MIDI Implementation

Model: TD-07
Date: Oct. 1, 2020
Version: 1.00

* In this implementation, the order in which the TD-07's buttons should be pressed is indicated in the following way. For example, [SETUP]-[MIDI] means "press the [SETUP] button, then press the [◂],[▸] buttons, then select [MIDI] with the cursor, and finally press the [ENTER] button." For details, refer to the TD-07 owner's manual.
* For button names, refer to the TD-07 owner's manual.

1. Receive Data

■Channel Voice Messages

* The following Channel Voice Messages can be received by the channel assigned in [SETUP]-[MIDI] Channel.
* Not received when [SETUP]-[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 TD-07 owner's manual.

●Polyphonic Key Pressure

Status	2nd byte	3rd byte
AnH	kkH	vvH
n = MIDI channel number:		0H-FH (ch.1-ch.16)
kk = note number:		00H-7FH (0-127)
vv = value:		00H-7FH (0-127)

* Only the note numbers assigned by the kit are received.
For details on note numbers, refer to the TD-07 owner's manual.
* If the value is greater than 1, the decay of the note sounded by the received note number will be shortened based on the value (used in choking).

●Control Change

○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-5AH (0-90: open to closed)

* Changes the position of the hi-hat control 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)

* Not Received when [SETUP]-[MIDI] ProgChg Rx is set to "OFF."
* The sound changes starting with a new note-on that follows program change reception. A voice that was already sounding before the program change was received is not affected.

■Channel Mode Messages

* The following Channel Voice Messages can be received in [SETUP]-[MIDI] Channel.
* Not received when [SETUP]-[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, polyphonic key pressure for all pads assigned to the same channel number is reset to 0.

●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 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. Roland's manufacturer ID is 41H. 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) 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 [SETUP]-[MIDI] 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 75H.

○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, 75H, 11H, aaH, bbH, ccH, ddH, 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 (TD-07)
00H	Model ID#2 (TD-07)
00H	Model ID#3 (TD-07)
75H	Model ID#4 (TD-07)
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, 75H, 12H, aaH, bbH, ccH, ddH, eeH, ... ffH, sum	F7H

Byte	Explanation
F0H	Exclusive status
41H	ID number (Roland)
dev	Model ID (dev: 10H-1FH, 7FH)
00H	Model ID#1 (TD-07)
00H	Model ID#2 (TD-07)
00H	Model ID#3 (TD-07)
75H	Model ID#4 (TD-07)
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

■Channel Voice Messages

* The following channel voice messages are transmitted on the channel specified as the [SETUP]-[MIDI] Channel.
* Not transmitted when [SETUP]-[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

* A note-off is transmitted 0.1 seconds after you strike a pad or use the hi-hat control pedal to play a foot close (splash).

●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)

* The note number assigned by the kit is transmitted when you strike a pad or use the hi-hat control pedal to play a foot-close (splash).
* If the [SETUP]-[PAD] XStickSens is not "OFF," and you play the SNARE pad using the cross-stick technique, the note number assigned by [KIT EDIT]-[MIDI NOTE] SNR Xs is transmitted.
* The note number that is transmitted when you strike the hi-hat pad (open or closed) is switched depending on how deeply the hi-hat pedal is being pressed.

●Polyphonic Key Pressure

Status	2nd byte	3rd byte
AnH	kkH	vvH
n = MIDI channel number:		0H-FH (ch.1-ch.16)
kk = note number:		00H-7FH (0-127)
vv = Value:		00H, 7FH (0, 127)

* On the channel to which the pad is assigned, 7FH will be transmitted when the rim of the pad is pressed and 00H will be transmitted when the rim is released, for the note number specified for the head and rim. (When using a choking compatible pad and [SETUP]-[PAD] Type is set to the corresponding pad.)

●Control Change

○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-5AH (0-90: open to closed)

* Transmitted when you operate the hi-hat control pedal.
When you strike the HI-HAT pad, this message is transmitted as pedal position data before the note-on.

●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 transmitted when [SETUP]-[MIDI] ProgChg Tx is set to “OFF.”
* When a drum kit is selected, the corresponding program number is transmitted.

■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, 75H, 03H, 00H, 00H, 00H, 00H, 00H, 00H	F7H

Byte	Explanation
F0H	Exclusive status
7EH	ID number (Universal Non-realtime Message)
dev	Device ID (10H-1FH (17-32), 7FH) Initial value is 10H (17)
06H	Sub ID#1 (General Information)
02H	Sub ID#2 (Identity Reply)
41H	ID number (Roland)
75H 03H	Device family code
00H 00H	Device family number code
00H 00H 00H 00H	Software revision level
F7H	EOX (End of Exclusive)

* When Identity Request is received, the above Identity Reply messages will be transmitted.
* The [SETUP]-[MIDI] 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, 75H, 12H, aaH, bbH, ccH, ddH, eeH, ... ffH, sum	F7H

Byte	Explanation
F0H	Exclusive status
41H	ID number (Roland)

dev Device ID (dev: 10H-1FH, 7FH)
00H Model ID#1 (TD-07)
00H Model ID#2 (TD-07)
00H Model ID#3 (TD-07)
75H Model ID#4 (TD-07)
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]
02 00 00 00	Trigger	[Trigger]
03 00 00 00	Kit 1	[Kit]
03 02 00 00	Kit 2	[Kit]
:	:	
03 62 00 00	Kit 50	[Kit]

* [Current]

Offset Address	Description	
00 00	00aa aaaa | KitNum	(0 - 49) 1 - 50
00 00 00 01	Total Size	

* [Setup]

Offset Address	Description	
00 00 00	Metronome	[Metronome]
00 01 00	Misc	[SetupMisc]

* [Trigger]
The assignments to each trigger within the [Trig] are as follows.

KICK	1
SNARE	2
TOM1	3
TOM2	4
TOM3	5
HI-HAT	6
CRASH1	7
CRASH2	8
RIDE	9

Offset Address	Description	
00 00 00	Trigger Misc	[TrigMisc]
00 01 00	Trigger 1	[Trig]
00 02 00	Trigger 2	[Trig]
:	:	
00 09 00	Trigger 9	[Trig]

* [Kit]
The assignments to each pad within the [Kit] are as follows.
[KitUnitCommon], [KitUnitLayer], [KitUnitVEdit]

KICK HEAD	1
SNARE HEAD	2
SNARE RIM	3
TOM1 HEAD	4
TOM2 HEAD	5
TOM3 HEAD	6
HI-HAT HEAD	7
HI-HAT RIM	8
CRASH1 HEAD	9
CRASH1 RIM	10
CRASH2 HEAD	11
CRASH2 RIM	12
RIDE HEAD	13
RIDE RIM	14
RIDE BELL	15

Offset Address	Description	
00 00 00	Kit Common	[KitCommon]
00 01 00	Kit MIDI	[KitMidi]
00 10 00	Kit MFX	[KitMfx]
00 20 00	Kit Unit Common 1	[KitUnitCommon]
00 21 00	Kit Unit Common 2	[KitUnitCommon]
:		
00 2E 00	Kit Unit Common 15	[KitUnitCommon]
00 40 00	Kit Unit Layer 1	[KitUnitLayer]
00 41 00	Kit Unit Layer 2	[KitUnitLayer]
:		
00 4E 00	Kit Unit Layer 15	[KitUnitLayer]
00 60 00	Kit Unit VEdit 1	[KitUnitVEdit]
00 61 00	Kit Unit VEdit 2	[KitUnitVEdit]
:		
00 6E 00	Kit Unit VEdit 15	[KitUnitVEdit]
01 10 00	Kit MCR Room	[KitMCRRoom]
01 20 00	Kit MCR Overhead	[KitMCROverhead]

* [Metronome]

	Offset Address		Description	
	00 00	0000 aaaa	Sound	(0 - 14) TYPE 1 - 15
#	00 01	0000 aaaa		
	00 02	0000 bbbb	Pan	(-30 - 30) L30 - 1, CTR, R1 - 30
#	00 03	0000 aaaa		
	00 04	0000 bbbb		
	00 05	0000 cccc		
	00 06	0000 dddd	Level	(-601 - 60) -INF, -60.0 - +6.0 [dB]
00 00 00 07	Total Size			

* [SetupMisc]

	Offset Address		Description	
#	00 00	0000 aaaa		
	00 01	0000 bbbb	USB Audio Input Gain	(-36 - 12) -36 - +12[dB]
#	00 02	0000 aaaa		
	00 03	0000 bbbb	USB Audio Output Gain	(-24 - 24) -24 - +24[dB]
00 00 00 04	Total Size			

* [TrigMisc]

