MIDI Implementation

Model: SPD-SX PRO
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Version: 1.10

* In this implementation, the order in which the SPD-SX PRO's buttons should be pressed is indicated in the following way. For example, [MENU]-[KIT EDIT2]-[KIT MIDI] means "press the [MENU] button, then press the [<],[>] buttons, then select [KIT EDIT2]-[KIT MIDI] with the cursor, and finally press the [ENTER] button." For details, refer to the SPD-SX PRO owner's manual.
* For button names, refer to the SPD-SX PRO Reference Manual.

1. Receive Data
■Channel Voice Messages

* The following Channel Voice Messages can be received by the channel assigned in [MENU]-[KIT EDIT2]-[KIT MIDI]-CHANNEL tab.
* Not received when [MENU]-[SYSTEM]-[SYSTEM MIDI]-BASIC tab-MIDI Tx/Rx Sw is set to "OFF."

●Note On

| Status | 2nd byte | 3rd byte |
|---|---|---|
| 9nH | kkH | vvH |
| n = MIDI channel number: | | 0H-FH (ch.1-ch.16) |
| kk = note number: | | 00H-7FH (0-127) |
| vv = note on velocity: | | 01H-7FH (1-127) |

* Only the note numbers assigned by the kit are received. For details on note numbers, refer to the SPD-SX PRO Reference Manual.

●Control Change

○Bank Select (Controller number 0, 32)

| Status | 2nd byte | 3rd byte |
|---|---|---|
| BnH | 00H | mmH |
| BnH | 20H | llH |
| n = MIDI channel number: | | 0H-FH (ch.1-ch.16) |
| mm = bank number MSB: | | processed as 00H |
| ll = bank number LSB: | | 00H-01H |

* Bank Select processing will be suspended until a Program Change message is received.
* Not received when [MENU]-[SYSTEM]-[SYSTEM MIDI]-BASIC tab-Program Change Rx is set to "OFF."

The Kits corresponding to each Bank Select are as follows.

| Bank Select MSB / LSB | Program Number | Kit Number |
|---|---|---|
| 000 / 000 | 001-128 | 001-128 |
| 000 / 001 | 001-072 | 129-200 |

○Modulation (Controller number 1)

| Status | 2nd byte | 3rd byte |
|---|---|---|
| BnH | 01H | vvH |
| n = MIDI channel number: | | 0H-FH (ch.1-ch.16) |
| vv = Control value: | | 00H-7FH (0-127:open to closed) |

* For the channels corresponding to pads that can be played using the closed pedal, if HH Pedal CC in [MENU] - [SYSTEM] - [SYSTEM MIDI] - CONTROL tab is set to “MODULATION (1)”, this changes the hi-hat control pedal position.

○Breath Controller (Controller number 2)

| Status | 2nd byte | 3rd byte |
|---|---|---|
| BnH | 02H | vvH |
| n = MIDI channel number: | | 0H-FH (ch.1-ch.16) |
| vv = Control value: | | 00H-7FH (0-127:open to closed) |

* For the channels corresponding to pads that can be played using the closed pedal, if HH Pedal CC in [MENU] - [SYSTEM] - [SYSTEM MIDI] - CONTROL tab is set to “BREATH (2)”, this changes the hi-hat control pedal position.

○Foot Controller (Controller number 4)

| Status | 2nd byte | 3rd byte |
|---|---|---|
| BnH | 04H | vvH |
| n = MIDI channel number: | | 0H-FH (ch.1-ch.16) |
| vv = Control value: | | 00H-7FH (0-127:open to closed) |

* For the channels corresponding to pads that can be played using the closed pedal, if HH Pedal CC in [MENU] - [SYSTEM] - [SYSTEM MIDI] - CONTROL tab is set to “FOOT (4)”, this changes the hi-hat control pedal position.

○Expression (Controller number 11)

When used for the hi-hat control pedal position:

| Status | 2nd byte | 3rd byte |
|---|---|---|
| BnH | 0BH | vvH |
| n = MIDI channel number: | | 0H-FH (ch.1-ch.16) |
| vv = Control value: | | 00H-7FH (0-127:open to closed) |

* For the channels corresponding to pads that can be played using the closed pedal, if HH Pedal CC in [MENU] - [SYSTEM] - [SYSTEM MIDI] - CONTROL tab is set to “EXPPRESSION (11)”, this changes the hi-hat control pedal position.

When used for pad expression:

| Status | 2nd byte | 3rd byte |
|---|---|---|

| | | |
|---|---|---|
| BnH | 0BH | vvH |
| n = MIDI channel number: | | 0H-FH (ch.1-ch.16) |
| vv = Expression: | | 00H-7FH (0-127) |

* Not received when Rx Control Switch in [MENU] - [KIT EDIT2] - [PAD EDIT KNOB/EXP PEDAL] -EXP PEDAL tab is set to “OFF”.

○General Purpose Controller 1 (Controller number 16)

| Status | 2nd byte | 3rd byte |
|---|---|---|
| BnH | 10H | vvH |
| n = MIDI channel number: | | 0H-FH (ch.1-ch.16) |
| vv = Control value: | | 00H-7FH (0-127:open to closed) |

* For the channels corresponding to pads that can be played using the closed pedal, if HH Pedal CC in [MENU] - [SYSTEM] - [SYSTEM MIDI] - CONTROL tab is set to “GENERAL1 (16)”, this changes the hi-hat control pedal position.

○General Purpose Controller 2 (Controller number 17)

| Status | 2nd byte | 3rd byte |
|---|---|---|
| BnH | 11H | vvH |
| n = MIDI channel number: | | 0H-FH (ch.1-ch.16) |
| vv = Control value: | | 00H-7FH (0-127:open to closed) |

* For the channels corresponding to pads that can be played using the closed pedal, if HH Pedal CC in [MENU] - [SYSTEM] - [SYSTEM MIDI] - CONTROL tab is set to “GENERAL2 (17)”, this changes the hi-hat control pedal position.

○General Purpose Controller 3 (Controller number 18)

| Status | 2nd byte | 3rd byte |
|---|---|---|
| BnH | 12H | vvH |
| n = MIDI channel number: | | 0H-FH (ch.1-ch.16) |
| vv = Control value: | | 00H-7FH (0-127:open to closed) |

* For the channels corresponding to pads that can be played using the closed pedal, if HH Pedal CC in [MENU] - [SYSTEM] - [SYSTEM MIDI] - CONTROL tab is set to “GENERAL3 (18)”, this changes the hi-hat control pedal position.

○General Purpose Controller 4 (Controller number 19)

| Status | 2nd byte | 3rd byte |
|---|---|---|
| BnH | 13H | vvH |
| n = MIDI channel number: | | 0H-FH (ch.1-ch.16) |
| vv = Control value: | | 00H-7FH (0-127:open to closed) |

* For the channels corresponding to pads that can be played using the closed pedal, if HH Pedal CC in [MENU] - [SYSTEM] - [SYSTEM MIDI] - CONTROL tab is set to “GENERAL4 (19)”, this changes the hi-hat control pedal position.

○Master Effect Control

| Status | 2nd byte | 3rd byte |
|---|---|---|
| BnH | kkH | vvH |
| n = MIDI channel number: | | 0H-FH (ch.1-ch.16) |
| kk = Control Number: | | 00H-5FH (1-31,33-95) |
| vv = Control value: | | 00H-7FH (0-127) |

* Not received when Master Effect Control CC in [MENU] - [SYSTEM] - [SYSTEM MIDI] - CONTROL tab is set to “OFF”.

●Program Change

| Status | 2nd byte | |
|---|---|---|
| CnH | ppH | |
| n = MIDI channel number: | | 0H-FH (ch.1-ch.16) |
| pp = Program number: | | 00H-7FH (prog.1-prog.128) |

* Not received when [MENU]-[SYSTEM]-[SYSTEM MIDI]-BASIC tab-Program Change Rx is set to "OFF."
* Received only if the channel number matches the Global MIDI Channel of [MENU]-[SYSTEM]-[SYSTEM MIDI]-BASIC tab.
* The sound will change beginning with the next Note-On after the Program Change is received. Voices which were already sounding before the Program Change was received will not be affected.

■Channel Mode Messages

* The following Channel Voice Messages can be received in [MENU]-[KIT EDIT2]-[KIT MIDI]-CHANNEL tab.
* Not received when [MENU]-[SYSTEM]-[SYSTEM MIDI]-BASIC tab-MIDI Tx/Rx Sw is set to "OFF."

●All Sounds Off (Controller number 120)

| Status | 2nd byte | 3rd byte |
|---|---|---|
| BnH | 78H | 00H |
| n = MIDI channel number: | | 0H-FH (ch.1-ch.16) |

* When this message is received, all currently-sounding notes on the corresponding channel will be silenced. However, the status of channel messages will not change.

●Reset All Controllers (Controller number 121)

| Status | 2nd byte | 3rd byte |
|---|---|---|
| BnH | 79H | 00H |
| n = MIDI channel number: | | 0H-FH (ch.1-ch.16) |

* When this message is received, the step position playing back in the pad sequence is reset to zero.

●All Notes Off (Controller number 123)

| Status | 2nd byte | 3rd byte |
|---|---|---|

| | | |
|---|---|---|
| BnH | 7BH | 00H |
| n = MIDI channel number: | | 0H-FH (ch.1-ch.16) |

* The same processing will be carried out as when All Sounds Off is received.

●OMNI OFF (Controller number 124)

| Status | 2nd byte | 3rd byte |
|---|---|---|
| BnH | 7CH | 00H |
| n = MIDI channel number: | | 0H-FH (ch.1-ch.16) |

* The same processing will be carried out as when All Sounds Off is received.

●OMNI ON (Controller number 125)

| Status | 2nd byte | 3rd byte |
|---|---|---|
| BnH | 7DH | 00H |
| n = MIDI channel number: | | 0H-FH (ch.1-ch.16) |

* The same processing will be carried out as when All Sounds Off is received.

●MONO (Controller number 126)

| Status | 2nd byte | 3rd byte |
|---|---|---|
| BnH | 7EH | mmH |
| n = MIDI channel number: | | 0H-FH (ch.1-ch.16) |
| mm= mono number: | | 00H-10H (0-16) |

* The same processing will be carried out as when All Sounds Off is received.

●POLY (Controller number 127)

| Status | 2nd byte | 3rd byte |
|---|---|---|
| BnH | 7FH | 00H |
| n = MIDI channel number: | | 0H-FH (ch.1-ch.16) |

* The same processing will be carried out as when All Sounds Off is received.

■System Realtime Message

●Timing Clock

| Status |
|---|
| F8H |

* Recognized only when the [MENU]-[SYSTEM]-[SYSTEM MIDI]-SYNC tab-Sync Mode is set at "AUTO."

●Start

| Status |
|---|
| FAH |

* If a START message is received while the click is playing, the click playback is reset.
* Recognized only when the [MENU]-[SYSTEM]-[SYSTEM MIDI]-SYNC tab-Sync Mode is set at "AUTO."

●Active Sensing

| Status |
|---|
| FEH |

* When Active Sensing is received, the unit will begin monitoring the intervals of all further messages. While monitoring, if the interval between messages exceeds about 500 ms, the same processing will be carried out as when All Sounds Off, All Notes Off are received, and message interval monitoring will be halted.

■System Exclusive Message

| Status | Data byte | Status |
|---|---|---|
| F0H | iiH, ddH,....., eeH | F7H |

| | |
|---|---|
| F0H: | System Exclusive Message status |
| ii= ID number: | An ID number (manufacturer ID) to indicate the manufacturer whose Exclusive message this is.<br>Roland's manufacturer ID is 41H.<br>ID numbers 7EH and 7FH are extensions of the MIDI standard; Universal Non-realtime Messages (7EH) and Universal Realtime Messages (7FH). |
| dd,..., ee= data: | 00H-7FH (0-127) |
| F7H: | EOX (End Of Exclusive) |

This device receives the following system exclusive messages: universal non-realtime system exclusive messages, data request (RQ1), and data set (DT1).

●Universal Non-realtime System Exclusive Messages

○Identity Request Message

| Status | Data byte | Status |
|---|---|---|
| F0H | 7EH, dev, 06H, 01H | F7H |

| Byte | Explanation |
|---|---|
| F0H | Exclusive status |
| 7EH | ID number (Universal Non-realtime Message) |
| dev | Device ID (10H-1FH (17-32), 7FH)<br>Initial value is 10H (17) |
| 06H | Sub ID#1 (General Information) |
| 01H | Sub ID#2 (Identity Request) |

| | |
|---|---|
| F7H | EOX (End Of Exclusive) |

* When Identity Request is received, Identity Reply message will be transmitted.
* The [MENU]-[SYSTEM]-[SYSTEM MIDI]-BASIC tab Device ID setting is used as the Device ID.

●Data Transmission

This instrument can use exclusive messages to exchange many varieties of internal settings with other devices. The model ID of the exclusive messages used by this instrument is 00H 00H 00H 79H.

○Data Request 1 (RQ1)

This message requests the other device to transmit data. The address and size indicate the type and amount of data that is requested. When a Data Request message is received, if the device is in a state in which it is able to transmit data, and if the address and size are appropriate, the requested data is transmitted as a Data Set 1 (DT1) message. If the conditions are not met, nothing is transmitted.

| Status | Data byte | Status |
|---|---|---|
| F0H | 41H, dev, 00H, 00H, 00H, 00H,<br>16H, 11H, aaH, bbH, ccH, ddH,<br>ssH, ttH, uuH, vvH, sum | F7H |

| byte | Explanation |
|---|---|
| F0H | Exclusive status |
| 41H | ID number (Roland) |
| dev | device ID (dev: 10H-1FH, 7FH) |
| 00H | Model ID#1 (SPD-SX PRO) |
| 00H | Model ID#2 (SPD-SX PRO) |
| 00H | Model ID#3 (SPD-SX PRO) |
| 00H | Model ID#4 (SPD-SX PRO) |
| 16H | Model ID#5 (SPD-SX PRO) |
| 11H | Command ID (RQ1) |
| aaH | Address MSB |
| bbH | Address |
| ccH | Address |
| ddH | Address LSB |
| ssH | Size MSB |
| ttH | Size |
| uuH | Size |
| vvH | Size LSB |
| sum | Checksum |
| F7H | EOX (End Of Exclusive) |

* The size of data that can be transmitted at one time is fixed for each type of data. And data requests must be made with a fixed starting address and size. Refer to the address and size given in "3. Parameter Address Map."
* For the checksum, refer to "How to calculate the checksum."

○Data Set 1 (DT1)

These messages are used for transmitting the actual data and are used when you want to assign data to the device.

| Status | Data byte | Status |
|---|---|---|
| F0H | 41H, dev, 00H, 00H, 00H, 00H,<br>16H, 12H, aaH, bbH, ccH, ddH,<br>eeH,... ffH, sum | F7H |

| Byte | Explanation |
|---|---|
| F0H | Exclusive status |
| 41H | ID number (Roland) |
| dev | Model ID (dev: 10H-1FH, 7FH) |
| 00H | Model ID#1 (SPD-SX PRO) |
| 00H | Model ID#2 (SPD-SX PRO) |
| 00H | Model ID#3 (SPD-SX PRO) |
| 00H | Model ID#4 (SPD-SX PRO) |
| 16H | Model ID#5 (SPD-SX PRO) |
| 12H | Command ID (DT1) |
| aaH | Address MSB |
| bbH | Address |
| ccH | Address |
| ddH | Address LSB |
| eeH | Data: the actual data to be sent. Multiple bytes of data are transmitted in order starting from the address. |
| : | : |
| ffH | Data |
| sum | Checksum |
| F7H | EOX (End Of Exclusive) |

* The amount of data that can be transmitted at one time depends on the type of data, and data will be transmitted from the specified starting address and size. Refer to the address and size given in "3. Parameter Address Map."
* Data larger than 256 bytes must be divided into packets of 256 bytes or less, and each packet must be sent at an interval of about 20 ms or longer.
* For the checksum, refer to "How to calculate the checksum."

2. Transmit Data

* When [MENU]-[SYSTEM]-[SYSTEM MIDI]-BASIC tab-Soft Thru MIDI In/Soft Thru USB MIDI In is set to "ON", messages received in addition to the following messages are also sent to the corresponding jack.

■Channel Voice Messages

* The following channel voice messages are transmitted on the channel specified as the [MENU]-[KIT EDIT2]-[KIT MIDI]-CHANNEL tab.
* Not transmitted when [MENU]-[SYSTEM]-[SYSTEM MIDI]-BASIC tab- MIDI Tx/Rx Sw is set to "OFF."

