDI event:

aa bb cc dd = 01 **bb cc dd**: Value of byte #**bb** qualified by range **cc dd**

aa bb cc dd = 1**x bb** 00 00: Value of byte #**bb** compared to variable **x** = 0 to 7

(if MIDI event is non-System Exclusive then **bb** = 03)

For outgoing MIDI events, **aa bb cc dd** is defined as follows:

First value of outgoing MIDI event:

aa bb cc dd = 02 **bb cc dd**: Value of byte #**bb** scaled to outgoing range **cc dd**

aa bb cc dd = 2**x bb** 00 00: Value of byte #**bb** assigned the value stored in variable **x** = 0 to 7

(if MIDI event is non-System Exclusive then **bb** = 02)

Second value of outgoing MIDI event:

aa bb cc dd = 03 **bb cc dd**: Value of byte #**bb** scaled to outgoing range **cc dd**

aa bb cc dd = 2**x bb** 00 00: Value of byte #**bb** assigned the value stored in variable **x** = 0 to 7

(if MIDI event is non-System Exclusive then **bb** = 03)

When multiple parameter sets **aa bb cc dd** are used in a single programming command the sets must appear in the order shown above.

All bytes must be in Hexadecimal format (see hexadecimal conversion table at end)

MIDI CONTROL CHANGE TABLE

Decimal	Hexadecimal	Control Function
0	00	Bank Select
1	01	Modulation wheel or lever
2	02	Breath Controller
3	03	Undefined
4	04	Foot controller
5	05	Portamento time
6	06	Data entry MSB
7	07	Channel Volume
8	08	Balance
9	09	Undefined
10	0A	Pan
11	0B	Expression Controller
12-13	0C-0D	Effect Controls 1-2
14-15	0E-0F	Undefined
16-19	10-13	General Purpose Controllers (#'s 1-4)
20-31	14-1F	Undefined
32-63	20-3F	LSB values for 0-31
64	40	Damper pedal (sustain)
65	41	Portamento On/Off
66	42	Sostenuto
67	43	Soft pedal
68	44	Legato Fsw (vv=00-3F: Normal, 40-7F: Legato)
69	45	Hold 2
70	46	Sound Controller 1 (default: Sound Variation)
71	47	Sound Controller 2 (default: Timbre/Harmonic Content)
72	48	Sound Controller 3 (default: Release Time)
73	49	Sound Controller 4 (default: Attack Time)
74	4A	Sound Controller 5 (default: Brightness)
75-79	4B-4F	Sound Controllers 6-10 (no defaults)
80-83	50-53	General Purpose Controllers (#'s 5-8)
84	54	Portamento Control
85-90	55-5A	Undefined
91	5B	Effects 1 Depth (formerly External Effects Depth)
92	5C	Effects 2 Depth (formerly Tremolo Depth)
93	5D	Effects 3 Depth (formerly Chorus Depth)
94	5E	Effects 4 Depth (formerly Celeste (Detune) Depth)
95	5F	Effects 5 Depth (formerly Phaser Depth)
96,97	60,61	Data increment, Data decrement
98,99	62,63	Non-Registered Parameter Number LSB, MSB
100,101	64,65	Registered Parameter Number LSB, MSB
102-119	66-77	Undefined
120-127	78-7F	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.