Offset

Address		Description	
# 00 00	0000 aaaa		
00 01	0000 bbbb	HH Foot Splash Sens	(-10 - 10) -10 - 10
00 02	0000 aaaa	XStick Sens	(0 - 10) OFF, 1 - 10
00 03	0000 000a	CR2 Usage	(0 - 1) CR2, RDB
00 04	0aaa aaaa	XTalkCancelRate 1(KICK)	(0 - 80) 0 - 80
00 05	0aaa aaaa	XTalkCancelRate 2(SNARE)	(0 - 80) 0 - 80
00 06	0aaa aaaa	XTalkCancelRate 3(TOM1)	(0 - 80) 0 - 80
00 07	0aaa aaaa	XTalkCancelRate 4(TOM2)	(0 - 80) 0 - 80
00 08	0aaa aaaa	XTalkCancelRate 5(TOM3)	(0 - 80) 0 - 80
00 09	0aaa aaaa	XTalkCancelRate 6(HI-HAT)	(0 - 80) 0 - 80
00 0A	0aaa aaaa	XTalkCancelRate 7(CRASH1)	(0 - 80) 0 - 80
00 0B	0aaa aaaa	XTalkCancelRate 8(CRASH2)	(0 - 80) 0 - 80
00 0C	0aaa aaaa	XTalkCancelRate 9(RIDE)	(0 - 80) 0 - 80
00 00 00 0D	Total Size		

* [Trig]

Offset Address		Description	
00 00	00aa aaaa	Type	(0 - 44) KDA22, KD200, KD140, KD120, KD85, KD10, KD9, KD8, KD7, KT10, KT9, PDA120L, PDA100L, PD128, PD125X, PD125, PD108, PD105X, PD105, PD85, PDX100, PDX12, PDX8, PDX6, PD8, VH11, VH10, CY16RT, CY15R, CY14CT, CY14C, CY13R, CY12C, CY12R/C, CY8, CY5, BT1, BT1 SENS, RT30K, RT30HR, RT30H SN, RT30H TM, RT10K, RT10S, RT10T
00 01	000a aaaa	Sens	(0 - 31) 1 - 32
00 02	00aa aaaa	Rim Gain	(0 - 32) 0 - 3.2
00 03	000a aaaa	Threshold	(0 - 31) 0 - 31
00 04	0000 0aaa	Curve	(0 - 7) LINEAR, EXP1, EXP2, LOG1, LOG2, SPLINE, LOUD1, LOUD2
00 05	0000 0aaa	(reserve)	
00 06	0aaa aaaa	Head/Rim Adjust	(0 - 80) 0 - 80
00 07	00aa aaaa	Scan Time	(0 - 40) 0 - 4.0[ms]
00 08	0aaa aaaa	Mask Time	(0 - 64) 0 - 64[ms]
00 09	0000 aaaa	Retrigger Cancel	(0 - 15) 1 - 16
00 00 00 0A	Total Size		

* [KitCommon]

Offset Address		Description	
00 00	0aaa aaaa	Kit Name 1	(32 - 127) 32 - 127 [ASCII]
00 01	0aaa aaaa	Kit Name 2	(32 - 127) 32 - 127 [ASCII]
00 02	0aaa aaaa	Kit Name 3	(32 - 127) 32 - 127 [ASCII]
00 03	0aaa aaaa	Kit Name 4	(32 - 127) 32 - 127 [ASCII]
00 04	0aaa aaaa	Kit Name 5	(32 - 127) 32 - 127 [ASCII]
00 05	0aaa aaaa	Kit Name 6	(32 - 127) 32 - 127 [ASCII]
00 06	0aaa aaaa	Kit Name 7	(32 - 127) 32 - 127 [ASCII]
00 07	0aaa aaaa	Kit Name 8	(32 - 127) 32 - 127 [ASCII]

	00 08	0aaa aaaa	Kit Name 9	(32 - 127) 32 - 127 [ASCII]
	00 09	0aaa aaaa	Kit Name 10	(32 - 127) 32 - 127 [ASCII]
	00 0A	0aaa aaaa	Kit Name 11	(32 - 127) 32 - 127 [ASCII]
	00 0B	0aaa aaaa	Kit Name 12	(32 - 127) 32 - 127 [ASCII]
#	00 0C	0000 aaaa		
	00 0D	0000 bbbb		
	00 0E	0000 cccc		
	00 0F	0000 dddd	Kit Volume	(-601 - 60) -INF, -60.0 - +6.0 [dB]
#	00 10	0000 aaaa		
	00 11	0000 bbbb		
	00 12	0000 cccc		
	00 13	0000 dddd	Pedal HH Volume	(-601 - 60) -INF, -60.0 - +6.0 [dB]
#	00 14	0000 aaaa		
	00 15	0000 bbbb		
	00 16	0000 cccc		
	00 17	0000 dddd	Xstick Volume	(-601 - 60) -INF, -60.0 - +6.0 [dB]
	00 18	0000 aaaa	Overhead Type	(0 - 11) STD-1 - 2, WIDE, CLEAR, WARM, DRY, MILD, BRIGHT, OTHER-1 - 4
#	00 19	0000 aaaa		
	00 1A	0000 bbbb	HH Open/Close Balance	(-5 - 5) -5 - +5
	00 00 00 1B	Total Size		

* [KitMidi]

	Offset Address		Description	
#	00 00	0000 aaaa		
	00 01	0000 bbbb		
	00 02	0000 cccc		
	00 03	0000 dddd	Note KICK	(0 - 128) 0 - 127, OFF
#	00 04	0000 aaaa		
	00 05	0000 bbbb		
	00 06	0000 cccc		
	00 07	0000 dddd	Note SNARE (HEAD)	(0 - 128) 0 - 127, OFF
#	00 08	0000 aaaa		
	00 09	0000 bbbb		
	00 0A	0000 cccc		
	00 0B	0000 dddd	Note SNARE (RIM)	(0 - 128) 0 - 127, OFF
#	00 0C	0000 aaaa		
	00 0D	0000 bbbb		
	00 0E	0000 cccc		
	00 0F	0000 dddd	Note SNARE (XSTICK)	(0 - 128) 0 - 127, OFF
#	00 10	0000 aaaa		
	00 11	0000 bbbb		
	00 12	0000 cccc		
	00 13	0000 dddd	Note TOM1 (HEAD)	(0 - 128) 0 - 127, OFF
#	00 14	0000 aaaa		
	00 15	0000 bbbb		
	00 16	0000 cccc		
	00 17	0000 dddd	Note TOM2 (HEAD)	(0 - 128) 0 - 127, OFF
#	00 18	0000 aaaa		
	00 19	0000 bbbb		
	00 1A	0000 cccc		
	00 1B	0000 dddd	Note TOM3 (HEAD)	(0 - 128) 0 - 127, OFF
#	00 1C	0000 aaaa		
	00 1D	0000 bbbb		
	00 1E	0000 cccc		
	00 1F	0000 dddd	Note HI-HAT OPEN (BOW)	(0 - 128) 0 - 127, OFF
#	00 20	0000 aaaa		
	00 21	0000 bbbb		
	00 22	0000 cccc		
	00 23	0000 dddd	Note HI-HAT OPEN (EDGE)	(0 - 128) 0 - 127, OFF
#	00 24	0000 aaaa		
	00 25	0000 bbbb		
	00 26	0000 cccc		

	00 27	0000 dddd	Note HI-HAT CLOSE (BOW)	(0 - 128)
				0 - 127, OFF
#	00 28	0000 aaaa		
	00 29	0000 bbbb		
	00 2A	0000 cccc		
	00 2B	0000 dddd	Note HI-HAT CLOSE (EDGE)	(0 - 128)
				0 - 127, OFF
#	00 2C	0000 aaaa		
	00 2D	0000 bbbb		
	00 2E	0000 cccc		
	00 2F	0000 dddd	Note HI-HAT PEDAL	(0 - 128)
				0 - 127, OFF
#	00 30	0000 aaaa		
	00 31	0000 bbbb		
	00 32	0000 cccc		
	00 33	0000 dddd	Note CRASH1 (BOW)	(0 - 128)
				0 - 127, OFF
#	00 34	0000 aaaa		
	00 35	0000 bbbb		
	00 36	0000 cccc		
	00 37	0000 dddd	Note CRASH1 (EDGE)	(0 - 128)
				0 - 127, OFF
#	00 38	0000 aaaa		
	00 39	0000 bbbb		
	00 3A	0000 cccc		
	00 3B	0000 dddd	Note CRASH2 (BOW)	(0 - 128)
				0 - 127, OFF
#	00 3C	0000 aaaa		
	00 3D	0000 bbbb		
	00 3E	0000 cccc		
	00 3F	0000 dddd	Note CRASH2 (EDGE)	(0 - 128)
				0 - 127, OFF
#	00 40	0000 aaaa		
	00 41	0000 bbbb		
	00 42	0000 cccc		
	00 43	0000 dddd	Note RIDE (BOW)	(0 - 128)
				0 - 127, OFF
#	00 44	0000 aaaa		
	00 45	0000 bbbb		
	00 46	0000 cccc		
	00 47	0000 dddd	Note RIDE (EDGE)	(0 - 128)
				0 - 127, OFF
#	00 48	0000 aaaa		
	00 49	0000 bbbb		
	00 4A	0000 cccc		
	00 4B	0000 dddd	Note RIDE (BELL)	(0 - 128)
				0 - 127, OFF
	00 00 00 4C	Total Size		