●Note Off

| Status | 2nd byte | 3rd byte |
|---|---|---|
| 8nH | kkH | vvH |
| n = MIDI channel number: | | 0H-FH (ch.1-ch.16) |
| kk = note number: | | 00H-7FH (0-127) |
| vv = Note off velocity: | | 40H (64) fixed |

* In the channel assigned to the pad, after a pad is struck or the hi-hat control pedal is in the foot closed position, Note Off is transmitted after the interval set in GATE TIME tab ([MENU]-[KIT EDIT2]-[KIT MIDI]).

●Note On

| Status | 2nd byte | 3rd byte |
|---|---|---|
| 9nH | kkH | vvH |
| n = MIDI channel number: | | 0H-FH (ch.1-ch.16) |
| kk = note number: | | 00H-7FH (0-127) |
| vv = Note on velocity: | | 01H-7FH (1-127) |

* In the channel assigned to the pad, after a pad is struck or the hi-hat control pedal is in the foot closed position, the note number set for the drum kit is transmitted.
* In the channel corresponding to the pad played by the hi-hat control pedal, the note number transmitted when the hi-hat pad is struck (open, closed) switches depending on how deeply the hi-hat pedal is being pressed.

●Control Change

○Bank Select (Controller number 0, 32)

| Status | 2nd byte | 3rd byte |
|---|---|---|
| BnH | 00H | mmH |
| BnH | 20H | llH |
| n = MIDI channel number: | | 0H-FH (ch.1-ch.16) |
| mm = bank number MSB: | | Fixed as 00H |
| ll = bank number LSB: | | 00H-01H |

* When a kit is selected, the corresponding bank select is transmitted.
* Not transmitted when [MENU]-[SYSTEM]-[SYSTEM MIDI]-BASIC tab- Program Change Tx is set to "OFF."

○Modulation (Controller number 1)

| Status | 2nd byte | 3rd byte |
|---|---|---|
| BnH | 01H | vvH |
| n = MIDI channel number: | | 0H-FH (ch.1-ch.16) |
| vv = Control value: | | 00H-7FH (0-127:open to closed) |

* In the channel corresponding to the pad played by the hi-hat control pedal, when [MENU]-[SYSTEM]-[SYSTEM MIDI]-CONTROL tab- HH Pedal CC is set to "MODULATION(1)," this is transmitted when the hi-hat control pedal is played. When the pad played by the hi-hat control pedal is struck, this is transmitted as a pedal position message before Note On.

○Breath Controller (Controller number 2)

| Status | 2nd byte | 3rd byte |
|---|---|---|
| BnH | 02H | vvH |
| n = MIDI channel number: | | 0H-FH (ch.1-ch.16) |
| vv = Control value: | | 00H-7FH (0-127:open to closed) |

* In the channel corresponding to the pad played by the hi-hat control pedal, when [MENU]-[SYSTEM]-[SYSTEM MIDI]-CONTROL tab- HH Pedal CC is set to "BREATH(2)," this is transmitted when the hi-hat control pedal is played. When the pad played by the hi-hat control pedal is struck, this is transmitted as a pedal position message before Note On.

○Foot Controller (Controller number 4)

| Status | 2nd byte | 3rd byte |
|---|---|---|
| BnH | 04H | vvH |
| n = MIDI channel number: | | 0H-FH (ch.1-ch.16) |
| vv = Control value: | | 00H-7FH (0-127:open to closed) |

* In the channel corresponding to the pad played by the hi-hat control pedal, when [MENU]-[SYSTEM]-[SYSTEM MIDI]-CONTROL tab- HH Pedal CC is set to "FOOT(4)," this is transmitted when the hi-hat control pedal is played. When the pad played by the hi-hat control pedal is struck, this is transmitted as a pedal position message before Note On.

○Expression (Controller number 11)

When used for the hi-hat control pedal position:

| Status | 2nd byte | 3rd byte |
|---|---|---|
| BnH | 0BH | vvH |
| n = MIDI channel number: | | 0H-FH (ch.1-ch.16) |
| vv = Control value: | | 00H-7FH (0-127:open to closed) |

* In the channel corresponding to the pad played by the hi-hat control pedal, when [MENU]-[SYSTEM]-[SYSTEM MIDI]-CONTROL tab- HH Pedal CC is set to "EXPPRESSION(11)," this is transmitted when the hi-hat control pedal is played. When the pad played by the hi-hat control pedal is struck, this is transmitted as a pedal position message before Note On.

When used for expression:

| Status | 2nd byte | 3rd byte |
|---|---|---|
| BnH | 0BH | vvH |
| n = MIDI channel number: | | 0H-FH (ch.1-ch.16) |
| vv = Expression: | | 00H-7FH (0-127) |

* When using the following settings, data is transmitted when you operate the expression pedal.
- When “Pedal Mode” in [MENU] - [SYSTEM] - [PAD/TRIG IN] - HI-HAT tab is set to “EXP-CTRL”

- When Exp Pedal Setting in [MENU] - [KIT EDIT2] - [PAD EDIT KNOB/EXP PEDAL] - EXP PEDAL tab is set to “KIT”
- When Exp Pedal Assign in [MENU] - [KIT EDIT2] - [PAD EDIT KNOB/EXP PEDAL] - EXP PEDAL tab is set to “EXPRESSION”

When using the following settings, data is transmitted when you operate the expression pedal.
- When Pedal Mode in [MENU] - [SYSTEM] - [PAD/TRIG IN] - HI-HAT tab is set to “EXP-CTRL”
- When Exp Pedal Setting in [MENU] - [KIT EDIT2] - [PAD EDIT KNOB/EXP PEDAL] -EXP PEDAL tab is set to “SYSTEM”
- When Exp Pedal Assign in [MENU] - [SYSTEM] - [CONTROL SETUP] - EXP PEDAL tab is set to “EXPRESSION”

○General Purpose Controller 1 (Controller number 16)

| Status | 2nd byte | 3rd byte |
|---|---|---|
| BnH | 10H | vvH |
| n = MIDI channel number: | | 0H-FH (ch.1-ch.16) |
| vv = Control value: | | 00H-7FH (0-127:open to closed) |

* In the channel corresponding to the pad played by the hi-hat control pedal, when [MENU]-[SYSTEM]-[SYSTEM MIDI]-CONTROL tab- HH Pedal CC is set to "GENERAL1(16)," this is transmitted when the hi-hat control pedal is played. When the pad played by the hi-hat control pedal is struck, this is transmitted as a pedal position message before Note On.

○General Purpose Controller 2 (Controller number 17)

| Status | 2nd byte | 3rd byte |
|---|---|---|
| BnH | 11H | vvH |
| n = MIDI channel number: | | 0H-FH (ch.1-ch.16) |
| vv = Control value: | | 00H-7FH (0-127:open to closed) |

* In the channel corresponding to the pad played by the hi-hat control pedal, when [MENU]-[SYSTEM]-[SYSTEM MIDI]-CONTROL tab- HH Pedal CC is set to "GENERAL2(17)," this is transmitted when the hi-hat control pedal is played. When the pad played by the hi-hat control pedal is struck, this is transmitted as a pedal position message before Note On.

○General Purpose Controller 3 (Controller number 18)

| Status | 2nd byte | 3rd byte |
|---|---|---|
| BnH | 12H | vvH |
| n = MIDI channel number: | | 0H-FH (ch.1-ch.16) |
| vv = Control value: | | 00H-7FH (0-127:open to closed) |

* In the channel corresponding to the pad played by the hi-hat control pedal, when [MENU]-[SYSTEM]-[SYSTEM MIDI]-CONTROL tab- HH Pedal CC is set to "GENERAL3(18)," this is transmitted when the hi-hat control pedal is played. When the pad played by the hi-hat control pedal is struck, this is transmitted as a pedal position message before Note On.

○General Purpose Controller 4 (Controller number 19)

| Status | 2nd byte | 3rd byte |
|---|---|---|
| BnH | 13H | vvH |
| n = MIDI channel number: | | 0H-FH (ch.1-ch.16) |
| vv = Control value: | | 00H-7FH (0-127:open to closed) |

* In the channel corresponding to the pad played by the hi-hat control pedal, when [MENU]-[SYSTEM]-[SYSTEM MIDI]-CONTROL tab- HH Pedal CC is set to "GENERAL4(19)," this is transmitted when the hi-hat control pedal is played. When the pad played by the hi-hat control pedal is struck, this is transmitted as a pedal position message before Note On.

○Master Effect Control

| Status | 2nd byte | 3rd byte |
|---|---|---|
| BnH | kkH | vvH |
| n = MIDI channel number: | | 0H-FH (ch.1-ch.16) |
| kk = Control Number: | | 00H-5FH (1-31,33-95) |
| vv = Control value: | | 00H-7FH (0-127) |

* Transmitted when you operate the MASTER EFFECT knob, while Master Effect Control CC in [MENU] - [SYSTEM] - [SYSTEM MIDI] is set to a value other than “OFF”.

○General purpose controller

| Status | 2nd byte | 3rd byte |
|---|---|---|
| BnH | kkH | vvH |
| n = MIDI channel number: | | 0H-FH (ch.1-ch.16) |
| kk = Control Number: | | 00H-5FH (1-31,33-95) |
| vv = Control value: | | 00H-7FH (0-127) |

* When Pad Edit Knob Setting in [MENU] - [KIT EDIT2] - [PAD EDIT KNOB/EXP PEDAL] - PAD EDIT KNOB tab is set to “KIT” and you operate the PAD EDIT knob while “Group” in the [MENU] - [KIT EDIT2] - [PAD EDIT KNOB/EXP PEDAL] - PAD EDIT KNOB tab is set to “PAD EDIT KNOB CC”, a controller number is transmitted according to the Param setting.
When Pad Edit Knob Setting in [MENU] - [KIT EDIT2] - [PAD EDIT KNOB/EXP PEDAL] - PAD EDIT KNOB tab is set to “SYSTEM” and you operate the PAD EDIT knob while “Group” in the [MENU] - [SYSTEM] - [CONTROL SETUP] - PAD EDIT KNOB tab is set to “PAD EDIT KNOB CC”, a controller number is transmitted according to the Param setting.
* When Pedal Mode in [MENU] - [SYSTEM] - [PAD/TRIG IN] - HI-HAT tab is “EXP-CTRL” and Exp Pedal Setting in [MENU] - [KIT EDIT2] - [PAD EDIT KNOB/EXP PEDAL] - EXP PEDAL tab is set to “KIT”, a controller number is transmitted according to the Exp Pedal Assign setting in [MENU] - [KIT EDIT2] - [PAD EDIT KNOB/EXP PEDAL] - EXP PEDAL tab when you operate the expression pedal.
When Pedal Mode in [MENU] - [SYSTEM] - [PAD/TRIG IN] - HI-HAT tab is “EXP-CTRL” and Exp Pedal Setting in [MENU] - [KIT EDIT2] - [PAD EDIT KNOB/EXP PEDAL] - EXP PEDAL tab is set to “SYSTEM”, a controller number is transmitted according to the Exp Pedal Assign setting in [MENU] - [SYSTEM] - [CONTROL SETUP] - EXP PEDAL tab when you operate the expression pedal.

●Program Change

| Status | 2nd byte | |
|---|---|---|
| CnH | ppH | |
| n = MIDI channel number: | | 0H-FH (ch.1-ch.16) |
| pp = Program number: | | 00H-7FH (prog.1-prog.128) |

* When a kit is selected, the corresponding program number is transmitted.

* Not transmitted when [MENU]-[SYSTEM]-[SYSTEM MIDI]-BASIC tab- Program Change Tx is set to "OFF."

■System Realtime Messages

●Timing Clock

Status
F8H

* Not transmitted when [MENU]-[SYSTEM]-[SYSTEM MIDI]-SYNC tab- Sync Out is set to "OFF."

●Start

Status
FAH

* Transmitted when the click is playing back.
* Not transmitted when [MENU]-[SYSTEM]-[SYSTEM MIDI]-SYNC tab- Tx Start/Stop is set to "OFF."

●Stop

Status
FCH

* Transmitted when the click stops.
* Not transmitted when [MENU]-[SYSTEM]-[SYSTEM MIDI]-SYNC tab- Tx Start/Stop is set to "OFF."

●Active Sensing

Status
FEH

* This message is transmitted at intervals of approximately 250 msec.

■System Exclusive Message

Identity Reply and Data Set (DT1) are the System Exclusive messages transmitted by this device.

●Universal Non-realtime System Exclusive Message

○Identity Reply

| Status | Data byte | Status |
|---|---|---|
| F0H | 7EH, dev, 06H, 02H, 41H, 16H,<br>04H, 00H, 00H, 00H, 01H, 00H,<br>00H | F7H |

| Byte | Explanation |
|---|---|
| F0H | Exclusive status |
| 7EH | ID number (Universal Non-realtime Message) |
| dev | Device ID (10H-1FH (17-32), 7FH)<br>Initial value is 10H (17) |
| 06H | Sub ID#1 (General Information) |
| 02H | Sub ID#2 (Identity Reply) |
| 41H | ID number (Roland) |
| 16H 04H | Device family code |
| 00H 00H | Device family number code |
| 00H 01H 00H 00H | Software revision level |
| F7H | EOX (End of Exclusive) |

* When Identity Request is received, the above Identity Reply messages will be transmitted.
* The [MENU]-[SYSTEM]-[SYSTEM MIDI]-BASIC tab- Device ID setting is used as the Device ID.

○Data Set 1 (DT1)

These messages are used for transmitting the actual data and are used when you want to assign data to the device.

| Status | Data byte | Status |
|---|---|---|
| F0H | 41H, dev, 00H, 00H, 00H, 00H,<br>16H, 12H, aaH, bbH, ccH, ddH,<br>eeH, ... ffH, sum | F7H |

| Byte | Explanation |
|---|---|
| F0H | Exclusive status |
| 41H | ID number (Roland) |
| dev | Device ID (dev: 10H-1FH, 7FH) |
| 00H | Model ID#1 (SPD-SX PRO) |
| 00H | Model ID#2 (SPD-SX PRO) |
| 00H | Model ID#3 (SPD-SX PRO) |
| 00H | Model ID#4 (SPD-SX PRO) |
| 16H | Model ID#4 (SPD-SX PRO) |
| 12H | Command ID (DT1) |
| aaH | Address MSB |
| bbH | Address |
| ccH | Address |
| ddH | Address LSB |
| eeH | Data: the actual data to be sent. Multiple bytes of data are transmitted in order starting from the address. |
| : | : |
| ffH | Data |
| sum | Checksum |
| F7H | EOX (End Of Exclusive) |

* The amount of data that can be transmitted at one time depends on the type of data, and data will be transmitted from

the specified starting address and size. Refer to the address and size given in “3. Parameter Address Map.”
* Data larger than 256 bytes will be divided into packets of 256 bytes or less, and each packet will be sent at an interval of about 20 ms.

3. Parameter Address Map

* Transmission of “#” marked address is divided to multiple packets. For example, ABH in hexadecimal notation will be divided to 0AH and 0BH, and is sent/received in this order.

| Start Address | Description | |
|---|---|---|
| 00 00 00 00 | Current | [Current] |
| 01 00 00 00 | Setup | [Setup] |
| 03 00 00 00 | SetList 1 | [SetListParams] |
| 03 00 10 00 | SetList 2 | [SetListParams] |
| : | | |
| 03 03 70 00 | SetList 32 | [SetListParams] |
| 04 00 00 00 | Kit 1 | [Kit] |
| 04 02 00 00 | Kit 2 | [Kit] |
| : | | |
| 07 0E 00 00 | Kit 200 | [Kit] |

* [Setup]

| Offset Address | Description | |
|---|---|---|
| 00 00 00 | Output | [SetupOutput] |
| 00 01 00 | Master Comp | [MasterComp] |
| 00 02 00 | Master EQ | [MasterEQ] |
| 00 03 00 | Master FX | [Mfx] |
| 00 05 00 | Click | [Click] |
| 00 07 00 | Control | [SetupControl] |
| 00 08 00 | Color Table 1 | [SetupColor] |
| 00 09 00 | Color Table 2 | [SetupColor] |
| : | | |
| 00 17 00 | Color Table 16 | [SetupColor] |

* [Kit]
The assignments to each pad within the [Kit] are as follows.