* [KitMfx]

Offset Address		Description	
00 00	000a aaaa	Type	(0 - 29)
			DELAY, TAPE ECHO, REV DLY, 3TPAN DLY,
			OD->DELAY, DS->DELAY, CHORUS, SPACE-D,
			OD->CHORS, DS->CHORS, PHASER A, PHASER B,
			STEP PHSR, FLANGER, REVERB, LONG REV,
			SP FILTER, FIL+DRIVE, AUTO WAH, OD/DS->TW,
			LOFI COMP, DIST, OVERDRIVE, SATURATOR,
			T-SCREAM, BIT CRUSH, ISOLATOR, RING MOD,
			PITCH SFT, AUTO PAN
00 01	0000 000a	Switch	(0 - 1)
			OFF, ON
# 00 02	0000 aaaa		
00 03	0000 bbbb		
00 04	0000 cccc		
00 05	0000 dddd	Level	(-601 - 60)
			-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	(*1)
# 00 0A	0000 aaaa		
00 0B	0000 bbbb		
00 0C	0000 cccc		
00 0D	0000 dddd	MFX Parameter 2	(*1)
# 00 0E	0000 aaaa		
00 0F	0000 bbbb		
00 10	0000 cccc		
00 11	0000 dddd	MFX Parameter 3	(*1)
# 00 12	0000 aaaa		
00 13	0000 bbbb		
00 14	0000 cccc		

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

	00 6C	0000 cccc		
	00 6D	0000 dddd	MFX Parameter 26	(*1)
#	00 6E	0000 aaaa		
	00 6F	0000 bbbb		
	00 70	0000 cccc		
	00 71	0000 dddd	MFX Parameter 27	(*1)
#	00 72	0000 aaaa		
	00 73	0000 bbbb		
	00 74	0000 cccc		
	00 75	0000 dddd	MFX Parameter 28	(*1)
#	00 76	0000 aaaa		
	00 77	0000 bbbb		
	00 78	0000 cccc		
	00 79	0000 dddd	MFX Parameter 29	(*1)
#	00 7A	0000 aaaa		
	00 7B	0000 bbbb		
	00 7C	0000 cccc		
	00 7D	0000 dddd	MFX Parameter 30	(*1)
#	00 7E	0000 aaaa		
	00 7F	0000 bbbb		
	01 00	0000 cccc		
	01 01	0000 dddd	MFX Parameter 31	(*1)
#	01 02	0000 aaaa		
	01 03	0000 bbbb		
	01 04	0000 cccc		
	01 05	0000 dddd	MFX Parameter 32	(*1)
	00 00 01 06	Total Size		

(*1) This area is assigned as follows according to the selected MFX Type. Addresses for which the MFX Type has no assignment are ignored.

MFX Type: DELAY

	Offset Address		Description	
#	00 06	0000 aaaa		
	00 07	0000 bbbb		
	00 08	0000 cccc		
	00 09	0000 dddd	Tempo Sync L	(0 - 1) OFF, ON
#	00 0A	0000 aaaa		
	00 0B	0000 bbbb		
	00 0C	0000 cccc		
	00 0D	0000 dddd	Delay L Time (msec)	(1 - 1300) 1 - 1300 [msec]
#	00 0E	0000 aaaa		
	00 0F	0000 bbbb		
	00 10	0000 cccc		
	00 11	0000 dddd	Delay L Time (note)	(0 - 21) MUSICAL-NOTES
#	00 12	0000 aaaa		
	00 13	0000 bbbb		
	00 14	0000 cccc		
	00 15	0000 dddd	Tempo Sync R	(0 - 1) OFF, ON
#	00 16	0000 aaaa		
	00 17	0000 bbbb		
	00 18	0000 cccc		
	00 19	0000 dddd	Delay R Time (msec)	(1 - 1300) 1 - 1300 [msec]
#	00 1A	0000 aaaa		
	00 1B	0000 bbbb		
	00 1C	0000 cccc		
	00 1D	0000 dddd	Delay R Time (note)	(0 - 21) MUSICAL-NOTES
#	00 1E	0000 aaaa		
	00 1F	0000 bbbb		
	00 20	0000 cccc		
	00 21	0000 dddd	Phase Left	(0 - 1) NORMAL, INVERSE
#	00 22	0000 aaaa		
	00 23	0000 bbbb		
	00 24	0000 cccc		
	00 25	0000 dddd	Phase Right	(0 - 1) NORMAL, INVERSE
#	00 26	0000 aaaa		
	00 27	0000 bbbb		
	00 28	0000 cccc		
	00 29	0000 dddd	Feedback Mode	(0 - 1) NORMAL, CROSS
#	00 2A	0000 aaaa		
	00 2B	0000 bbbb		
	00 2C	0000 cccc		
	00 2D	0000 dddd	Feedback	(0 - 98) -98 - +98 [%]

	Offset Address		Description	
#	00 2E	0000 aaaa		
	00 2F	0000 bbbb		
	00 30	0000 cccc		
	00 31	0000 dddd	HF Damp	(0 - 17)
			200, 250, 315, 400, 500, 630, 800, 1000, 1250, 1600, 2000, 2500, 3150, 4000, 5000, 6300, 8000, BYPASS [Hz]	
#	00 32	0000 aaaa		
	00 33	0000 bbbb		
	00 34	0000 cccc		
	00 35	0000 dddd	Low Gain	(0 - 30)
				-15 - +15 [dB]
#	00 36	0000 aaaa		
	00 37	0000 bbbb		
	00 38	0000 cccc		
	00 39	0000 dddd	High Gain	(0 - 30)
				-15 - +15 [dB]
#	00 3A	0000 aaaa		
	00 3B	0000 bbbb		
	00 3C	0000 cccc		
	00 3D	0000 dddd	dummy (ignored)	
#	00 3E	0000 aaaa		
	00 3F	0000 bbbb		
	00 40	0000 cccc		
	00 41	0000 dddd	Level	(0 - 127)
				0 - 127

MFX Type: TAPE ECHO

	Offset Address		Description	
#	00 06	0000 aaaa		
	00 07	0000 bbbb		
	00 08	0000 cccc		
	00 09	0000 dddd	Mode	(0 - 6)
			S, M, L, S+M, S+L, M+L, S+M+L	
#	00 0A	0000 aaaa		
	00 0B	0000 bbbb		
	00 0C	0000 cccc		
	00 0D	0000 dddd	Repeat Rate	(0 - 127)
				0 - 127
#	00 0E	0000 aaaa		
	00 0F	0000 bbbb		
	00 10	0000 cccc		
	00 11	0000 dddd	Intensity	(0 - 127)
				0 - 127
#	00 12	0000 aaaa		
	00 13	0000 bbbb		
	00 14	0000 cccc		
	00 15	0000 dddd	Bass	(0 - 30)
				-15 - +15 [dB]
#	00 16	0000 aaaa		
	00 17	0000 bbbb		
	00 18	0000 cccc		
	00 19	0000 dddd	Treble	(0 - 30)
				-15 - +15 [dB]
#	00 1A	0000 aaaa		
	00 1B	0000 bbbb		
	00 1C	0000 cccc		
	00 1D	0000 dddd	Head S Pan	(0 - 127)
				L64 - 63R
#	00 1E	0000 aaaa		
	00 1F	0000 bbbb		
	00 20	0000 cccc		
	00 21	0000 dddd	Head M Pan	(0 - 127)
				L64 - 63R
#	00 22	0000 aaaa		
	00 23	0000 bbbb		
	00 24	0000 cccc		
	00 25	0000 dddd	Head L Pan	(0 - 127)
				L64 - 63R
#	00 26	0000 aaaa		
	00 27	0000 bbbb		
	00 28	0000 cccc		
	00 29	0000 dddd	Tape Distortion	(0 - 5)
				0 - 5
#	00 2A	0000 aaaa		
	00 2B	0000 bbbb		
	00 2C	0000 cccc		
	00 2D	0000 dddd	W/F Rate	(0 - 127)
				0 - 127
#	00 2E	0000 aaaa		
	00 2F	0000 bbbb		
	00 30	0000 cccc		
	00 31	0000 dddd	W/F Depth	(0 - 127)

				0 - 127
#	00 32	0000 aaaa		
	00 33	0000 bbbb		
	00 34	0000 cccc		
	00 35	0000 dddd	dummy (ignored)	
#	00 36	0000 aaaa		
	00 37	0000 bbbb		
	00 38	0000 cccc		
	00 39	0000 dddd	dummy (ignored)	
#	00 3A	0000 aaaa		
	00 3B	0000 bbbb		
	00 3C	0000 cccc		
	00 3D	0000 dddd	Level	(0 - 127) 0 - 127

MFX Type: REVERSE DELAY

	Offset Address		Description	
#	00 06	0000 aaaa		
	00 07	0000 bbbb		
	00 08	0000 cccc		
	00 09	0000 dddd	Threshold	(0 - 127) 0 - 127
#	00 0A	0000 aaaa		
	00 0B	0000 bbbb		
	00 0C	0000 cccc		
	00 0D	0000 dddd	Tempo Sync Rev	(0 - 1) OFF, ON
#	00 0E	0000 aaaa		
	00 0F	0000 bbbb		
	00 10	0000 cccc		
	00 11	0000 dddd	RevDelay Time (msec)	(1 - 1300) 1 - 1300 [msec]
#	00 12	0000 aaaa		
	00 13	0000 bbbb		
	00 14	0000 cccc		
	00 15	0000 dddd	RevDelay Time (note)	(0 - 21) MUSICAL-NOTES
#	00 16	0000 aaaa		
	00 17	0000 bbbb		
	00 18	0000 cccc		
	00 19	0000 dddd	RevDelay Feedback	(0 - 98) -98 - +98 [%]
#	00 1A	0000 aaaa		
	00 1B	0000 bbbb		
	00 1C	0000 cccc		
	00 1D	0000 dddd	RevDelay HF Damp	(0 - 17) 200, 250, 315, 400, 500, 630, 800, 1000, 1250, 1600, 2000, 2500, 3150, 4000, 5000, 6300, 8000, BYPS [Hz]
#	00 1E	0000 aaaa		
	00 1F	0000 bbbb		
	00 20	0000 cccc		
	00 21	0000 dddd	RevDelay Pan	(0 - 127) L64 - 63R
#	00 22	0000 aaaa		
	00 23	0000 bbbb		
	00 24	0000 cccc		
	00 25	0000 dddd	RevDelay Level	(0 - 127) 0 - 127
#	00 26	0000 aaaa		
	00 27	0000 bbbb		
	00 28	0000 cccc		
	00 29	0000 dddd	Tempo Sync Delay1	(0 - 1) OFF, ON
#	00 2A	0000 aaaa		
	00 2B	0000 bbbb		
	00 2C	0000 cccc		
	00 2D	0000 dddd	Delay1 Time (msec)	(1 - 1300) 1 - 1300 [msec]
#	00 2E	0000 aaaa		
	00 2F	0000 bbbb		
	00 30	0000 cccc		
	00 31	0000 dddd	Delay1 Time (note)	(0 - 21) MUSICAL-NOTES
#	00 32	0000 aaaa		
	00 33	0000 bbbb		
	00 34	0000 cccc		
	00 35	0000 dddd	Tempo Sync Delay2	(0 - 1) OFF, ON
#	00 36	0000 aaaa		
	00 37	0000 bbbb		
	00 38	0000 cccc		
	00 39	0000 dddd	Delay2 Time (msec)	(1 - 1300)

			1 - 1300 [msec]
#	00 3A	0000 aaaa	
	00 3B	0000 bbbb	
	00 3C	0000 cccc	
	00 3D	0000 dddd	Delay2 Time (note) (0 - 21) MUSICAL-NOTES
#	00 3E	0000 aaaa	
	00 3F	0000 bbbb	
	00 40	0000 cccc	
	00 41	0000 dddd	Tempo Sync Delay3 (0 - 1) OFF, ON
#	00 42	0000 aaaa	
	00 43	0000 bbbb	
	00 44	0000 cccc	
	00 45	0000 dddd	Delay3 Time (msec) (1 - 1300) 1 - 1300 [msec]
#	00 46	0000 aaaa	
	00 47	0000 bbbb	
	00 48	0000 cccc	
	00 49	0000 dddd	Delay3 Time (note) (0 - 21) MUSICAL-NOTES
#	00 4A	0000 aaaa	
	00 4B	0000 bbbb	
	00 4C	0000 cccc	
	00 4D	0000 dddd	Delay 3 Feedback (0 - 98) -98 - +98 [%]
#	00 4E	0000 aaaa	
	00 4F	0000 bbbb	
	00 50	0000 cccc	
	00 51	0000 dddd	Delay HF Damp (0 - 17) 200, 250, 315, 400, 500, 630, 800, 1000, 1250, 1600, 2000, 2500, 3150, 4000, 5000, 6300, 8000, BYPS [Hz]
#	00 52	0000 aaaa	
	00 53	0000 bbbb	
	00 54	0000 cccc	
	00 55	0000 dddd	Delay 1 Pan (0 - 127) L64 - 63R
#	00 56	0000 aaaa	
	00 57	0000 bbbb	
	00 58	0000 cccc	
	00 59	0000 dddd	Delay 2 Pan (0 - 127) L64 - 63R
#	00 5A	0000 aaaa	
	00 5B	0000 bbbb	
	00 5C	0000 cccc	
	00 5D	0000 dddd	Delay 1 Level (0 - 127) 0 - 127
#	00 5E	0000 aaaa	
	00 5F	0000 bbbb	
	00 60	0000 cccc	
	00 61	0000 dddd	Delay 2 Level (0 - 127) 0 - 127
#	00 62	0000 aaaa	
	00 63	0000 bbbb	
	00 64	0000 cccc	
	00 65	0000 dddd	Low Gain (0 - 30) -15 - +15 [dB]
#	00 66	0000 aaaa	
	00 67	0000 bbbb	
	00 68	0000 cccc	
	00 69	0000 dddd	High Gain (0 - 30) -15 - +15 [dB]
#	00 6A	0000 aaaa	
	00 6B	0000 bbbb	
	00 6C	0000 cccc	
	00 6D	0000 dddd	dummy (ignored)
#	00 6E	0000 aaaa	
	00 6F	0000 bbbb	
	00 70	0000 cccc	
	00 71	0000 dddd	Level (0 - 127) 0 - 127

MFX Type: 3TAP PAN DELAY

Offset Address		Description
#	00 06	0000 aaaa	
	00 07	0000 bbbb	
	00 08	0000 cccc	
	00 09	0000 dddd	Tempo Sync L (0 - 1) OFF, ON
#	00 0A	0000 aaaa	
	00 0B	0000 bbbb	
	00 0C	0000 cccc	

	00 0D	0000 dddd	Delay L Time (msec)	(1 - 1300) 1 - 1300 [msec]
#	00 0E	0000 aaaa		
	00 0F	0000 bbbb		
	00 10	0000 cccc		
	00 11	0000 dddd	Delay L Time (note)	(0 - 21) MUSICAL-NOTES
#	00 12	0000 aaaa		
	00 13	0000 bbbb		
	00 14	0000 cccc		
	00 15	0000 dddd	Tempo Sync R	(0 - 1) OFF, ON
#	00 16	0000 aaaa		
	00 17	0000 bbbb		
	00 18	0000 cccc		
	00 19	0000 dddd	Delay R Time (msec)	(1 - 1300) 1 - 1300 [msec]
#	00 1A	0000 aaaa		
	00 1B	0000 bbbb		
	00 1C	0000 cccc		
	00 1D	0000 dddd	Delay R Time (note)	(0 - 21) MUSICAL-NOTES
#	00 1E	0000 aaaa		
	00 1F	0000 bbbb		
	00 20	0000 cccc		
	00 21	0000 dddd	Tempo Sync Center	(0 - 1) OFF, ON
#	00 22	0000 aaaa		
	00 23	0000 bbbb		
	00 24	0000 cccc		
	00 25	0000 dddd	Delay Ctr Time (msec)	(1 - 1300) 1 - 1300 [msec]
#	00 26	0000 aaaa		
	00 27	0000 bbbb		
	00 28	0000 cccc		
	00 29	0000 dddd	Delay Ctr Time (note)	(0 - 21) MUSICAL-NOTES
#	00 2A	0000 aaaa		
	00 2B	0000 bbbb		
	00 2C	0000 cccc		
	00 2D	0000 dddd	Center Feedback	(0 - 98) -98 - +98 [%]
#	00 2E	0000 aaaa		
	00 2F	0000 bbbb		
	00 30	0000 cccc		
	00 31	0000 dddd	HF Damp	(0 - 17) 200, 250, 315, 400, 500, 630, 800, 1000, 1250, 1600, 2000, 2500, 3150, 4000, 5000, 6300, 8000, BYPASS [Hz]
#	00 32	0000 aaaa		
	00 33	0000 bbbb		
	00 34	0000 cccc		
	00 35	0000 dddd	Left Level	(0 - 127) 0 - 127
#	00 36	0000 aaaa		
	00 37	0000 bbbb		
	00 38	0000 cccc		
	00 39	0000 dddd	Right Level	(0 - 127) 0 - 127
#	00 3A	0000 aaaa		
	00 3B	0000 bbbb		
	00 3C	0000 cccc		
	00 3D	0000 dddd	Center Level	(0 - 127) 0 - 127
#	00 3E	0000 aaaa		
	00 3F	0000 bbbb		
	00 40	0000 cccc		
	00 41	0000 dddd	Low Gain	(0 - 30) -15 - +15 [dB]
#	00 42	0000 aaaa		
	00 43	0000 bbbb		
	00 44	0000 cccc		
	00 45	0000 dddd	High Gain	(0 - 30) -15 - +15 [dB]
#	00 46	0000 aaaa		
	00 47	0000 bbbb		
	00 48	0000 cccc		
	00 49	0000 dddd	dummy (ignored)	
#	00 4A	0000 aaaa		
	00 4B	0000 bbbb		
	00 4C	0000 cccc		
	00 4D	0000 dddd	Level	(0 - 127) 0 - 127