[KitPad]

| | |
|---|---|
| PAD1 | 1 |
| PAD2 | 2 |
| PAD3 | 3 |
| PAD4 | 4 |
| PAD5 | 5 |
| PAD6 | 6 |
| PAD7 | 7 |
| PAD8 | 8 |
| PAD9 | 9 |
| TRIG IN1 | 10 |
| TRIG IN2 | 11 |
| TRIG IN3 | 12 |
| TRIG IN4 | 13 |
| TRIG IN5 | 14 |
| TRIG IN6 | 15 |
| TRIG IN7 | 16 |
| TRIG IN8 | 17 |
| FOOT SW1 | 18 |
| FOOT SW2 | 19 |

[KitPadLayer]

| | |
|---|---|
| PAD1 LAYER A | 1 |
| PAD1 LAYER B | 2 |
| PAD2 LAYER A | 3 |
| PAD2 LAYER B | 4 |
| PAD3 LAYER A | 5 |
| PAD3 LAYER B | 6 |
| PAD4 LAYER A | 7 |
| PAD4 LAYER B | 8 |
| PAD5 LAYER A | 9 |
| PAD5 LAYER B | 10 |
| PAD6 LAYER A | 11 |
| PAD6 LAYER B | 12 |
| PAD7 LAYER A | 13 |
| PAD7 LAYER B | 14 |
| PAD8 LAYER A | 15 |
| PAD8 LAYER B | 16 |
| PAD9 LAYER A | 17 |

PAD9 LAYER B 18
TRIG IN1 LAYER A 19
TRIG IN1 LAYER B 20
TRIG IN2 LAYER A 21
TRIG IN2 LAYER B 22
TRIG IN3 LAYER A 23
TRIG IN3 LAYER B 24
TRIG IN4 LAYER A 25
TRIG IN4 LAYER B 26
TRIG IN5 LAYER A 27
TRIG IN5 LAYER B 28
TRIG IN6 LAYER A 29
TRIG IN6 LAYER B 30
TRIG IN7 LAYER A 31
TRIG IN7 LAYER B 32
TRIG IN8 LAYER A 33
TRIG IN8 LAYER B 34
FOOT SW1 LAYER A 35
FOOT SW1 LAYER B 36
FOOT SW2 LAYER A 37
FOOT SW2 LAYER B 38

| Offset Address | Description | |
|---|---|---|
| 00 00 00 | Kit Common | [KitCommon] |
| 00 02 00 | Kit Control | [KitControl] |
| 00 03 00 | Kit Click | [Click] |
| 00 04 00 | Kit MIDI | [KitMidi] |
| 00 05 00 | Kit Side Chain | [SideChain] |
| 00 10 00 | Kit MFX 1 | [Mfx] |
| 00 12 00 | Kit MFX 2 | [Mfx] |
| : | | |
| 00 16 00 | Kit MFX 4 | [Mfx] |
| 00 20 00 | Kit Pad 1 | [KitPad] |
| 00 21 00 | Kit Pad 2 | [KitPad] |
| : | | |
| 00 32 00 | Kit Pad 19 | [KitPad] |
| 00 40 00 | Kit Pad Layer 1 | [KitPadLayer] |
| 00 41 00 | Kit Pad Layer 2 | [KitPadLayer] |
| : | | |
| 00 65 00 | Kit Pad Layer 38 | [KitPadLayer] |

* [Current]

| Offset Address | | Description | |
|---|---|---|---|
| # 00 00 | 0000 aaaa | | |
| 00 01 | 0000 bbbb | | |
| 00 02 | 0000 cccc | | |
| 00 03 | 0000 dddd | KitNum | (0 - 199)<br>1 - 200 |
| 00 00 00 04 | Total Size | | |

* [SetupOutput]

| Offset Address | | Description | |
|---|---|---|---|
| # 00 00 | 0000 aaaa | | |
| 00 01 | 0000 bbbb | MasterOutputGain | (-24 - 12)<br>-24 - +12 [dB] |
| # 00 02 | 0000 aaaa | | |
| 00 03 | 0000 bbbb | PhonesOutputGain | (-24 - 12)<br>-24 - +12 [dB] |
| # 00 04 | 0000 aaaa | | |
| 00 05 | 0000 bbbb | DirectOutputGain | (-24 - 12)<br>-24 - +12 [dB] |
| 00 06 | 0000 000a | MasterDirectSw | (0 - 1)<br>NORMAL, DIRECT |
| 00 07 | 0000 000a | MasterMonoSw | (0 - 1)<br>STEREO, MONO x2 |
| 00 08 | 0000 000a | DirectOutSw | (0 - 1)<br>ALL OFF, ALL ON |
| # 00 09 | 0000 aaaa | | |
| 00 0A | 0000 bbbb | UsbAudioInputGain | (-36 - 12)<br>-36 - +12 [dB] |
| # 00 0B | 0000 aaaa | | |
| 00 0C | 0000 bbbb | UsbAudioOutputGain | (-24 - 24)<br>-24 - +24 [dB] |
| # 00 0D | 0000 aaaa | | |
| 00 0E | 0000 bbbb | AudioInGain | (-36 - 12) |

| | | | |
|---|---|---|---|
| | | | -36 - +12 [dB] |
| | 00 0F | 0000 000a | Audio In Output (0 - 1) |
| | | | MASTER+PHONES, PHONES-ONLY |
| | 00 10 | 0000 aaaa | Audio In Direct Output (0 - 9) |
| | | | OFF, |
| | | | DIRECT 1, |
| | | | DIRECT 2, |
| | | | DIRECT 1+2(L+R), |
| | | | DIRECT 3, |
| | | | DIRECT 4, |
| | | | DIRECT 3+4(L+R), |
| | | | MASTER DIRECT L, |
| | | | MASTER DIRECT R, |
| | | | MASTER DIRECT L+R |
| | 00 11 | 0000 00aa | (reserved) |
| | 00 12 | 0000 000a | Noise Suppressor Sw (0 - 1) |
| | | | OFF, ON |
| # | 00 13 | 0000 aaaa | |
| | 00 14 | 0000 bbbb | Noise Suppressor Threshold (-90 - 0) |
| | | | -90 - 0 [dB] |
| | 00 15 | 0000 000a | UsbMasterOutput (0 - 1) |
| | | | MASTER-ONLY, MASTER+PHONES |
| | 00 16 | 0000 000a | Audio In Type (0 - 1) |
| | | | LINE, MIC |
| 00 00 00 17 | | | Total Size |

* [MasterComp]

| | | | |
|---|---|---|---|
| | 00 00 | 0000 000a | Switch (0 - 1) |
| | | | OFF, ON |
| | 00 01 | 0000 0aaa | Type (0 - 5) |
| # | 00 02 | 0000 aaaa | |
| | 00 03 | 0000 bbbb | |
| | 00 04 | 0000 cccc | |
| | 00 05 | 0000 dddd | Split Freq (0 - 1600) |
| | | | 0 - 16000 [Hz] |
| # | 00 06 | 0000 aaaa | |
| | 00 07 | 0000 bbbb | Lo Gain (-120 - 48) |
| | | | -60.0 - +24.0 [dB] |
| # | 00 08 | 0000 aaaa | |
| | 00 09 | 0000 bbbb | Hi Gain (-120 - 48) |
| | | | -60.0 - +24.0 [dB] |
| # | 00 0A | 0000 aaaa | |
| | 00 0B | 0000 bbbb | Lo Threshold (-60 - 0) |
| | | | -60 - 0 [dB] |
| # | 00 0C | 0000 aaaa | |
| | 00 0D | 0000 bbbb | Hi Threshold (-60 - 0) |
| | | | -60 - 0 [dB] |
| | 00 0E | 0000 0aaa | Lo Ratio (0 - 7) |
| | | | 1:1, 2:1, 3:1, 4:1, 8:1, 16:1, 32:1, INF:1 |
| | 00 0F | 0000 0aaa | Hi Ratio (0 - 7) |
| | | | 1:1, 2:1, 3:1, 4:1, 8:1, 16:1, 32:1, INF:1 |
| | 00 10 | 0000 00aa | Lo Knee (0 - 3) |
| | | | HARD, SOFT1, SOFT2, SOFT3 |
| | 00 11 | 0000 00aa | Hi Knee (0 - 3) |
| | | | HARD, SOFT1, SOFT2, SOFT3 |
| | 00 12 | 0aaa aaaa | Lo Attack (0 - 100) |
| | | | 0.1 - 100 |
| | 00 13 | 0aaa aaaa | Hi Attack (0 - 100) |
| | | | 0.1 - 100 |
| | 00 14 | 0aaa aaaa | Lo Release (0 - 99) |
| | | | 10 - 1000 |
| | 00 15 | 0aaa aaaa | Hi Release (0 - 99) |
| | | | 10 - 1000 |
| 00 00 00 16 | | | Total Size |

* [MasterEQ]

| | | | |
|---|---|---|---|
| | 00 00 | 0000 000a | Switch (0 - 1) |
| | | | OFF, ON |
| | 00 01 | 0000 000a | LowEqType (0 - 1) |
| | | | SHELV, PEAK |
| # | 00 02 | 0000 aaaa | |
| | 00 03 | 0000 bbbb | |
| | 00 04 | 0000 cccc | |
| | 00 05 | 0000 dddd | LowFreq (0 - 34) |
| | | | 20Hz, 22.5Hz, 25Hz, 28.25Hz, 31.5Hz, 35.75Hz, 40Hz, 45Hz, 50Hz, 56.5Hz, 63Hz, 71.5Hz, 80Hz, 90Hz, 100Hz, 112.5Hz, 125Hz, 142.5Hz, 160Hz, 180Hz, 200Hz, 225Hz, 250Hz, 282.5Hz, 315Hz, 357.5Hz, 400Hz, 450Hz, 500Hz, 565Hz, 630Hz, 715Hz, 800Hz, 900Hz, 1kHz |
| | 00 06 | 0000 0aaa | LowQ (0 - 6) |
| | | | 0.5, 1.0, 2.0, 3.0, 4.0, 8.0, 16.0 |

| Offset Address | | Description |
|---|---|---|
| # 00 07 | 0000 aaaa | |
| 00 08 | 0000 bbbb | LowGain (-12 - 12)<br>-12 - 12 [dB] |
| # 00 09 | 0000 aaaa | |
| 00 0A | 0000 bbbb | |
| 00 0B | 0000 cccc | |
| 00 0C | 0000 dddd | Mid1Freq (0 - 58)<br>20Hz, 22.5Hz, 25Hz, 28.25Hz, 31.5Hz, 35.75Hz, 40Hz,<br>45Hz, 50Hz, 56.5Hz, 63Hz, 71.5Hz, 80Hz, 90Hz, 100Hz,<br>112.5Hz, 125Hz, 142.5Hz, 160Hz, 180Hz, 200Hz, 225Hz,<br>250Hz, 282.5Hz, 315Hz, 357.5Hz, 400Hz, 450Hz, 500Hz,<br>565Hz, 630Hz, 715Hz, 800Hz, 900Hz, 1kHz, 1.125kHz,<br>1.25kHz, 1.425kHz, 1.6kHz, 1.8kHz, 2kHz, 2.25kHz,<br>2.5kHz, 2.825kHz, 3.15kHz, 3.575kHz, 4kHz, 4.5kHz,<br>5kHz, 5.65kHz, 6.3kHz, 7.15kHz, 8kHz, 9kHz, 10kHz,<br>11.25kHz, 12.5kHz, 14.25kHz, 16kHz |
| 00 0D | 0000 0aaa | Mid1Q (0 - 6)<br>0.5, 1.0, 2.0, 3.0, 4.0, 8.0, 16.0 |
| # 00 0E | 0000 aaaa | |
| 00 0F | 0000 bbbb | Mid1Gain (-12 - 12)<br>-12 - 12 [dB] |
| # 00 10 | 0000 aaaa | |
| 00 11 | 0000 bbbb | |
| 00 12 | 0000 cccc | |
| 00 13 | 0000 dddd | Mid2Freq (0 - 58)<br>20Hz, 22.5Hz, 25Hz, 28.25Hz, 31.5Hz, 35.75Hz, 40Hz,<br>45Hz, 50Hz, 56.5Hz, 63Hz, 71.5Hz, 80Hz, 90Hz, 100Hz,<br>112.5Hz, 125Hz, 142.5Hz, 160Hz, 180Hz, 200Hz, 225Hz,<br>250Hz, 282.5Hz, 315Hz, 357.5Hz, 400Hz, 450Hz, 500Hz,<br>565Hz, 630Hz, 715Hz, 800Hz, 900Hz, 1kHz, 1.125kHz,<br>1.25kHz, 1.425kHz, 1.6kHz, 1.8kHz, 2kHz, 2.25kHz,<br>2.5kHz, 2.825kHz, 3.15kHz, 3.575kHz, 4kHz, 4.5kHz,<br>5kHz, 5.65kHz, 6.3kHz, 7.15kHz, 8kHz, 9kHz, 10kHz,<br>11.25kHz, 12.5kHz, 14.25kHz, 16kHz |
| 00 14 | 0000 0aaa | Mid2Q (0 - 6)<br>0.5, 1.0, 2.0, 3.0, 4.0, 8.0, 16.0 |
| # 00 15 | 0000 aaaa | |
| 00 16 | 0000 bbbb | Mid2Gain (-12 - 12)<br>-12 - 12 [dB] |
| 00 17 | 0000 000a | HighEqType (0 - 1)<br>SHELV, PEAK |
| # 00 18 | 0000 aaaa | |
| 00 19 | 0000 bbbb | |
| 00 1A | 0000 cccc | |
| 00 1B | 0000 dddd | HighFreq (0 - 24)<br>1kHz, 1.125kHz, 1.25kHz, 1.425kHz, 1.6kHz, 1.8kHz,<br>2kHz, 2.25kHz, 2.5kHz, 2.825kHz, 3.15kHz, 3.575kHz,<br>4kHz, 4.5kHz, 5kHz, 5.65kHz, 6.3kHz, 7.15kHz, 8kHz,<br>9kHz, 10kHz, 11.25kHz, 12.5kHz, 14.25kHz, 16kHz |
| 00 1C | 0000 0aaa | HighQ (0 - 6)<br>0.5, 1.0, 2.0, 3.0, 4.0, 8.0, 16.0 |
| # 00 1D | 0000 aaaa | |
| 00 1E | 0000 bbbb | HighGain (-12 - 12)<br>-12 - 12 [dB] |
| 00 00 00 1F | Total Size | |

* [Mfx]
This data is common to both Setup Master FX and Kit MFX.

| Offset Address | | Description |
|---|---|---|
| 00 00 | 00aa aaaa | Type (0 - 52) |
| 00 01 | 0000 000a | Switch (0 - 1)<br>OFF, ON |
| # 00 02 | 0000 aaaa | |
| 00 03 | 0000 bbbb | |
| 00 04 | 0000 cccc | |
| 00 05 | 0000 dddd | Level (-601 - 60)<br>-INF, -60.0 - +6.0 [dB] |
| # 00 06 | 0000 aaaa | |
| 00 07 | 0000 bbbb | |
| 00 08 | 0000 cccc | |
| 00 09 | 0000 dddd | MFX Parameter 1 (-20000 - 20000) |
| # 00 0A | 0000 aaaa | |
| 00 0B | 0000 bbbb | |
| 00 0C | 0000 cccc | |
| 00 0D | 0000 dddd | MFX Parameter 2 (-20000 - 20000) |
| # 00 0E | 0000 aaaa | |
| 00 0F | 0000 bbbb | |
| 00 10 | 0000 cccc | |
| 00 11 | 0000 dddd | MFX Parameter 3 (-20000 - 20000) |
| # 00 12 | 0000 aaaa | |
| 00 13 | 0000 bbbb | |
| 00 14 | 0000 cccc | |
| 00 15 | 0000 dddd | MFX Parameter 4 (-20000 - 20000) |
| # 00 16 | 0000 aaaa | |
| 00 17 | 0000 bbbb | |
| 00 18 | 0000 cccc | |
| 00 19 | 0000 dddd | MFX Parameter 5 (-20000 - 20000) |
| # 00 1A | 0000 aaaa | |
| 00 1B | 0000 bbbb | |

| | | | | |
|---|---|---|---|---|
| | 00 1C | 0000 cccc | | |
| | 00 1D | 0000 dddd | MFX Parameter 6 | (-20000 - 20000) |
| # | 00 1E | 0000 aaaa | | |
| | 00 1F | 0000 bbbb | | |
| | 00 20 | 0000 cccc | | |
| | 00 21 | 0000 dddd | MFX Parameter 7 | (-20000 - 20000) |
| # | 00 22 | 0000 aaaa | | |
| | 00 23 | 0000 bbbb | | |
| | 00 24 | 0000 cccc | | |
| | 00 25 | 0000 dddd | MFX Parameter 8 | (-20000 - 20000) |
| # | 00 26 | 0000 aaaa | | |
| | 00 27 | 0000 bbbb | | |
| | 00 28 | 0000 cccc | | |
| | 00 29 | 0000 dddd | MFX Parameter 9 | (-20000 - 20000) |
| # | 00 2A | 0000 aaaa | | |
| | 00 2B | 0000 bbbb | | |
| | 00 2C | 0000 cccc | | |
| | 00 2D | 0000 dddd | MFX Parameter 10 | (-20000 - 20000) |
| # | 00 2E | 0000 aaaa | | |
| | 00 2F | 0000 bbbb | | |
| | 00 30 | 0000 cccc | | |
| | 00 31 | 0000 dddd | MFX Parameter 11 | (-20000 - 20000) |
| # | 00 32 | 0000 aaaa | | |
| | 00 33 | 0000 bbbb | | |
| | 00 34 | 0000 cccc | | |
| | 00 35 | 0000 dddd | MFX Parameter 12 | (-20000 - 20000) |
| # | 00 36 | 0000 aaaa | | |
| | 00 37 | 0000 bbbb | | |
| | 00 38 | 0000 cccc | | |
| | 00 39 | 0000 dddd | MFX Parameter 13 | (-20000 - 20000) |
| # | 00 3A | 0000 aaaa | | |
| | 00 3B | 0000 bbbb | | |
| | 00 3C | 0000 cccc | | |
| | 00 3D | 0000 dddd | MFX Parameter 14 | (-20000 - 20000) |
| # | 00 3E | 0000 aaaa | | |
| | 00 3F | 0000 bbbb | | |
| | 00 40 | 0000 cccc | | |
| | 00 41 | 0000 dddd | MFX Parameter 15 | (-20000 - 20000) |
| # | 00 42 | 0000 aaaa | | |
| | 00 43 | 0000 bbbb | | |
| | 00 44 | 0000 cccc | | |
| | 00 45 | 0000 dddd | MFX Parameter 16 | (-20000 - 20000) |
| # | 00 46 | 0000 aaaa | | |
| | 00 47 | 0000 bbbb | | |
| | 00 48 | 0000 cccc | | |
| | 00 49 | 0000 dddd | MFX Parameter 17 | (-20000 - 20000) |
| # | 00 4A | 0000 aaaa | | |
| | 00 4B | 0000 bbbb | | |
| | 00 4C | 0000 cccc | | |
| | 00 4D | 0000 dddd | MFX Parameter 18 | (-20000 - 20000) |
| # | 00 4E | 0000 aaaa | | |
| | 00 4F | 0000 bbbb | | |
| | 00 50 | 0000 cccc | | |
| | 00 51 | 0000 dddd | MFX Parameter 19 | (-20000 - 20000) |
| # | 00 52 | 0000 aaaa | | |
| | 00 53 | 0000 bbbb | | |
| | 00 54 | 0000 cccc | | |
| | 00 55 | 0000 dddd | MFX Parameter 20 | (-20000 - 20000) |
| # | 00 56 | 0000 aaaa | | |
| | 00 57 | 0000 bbbb | | |
| | 00 58 | 0000 cccc | | |
| | 00 59 | 0000 dddd | MFX Parameter 21 | (-20000 - 20000) |
| # | 00 5A | 0000 aaaa | | |
| | 00 5B | 0000 bbbb | | |
| | 00 5C | 0000 cccc | | |
| | 00 5D | 0000 dddd | MFX Parameter 22 | (-20000 - 20000) |
| # | 00 5E | 0000 aaaa | | |
| | 00 5F | 0000 bbbb | | |
| | 00 60 | 0000 cccc | | |
| | 00 61 | 0000 dddd | MFX Parameter 23 | (-20000 - 20000) |
| # | 00 62 | 0000 aaaa | | |
| | 00 63 | 0000 bbbb | | |
| | 00 64 | 0000 cccc | | |
| | 00 65 | 0000 dddd | MFX Parameter 24 | (-20000 - 20000) |
| # | 00 66 | 0000 aaaa | | |
| | 00 67 | 0000 bbbb | | |
| | 00 68 | 0000 cccc | | |
| | 00 69 | 0000 dddd | MFX Parameter 25 | (-20000 - 20000) |
| # | 00 6A | 0000 aaaa | | |
| | 00 6B | 0000 bbbb | | |
| | 00 6C | 0000 cccc | | |
| | 00 6D | 0000 dddd | MFX Parameter 26 | (-20000 - 20000) |
| # | 00 6E | 0000 aaaa | | |
| | 00 6F | 0000 bbbb | | |
| | 00 70 | 0000 cccc | | |
| | 00 71 | 0000 dddd | MFX Parameter 27 | (-20000 - 20000) |
| # | 00 72 | 0000 aaaa | | |
| | 00 73 | 0000 bbbb | | |
| | 00 74 | 0000 cccc | | |
| | 00 75 | 0000 dddd | MFX Parameter 28 | (-20000 - 20000) |
| # | 00 76 | 0000 aaaa | | |
| | 00 77 | 0000 bbbb | | |
| | 00 78 | 0000 cccc | | |
| | 00 79 | 0000 dddd | MFX Parameter 29 | (-20000 - 20000) |

| | Offset Address | | Description | |
|---|---|---|---|---|
| # | 00 7A | 0000 aaaa | | |
| | 00 7B | 0000 bbbb | | |
| | 00 7C | 0000 cccc | | |
| | 00 7D | 0000 dddd | MFX Parameter 30 | (-20000 - 20000) |
| # | 00 7E | 0000 aaaa | | |
| | 00 7F | 0000 bbbb | | |
| | 01 00 | 0000 cccc | | |
| | 01 01 | 0000 dddd | MFX Parameter 31 | (-20000 - 20000) |
| # | 01 02 | 0000 aaaa | | |
| | 01 03 | 0000 bbbb | | |
| | 01 04 | 0000 cccc | | |
| | 01 05 | 0000 dddd | MFX Parameter 32 | (-20000 - 20000) |
| | 00 00 01 06 | Total Size | | |

* [Click]
This data is common to both Setup Click and Kit Click.

| | Offset Address | | Description | |
|---|---|---|---|---|
| | 00 00 | 0000 00aa | Click Mode | (0 - 2)<br>PRESET, WAVE, CLICK-TRACK |
| | 00 01 | 0000 aaaa | Sound | (0 - 9) |
| # | 00 02 | 0000 aaaa | | |
| | 00 03 | 0000 bbbb | | |
| | 00 04 | 0000 cccc | | |
| | 00 05 | 0000 dddd | WaveNum | (0 - 20000) |
| # | 00 06 | 0000 aaaa | | |
| | 00 07 | 0000 bbbb | | |
| | 00 08 | 0000 cccc | | |
| | 00 09 | 0000 dddd | Volume | (-601 - 60)<br>-INF, -60.0 - +6.0 [dB] |
| # | 00 0A | 0000 aaaa | | |
| | 00 0B | 0000 bbbb | Pan | (-15 - 15)<br>L15 - R15 |
| | 00 0C | 0000 000a | TrackLoop | (0 - 1)<br>OFF, ON |
| | 00 0D | 0000 000a | ClickReference | (0 - 1)<br>OFF, ON |
| | 00 0E | 000a aaaa | Click Start Pad Range1 | (0 - 19)<br>OFF, PAD1, PAD2, PAD3, PAD4, PAD5, PAD6, PAD7, PAD8, PAD9, T1, T2, T3, T4, T5, T6, T7, T8, FS1, FS2 |
| | 00 0F | 0000 00aa | PadClickTrigType | (0 - 2)<br>ONE-TIME, RETRIGGER, ALTERNATE |
| | 00 10 | 0000 aaaa | Beat | (1 - 9) |
| | 00 11 | 0aaa aaaa | AccentLevel | (0 - 127) |
| | 00 12 | 0aaa aaaa | QuarterLevel | (0 - 127) |
| | 00 13 | 0aaa aaaa | EighthLevel | (0 - 127) |
| | 00 14 | 0aaa aaaa | TripletLevel | (0 - 127) |
| | 00 15 | 0aaa aaaa | SixteenthLevel | (0 - 127) |
| | 00 16 | 000a aaaa | Click Start Pad Range2 | (0 - 19)<br>OFF, PAD1, PAD2, PAD3, PAD4, PAD5, PAD6, PAD7, PAD8, PAD9, T1, T2, T3, T4, T5, T6, T7, T8, FS1, FS2 |
| | 00 17 | 0000 000a | Output | (0 - 1)<br>MASTER+PHONES, PHONES-ONLY |
| | 00 18 | 0000 aaaa | DirectOutput | (0 - 9)<br>OFF,<br>DIRECT 1,<br>DIRECT 2,<br>DIRECT 1+2(L+R),<br>DIRECT 3,<br>DIRECT 4,<br>DIRECT 3+4(L+R),<br>MASTER DIRECT L,<br>MASTER DIRECT R,<br>MASTER DIRECT L+R |
| | 00 00 00 19 | Total Size | | |

* [SetupControl]

| Offset Address | | Description | |
|---|---|---|---|
| 00 00 | 000a aaaa | Pad Func Sw Pad1 | (0 - 31) |
| 00 01 | 000a aaaa | Pad Func Sw Pad2 | (0 - 31) |
| 00 02 | 000a aaaa | Pad Func Sw Pad3 | (0 - 31) |
| 00 03 | 000a aaaa | Pad Func Sw Pad4 | (0 - 31) |
| 00 04 | 000a aaaa | Pad Func Sw Pad5 | (0 - 31) |
| 00 05 | 000a aaaa | Pad Func Sw Pad6 | (0 - 31) |
| 00 06 | 000a aaaa | Pad Func Sw Pad7 | (0 - 31) |
| 00 07 | 000a aaaa | Pad Func Sw Pad8 | (0 - 31) |
| 00 08 | 000a aaaa | Pad Func Sw Pad9 | (0 - 31) |
| 00 09 | 000a aaaa | Pad Func Sw T1 | (0 - 31) |
| 00 0A | 000a aaaa | Pad Func Sw T2 | (0 - 31) |
| 00 0B | 000a aaaa | Pad Func Sw T3 | (0 - 31) |
| 00 0C | 000a aaaa | Pad Func Sw T4 | (0 - 31) |
| 00 0D | 000a aaaa | Pad Func Sw T5 | (0 - 31) |
| 00 0E | 000a aaaa | Pad Func Sw T6 | (0 - 31) |

| | | | |
|---|---|---|---|
| 00 0F | 000a aaaa | Pad Func Sw T7 | (0 - 31) |
| 00 10 | 000a aaaa | Pad Func Sw T8 | (0 - 31) |
| 00 11 | 000a aaaa | (reserved) | |
| 00 12 | 000a aaaa | (reserved) | |
| 00 13 | 0aaa aaaa | EditKnob Asgn Grp 1 | (0 - 127) |
| 00 14 | 0aaa aaaa | EditKnob Asgn Grp 2 | (0 - 127) |
| 00 15 | 0aaa aaaa | (reserved) | |
| 00 16 | 0aaa aaaa | (reserved) | |
| 00 17 | 0aaa aaaa | EditKnob Asgn PrmID 1 | (0 - 127) |
| 00 18 | 0aaa aaaa | EditKnob Asgn PrmID 2 | (0 - 127) |
| 00 19 | 0aaa aaaa | (reserved) | |
| 00 1A | 0aaa aaaa | (reserved) | |
| 00 1B | 0aaa aaaa | (reserved) | |
| 00 1C | 0aaa aaaa | (reserved) | |
| 00 1D | 0aaa aaaa | (reserved) | |
| 00 1E | 0aaa aaaa | (reserved) | |
| 00 1F | 000a aaaa | FootSw Func Sw 1 | (0 - 31) |
| 00 20 | 000a aaaa | FootSw Func Sw 2 | (0 - 31) |
| 00 21 | 0aaa aaaa | Expression Pedal Assign | (0 - 97)<br>OFF, CC01 - CC31, OFF, CC33 - CC95,<br>MASTER-EFX-CTRL, EXPRESSION |
| 00 00 00 22 | Total Size | | |

* [SetupColor]

| | | | |
|---|---|---|---|
| 00 00 | 0aaa aaaa | Color Name 1 | (0 - 127)<br>0 - 127 [ASCII] |
| 00 01 | 0aaa aaaa | Color Name 2 | (0 - 127)<br>0 - 127 [ASCII] |
| 00 02 | 0aaa aaaa | Color Name 3 | (0 - 127)<br>0 - 127 [ASCII] |
| 00 03 | 0aaa aaaa | Color Name 4 | (0 - 127)<br>0 - 127 [ASCII] |
| 00 04 | 0aaa aaaa | Color Name 5 | (0 - 127)<br>0 - 127 [ASCII] |
| 00 05 | 0aaa aaaa | Color Name 6 | (0 - 127)<br>0 - 127 [ASCII] |
| 00 06 | 0aaa aaaa | Color Name 7 | (0 - 127)<br>0 - 127 [ASCII] |
| 00 07 | 0aaa aaaa | Color Name 8 | (0 - 127)<br>0 - 127 [ASCII] |
| 00 08 | 0aaa aaaa | Color Name 9 | (0 - 127)<br>0 - 127 [ASCII] |
| 00 09 | 0aaa aaaa | Color Name 10 | (0 - 127)<br>0 - 127 [ASCII] |
| 00 0A | 0aaa aaaa | Color Name 11 | (0 - 127)<br>0 - 127 [ASCII] |
| 00 0B | 0aaa aaaa | Color Name 12 | (0 - 127)<br>0 - 127 [ASCII] |
| 00 0C | 0aaa aaaa | Color Name 13 | (0 - 127)<br>0 - 127 [ASCII] |
| 00 0D | 0aaa aaaa | Color Name 14 | (0 - 127)<br>0 - 127 [ASCII] |
| 00 0E | 0aaa aaaa | Color Name 15 | (0 - 127)<br>0 - 127 [ASCII] |
| 00 0F | 0aaa aaaa | Color Name 16 | (0 - 127)<br>0 - 127 [ASCII] |
| # 00 10 | 0000 aaaa | | |
| 00 11 | 0000 bbbb | | |
| 00 12 | 0000 cccc | | |
| 00 13 | 0000 dddd | ColorR | (0 - 255) |
| # 00 14 | 0000 aaaa | | |
| 00 15 | 0000 bbbb | | |
| 00 16 | 0000 cccc | | |
| 00 17 | 0000 dddd | ColorG | (0 - 255) |
| # 00 18 | 0000 aaaa | | |
| 00 19 | 0000 bbbb | | |
| 00 1A | 0000 cccc | | |
| 00 1B | 0000 dddd | ColorB | (0 - 255) |
| 00 00 00 1C | Total Size | | |