MFX Type: 0D -> DELAY

Offset Address		Description	
# 00 06	0000 aaaa		
00 07	0000 bbbb		
00 08	0000 cccc		
00 09	0000 dddd	Overdrive Drive	(0 - 127) 0 - 127
# 00 0A	0000 aaaa		
00 0B	0000 bbbb		
00 0C	0000 cccc		
00 0D	0000 dddd	Overdrive Pan	(0 - 127) L64 - 63R
# 00 0E	0000 aaaa		
00 0F	0000 bbbb		
00 10	0000 cccc		
00 11	0000 dddd	Tempo Sync	(0 - 1) OFF, ON
# 00 12	0000 aaaa		
00 13	0000 bbbb		
00 14	0000 cccc		
00 15	0000 dddd	Delay Time (msec)	(1 - 2600) 1 - 2600 [msec]
# 00 16	0000 aaaa		
00 17	0000 bbbb		
00 18	0000 cccc		
00 19	0000 dddd	Delay Time (note)	(0 - 21) MUSICAL-NOTES
# 00 1A	0000 aaaa		
00 1B	0000 bbbb		
00 1C	0000 cccc		
00 1D	0000 dddd	Delay Feedback	(0 - 98) -98 - +98 [%]
# 00 1E	0000 aaaa		
00 1F	0000 bbbb		
00 20	0000 cccc		
00 21	0000 dddd	Delay HF Damp	(0 - 17) 200, 250, 315, 400, 500, 630, 800, 1000, 1250, 1600, 2000, 2500, 3150, 4000, 5000, 6300, 8000, BYPS [Hz]
# 00 22	0000 aaaa		
00 23	0000 bbbb		
00 24	0000 cccc		
00 25	0000 dddd	Delay Balance	(0 - 100) D100:0W - D0:100W
# 00 26	0000 aaaa		
00 27	0000 bbbb		
00 28	0000 cccc		
00 29	0000 dddd	Level	(0 - 127) 0 - 127

MFX Type: DS -> DELAY

Offset Address		Description	
# 00 06	0000 aaaa		
00 07	0000 bbbb		
00 08	0000 cccc		
00 09	0000 dddd	Distortion Drive	(0 - 127) 0 - 127
# 00 0A	0000 aaaa		
00 0B	0000 bbbb		
00 0C	0000 cccc		
00 0D	0000 dddd	Distortion Pan	(0 - 127) L64 - 63R
# 00 0E	0000 aaaa		
00 0F	0000 bbbb		
00 10	0000 cccc		
00 11	0000 dddd	Tempo Sync	(0 - 1) OFF, ON
# 00 12	0000 aaaa		
00 13	0000 bbbb		
00 14	0000 cccc		
00 15	0000 dddd	Delay Time (msec)	(1 - 2600) 1 - 2600 [msec]
# 00 16	0000 aaaa		
00 17	0000 bbbb		
00 18	0000 cccc		
00 19	0000 dddd	Delay Time (note)	(0 - 21) MUSICAL-NOTES
# 00 1A	0000 aaaa		
00 1B	0000 bbbb		
00 1C	0000 cccc		
00 1D	0000 dddd	Delay Feedback	(0 - 98) -98 - +98 [%]

Offset Address		Description	
# 00 1E	0000 aaaa		
00 1F	0000 bbbb		
00 20	0000 cccc		
00 21	0000 dddd	Delay HF Damp	(0 - 17) 200, 250, 315, 400, 500, 630, 800, 1000, 1250, 1600, 2000, 2500, 3150, 4000, 5000, 6300, 8000, BYPS [Hz]
# 00 22	0000 aaaa		
00 23	0000 bbbb		
00 24	0000 cccc		
00 25	0000 dddd	Delay Balance	(0 - 100) D100:0W - D0:100W
# 00 26	0000 aaaa		
00 27	0000 bbbb		
00 28	0000 cccc		
00 29	0000 dddd	Level	(0 - 127) 0 - 127

MFX Type: CHORUS

Offset Address		Description	
# 00 06	0000 aaaa		
00 07	0000 bbbb		
00 08	0000 cccc		
00 09	0000 dddd	Filter Type	(0 - 2) OFF, LPF, HPF
# 00 0A	0000 aaaa		
00 0B	0000 bbbb		
00 0C	0000 cccc		
00 0D	0000 dddd	Cutoff Freq	(0 - 16) 200, 250, 315, 400, 500, 630, 800, 1000, 1250, 1600, 2000, 2500, 3150, 4000, 5000, 6300, 8000 [Hz]
# 00 0E	0000 aaaa		
00 0F	0000 bbbb		
00 10	0000 cccc		
00 11	0000 dddd	Pre Delay	(0 - 125) 0.0 - 100 [msec]
# 00 12	0000 aaaa		
00 13	0000 bbbb		
00 14	0000 cccc		
00 15	0000 dddd	Tempo Sync	(0 - 1) OFF, ON
# 00 16	0000 aaaa		
00 17	0000 bbbb		
00 18	0000 cccc		
00 19	0000 dddd	Rate (Hz)	(1 - 200) 0.05 - 10.00 [Hz]
# 00 1A	0000 aaaa		
00 1B	0000 bbbb		
00 1C	0000 cccc		
00 1D	0000 dddd	Rate (note)	(0 - 21) MUSICAL-NOTES
# 00 1E	0000 aaaa		
00 1F	0000 bbbb		
00 20	0000 cccc		
00 21	0000 dddd	Depth	(0 - 127) 0 - 127
# 00 22	0000 aaaa		
00 23	0000 bbbb		
00 24	0000 cccc		
00 25	0000 dddd	Phase	(0 - 90) 0 - 180 [deg]
# 00 26	0000 aaaa		
00 27	0000 bbbb		
00 28	0000 cccc		
00 29	0000 dddd	Low Gain	(0 - 30) -15 - +15 [dB]
# 00 2A	0000 aaaa		
00 2B	0000 bbbb		
00 2C	0000 cccc		
00 2D	0000 dddd	High Gain	(0 - 30) -15 - +15 [dB]
# 00 2E	0000 aaaa		
00 2F	0000 bbbb		
00 30	0000 cccc		
00 31	0000 dddd	dummy (ignored)	
# 00 32	0000 aaaa		
00 33	0000 bbbb		
00 34	0000 cccc		
00 35	0000 dddd	Level	(0 - 127) 0 - 127