* [SetListParams]

| | | | |
|---|---|---|---|
| # 00 00 | 0000 aaaa | | |
| 00 01 | 0000 bbbb | SetList Name 1 | (0 - 127)<br>0 - 127 [ASCII] |
| # 00 02 | 0000 aaaa | | |
| 00 03 | 0000 bbbb | SetList Name 2 | (0 - 127)<br>0 - 127 [ASCII] |
| # 00 04 | 0000 aaaa | | |
| 00 05 | 0000 bbbb | SetList Name 3 | (0 - 127)<br>0 - 127 [ASCII] |
| # 00 06 | 0000 aaaa | | |
| 00 07 | 0000 bbbb | SetList Name 4 | (0 - 127) |

| | | | | |
|---|---|---|---|---|
| | | | | 0 - 127 [ASCII] |
| # | 00 08 | 0000 aaaa | | |
| | 00 09 | 0000 bbbb | SetList Name 5 | (0 - 127)<br>0 - 127 [ASCII] |
| # | 00 0A | 0000 aaaa | | |
| | 00 0B | 0000 bbbb | SetList Name 6 | (0 - 127)<br>0 - 127 [ASCII] |
| # | 00 0C | 0000 aaaa | | |
| | 00 0D | 0000 bbbb | SetList Name 7 | (0 - 127)<br>0 - 127 [ASCII] |
| # | 00 0E | 0000 aaaa | | |
| | 00 0F | 0000 bbbb | SetList Name 8 | (0 - 127)<br>0 - 127 [ASCII] |
| # | 00 10 | 0000 aaaa | | |
| | 00 11 | 0000 bbbb | SetList Name 9 | (0 - 127)<br>0 - 127 [ASCII] |
| # | 00 12 | 0000 aaaa | | |
| | 00 13 | 0000 bbbb | SetList Name 10 | (0 - 127)<br>0 - 127 [ASCII] |
| # | 00 14 | 0000 aaaa | | |
| | 00 15 | 0000 bbbb | SetList Name 11 | (0 - 127)<br>0 - 127 [ASCII] |
| # | 00 16 | 0000 aaaa | | |
| | 00 17 | 0000 bbbb | SetList Name 12 | (0 - 127)<br>0 - 127 [ASCII] |
| # | 00 18 | 0000 aaaa | | |
| | 00 19 | 0000 bbbb | SetList Name 13 | (0 - 127)<br>0 - 127 [ASCII] |
| # | 00 1A | 0000 aaaa | | |
| | 00 1B | 0000 bbbb | SetList Name 14 | (0 - 127)<br>0 - 127 [ASCII] |
| # | 00 1C | 0000 aaaa | | |
| | 00 1D | 0000 bbbb | SetList Name 15 | (0 - 127)<br>0 - 127 [ASCII] |
| # | 00 1E | 0000 aaaa | | |
| | 00 1F | 0000 bbbb | SetList Name 16 | (0 - 127)<br>0 - 127 [ASCII] |
| # | 00 20 | 0000 aaaa | | |
| | 00 21 | 0000 bbbb | | |
| | 00 22 | 0000 cccc | | |
| | 00 23 | 0000 dddd | Step 1 KitNum | (-1 - 199)<br>END(*), 1 - 200 |
| # | 00 24 | 0000 aaaa | | |
| | 00 25 | 0000 bbbb | | |
| | 00 26 | 0000 cccc | | |
| | 00 27 | 0000 dddd | Step 2 KitNum | (-1 - 199)<br>END(*), 1 - 200 |
| # | 00 28 | 0000 aaaa | | |
| | 00 29 | 0000 bbbb | | |
| | 00 2A | 0000 cccc | | |
| | 00 2B | 0000 dddd | Step 3 KitNum | (-1 - 199)<br>END(*), 1 - 200 |
| # | 00 2C | 0000 aaaa | | |
| | 00 2D | 0000 bbbb | | |
| | 00 2E | 0000 cccc | | |
| | 00 2F | 0000 dddd | Step 4 KitNum | (-1 - 199)<br>END(*), 1 - 200 |
| # | 00 30 | 0000 aaaa | | |
| | 00 31 | 0000 bbbb | | |
| | 00 32 | 0000 cccc | | |
| | 00 33 | 0000 dddd | Step 5 KitNum | (-1 - 199)<br>END(*), 1 - 200 |
| # | 00 34 | 0000 aaaa | | |
| | 00 35 | 0000 bbbb | | |
| | 00 36 | 0000 cccc | | |
| | 00 37 | 0000 dddd | Step 6 KitNum | (-1 - 199)<br>END(*), 1 - 200 |
| # | 00 38 | 0000 aaaa | | |
| | 00 39 | 0000 bbbb | | |
| | 00 3A | 0000 cccc | | |
| | 00 3B | 0000 dddd | Step 7 KitNum | (-1 - 199)<br>END(*), 1 - 200 |
| # | 00 3C | 0000 aaaa | | |
| | 00 3D | 0000 bbbb | | |
| | 00 3E | 0000 cccc | | |
| | 00 3F | 0000 dddd | Step 8 KitNum | (-1 - 199)<br>END(*), 1 - 200 |
| # | 00 40 | 0000 aaaa | | |
| | 00 41 | 0000 bbbb | | |
| | 00 42 | 0000 cccc | | |
| | 00 43 | 0000 dddd | Step 9 KitNum | (-1 - 199)<br>END(*), 1 - 200 |
| # | 00 44 | 0000 aaaa | | |
| | 00 45 | 0000 bbbb | | |
| | 00 46 | 0000 cccc | | |
| | 00 47 | 0000 dddd | Step 10 KitNum | (-1 - 199)<br>END(*), 1 - 200 |
| # | 00 48 | 0000 aaaa | | |
| | 00 49 | 0000 bbbb | | |
| | 00 4A | 0000 cccc | | |
| | 00 4B | 0000 dddd | Step 11 KitNum | (-1 - 199)<br>END(*), 1 - 200 |
| # | 00 4C | 0000 aaaa | | |

| | | | | |
|---|---|---|---|---|
| | 00 4D | 0000 bbbb | | |
| | 00 4E | 0000 cccc | | |
| | 00 4F | 0000 dddd | Step 12 KitNum | (-1 - 199)<br>END(*), 1 - 200 |
| # | 00 50 | 0000 aaaa | | |
| | 00 51 | 0000 bbbb | | |
| | 00 52 | 0000 cccc | | |
| | 00 53 | 0000 dddd | Step 13 KitNum | (-1 - 199)<br>END(*), 1 - 200 |
| # | 00 54 | 0000 aaaa | | |
| | 00 55 | 0000 bbbb | | |
| | 00 56 | 0000 cccc | | |
| | 00 57 | 0000 dddd | Step 14 KitNum | (-1 - 199)<br>END(*), 1 - 200 |
| # | 00 58 | 0000 aaaa | | |
| | 00 59 | 0000 bbbb | | |
| | 00 5A | 0000 cccc | | |
| | 00 5B | 0000 dddd | Step 15 KitNum | (-1 - 199)<br>END(*), 1 - 200 |
| # | 00 5C | 0000 aaaa | | |
| | 00 5D | 0000 bbbb | | |
| | 00 5E | 0000 cccc | | |
| | 00 5F | 0000 dddd | Step 16 KitNum | (-1 - 199)<br>END(*), 1 - 200 |
| # | 00 60 | 0000 aaaa | | |
| | 00 61 | 0000 bbbb | | |
| | 00 62 | 0000 cccc | | |
| | 00 63 | 0000 dddd | Step 17 KitNum | (-1 - 199)<br>END(*), 1 - 200 |
| # | 00 64 | 0000 aaaa | | |
| | 00 65 | 0000 bbbb | | |
| | 00 66 | 0000 cccc | | |
| | 00 67 | 0000 dddd | Step 18 KitNum | (-1 - 199)<br>END(*), 1 - 200 |
| # | 00 68 | 0000 aaaa | | |
| | 00 69 | 0000 bbbb | | |
| | 00 6A | 0000 cccc | | |
| | 00 6B | 0000 dddd | Step 19 KitNum | (-1 - 199)<br>END(*), 1 - 200 |
| # | 00 6C | 0000 aaaa | | |
| | 00 6D | 0000 bbbb | | |
| | 00 6E | 0000 cccc | | |
| | 00 6F | 0000 dddd | Step 20 KitNum | (-1 - 199)<br>END(*), 1 - 200 |
| # | 00 70 | 0000 aaaa | | |
| | 00 71 | 0000 bbbb | | |
| | 00 72 | 0000 cccc | | |
| | 00 73 | 0000 dddd | Step 21 KitNum | (-1 - 199)<br>END(*), 1 - 200 |
| # | 00 74 | 0000 aaaa | | |
| | 00 75 | 0000 bbbb | | |
| | 00 76 | 0000 cccc | | |
| | 00 77 | 0000 dddd | Step 22 KitNum | (-1 - 199)<br>END(*), 1 - 200 |
| # | 00 78 | 0000 aaaa | | |
| | 00 79 | 0000 bbbb | | |
| | 00 7A | 0000 cccc | | |
| | 00 7B | 0000 dddd | Step 23 KitNum | (-1 - 199)<br>END(*), 1 - 200 |
| # | 00 7C | 0000 aaaa | | |
| | 00 7D | 0000 bbbb | | |
| | 00 7E | 0000 cccc | | |
| | 00 7F | 0000 dddd | Step 24 KitNum | (-1 - 199)<br>END(*), 1 - 200 |
| # | 01 00 | 0000 aaaa | | |
| | 01 01 | 0000 bbbb | | |
| | 01 02 | 0000 cccc | | |
| | 01 03 | 0000 dddd | Step 25 KitNum | (-1 - 199)<br>END(*), 1 - 200 |
| # | 01 04 | 0000 aaaa | | |
| | 01 05 | 0000 bbbb | | |
| | 01 06 | 0000 cccc | | |
| | 01 07 | 0000 dddd | Step 26 KitNum | (-1 - 199)<br>END(*), 1 - 200 |
| # | 01 08 | 0000 aaaa | | |
| | 01 09 | 0000 bbbb | | |
| | 01 0A | 0000 cccc | | |
| | 01 0B | 0000 dddd | Step 27 KitNum | (-1 - 199)<br>END(*), 1 - 200 |
| # | 01 0C | 0000 aaaa | | |
| | 01 0D | 0000 bbbb | | |
| | 01 0E | 0000 cccc | | |
| | 01 0F | 0000 dddd | Step 28 KitNum | (-1 - 199)<br>END(*), 1 - 200 |
| # | 01 10 | 0000 aaaa | | |
| | 01 11 | 0000 bbbb | | |
| | 01 12 | 0000 cccc | | |
| | 01 13 | 0000 dddd | Step 29 KitNum | (-1 - 199)<br>END(*), 1 - 200 |
| # | 01 14 | 0000 aaaa | | |
| | 01 15 | 0000 bbbb | | |
| | 01 16 | 0000 cccc | | |
| | 01 17 | 0000 dddd | Step 30 KitNum | (-1 - 199)<br>END(*), 1 - 200 |

| | | | | |
|---|---|---|---|---|
| # | 01 18 | 0000 aaaa | | |
| | 01 19 | 0000 bbbb | | |
| | 01 1A | 0000 cccc | | |
| | 01 1B | 0000 dddd | Step 31 KitNum | (-1 - 199)<br>END(*), 1 - 200 |
| # | 01 1C | 0000 aaaa | | |
| | 01 1D | 0000 bbbb | | |
| | 01 1E | 0000 cccc | | |
| | 01 1F | 0000 dddd | Step 32 KitNum | (-1 - 199)<br>END(*), 1 - 200 |
| 00 00 01 20 | | | Total Size | |

(*) The last step of each set list (shown as END on the actual unit) has a value of "-1."

* [KitCommon]
Some characters are not displayed for Kit Name.

| Offset Address | | Description | |
|---|---|---|---|
| 00 00 | 0aaa aaaa | Kit Name 1 | (0 - 127)<br>0 - 127 [ASCII] |
| 00 01 | 0aaa aaaa | Kit Name 2 | (0 - 127)<br>0 - 127 [ASCII] |
| 00 02 | 0aaa aaaa | Kit Name 3 | (0 - 127)<br>0 - 127 [ASCII] |
| 00 03 | 0aaa aaaa | Kit Name 4 | (0 - 127)<br>0 - 127 [ASCII] |
| 00 04 | 0aaa aaaa | Kit Name 5 | (0 - 127)<br>0 - 127 [ASCII] |
| 00 05 | 0aaa aaaa | Kit Name 6 | (0 - 127)<br>0 - 127 [ASCII] |
| 00 06 | 0aaa aaaa | Kit Name 7 | (0 - 127)<br>0 - 127 [ASCII] |
| 00 07 | 0aaa aaaa | Kit Name 8 | (0 - 127)<br>0 - 127 [ASCII] |
| 00 08 | 0aaa aaaa | Kit Name 9 | (0 - 127)<br>0 - 127 [ASCII] |
| 00 09 | 0aaa aaaa | Kit Name 10 | (0 - 127)<br>0 - 127 [ASCII] |
| 00 0A | 0aaa aaaa | Kit Name 11 | (0 - 127)<br>0 - 127 [ASCII] |
| 00 0B | 0aaa aaaa | Kit Name 12 | (0 - 127)<br>0 - 127 [ASCII] |
| 00 0C | 0aaa aaaa | Kit Name 13 | (0 - 127)<br>0 - 127 [ASCII] |
| 00 0D | 0aaa aaaa | Kit Name 14 | (0 - 127)<br>0 - 127 [ASCII] |
| 00 0E | 0aaa aaaa | Kit Name 15 | (0 - 127)<br>0 - 127 [ASCII] |
| 00 0F | 0aaa aaaa | Kit Name 16 | (0 - 127)<br>0 - 127 [ASCII] |
| 00 10 | 0aaa aaaa | Kit Memo 1 | (0 - 127)<br>0 - 127 [ASCII] |
| 00 11 | 0aaa aaaa | Kit Memo 2 | (0 - 127)<br>0 - 127 [ASCII] |
| 00 12 | 0aaa aaaa | Kit Memo 3 | (0 - 127)<br>0 - 127 [ASCII] |
| 00 13 | 0aaa aaaa | Kit Memo 4 | (0 - 127)<br>0 - 127 [ASCII] |
| 00 14 | 0aaa aaaa | Kit Memo 5 | (0 - 127)<br>0 - 127 [ASCII] |
| 00 15 | 0aaa aaaa | Kit Memo 6 | (0 - 127)<br>0 - 127 [ASCII] |
| 00 16 | 0aaa aaaa | Kit Memo 7 | (0 - 127)<br>0 - 127 [ASCII] |
| 00 17 | 0aaa aaaa | Kit Memo 8 | (0 - 127)<br>0 - 127 [ASCII] |
| 00 18 | 0aaa aaaa | Kit Memo 9 | (0 - 127)<br>0 - 127 [ASCII] |
| 00 19 | 0aaa aaaa | Kit Memo 10 | (0 - 127)<br>0 - 127 [ASCII] |
| 00 1A | 0aaa aaaa | Kit Memo 11 | (0 - 127)<br>0 - 127 [ASCII] |
| 00 1B | 0aaa aaaa | Kit Memo 12 | (0 - 127)<br>0 - 127 [ASCII] |
| 00 1C | 0aaa aaaa | Kit Memo 13 | (0 - 127)<br>0 - 127 [ASCII] |
| 00 1D | 0aaa aaaa | Kit Memo 14 | (0 - 127)<br>0 - 127 [ASCII] |
| 00 1E | 0aaa aaaa | Kit Memo 15 | (0 - 127)<br>0 - 127 [ASCII] |
| 00 1F | 0aaa aaaa | Kit Memo 16 | (0 - 127)<br>0 - 127 [ASCII] |
| 00 20 | 0aaa aaaa | Kit Memo 17 | (0 - 127)<br>0 - 127 [ASCII] |
| 00 21 | 0aaa aaaa | Kit Memo 18 | (0 - 127)<br>0 - 127 [ASCII] |
| 00 22 | 0aaa aaaa | Kit Memo 19 | (0 - 127)<br>0 - 127 [ASCII] |
| 00 23 | 0aaa aaaa | Kit Memo 20 | (0 - 127)<br>0 - 127 [ASCII] |
| 00 24 | 0aaa aaaa | Kit Memo 21 | (0 - 127) |

| | | | |
|---|---|---|---|
| | | | 0 - 127 [ASCII] |
| | 00 25 | 0aaa aaaa | Kit Memo 22 (0 - 127) 0 - 127 [ASCII] |
| | 00 26 | 0aaa aaaa | Kit Memo 23 (0 - 127) 0 - 127 [ASCII] |
| | 00 27 | 0aaa aaaa | Kit Memo 24 (0 - 127) 0 - 127 [ASCII] |
| | 00 28 | 0aaa aaaa | Kit Memo 25 (0 - 127) 0 - 127 [ASCII] |
| | 00 29 | 0aaa aaaa | Kit Memo 26 (0 - 127) 0 - 127 [ASCII] |
| | 00 2A | 0aaa aaaa | Kit Memo 27 (0 - 127) 0 - 127 [ASCII] |
| | 00 2B | 0aaa aaaa | Kit Memo 28 (0 - 127) 0 - 127 [ASCII] |
| | 00 2C | 0aaa aaaa | Kit Memo 29 (0 - 127) 0 - 127 [ASCII] |
| | 00 2D | 0aaa aaaa | Kit Memo 30 (0 - 127) 0 - 127 [ASCII] |
| | 00 2E | 0aaa aaaa | Kit Memo 31 (0 - 127) 0 - 127 [ASCII] |
| | 00 2F | 0aaa aaaa | Kit Memo 32 (0 - 127) 0 - 127 [ASCII] |
| | 00 30 | 0aaa aaaa | Kit Memo 33 (0 - 127) 0 - 127 [ASCII] |
| | 00 31 | 0aaa aaaa | Kit Memo 34 (0 - 127) 0 - 127 [ASCII] |
| | 00 32 | 0aaa aaaa | Kit Memo 35 (0 - 127) 0 - 127 [ASCII] |
| | 00 33 | 0aaa aaaa | Kit Memo 36 (0 - 127) 0 - 127 [ASCII] |
| | 00 34 | 0aaa aaaa | Kit Memo 37 (0 - 127) 0 - 127 [ASCII] |
| | 00 35 | 0aaa aaaa | Kit Memo 38 (0 - 127) 0 - 127 [ASCII] |
| | 00 36 | 0aaa aaaa | Kit Memo 39 (0 - 127) 0 - 127 [ASCII] |
| | 00 37 | 0aaa aaaa | Kit Memo 40 (0 - 127) 0 - 127 [ASCII] |
| | 00 38 | 0aaa aaaa | Kit Memo 41 (0 - 127) 0 - 127 [ASCII] |
| | 00 39 | 0aaa aaaa | Kit Memo 42 (0 - 127) 0 - 127 [ASCII] |
| | 00 3A | 0aaa aaaa | Kit Memo 43 (0 - 127) 0 - 127 [ASCII] |
| | 00 3B | 0aaa aaaa | Kit Memo 44 (0 - 127) 0 - 127 [ASCII] |
| | 00 3C | 0aaa aaaa | Kit Memo 45 (0 - 127) 0 - 127 [ASCII] |
| | 00 3D | 0aaa aaaa | Kit Memo 46 (0 - 127) 0 - 127 [ASCII] |
| | 00 3E | 0aaa aaaa | Kit Memo 47 (0 - 127) 0 - 127 [ASCII] |
| | 00 3F | 0aaa aaaa | Kit Memo 48 (0 - 127) 0 - 127 [ASCII] |
| | 00 40 | 0aaa aaaa | Kit Memo 49 (0 - 127) 0 - 127 [ASCII] |
| | 00 41 | 0aaa aaaa | Kit Memo 50 (0 - 127) 0 - 127 [ASCII] |
| | 00 42 | 0aaa aaaa | Kit Memo 51 (0 - 127) 0 - 127 [ASCII] |
| | 00 43 | 0aaa aaaa | Kit Memo 52 (0 - 127) 0 - 127 [ASCII] |
| | 00 44 | 0aaa aaaa | Kit Memo 53 (0 - 127) 0 - 127 [ASCII] |
| | 00 45 | 0aaa aaaa | Kit Memo 54 (0 - 127) 0 - 127 [ASCII] |
| | 00 46 | 0aaa aaaa | Kit Memo 55 (0 - 127) 0 - 127 [ASCII] |
| | 00 47 | 0aaa aaaa | Kit Memo 56 (0 - 127) 0 - 127 [ASCII] |
| | 00 48 | 0aaa aaaa | Kit Memo 57 (0 - 127) 0 - 127 [ASCII] |
| | 00 49 | 0aaa aaaa | Kit Memo 58 (0 - 127) 0 - 127 [ASCII] |
| | 00 4A | 0aaa aaaa | Kit Memo 59 (0 - 127) 0 - 127 [ASCII] |
| | 00 4B | 0aaa aaaa | Kit Memo 60 (0 - 127) 0 - 127 [ASCII] |
| | 00 4C | 0aaa aaaa | Kit Memo 61 (0 - 127) 0 - 127 [ASCII] |
| | 00 4D | 0aaa aaaa | Kit Memo 62 (0 - 127) 0 - 127 [ASCII] |
| | 00 4E | 0aaa aaaa | Kit Memo 63 (0 - 127) 0 - 127 [ASCII] |
| | 00 4F | 0aaa aaaa | Kit Memo 64 (0 - 127) 0 - 127 [ASCII] |
| # | 00 50 | 0000 aaaa | |
| | 00 51 | 0000 bbbb | |
| | 00 52 | 0000 cccc | |
| | 00 53 | 0000 dddd | Volume (-601 - 60) -INF, -60.0 - +6.0 [dB] |

| | | | |
|---|---|---|---|
| | 00 54 | 0000 000a | ClickSettingSw (0 - 1)<br>OFF, ON |
| | 00 55 | 0000 000a | (reserved) |
| # | 00 56 | 0000 aaaa | |
| | 00 57 | 0000 bbbb | |
| | 00 58 | 0000 cccc | |
| | 00 59 | 0000 dddd | TempoValue (200 - 2600)<br>20.0 - 260.0 |
| | 00 5A | 0000 00aa | MFXOutput1 (0 - 2)<br>MASTER+PHONES, PHONES-ONLY, SIDE CHAIN |
| | 00 5B | 0000 00aa | MFXOutput2 (0 - 2)<br>MASTER+PHONES, PHONES-ONLY, SIDE CHAIN |
| | 00 5C | 0000 00aa | MFXOutput3 (0 - 2)<br>MASTER+PHONES, PHONES-ONLY, SIDE CHAIN |
| | 00 5D | 0000 00aa | MFXOutput4 (0 - 2)<br>MASTER+PHONES, PHONES-ONLY, SIDE CHAIN |
| | 00 5E | 0000 aaaa | MFXDirectOutput1 (0 - 9)<br>OFF,<br>DIRECT 1,<br>DIRECT 2,<br>DIRECT 1+2(L+R),<br>DIRECT 3,<br>DIRECT 4,<br>DIRECT 3+4(L+R),<br>MASTER DIRECT L,<br>MASTER DIRECT R,<br>MASTER DIRECT L+R |
| | 00 5F | 0000 aaaa | MFXDirectOutput2 (0 - 9)<br>OFF,<br>DIRECT 1,<br>DIRECT 2,<br>DIRECT 1+2(L+R),<br>DIRECT 3,<br>DIRECT 4,<br>DIRECT 3+4(L+R),<br>MASTER DIRECT L,<br>MASTER DIRECT R,<br>MASTER DIRECT L+R |
| | 00 60 | 0000 aaaa | MFXDirectOutput3 (0 - 9)<br>OFF,<br>DIRECT 1,<br>DIRECT 2,<br>DIRECT 1+2(L+R),<br>DIRECT 3,<br>DIRECT 4,<br>DIRECT 3+4(L+R),<br>MASTER DIRECT L,<br>MASTER DIRECT R,<br>MASTER DIRECT L+R |
| | 00 61 | 0000 aaaa | MFXDirectOutput4 (0 - 9)<br>OFF,<br>DIRECT 1,<br>DIRECT 2,<br>DIRECT 1+2(L+R),<br>DIRECT 3,<br>DIRECT 4,<br>DIRECT 3+4(L+R),<br>MASTER DIRECT L,<br>MASTER DIRECT R,<br>MASTER DIRECT L+R |
| | 00 62 | 0000 000a | SideChainOutput (0 - 1)<br>MASTER+PHONES, PHONES-ONLY |
| | 00 63 | 0000 aaaa | SideChainDirectOutput (0 - 9)<br>OFF,<br>DIRECT 1,<br>DIRECT 2,<br>DIRECT 1+2(L+R),<br>DIRECT 3,<br>DIRECT 4,<br>DIRECT 3+4(L+R),<br>MASTER DIRECT L,<br>MASTER DIRECT R,<br>MASTER DIRECT L+R |
| | 00 64 | 000a aaaa | Pad Sequence Pad (0 - 19)<br>OFF, PAD1, PAD2, PAD3, PAD4, PAD5, PAD6, PAD7,<br>PAD8, PAD9, T1, T2, T3, T4, T5, T6, T7, T8,<br>FS1, FS2 |
| | 00 65 | 000a aaaa | Pad Sequence Data1 (0 - 20)<br>END, PAD1, PAD2, PAD3, PAD4, PAD5, PAD6, PAD7,<br>PAD8, PAD9, T1, T2, T3, T4, T5, T6, T7, T8,<br>FS1, FS2, SKIP |
| | 00 66 | 000a aaaa | Pad Sequence Data2 (0 - 20)<br>END, PAD1, PAD2, PAD3, PAD4, PAD5, PAD6, PAD7,<br>PAD8, PAD9, T1, T2, T3, T4, T5, T6, T7, T8,<br>FS1, FS2, SKIP |
| | 00 67 | 000a aaaa | Pad Sequence Data3 (0 - 20)<br>END, PAD1, PAD2, PAD3, PAD4, PAD5, PAD6, PAD7,<br>PAD8, PAD9, T1, T2, T3, T4, T5, T6, T7, T8,<br>FS1, FS2, SKIP |
| | 00 68 | 000a aaaa | Pad Sequence Data4 (0 - 20)<br>END, PAD1, PAD2, PAD3, PAD4, PAD5, PAD6, PAD7,<br>PAD8, PAD9, T1, T2, T3, T4, T5, T6, T7, T8,<br>FS1, FS2, SKIP |

| | | | |
|---|---|---|---|
| | 00 69 | 000a aaaa | Pad Sequence Data5 (0 - 20)<br>END, PAD1, PAD2, PAD3, PAD4, PAD5, PAD6, PAD7, PAD8, PAD9, T1, T2, T3, T4, T5, T6, T7, T8, FS1, FS2, SKIP |
| | 00 6A | 000a aaaa | Pad Sequence Data6 (0 - 20)<br>END, PAD1, PAD2, PAD3, PAD4, PAD5, PAD6, PAD7, PAD8, PAD9, T1, T2, T3, T4, T5, T6, T7, T8, FS1, FS2, SKIP |
| | 00 6B | 000a aaaa | Pad Sequence Data7 (0 - 20)<br>END, PAD1, PAD2, PAD3, PAD4, PAD5, PAD6, PAD7, PAD8, PAD9, T1, T2, T3, T4, T5, T6, T7, T8, FS1, FS2, SKIP |
| | 00 6C | 000a aaaa | Pad Sequence Data8 (0 - 20)<br>END, PAD1, PAD2, PAD3, PAD4, PAD5, PAD6, PAD7, PAD8, PAD9, T1, T2, T3, T4, T5, T6, T7, T8, FS1, FS2, SKIP |
| | 00 6D | 000a aaaa | Pad Sequence Data9 (0 - 20)<br>END, PAD1, PAD2, PAD3, PAD4, PAD5, PAD6, PAD7, PAD8, PAD9, T1, T2, T3, T4, T5, T6, T7, T8, FS1, FS2, SKIP |
| | 00 6E | 000a aaaa | Pad Sequence Data10 (0 - 20)<br>END, PAD1, PAD2, PAD3, PAD4, PAD5, PAD6, PAD7, PAD8, PAD9, T1, T2, T3, T4, T5, T6, T7, T8, FS1, FS2, SKIP |
| | 00 6F | 000a aaaa | Pad Sequence Data11 (0 - 20)<br>END, PAD1, PAD2, PAD3, PAD4, PAD5, PAD6, PAD7, PAD8, PAD9, T1, T2, T3, T4, T5, T6, T7, T8, FS1, FS2, SKIP |
| | 00 70 | 000a aaaa | Pad Sequence Data12 (0 - 20)<br>END, PAD1, PAD2, PAD3, PAD4, PAD5, PAD6, PAD7, PAD8, PAD9, T1, T2, T3, T4, T5, T6, T7, T8, FS1, FS2, SKIP |
| | 00 71 | 000a aaaa | Pad Sequence Data13 (0 - 20)<br>END, PAD1, PAD2, PAD3, PAD4, PAD5, PAD6, PAD7, PAD8, PAD9, T1, T2, T3, T4, T5, T6, T7, T8, FS1, FS2, SKIP |
| | 00 72 | 000a aaaa | Pad Sequence Data14 (0 - 20)<br>END, PAD1, PAD2, PAD3, PAD4, PAD5, PAD6, PAD7, PAD8, PAD9, T1, T2, T3, T4, T5, T6, T7, T8, FS1, FS2, SKIP |
| | 00 73 | 000a aaaa | Pad Sequence Data15 (0 - 20)<br>END, PAD1, PAD2, PAD3, PAD4, PAD5, PAD6, PAD7, PAD8, PAD9, T1, T2, T3, T4, T5, T6, T7, T8, FS1, FS2, SKIP |
| | 00 74 | 000a aaaa | Pad Sequence Data16 (0 - 20)<br>END, PAD1, PAD2, PAD3, PAD4, PAD5, PAD6, PAD7, PAD8, PAD9, T1, T2, T3, T4, T5, T6, T7, T8, FS1, FS2, SKIP |
| # | 00 75 | 0000 aaaa | (reserved) |
| | 00 76 | 0000 bbbb | (reserved) |
| | 00 77 | 0000 cccc | (reserved) |
| | 00 78 | 0000 dddd | (reserved) |
| | 00 00 00 79 | Total Size | |

* [KitControl]

| Offset Address | | Description | |
|---|---|---|---|
| 00 00 | 0000 00aa | Pad Led Func P1 | (0 - 2)<br>STATIC, STATE, DYNAMIC |
| 00 01 | 0000 00aa | Pad Led Func P2 | (0 - 2)<br>STATIC, STATE, DYNAMIC |
| 00 02 | 0000 00aa | Pad Led Func P3 | (0 - 2)<br>STATIC, STATE, DYNAMIC |
| 00 03 | 0000 00aa | Pad Led Func P4 | (0 - 2)<br>STATIC, STATE, DYNAMIC |
| 00 04 | 0000 00aa | Pad Led Func P5 | (0 - 2)<br>STATIC, STATE, DYNAMIC |
| 00 05 | 0000 00aa | Pad Led Func P6 | (0 - 2)<br>STATIC, STATE, DYNAMIC |
| 00 06 | 0000 00aa | Pad Led Func P7 | (0 - 2)<br>STATIC, STATE, DYNAMIC |
| 00 07 | 0000 00aa | Pad Led Func P8 | (0 - 2)<br>STATIC, STATE, DYNAMIC |
| 00 08 | 0000 00aa | Pad Led Func P9 | (0 - 2)<br>STATIC, STATE, DYNAMIC |
| 00 09 | 0000 000a | (reserved) | |
| 00 0A | 0000 000a | (reserved) | |
| 00 0B | 0000 000a | (reserved) | |
| 00 0C | 0000 000a | (reserved) | |
| 00 0D | 0000 000a | (reserved) | |
| 00 0E | 0000 000a | (reserved) | |
| 00 0F | 0000 000a | (reserved) | |
| 00 10 | 0000 000a | (reserved) | |
| 00 11 | 0000 000a | (reserved) | |
| 00 12 | 0000 aaaa | Pad Led Color P1 | (0 - 15)<br>COLOR TABLE1 - COLOR TABLE16 |
| 00 13 | 0000 aaaa | Pad Led Color P2 | (0 - 15)<br>COLOR TABLE1 - COLOR TABLE16 |
| 00 14 | 0000 aaaa | Pad Led Color P3 | (0 - 15)<br>COLOR TABLE1 - COLOR TABLE16 |

| | | | |
|---|---|---|---|
| | 00 15 | 0000 aaaa | Pad Led Color P4 (0 - 15)<br>COLOR TABLE1 - COLOR TABLE16 |
| | 00 16 | 0000 aaaa | Pad Led Color P5 (0 - 15)<br>COLOR TABLE1 - COLOR TABLE16 |
| | 00 17 | 0000 aaaa | Pad Led Color P6 (0 - 15)<br>COLOR TABLE1 - COLOR TABLE16 |
| | 00 18 | 0000 aaaa | Pad Led Color P7 (0 - 15)<br>COLOR TABLE1 - COLOR TABLE16 |
| | 00 19 | 0000 aaaa | Pad Led Color P8 (0 - 15)<br>COLOR TABLE1 - COLOR TABLE16 |
| | 00 1A | 0000 aaaa | Pad Led Color P9 (0 - 15)<br>COLOR TABLE1 - COLOR TABLE16 |
| | 00 1B | 0000 aaaa | Vertical Led Color1 (0 - 15)<br>COLOR TABLE1 - COLOR TABLE16 |
| | 00 1C | 0000 aaaa | Vertical Led Color2 (0 - 15)<br>COLOR TABLE1 - COLOR TABLE16 |
| | 00 1D | 0000 aaaa | Vertical Led Color3 (0 - 15)<br>COLOR TABLE1 - COLOR TABLE16 |
| | 00 1E | 0000 aaaa | Vertical Led Color4 (0 - 15)<br>COLOR TABLE1 - COLOR TABLE16 |
| | 00 1F | 0000 aaaa | Vertical Led Color5 (0 - 15)<br>COLOR TABLE1 - COLOR TABLE16 |
| | 00 20 | 0000 aaaa | Vertical Led Color6 (0 - 15)<br>COLOR TABLE1 - COLOR TABLE16 |
| | 00 21 | 0000 aaaa | (reserved) |
| | 00 22 | 0000 aaaa | (reserved) |
| | 00 23 | 0000 aaaa | (reserved) |
| | 00 24 | 0000 000a | PadEditKnobSource (0 - 1)<br>SYSTEM, KIT |
| | 00 25 | 0aaa aaaa | Pad Edit Knob 1 Asgn Grp (0 - 127) |
| | 00 26 | 0aaa aaaa | Pad Edit Knob 2 Asgn Grp (0 - 127) |
| | 00 27 | 0aaa aaaa | (reserved) |
| | 00 28 | 0aaa aaaa | (reserved) |
| | 00 29 | 0aaa aaaa | Pad Edit Knob 1 Asgn PrmID (0 - 127) |
| | 00 2A | 0aaa aaaa | Pad Edit Knob 2 Asgn PrmID (0 - 127) |
| | 00 2B | 0aaa aaaa | (reserved) |
| | 00 2C | 0aaa aaaa | (reserved) |
| | 00 2D | 0aaa aaaa | (reserved) |
| | 00 2E | 0aaa aaaa | (reserved) |
| | 00 2F | 0aaa aaaa | (reserved) |
| | 00 30 | 0aaa aaaa | (reserved) |
| | 00 31 | 0aaa aaaa | Expression Pedal Assign (0 - 97)<br>OFF, CC01 - CC31, OFF, CC33 - CC95,<br>MASTER-EFX-CTRL, EXPRESSION |
| | 00 32 | 0000 000a | KitExpPedalSw (0 - 1)<br>OFF, ON |
| 00 00 00 33 | Total Size | | |