MFX Type: SPACE-D

Offset Address		Description	
# 00 06	0000 aaaa		
00 07	0000 bbbb		
00 08	0000 cccc		
00 09	0000 dddd	Pre Delay	(0 - 125) 0.0 - 100 [msec]
# 00 0A	0000 aaaa		
00 0B	0000 bbbb		
00 0C	0000 cccc		
00 0D	0000 dddd	Tempo Sync	(0 - 1) OFF, ON
# 00 0E	0000 aaaa		
00 0F	0000 bbbb		
00 10	0000 cccc		
00 11	0000 dddd	Rate (Hz)	(1 - 200) 0.05 - 10.00 [Hz]
# 00 12	0000 aaaa		
00 13	0000 bbbb		
00 14	0000 cccc		
00 15	0000 dddd	Rate (note)	(0 - 21) MUSICAL-NOTES
# 00 16	0000 aaaa		
00 17	0000 bbbb		
00 18	0000 cccc		
00 19	0000 dddd	Depth	(0 - 127) 0 - 127
# 00 1A	0000 aaaa		
00 1B	0000 bbbb		
00 1C	0000 cccc		
00 1D	0000 dddd	Phase	(0 - 90) 0 - 180 [deg]
# 00 1E	0000 aaaa		
00 1F	0000 bbbb		
00 20	0000 cccc		
00 21	0000 dddd	Low Gain	(0 - 30) -15 - +15 [dB]
# 00 22	0000 aaaa		
00 23	0000 bbbb		
00 24	0000 cccc		
00 25	0000 dddd	High Gain	(0 - 30) -15 - +15 [dB]
# 00 26	0000 aaaa		
00 27	0000 bbbb		
00 28	0000 cccc		
00 29	0000 dddd	dummy (ignored)	
# 00 2A	0000 aaaa		
00 2B	0000 bbbb		
00 2C	0000 cccc		
00 2D	0000 dddd	Level	(0 - 127) 0 - 127

MFX Type: OD -> CHORUS

Offset Address		Description	
# 00 06	0000 aaaa		
00 07	0000 bbbb		
00 08	0000 cccc		
00 09	0000 dddd	Overdrive Drive	(0 - 127) 0 - 127
# 00 0A	0000 aaaa		
00 0B	0000 bbbb		
00 0C	0000 cccc		
00 0D	0000 dddd	Overdrive Pan	(0 - 127) L64 - 63R
# 00 0E	0000 aaaa		
00 0F	0000 bbbb		
00 10	0000 cccc		
00 11	0000 dddd	Pre Delay	(0 - 125) 0.0 - 100 [msec]
# 00 12	0000 aaaa		
00 13	0000 bbbb		
00 14	0000 cccc		
00 15	0000 dddd	Tempo Sync	(0 - 1) OFF, ON
# 00 16	0000 aaaa		
00 17	0000 bbbb		
00 18	0000 cccc		
00 19	0000 dddd	Rate (Hz)	(1 - 200) 0.05 - 10.00 [Hz]
# 00 1A	0000 aaaa		

	00 1B	0000 bbbb		
	00 1C	0000 cccc		
	00 1D	0000 dddd	Rate (note)	(0 - 21) MUSICAL-NOTES
#	00 1E	0000 aaaa		
	00 1F	0000 bbbb		
	00 20	0000 cccc		
	00 21	0000 dddd	Chorus Depth	(0 - 127) 0 - 127
#	00 22	0000 aaaa		
	00 23	0000 bbbb		
	00 24	0000 cccc		
	00 25	0000 dddd	Chorus Balance	(0 - 100) D100:0W - D0:100W
#	00 26	0000 aaaa		
	00 27	0000 bbbb		
	00 28	0000 cccc		
	00 29	0000 dddd	Level	(0 - 127) 0 - 127

MFX Type: DS -> CHORUS

Offset Address		Description	
# 00 06	0000 aaaa		
00 07	0000 bbbb		
00 08	0000 cccc		
00 09	0000 dddd	Distortion Drive	(0 - 127) 0 - 127
# 00 0A	0000 aaaa		
00 0B	0000 bbbb		
00 0C	0000 cccc		
00 0D	0000 dddd	Distortion Pan	(0 - 127) L64 - 63R
# 00 0E	0000 aaaa		
00 0F	0000 bbbb		
00 10	0000 cccc		
00 11	0000 dddd	Pre Delay	(0 - 125) 0.0 - 100 [msec]
# 00 12	0000 aaaa		
00 13	0000 bbbb		
00 14	0000 cccc		
00 15	0000 dddd	Tempo Sync	(0 - 1) OFF, ON
# 00 16	0000 aaaa		
00 17	0000 bbbb		
00 18	0000 cccc		
00 19	0000 dddd	Rate (Hz)	(1 - 200) 0.05 - 10.00 [Hz]
# 00 1A	0000 aaaa		
00 1B	0000 bbbb		
00 1C	0000 cccc		
00 1D	0000 dddd	Rate (note)	(0 - 21) MUSICAL-NOTES
# 00 1E	0000 aaaa		
00 1F	0000 bbbb		
00 20	0000 cccc		
00 21	0000 dddd	Chorus Depth	(0 - 127) 0 - 127
# 00 22	0000 aaaa		
00 23	0000 bbbb		
00 24	0000 cccc		
00 25	0000 dddd	Chorus Balance	(0 - 100) D100:0W - D0:100W
# 00 26	0000 aaaa		
00 27	0000 bbbb		
00 28	0000 cccc		
00 29	0000 dddd	Level	(0 - 127) 0 - 127

MFX Type: PHASER A

Offset Address		Description	
# 00 06	0000 aaaa		
00 07	0000 bbbb		
00 08	0000 cccc		
00 09	0000 dddd	Mode	(0 - 2) 4-STAGE, 8-STAGE, 12-STAGE
# 00 0A	0000 aaaa		
00 0B	0000 bbbb		
00 0C	0000 cccc		
00 0D	0000 dddd	Manual	(0 - 127)

			0 - 127
#	00 0E	0000 aaaa	
	00 0F	0000 bbbb	
	00 10	0000 cccc	
	00 11	0000 dddd	Tempo Sync (0 - 1) OFF, ON
#	00 12	0000 aaaa	
	00 13	0000 bbbb	
	00 14	0000 cccc	
	00 15	0000 dddd	Rate (Hz) (1 - 200) 0.05 - 10.00 [Hz]
#	00 16	0000 aaaa	
	00 17	0000 bbbb	
	00 18	0000 cccc	
	00 19	0000 dddd	Rate (note) (0 - 21) MUSICAL-NOTES
#	00 1A	0000 aaaa	
	00 1B	0000 bbbb	
	00 1C	0000 cccc	
	00 1D	0000 dddd	Depth (0 - 127) 0 - 127
#	00 1E	0000 aaaa	
	00 1F	0000 bbbb	
	00 20	0000 cccc	
	00 21	0000 dddd	Polarity (0 - 1) INVR, SYNC
#	00 22	0000 aaaa	
	00 23	0000 bbbb	
	00 24	0000 cccc	
	00 25	0000 dddd	Resonance (0 - 127) 0 - 127
#	00 26	0000 aaaa	
	00 27	0000 bbbb	
	00 28	0000 cccc	
	00 29	0000 dddd	Cross Feedback (0 - 98) -98 - +98 [%]
#	00 2A	0000 aaaa	
	00 2B	0000 bbbb	
	00 2C	0000 cccc	
	00 2D	0000 dddd	dummy (ignored)
#	00 2E	0000 aaaa	
	00 2F	0000 bbbb	
	00 30	0000 cccc	
	00 31	0000 dddd	Low Gain (0 - 30) -15 - +15 [dB]
#	00 32	0000 aaaa	
	00 33	0000 bbbb	
	00 34	0000 cccc	
	00 35	0000 dddd	High Gain (0 - 30) -15 - +15 [dB]
#	00 36	0000 aaaa	
	00 37	0000 bbbb	
	00 38	0000 cccc	
	00 39	0000 dddd	Level (0 - 127) 0 - 127

MFX Type: PHASER B

Offset Address		Description	
#	00 06	0000 aaaa	
	00 07	0000 bbbb	
	00 08	0000 cccc	
	00 09	0000 dddd	Speed (0 - 100) 0 - 100
#	00 0A	0000 aaaa	
	00 0B	0000 bbbb	
	00 0C	0000 cccc	
	00 0D	0000 dddd	Depth (0 - 127) 0 - 127
#	00 0E	0000 aaaa	
	00 0F	0000 bbbb	
	00 10	0000 cccc	
	00 11	0000 dddd	Low Gain (0 - 30) -15 - +15 [dB]
#	00 12	0000 aaaa	
	00 13	0000 bbbb	
	00 14	0000 cccc	
	00 15	0000 dddd	High Gain (0 - 30) -15 - +15 [dB]
#	00 16	0000 aaaa	
	00 17	0000 bbbb	
	00 18	0000 cccc	
	00 19	0000 dddd	Level (0 - 127) 0 - 127