* [KitMidi]

| Offset Address | | Description | |
|---|---|---|---|
| # 00 00 | 0000 aaaa | | |
| 00 01 | 0000 bbbb | | |
| 00 02 | 0000 cccc | | |
| 00 03 | 0000 dddd | Note Pad1 | (0 - 128)<br>0 - 127, OFF |
| # 00 04 | 0000 aaaa | | |
| 00 05 | 0000 bbbb | | |
| 00 06 | 0000 cccc | | |
| 00 07 | 0000 dddd | Note Pad2 | (0 - 128)<br>0 - 127, OFF |
| # 00 08 | 0000 aaaa | | |
| 00 09 | 0000 bbbb | | |
| 00 0A | 0000 cccc | | |
| 00 0B | 0000 dddd | Note Pad3 | (0 - 128)<br>0 - 127, OFF |
| # 00 0C | 0000 aaaa | | |
| 00 0D | 0000 bbbb | | |
| 00 0E | 0000 cccc | | |
| 00 0F | 0000 dddd | Note Pad4 | (0 - 128)<br>0 - 127, OFF |
| # 00 10 | 0000 aaaa | | |
| 00 11 | 0000 bbbb | | |
| 00 12 | 0000 cccc | | |
| 00 13 | 0000 dddd | Note Pad5 | (0 - 128)<br>0 - 127, OFF |
| # 00 14 | 0000 aaaa | | |
| 00 15 | 0000 bbbb | | |
| 00 16 | 0000 cccc | | |
| 00 17 | 0000 dddd | Note Pad6 | (0 - 128)<br>0 - 127, OFF |
| # 00 18 | 0000 aaaa | | |
| 00 19 | 0000 bbbb | | |
| 00 1A | 0000 cccc | | |
| 00 1B | 0000 dddd | Note Pad7 | (0 - 128)<br>0 - 127, OFF |
| # 00 1C | 0000 aaaa | | |
| 00 1D | 0000 bbbb | | |
| 00 1E | 0000 cccc | | |
| 00 1F | 0000 dddd | Note Pad8 | (0 - 128) |

| | | | | |
|---|---|---|---|---|
| | | | | 0 - 127, OFF |
| # | 00 20 | 0000 aaaa | | |
| | 00 21 | 0000 bbbb | | |
| | 00 22 | 0000 cccc | | |
| | 00 23 | 0000 dddd | Note Pad9 | (0 - 128)<br>0 - 127, OFF |
| # | 00 24 | 0000 aaaa | | |
| | 00 25 | 0000 bbbb | | |
| | 00 26 | 0000 cccc | | |
| | 00 27 | 0000 dddd | Note T1 | (0 - 128)<br>0 - 127, OFF |
| # | 00 28 | 0000 aaaa | | |
| | 00 29 | 0000 bbbb | | |
| | 00 2A | 0000 cccc | | |
| | 00 2B | 0000 dddd | Note T2 | (0 - 128)<br>0 - 127, OFF |
| # | 00 2C | 0000 aaaa | | |
| | 00 2D | 0000 bbbb | | |
| | 00 2E | 0000 cccc | | |
| | 00 2F | 0000 dddd | Note T3 | (0 - 128)<br>0 - 127, OFF |
| # | 00 30 | 0000 aaaa | | |
| | 00 31 | 0000 bbbb | | |
| | 00 32 | 0000 cccc | | |
| | 00 33 | 0000 dddd | Note T4 | (0 - 128)<br>0 - 127, OFF |
| # | 00 34 | 0000 aaaa | | |
| | 00 35 | 0000 bbbb | | |
| | 00 36 | 0000 cccc | | |
| | 00 37 | 0000 dddd | Note T5 | (0 - 128)<br>0 - 127, OFF |
| # | 00 38 | 0000 aaaa | | |
| | 00 39 | 0000 bbbb | | |
| | 00 3A | 0000 cccc | | |
| | 00 3B | 0000 dddd | Note T6 | (0 - 128)<br>0 - 127, OFF |
| # | 00 3C | 0000 aaaa | | |
| | 00 3D | 0000 bbbb | | |
| | 00 3E | 0000 cccc | | |
| | 00 3F | 0000 dddd | Note T7 | (0 - 128)<br>0 - 127, OFF |
| # | 00 40 | 0000 aaaa | | |
| | 00 41 | 0000 bbbb | | |
| | 00 42 | 0000 cccc | | |
| | 00 43 | 0000 dddd | Note T8 | (0 - 128)<br>0 - 127, OFF |
| # | 00 44 | 0000 aaaa | | |
| | 00 45 | 0000 bbbb | | |
| | 00 46 | 0000 cccc | | |
| | 00 47 | 0000 dddd | Note FS1 | (0 - 128)<br>0 - 127, OFF |
| # | 00 48 | 0000 aaaa | | |
| | 00 49 | 0000 bbbb | | |
| | 00 4A | 0000 cccc | | |
| | 00 4B | 0000 dddd | Note FS2 | (0 - 128)<br>0 - 127, OFF |
| | 00 4C | 0aaa aaaa | Gate Time Pad1 | (1 - 80)<br>0.1 - 8.0 [s] |
| | 00 4D | 0aaa aaaa | Gate Time Pad2 | (1 - 80)<br>0.1 - 8.0 [s] |
| | 00 4E | 0aaa aaaa | Gate Time Pad3 | (1 - 80)<br>0.1 - 8.0 [s] |
| | 00 4F | 0aaa aaaa | Gate Time Pad4 | (1 - 80)<br>0.1 - 8.0 [s] |
| | 00 50 | 0aaa aaaa | Gate Time Pad5 | (1 - 80)<br>0.1 - 8.0 [s] |
| | 00 51 | 0aaa aaaa | Gate Time Pad6 | (1 - 80)<br>0.1 - 8.0 [s] |
| | 00 52 | 0aaa aaaa | Gate Time Pad7 | (1 - 80)<br>0.1 - 8.0 [s] |
| | 00 53 | 0aaa aaaa | Gate Time Pad8 | (1 - 80)<br>0.1 - 8.0 [s] |
| | 00 54 | 0aaa aaaa | Gate Time Pad9 | (1 - 80)<br>0.1 - 8.0 [s] |
| | 00 55 | 0aaa aaaa | Gate Time T1 | (1 - 80)<br>0.1 - 8.0 [s] |
| | 00 56 | 0aaa aaaa | Gate Time T2 | (1 - 80)<br>0.1 - 8.0 [s] |
| | 00 57 | 0aaa aaaa | Gate Time T3 | (1 - 80)<br>0.1 - 8.0 [s] |
| | 00 58 | 0aaa aaaa | Gate Time T4 | (1 - 80)<br>0.1 - 8.0 [s] |
| | 00 59 | 0aaa aaaa | Gate Time T5 | (1 - 80)<br>0.1 - 8.0 [s] |
| | 00 5A | 0aaa aaaa | Gate Time T6 | (1 - 80)<br>0.1 - 8.0 [s] |
| | 00 5B | 0aaa aaaa | Gate Time T7 | (1 - 80)<br>0.1 - 8.0 [s] |
| | 00 5C | 0aaa aaaa | Gate Time T8 | (1 - 80)<br>0.1 - 8.0 [s] |
| | 00 5D | 0aaa aaaa | Gate Time FS1 | (1 - 80)<br>0.1 - 8.0 [s] |
| | 00 5E | 0aaa aaaa | Gate Time FS2 | (1 - 80)<br>0.1 - 8.0 [s] |

| | Offset Address | | Description | |
|---|---|---|---|---|
| | 00 5F | 000a aaaa | Ch Pad1 | (0 - 16)<br>1 - 16, GLOBAL [ch] |
| | 00 60 | 000a aaaa | Ch Pad2 | (0 - 16)<br>1 - 16, GLOBAL [ch] |
| | 00 61 | 000a aaaa | Ch Pad3 | (0 - 16)<br>1 - 16, GLOBAL [ch] |
| | 00 62 | 000a aaaa | Ch Pad4 | (0 - 16)<br>1 - 16, GLOBAL [ch] |
| | 00 63 | 000a aaaa | Ch Pad5 | (0 - 16)<br>1 - 16, GLOBAL [ch] |
| | 00 64 | 000a aaaa | Ch Pad6 | (0 - 16)<br>1 - 16, GLOBAL [ch] |
| | 00 65 | 000a aaaa | Ch Pad7 | (0 - 16)<br>1 - 16, GLOBAL [ch] |
| | 00 66 | 000a aaaa | Ch Pad8 | (0 - 16)<br>1 - 16, GLOBAL [ch] |
| | 00 67 | 000a aaaa | Ch Pad9 | (0 - 16)<br>1 - 16, GLOBAL [ch] |
| | 00 68 | 000a aaaa | Ch T1 | (0 - 16)<br>1 - 16, GLOBAL [ch] |
| | 00 69 | 000a aaaa | Ch T2 | (0 - 16)<br>1 - 16, GLOBAL [ch] |
| | 00 6A | 000a aaaa | Ch T3 | (0 - 16)<br>1 - 16, GLOBAL [ch] |
| | 00 6B | 000a aaaa | Ch T4 | (0 - 16)<br>1 - 16, GLOBAL [ch] |
| | 00 6C | 000a aaaa | Ch T5 | (0 - 16)<br>1 - 16, GLOBAL [ch] |
| | 00 6D | 000a aaaa | Ch T6 | (0 - 16)<br>1 - 16, GLOBAL [ch] |
| | 00 6E | 000a aaaa | Ch T7 | (0 - 16)<br>1 - 16, GLOBAL [ch] |
| | 00 6F | 000a aaaa | Ch T8 | (0 - 16)<br>1 - 16, GLOBAL [ch] |
| | 00 70 | 000a aaaa | Ch FS1 | (0 - 16)<br>1 - 16, GLOBAL [ch] |
| | 00 71 | 000a aaaa | Ch FS2 | (0 - 16)<br>1 - 16, GLOBAL [ch] |
| | 00 72 | 000a aaaa | Pad Edit Knob 1 Ch | (0 - 16)<br>1 - 16, GLOBAL [ch] |
| | 00 73 | 000a aaaa | Pad Edit Knob 2 Ch | (0 - 16)<br>1 - 16, GLOBAL [ch] |
| | 00 74 | 000a aaaa | Exp Pedal Ch | (0 - 16)<br>1 - 16, GLOBAL [ch] |
| # | 00 75 | 0000 aaaa | | |
| | 00 76 | 0000 bbbb | | |
| | 00 77 | 0000 cccc | | |
| | 00 78 | 0000 dddd | Note Hh Closed Pedal | (0 - 128)<br>0 - 127, OFF |
| | 00 00 00 79 | | Total Size | |

* [SideChain]

| | Offset Address | | Description | |
|---|---|---|---|---|
| | 00 00 | 0000 000a | Switch | (0 - 1)<br>OFF, ON |
| # | 00 01 | 0000 aaaa | | |
| | 00 02 | 0000 bbbb | Threshold | (-48 - 0)<br>-48 - 0[dB] |
| # | 00 03 | 0000 aaaa | | |
| | 00 04 | 0000 bbbb | Gain | (-24 - 24)<br>-12.0 - 12.0 [dB] |
| | 00 05 | 0aaa aaaa | Attack | (0 - 100)<br>0.1 - 100 |
| | 00 06 | 0aaa aaaa | Release | (0 - 99)<br>10 - 1000 |
| | 00 07 | 0000 0aaa | Ratio | (0 - 7)<br>1:1, 2:1, 3:1, 4:1, 8:1, 16:1, 32:1, INF:1 |
| | 00 08 | 0000 00aa | Knee | (0 - 3)<br>HARD, SOFT1, SOFT2, SOFT3 |
| | 00 09 | 0aaa aaaa | PreGate Threshold | (0 - 127)<br>0 - 127 |
| | 00 0A | 0000 000a | PreGate Mode | (0 - 1)<br>GATE, DUCK |
| | 00 0B | 0aaa aaaa | PreGate Attack | (0 - 127)<br>0 - 127 |
| | 00 0C | 0aaa aaaa | PreGate Hold | (0 - 127)<br>0 - 127 |
| | 00 0D | 0aaa aaaa | PreGate Release | (0 - 127)<br>0 - 127 |
| | 00 0E | 0aaa aaaa | PreGate Balance | (0 - 100)<br>D100:0W - D0:100W |
| | 00 0F | 0aaa aaaa | PreGate Level | (0 - 127)<br>0 - 127 |
| # | 00 10 | 0000 aaaa | | |
| | 00 11 | 0000 bbbb | PreGate Output Gain | (-12 - 12)<br>-12 - 12 [dB] |
| | 00 12 | 0000 000a | PreGate Switch | (0 - 1)<br>OFF, ON |

| 00 00 00 13 | Total Size | |
|---|---|---|

* [KitPad]

| Offset Address | | Description |
|---|---|---|
| 00 00 | 0000 0aaa | LayerType (0 - 7)<br>MIX, FADE1, FADE2, XFADE, SWITCH, SW-MONO, ALTERNATE, HIHAT |
| 00 01 | 0aaa aaaa | Layer Fade Point (1 - 127) |
| 00 02 | 0aaa aaaa | Layer Fade End (1 - 127) |
| 00 03 | 0000 000a | DynamicsSwitch (0 - 1)<br>OFF, ON |
| 00 04 | 0000 00aa | DynamicsCurve (0 - 3)<br>LINEAR, LOUD1, LOUD2, LOUD3 |
| 00 05 | 0aaa aaaa | FixedVelocity (1 - 127) |
| 00 06 | 0000 00aa | ExtControl (0 - 2)<br>OFF, ON, ON-ALT |
| 00 07 | 0aaa aaaa | HiHat Closed Pedal Level (0 - 127) |
| 00 08 | 0aaa aaaa | HiHat Closed Pedal Fade In (0 - 127) |
| 00 09 | 0aaa aaaa | HiHat Closed Pedal Decay (0 - 127) |
| 00 0A | 000a aaaa | MuteGroupTx (0 - 16) |
| 00 0B | 000a aaaa | MuteGroupRx (0 - 16) |
| 00 0C | 000a aaaa | PadLinkTx (0 - 16) |
| 00 0D | 000a aaaa | PadLinkRx (0 - 16) |
| 00 0E | 0000 00aa | Output (0 - 3)<br>MASTER+PHONES, PHONES-ONLY, MFX, SIDECHAIN |
| 00 0F | 0000 aaaa | DirectOutput (0 - 9)<br>OFF, DIRECT 1, DIRECT 2, DIRECT 1+2(L+R), DIRECT 3, DIRECT 4, DIRECT 3+4(L+R), MASTER DIRECT L, MASTER DIRECT R, MASTER DIRECT L+R |
| 00 10 | 0000 0aaa | MfxSelect (1 - 4)<br>MFX1, MFX2, MFX3, MFX4 |
| 00 11 | 0000 000a | SideChainControlSend (0 - 1)<br>OFF, ON |
| 00 12 | 0000 000a | RxControlSw (0 - 1)<br>OFF, ON |
| 00 13 | 0000 000a | TriggerReserve (0 - 1)<br>OFF, ON |
| 00 00 00 14 | Total Size | |