MFX Type: STEP PHASER

Offset Address		Description	
# 00 06	0000 aaaa		
00 07	0000 bbbb		
00 08	0000 cccc		
00 09	0000 dddd	Mode	(0 - 2) 4-STAGE, 8-STAGE, 12-STAGE
# 00 0A	0000 aaaa		
00 0B	0000 bbbb		
00 0C	0000 cccc		
00 0D	0000 dddd	Manual	(0 - 127) 0 - 127
# 00 0E	0000 aaaa		
00 0F	0000 bbbb		
00 10	0000 cccc		
00 11	0000 dddd	Tempo Sync (Rate)	(0 - 1) OFF, ON
# 00 12	0000 aaaa		
00 13	0000 bbbb		
00 14	0000 cccc		
00 15	0000 dddd	Rate (Hz)	(1 - 200) 0.05 - 10.00 [Hz]
# 00 16	0000 aaaa		
00 17	0000 bbbb		
00 18	0000 cccc		
00 19	0000 dddd	Rate (note)	(0 - 21) MUSICAL-NOTES
# 00 1A	0000 aaaa		
00 1B	0000 bbbb		
00 1C	0000 cccc		
00 1D	0000 dddd	Depth	(0 - 127) 0 - 127
# 00 1E	0000 aaaa		
00 1F	0000 bbbb		
00 20	0000 cccc		
00 21	0000 dddd	Polarity	(0 - 1) INVR, SYNC
# 00 22	0000 aaaa		
00 23	0000 bbbb		
00 24	0000 cccc		
00 25	0000 dddd	Resonance	(0 - 127) 0 - 127
# 00 26	0000 aaaa		
00 27	0000 bbbb		
00 28	0000 cccc		
00 29	0000 dddd	Cross Feedback	(0 - 98) -98 - +98 [%]
# 00 2A	0000 aaaa		
00 2B	0000 bbbb		
00 2C	0000 cccc		
00 2D	0000 dddd	Tempo Sync (Step Rate)	(0 - 1) OFF, ON
# 00 2E	0000 aaaa		
00 2F	0000 bbbb		
00 30	0000 cccc		
00 31	0000 dddd	Step Rate (Hz)	(1 - 200) 0.05 - 10.00 [Hz]
# 00 32	0000 aaaa		
00 33	0000 bbbb		
00 34	0000 cccc		
00 35	0000 dddd	Step Rate (note)	(0 - 21) MUSICAL-NOTES
# 00 36	0000 aaaa		
00 37	0000 bbbb		
00 38	0000 cccc		
00 39	0000 dddd	dummy (ignored)	
# 00 3A	0000 aaaa		
00 3B	0000 bbbb		
00 3C	0000 cccc		
00 3D	0000 dddd	Low Gain	(0 - 30) -15 - +15 [dB]
# 00 3E	0000 aaaa		
00 3F	0000 bbbb		
00 40	0000 cccc		
00 41	0000 dddd	High Gain	(0 - 30) -15 - +15 [dB]
# 00 42	0000 aaaa		
00 43	0000 bbbb		
00 44	0000 cccc		
00 45	0000 dddd	Level	(0 - 127) 0 - 127

MFX Type: FLANGER

Offset Address		Description
# 00 06	0000 aaaa	
00 07	0000 bbbb	
00 08	0000 cccc	
00 09	0000 dddd	Filter Type (0 - 2) OFF, LPF, HPF
# 00 0A	0000 aaaa	
00 0B	0000 bbbb	
00 0C	0000 cccc	
00 0D	0000 dddd	Cutoff Freq (0 - 16) 200, 250, 315, 400, 500, 630, 800, 1000, 1250, 1600, 2000, 2500, 3150, 4000, 5000, 6300, 8000 [Hz]
# 00 0E	0000 aaaa	
00 0F	0000 bbbb	
00 10	0000 cccc	
00 11	0000 dddd	Pre Delay (0 - 125) 0.0 - 100 [msec]
# 00 12	0000 aaaa	
00 13	0000 bbbb	
00 14	0000 cccc	
00 15	0000 dddd	Tempo Sync (0 - 1) OFF, ON
# 00 16	0000 aaaa	
00 17	0000 bbbb	
00 18	0000 cccc	
00 19	0000 dddd	Rate (Hz) (1 - 200) 0.05 - 10.00 [Hz]
# 00 1A	0000 aaaa	
00 1B	0000 bbbb	
00 1C	0000 cccc	
00 1D	0000 dddd	Rate (note) (0 - 21) MUSICAL-NOTES
# 00 1E	0000 aaaa	
00 1F	0000 bbbb	
00 20	0000 cccc	
00 21	0000 dddd	Depth (0 - 127) 0 - 127
# 00 22	0000 aaaa	
00 23	0000 bbbb	
00 24	0000 cccc	
00 25	0000 dddd	Phase (0 - 90) 0 - 180 [deg]
# 00 26	0000 aaaa	
00 27	0000 bbbb	
00 28	0000 cccc	
00 29	0000 dddd	Feedback (0 - 98) -98 - +98 [%]
# 00 2A	0000 aaaa	
00 2B	0000 bbbb	
00 2C	0000 cccc	
00 2D	0000 dddd	Low Gain (0 - 30) -15 - +15 [dB]
# 00 2E	0000 aaaa	
00 2F	0000 bbbb	
00 30	0000 cccc	
00 31	0000 dddd	High Gain (0 - 30) -15 - +15 [dB]
# 00 32	0000 aaaa	
00 33	0000 bbbb	
00 34	0000 cccc	
00 35	0000 dddd	dummy (ignored)
# 00 36	0000 aaaa	
00 37	0000 bbbb	
00 38	0000 cccc	
00 39	0000 dddd	Level (0 - 127) 0 - 127

MFX Type: REVERB

Offset Address		Description
# 00 06	0000 aaaa	
00 07	0000 bbbb	
00 08	0000 cccc	
00 09	0000 dddd	Type (0 - 5) ROOM1, ROOM2, STAGE1, STAGE2, HALL1, HALL2
# 00 0A	0000 aaaa	
00 0B	0000 bbbb	
00 0C	0000 cccc	

	Offset Address		Description	
	00 0D	0000 dddd	Pre Delay	(0 - 125) 0.0 - 100 [msec]
#	00 0E	0000 aaaa		
	00 0F	0000 bbbb		
	00 10	0000 cccc		
	00 11	0000 dddd	Time	(0 - 127) 0 - 127
#	00 12	0000 aaaa		
	00 13	0000 bbbb		
	00 14	0000 cccc		
	00 15	0000 dddd	HF Damp	(0 - 17) 200, 250, 315, 400, 500, 630, 800, 1000, 1250, 1600, 2000, 2500, 3150, 4000, 5000, 6300, 8000, BYPS [Hz]
#	00 16	0000 aaaa		
	00 17	0000 bbbb		
	00 18	0000 cccc		
	00 19	0000 dddd	Low Gain	(0 - 30) -15 - +15 [dB]
#	00 1A	0000 aaaa		
	00 1B	0000 bbbb		
	00 1C	0000 cccc		
	00 1D	0000 dddd	High Gain	(0 - 30) -15 - +15 [dB]
#	00 1E	0000 aaaa		
	00 1F	0000 bbbb		
	00 20	0000 cccc		
	00 21	0000 dddd	dummy (ignored)	
#	00 22	0000 aaaa		
	00 23	0000 bbbb		
	00 24	0000 cccc		
	00 25	0000 dddd	Level	(0 - 127) 0 - 127

MFX Type: LONG REVERB

	Offset Address		Description	
#	00 06	0000 aaaa		
	00 07	0000 bbbb		
	00 08	0000 cccc		
	00 09	0000 dddd	Depth	(0 - 127) 0 - 127
#	00 0A	0000 aaaa		
	00 0B	0000 bbbb		
	00 0C	0000 cccc		
	00 0D	0000 dddd	Time	(0 - 127) 0 - 127
#	00 0E	0000 aaaa		
	00 0F	0000 bbbb		
	00 10	0000 cccc		
	00 11	0000 dddd	Pre LPF	(1 - 32) 16, 20, 25, 32, 40, 50, 63, 80, 100, 125, 160, 200, 250, 315, 400, 500, 630, 800, 1000, 1250, 1600, 2000, 2500, 3150, 4000, 5000, 6300, 8000, 10000, 12500, 15000, BYPS [Hz]
#	00 12	0000 aaaa		
	00 13	0000 bbbb		
	00 14	0000 cccc		
	00 15	0000 dddd	Pre HPF	(0 - 31) BYPS, 16, 20, 25, 32, 40, 50, 63, 80, 100, 125, 160, 200, 250, 315, 400, 500, 630, 800, 1000, 1250, 1600, 2000, 2500, 3150, 4000, 5000, 6300, 8000, 10000, 12500, 15000 [Hz]
#	00 16	0000 aaaa		
	00 17	0000 bbbb		
	00 18	0000 cccc		
	00 19	0000 dddd	Peaking Freq	(0 - 16) 200, 250, 315, 400, 500, 630, 800, 1000, 1250, 1600, 2000, 2500, 3150, 4000, 5000, 6300, 8000 [Hz]
#	00 1A	0000 aaaa		
	00 1B	0000 bbbb		
	00 1C	0000 cccc		
	00 1D	0000 dddd	Peaking Gain	(0 - 30) -15 - +15 [dB]
#	00 1E	0000 aaaa		
	00 1F	0000 bbbb		
	00 20	0000 cccc		
	00 21	0000 dddd	Peaking Q	(0 - 4) 0.5, 1.0, 2.0, 4.0, 8.0
#	00 22	0000 aaaa		
	00 23	0000 bbbb		