* [KitPadLayer]

| Offset Address | | Description |
|---|---|---|
| 00 00 | 0000 000a | LayerSw (0 - 1)<br>OFF, ON |
| # 00 01 | 0000 aaaa | |
| 00 02 | 0000 bbbb | |
| 00 03 | 0000 cccc | |
| 00 04 | 0000 dddd | WaveNum (0 - 20000) |
| # 00 05 | 0000 aaaa | |
| 00 06 | 0000 bbbb | |
| 00 07 | 0000 cccc | |
| 00 08 | 0000 dddd | Volume (-601 - 60)<br>-INF, -60.0 - +6.0 [dB] |
| # 00 09 | 0000 aaaa | |
| 00 0A | 0000 bbbb | Pan (-15 - 15)<br>L15 - R15 |
| # 00 0B | 0000 aaaa | |
| 00 0C | 0000 bbbb | Coarse (-12 - 12)<br>-12 - +12 |
| # 00 0D | 0000 aaaa | |
| 00 0E | 0000 bbbb | Fine (-50 - 50)<br>-50 - +50 |
| 00 0F | 0000 000a | (reserved) |
| 00 10 | 0000 000a | Sample Delay Sync (0 - 1)<br>OFF, ON |
| 00 11 | 000a aaaa | Sample Delay Note (0 - 21)<br>1/64T, 1/64, 1/32T, 1/32, 1/16T, 1/32., 1/16, 1/8T, 1/16., 1/8, 1/4T, 1/8., 1/4, 1/2T, 1/4., 1/2, 1/1T, 1/2., 1/1, 2/1T, 1/1., 2/1 |
| # 00 12 | 0000 aaaa | |
| 00 13 | 0000 bbbb | |
| 00 14 | 0000 cccc | |
| 00 15 | 0000 dddd | Sample Delay Msec (0 - 5000)<br>1 - 5000 [ms] |
| 00 16 | 0000 000a | PolyMono (0 - 1)<br>MONO, POLY |
| 00 17 | 0aaa aaaa | Fade In (0 - 127) |
| 00 18 | 0aaa aaaa | Decay (0 - 127) |
| 00 19 | 0000 0aaa | Loop (0 - 4)<br>OFF, ON, X2, X4, X8 |
| 00 1A | 0000 000a | TriggerType (0 - 1)<br>ONESHOT, ALTERNATE |
| 00 1B | 0000 00aa | (reserved) |
| 00 1C | 0000 000a | EqSwitch (0 - 1) |

| | | | |
|---|---|---|---|
| | | | OFF, ON |
| # | 00 1D | 0000 aaaa | |
| | 00 1E | 0000 bbbb | |
| | 00 1F | 0000 cccc | |
| | 00 20 | 0000 dddd | EqLowFreq (0 - 34)<br>20Hz, 22.5Hz, 25Hz, 28.25Hz, 31.5Hz, 35.75Hz, 40Hz,<br>45Hz, 50Hz, 56.5Hz, 63Hz, 71.5Hz, 80Hz, 90Hz, 100Hz,<br>112.5Hz, 125Hz, 142.5Hz, 160Hz, 180Hz, 200Hz, 225Hz,<br>250Hz, 282.5Hz, 315Hz, 357.5Hz, 400Hz, 450Hz, 500Hz,<br>565Hz, 630Hz, 715Hz, 800Hz, 900Hz, 1kHz |
| # | 00 21 | 0000 aaaa | |
| | 00 22 | 0000 bbbb | EqLowGain (-24 - 24)<br>-24 - 24 [dB] |
| # | 00 23 | 0000 aaaa | |
| | 00 24 | 0000 bbbb | |
| | 00 25 | 0000 cccc | |
| | 00 26 | 0000 dddd | EqMid1Freq (0 - 58)<br>20Hz, 22.5Hz, 25Hz, 28.25Hz, 31.5Hz, 35.75Hz, 40Hz,<br>45Hz, 50Hz, 56.5Hz, 63Hz, 71.5Hz, 80Hz, 90Hz, 100Hz,<br>112.5Hz, 125Hz, 142.5Hz, 160Hz, 180Hz, 200Hz, 225Hz,<br>250Hz, 282.5Hz, 315Hz, 357.5Hz, 400Hz, 450Hz, 500Hz,<br>565Hz, 630Hz, 715Hz, 800Hz, 900Hz, 1kHz, 1.125kHz,<br>1.25kHz, 1.425kHz, 1.6kHz, 1.8kHz, 2kHz, 2.25kHz,<br>2.5kHz, 2.825kHz, 3.15kHz, 3.575kHz, 4kHz, 4.5kHz,<br>5kHz, 5.65kHz, 6.3kHz, 7.15kHz, 8kHz, 9kHz, 10kHz,<br>11.25kHz, 12.5kHz, 14.25kHz, 16kHz |
| | 00 27 | 0000 0aaa | EqMid1Q (0 - 6)<br>0.5, 1.0, 2.0, 3.0, 4.0, 8.0, 16.0 |
| # | 00 28 | 0000 aaaa | |
| | 00 29 | 0000 bbbb | EqMid1Gain (-24 - 24)<br>-24 - 24 [dB] |
| # | 00 2A | 0000 aaaa | |
| | 00 2B | 0000 bbbb | |
| | 00 2C | 0000 cccc | |
| | 00 2D | 0000 dddd | EqMid2Freq (0 - 58)<br>20Hz, 22.5Hz, 25Hz, 28.25Hz, 31.5Hz, 35.75Hz, 40Hz,<br>45Hz, 50Hz, 56.5Hz, 63Hz, 71.5Hz, 80Hz, 90Hz, 100Hz,<br>112.5Hz, 125Hz, 142.5Hz, 160Hz, 180Hz, 200Hz, 225Hz,<br>250Hz, 282.5Hz, 315Hz, 357.5Hz, 400Hz, 450Hz, 500Hz,<br>565Hz, 630Hz, 715Hz, 800Hz, 900Hz, 1kHz, 1.125kHz,<br>1.25kHz, 1.425kHz, 1.6kHz, 1.8kHz, 2kHz, 2.25kHz,<br>2.5kHz, 2.825kHz, 3.15kHz, 3.575kHz, 4kHz, 4.5kHz,<br>5kHz, 5.65kHz, 6.3kHz, 7.15kHz, 8kHz, 9kHz, 10kHz,<br>11.25kHz, 12.5kHz, 14.25kHz, 16kHz |
| | 00 2E | 0000 0aaa | EqMid2Q (0 - 6)<br>0.5, 1.0, 2.0, 3.0, 4.0, 8.0, 16.0 |
| # | 00 2F | 0000 aaaa | |
| | 00 30 | 0000 bbbb | EqMid2Gain (-24 - 24)<br>-24 - 24 [dB] |
| # | 00 31 | 0000 aaaa | |
| | 00 32 | 0000 bbbb | |
| | 00 33 | 0000 cccc | |
| | 00 34 | 0000 dddd | EqHighFreq (0 - 24)<br>1kHz, 1.125kHz, 1.25kHz, 1.425kHz, 1.6kHz, 1.8kHz,<br>2kHz, 2.25kHz, 2.5kHz, 2.825kHz, 3.15kHz, 3.575kHz,<br>4kHz, 4.5kHz, 5kHz, 5.65kHz, 6.3kHz, 7.15kHz, 8kHz,<br>9kHz, 10kHz, 11.25kHz, 12.5kHz, 14.25kHz, 16kHz |
| # | 00 35 | 0000 aaaa | |
| | 00 36 | 0000 bbbb | EqHighGain (-24 - 24)<br>-24 - 24 [dB] |
| | 00 37 | 0000 000a | TransSwitch (0 - 1)<br>OFF, ON |
| # | 00 38 | 0000 aaaa | |
| | 00 39 | 0000 bbbb | TransAttack (-50 - 50) |
| # | 00 3A | 0000 aaaa | |
| | 00 3B | 0000 bbbb | TransRelease (-50 - 50) |
| | 00 3C | 0000 00aa | TransSens (0 - 3)<br>ULOW, LOW, MID, HIGH |
| # | 00 3D | 0000 aaaa | |
| | 00 3E | 0000 bbbb | |
| | 00 3F | 0000 cccc | |
| | 00 40 | 0000 dddd | TransGain (-601 - 60)<br>-INF, -60.0 - +6.0 [dB] |
| | 00 00 00 41 | Total Size | |

4. Supplementary Material

■Decimal and Hexadecimal Table

(An “H” is appended to the end of numbers in hexadecimal notation.)
In MIDI documentation, data values and addresses/sizes of exclusive messages etc. are expressed as hexadecimal values for each 7 bits.
The following table shows how these correspond to decimal numbers. (in the case of hexadecimal values for each 7 bits, or positive hexadecimal values for each 4 bits.)

| D | H | D | H | D | H | D | H |
|---|---|---|---|---|---|---|---|
| 0 | 00H | 32 | 20H | 64 | 40H | 96 | 60H |

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

D: decimal
H: hexadecimal

* Decimal values such as MIDI channel, bank select, and program change are listed as one greater than the values given in the above table.
* A 7-bit byte in hexadecimals can express data in the range of 128 steps. For data where greater precision is required, we must use two or more bytes. For example, two hexadecimal numbers aa bbH expressing two 7-bit bytes would indicate a value of aa x 128+bb.
* In the case of data to which multiple addresses are assigned, a hexadecimal value is used for each four bits. A value 0a 0bH expressed as two-byte nibbles will be a×16+b.
* For values with a ± sign, 00H=-64, 40H=±0, and 7FH=+63. When expressing these values as decimal expressions, we use values that are 64 less than the values in the decimal table above. In the case of a two-byte value, 00 00H=-8192, 40 00H=±0, and 7F 7FH=+8191. For example, aa bbH expressed in decimal would be aa bbH - 40 00H＝aa×128＋bb-64×128.

<Example 1> What is the decimal expression of 5AH?

From the preceding table, 5AH = 90

<Example 2> What is the decimal expression of the value 12 34H given as hexadecimal for each 7 bits?

From the preceding table, since they are 12H = 18 and 34H = 52,
18 x 128 + 52 = 2356

■Examples of Actual MIDI Messages

<Example 1> 92 3E 5F

9n is the Note-on status, and n is the MIDI channel number. Since 2H = 2, 3EH = 62, and 5FH = 95, this is a Note-on message with MIDI CH = 3, note number 62 (note name is D4), and velocity 95.

<Example 2> C9 20

CnH is the Program Change status, and n is the MIDI channel number. Since 9H = 9 and 20H = 32, this is a Program Change message with MIDI CH = 10, program number 33.

■Examples of Exclusive Messages and Checksum Calculation
When transmitting Roland exclusive messages (DT1), a checksum is added following the data (before F7) so that the receiving device can check whether the message was received correctly.
The checksum value is determined by the address and data of the exclusive message that is transmitted.

●How to calculate the checksum

(An “H” is appended to the end of numbers in hexadecimal notation.)
The checksum is a value derived by adding the address, data and checksum itself and inverting the lower 7 bits.
Here’s an example of how the checksum is calculated. We will assume that in the exclusive message we are transmitting, the address is aa bb cc ddH and the data is ee ff gg hhH.

aa + bb + cc + dd + ee + ff + gg + hh = sum
sum / 128 = quotient ... remainder
128 - remainder = checksum
(However, the checksum will be 0 if the remainder is 0.)

<Example 1>
Specifying ON as the Volume of the main instrument assigned to the PAD1 Layer A of kit number 1
“Parameter address map” indicates that the start address of kit 1 is 04 00 00 00H, the offset address of the KitPadLayer parameters of the layer switch for the PAD1 Layer A is 00 40 00H, and the offset address of the layer switch is 00 00H; therefore, the address is

04 00 00 00H
00 40 00H

```
+)          00 00H
-------------------
      04 00 40 00H

Since ON is the parameter value 00 01H
F0      41      10      00 00 00 00 16  12      04 00 40 00     01      ??              F7
(1)     (2)     (3)     (4)             (5)     address         data    checksum        (6)

(1) Exclusive Status    (2) ID (Roland)
(3) Device ID (17)      (4) Model ID (SPD-SX PRO)
(5) Command ID (DT1)    (6) EOX

Then calculate the checksum.
04H + 00H + 40H + 00H + 01H = 4 + 0 + 64 + 0 + 1 = 69 (sum)
69 (sum) ÷ 128 = 0 (quotient)… 69 (remainder) checksum = 128 - 69 (remainder) = 59 = 3BH
This means that F0 41 10 00 00 00 00 16 12 04 00 40 00 01 3B F7 is the message should be sent.

<Example 2>
Requesting transmission of the output for the PAD1 of kit number 1
 “Parameter address map” indicates that the start address of kit 1 is 04 00 00 00H, the offset address of the PAD1
KitPad parameters is 00 28 00H, and the offset address of the output is 00 0EH; therefore, the address is

      04 00 00 00H
         00 28 00H
+)          00 0EH
-------------------
      04 00 28 0EH

Since the size is 00 00 00 01H
F0      41      10      00 00 00 00 16  11      04 00 28 0E     00 00 00 01     ??              F7
(1)     (2)     (3)     (4)             (5)     address         size            checksum        (6)

(1) Exclusive Status    (2) ID (Roland)
(3) Device ID (17)      (4) Model ID (SPD-SX PRO)
(5) Command ID (RQ1)    (6) EOX

Then calculate the checksum.
04H + 00H + 28H + 0EH + 00H + 00H + 00H + 01H = 4 + 0 + 40 + 14 + 0 + 0 + 0 + 1 = 59 (sum)
59 (sum) ÷ 128 = 0 (quotient)… 59 (remainder) checksum = 128 - 59 (remainder) = 69 = 45H
This means that F0 41 10 00 00 00 00 16 11 04 00 28 0E 00 00 00 01 45 F7 is the message should be sent.
```

5.MIDI Implementation Chart

Date : Apr. 1. 2023
Version : 1.10

Model SPD-SX PRO — MIDI Implementation Chart

| Function... | | Transmitted | | Recognized | | Remarks |
|---|---|---|---|---|---|---|
| Basic | Default | 1-16, OFF | | 1-16, OFF | | Memorized |
| Channel | Changed | 1-16, OFF | | 1-16, OFF | | |
| Mode | Default | Mode 3 | | Mode 3 | | |
| | Messages | x | | x | | |
| | Altered | ********** | | x | | |
| Note Number | :True Voice | 0-127 | | 0-127 | | Memorized |
| | | ********** | | 0-127 | | |
| Velocity | Note On | o 9nH, v = 1-127 | | o | | |
| | Note Off | o 8nH, v = 64 | | x | | |
| After Touch | Key's | x | | x | | |
| | Channel's | x | | x | | |
| Pitch Bend | | x | | x | | |
| Control Change | 0, 32 | o | | o | | Bank Select |
| | 1 | o | *1 | o | *1 | Modulation |
| | 2 | o | *1 | o | *1 | Breath Controller |
| | 4 | o | *1 | o | *1 | Foot Controller |
| | 11 | o | *1 | o | *1 | Expression |
| | 16 - 19 | o | *1 | o | *1 *2 *5 | General Purpose Controller 1-4 |
| | 1-31, 33-95 | o | *2 | o | *2 | Master Effect Control |
| | 1-31, 33-95 | o | *6 | x | | General Purpose Controller |
| Program Change | :True Number | o 0-127 | *2 | o 0-127 | *2 | Program No. 1-128 |
| | | ********** | | 0-127 | | |
| System Exclusive | | o | *4 | o | *2 | |
| System Common | :Song Position | x | | x | | |
| | :Song Select | x | | x | | |
| | :Tune Request | x | | x | | |
| System Real Time | :Clock | o | *2 | o | *7 | |
| | :Commands | o | *2 | o | *7 *8 | |
| Aux Messages | :All Sound Off | o | | o (120, 123-127) | | |
| | :Reset All Controllers | x | | o | | |
| | :Local On/Off | x | | x | | |
| | :All Notes Off | x | | o | *3 | |
| | :Active Sensing | o | | o | | |
| | :System Reset | x | | x | | |

| | | | |
|---|---|---|---|
| Notes | *1 One is selected as the strike position.<br>*2 ox is selectable.<br>*3 The same result as All Sound Off.<br>*4 Transmitted if Transmit Edit Data is on, or when RQ1 is received.<br>*5 Used for expression for each pad.<br>*6 Assigned to the Pad Edit Knob or Expression Pedal and transmitted.<br>*7 Received when Sync Mode is “AUTO”.<br>*8 When a start message is received while the click is playing back,<br>the click playback is reset. | | |

Mode 1 : OMNI ON, POLY　　Mode 2 : OMNI ON, MONO　　o : Yes
Mode 3 : OMNI OFF, POLY　　Mode 4 : OMNI OFF, MONO　　x : No