	Offset Address		Description	
	00 24	0000 cccc		
	00 25	0000 dddd	HF Damp	(1 - 32) 16, 20, 25, 32, 40, 50, 63, 80, 100, 125, 160, 200, 250, 315, 400, 500, 630, 800, 1000, 1250, 1600, 2000, 2500, 3150, 4000, 5000, 6300, 8000, 10000, 12500, 15000, BYPS [Hz]
#	00 26	0000 aaaa		
	00 27	0000 bbbb		
	00 28	0000 cccc		
	00 29	0000 dddd	LF Damp	(0 - 31) BYPS, 16, 20, 25, 32, 40, 50, 63, 80, 100, 125, 160, 200, 250, 315, 400, 500, 630, 800, 1000, 1250, 1600, 2000, 2500, 3150, 4000, 5000, 6300, 8000, 10000, 12500, 15000 [Hz]
#	00 2A	0000 aaaa		
	00 2B	0000 bbbb		
	00 2C	0000 cccc		
	00 2D	0000 dddd	Character	(0 - 5) 1 - 6
#	00 2E	0000 aaaa		
	00 2F	0000 bbbb		
	00 30	0000 cccc		
	00 31	0000 dddd	EQ Low Freq	(0 - 1) 200, 400 [Hz]
#	00 32	0000 aaaa		
	00 33	0000 bbbb		
	00 34	0000 cccc		
	00 35	0000 dddd	EQ Low Gain	(0 - 30) -15 - +15 [dB]
#	00 36	0000 aaaa		
	00 37	0000 bbbb		
	00 38	0000 cccc		
	00 39	0000 dddd	EQ High Freq	(0 - 2) 2000, 4000, 8000 [Hz]
#	00 3A	0000 aaaa		
	00 3B	0000 bbbb		
	00 3C	0000 cccc		
	00 3D	0000 dddd	EQ High Gain	(0 - 30) -15 - +15 [dB]
#	00 3E	0000 aaaa		
	00 3F	0000 bbbb		
	00 40	0000 cccc		
	00 41	0000 dddd	Level	(0 - 127) 0 - 127

MFX Type: SUPER FILTER

	Offset Address		Description	
#	00 06	0000 aaaa		
	00 07	0000 bbbb		
	00 08	0000 cccc		
	00 09	0000 dddd	Filter Type	(0 - 3) LPF, BPF, HPF, NOTCH
#	00 0A	0000 aaaa		
	00 0B	0000 bbbb		
	00 0C	0000 cccc		
	00 0D	0000 dddd	Filter Slope	(0 - 2) -12, -24, -36 [dB]
#	00 0E	0000 aaaa		
	00 0F	0000 bbbb		
	00 10	0000 cccc		
	00 11	0000 dddd	Filter Cutoff	(0 - 127) 0 - 127
#	00 12	0000 aaaa		
	00 13	0000 bbbb		
	00 14	0000 cccc		
	00 15	0000 dddd	Filter Resonance	(0 - 100) 0 - 100
#	00 16	0000 aaaa		
	00 17	0000 bbbb		
	00 18	0000 cccc		
	00 19	0000 dddd	Filter Gain	(0 - 12) 0 - +12[dB]
#	00 1A	0000 aaaa		
	00 1B	0000 bbbb		
	00 1C	0000 cccc		
	00 1D	0000 dddd	Modulation Sw	(0 - 1) OFF, ON
#	00 1E	0000 aaaa		
	00 1F	0000 bbbb		
	00 20	0000 cccc		
	00 21	0000 dddd	Modulation Wave	(0 - 4)

			TRI, SQR, SIN, SAW1, SAW2
#	00 22	0000 aaaa	
	00 23	0000 bbbb	
	00 24	0000 cccc	
	00 25	0000 dddd	Tempo Sync (0 - 1) OFF, ON
#	00 26	0000 aaaa	
	00 27	0000 bbbb	
	00 28	0000 cccc	
	00 29	0000 dddd	Rate (Hz) (1 - 200) 0.05 - 10.00 [Hz]
#	00 2A	0000 aaaa	
	00 2B	0000 bbbb	
	00 2C	0000 cccc	
	00 2D	0000 dddd	Rate (note) (0 - 21) MUSICAL-NOTES
#	00 2E	0000 aaaa	
	00 2F	0000 bbbb	
	00 30	0000 cccc	
	00 31	0000 dddd	Depth (0 - 127) 0 - 127
#	00 32	0000 aaaa	
	00 33	0000 bbbb	
	00 34	0000 cccc	
	00 35	0000 dddd	Attack (0 - 127) 0 - 127
#	00 36	0000 aaaa	
	00 37	0000 bbbb	
	00 38	0000 cccc	
	00 39	0000 dddd	Level (0 - 127) 0 - 127

MFX Type: FILTER+DRIVE

Offset Address		Description
#	00 06	0000 aaaa	
	00 07	0000 bbbb	
	00 08	0000 cccc	
	00 09	0000 dddd	Cutoff (0 - 127) 0 - 127
#	00 0A	0000 aaaa	
	00 0B	0000 bbbb	
	00 0C	0000 cccc	
	00 0D	0000 dddd	Resonance (0 - 127) 0 - 127
#	00 0E	0000 aaaa	
	00 0F	0000 bbbb	
	00 10	0000 cccc	
	00 11	0000 dddd	Drive (0 - 127) 0 - 127
#	00 12	0000 aaaa	
	00 13	0000 bbbb	
	00 14	0000 cccc	
	00 15	0000 dddd	Level (0 - 127) 0 - 127

MFX Type: AUTO WAH

Offset Address		Description
#	00 06	0000 aaaa	
	00 07	0000 bbbb	
	00 08	0000 cccc	
	00 09	0000 dddd	Filter Type (0 - 1) LPF, HPF
#	00 0A	0000 aaaa	
	00 0B	0000 bbbb	
	00 0C	0000 cccc	
	00 0D	0000 dddd	Manual (0 - 127) 0 - 127
#	00 0E	0000 aaaa	
	00 0F	0000 bbbb	
	00 10	0000 cccc	
	00 11	0000 dddd	Peak (0 - 127) 0 - 127
#	00 12	0000 aaaa	
	00 13	0000 bbbb	
	00 14	0000 cccc	
	00 15	0000 dddd	Sens (0 - 127) 0 - 127
#	00 16	0000 aaaa	
	00 17	0000 bbbb	

	00 18	0000 cccc		
	00 19	0000 dddd	Polarity	(0 - 1) UP, DOWN
#	00 1A	0000 aaaa		
	00 1B	0000 bbbb		
	00 1C	0000 cccc		
	00 1D	0000 dddd	Tempo Sync	(0 - 1) OFF, ON
#	00 1E	0000 aaaa		
	00 1F	0000 bbbb		
	00 20	0000 cccc		
	00 21	0000 dddd	Rate (Hz)	(1 - 200) 0.05 - 10.00 [Hz]
#	00 22	0000 aaaa		
	00 23	0000 bbbb		
	00 24	0000 cccc		
	00 25	0000 dddd	Rate (note)	(0 - 21) MUSICAL-NOTES
#	00 26	0000 aaaa		
	00 27	0000 bbbb		
	00 28	0000 cccc		
	00 29	0000 dddd	Depth	(0 - 127) 0 - 127
#	00 2A	0000 aaaa		
	00 2B	0000 bbbb		
	00 2C	0000 cccc		
	00 2D	0000 dddd	Phase	(0 - 90) 0 - 180 [deg]
#	00 2E	0000 aaaa		
	00 2F	0000 bbbb		
	00 30	0000 cccc		
	00 31	0000 dddd	Low Gain	(0 - 30) -15 - +15 [dB]
#	00 32	0000 aaaa		
	00 33	0000 bbbb		
	00 34	0000 cccc		
	00 35	0000 dddd	High Gain	(0 - 30) -15 - +15 [dB]
#	00 36	0000 aaaa		
	00 37	0000 bbbb		
	00 38	0000 cccc		
	00 39	0000 dddd	Level	(0 - 127) 0 - 127

MFX Type: OD/DS -> TWAH

	Offset Address		Description	
#	00 06	0000 aaaa		
	00 07	0000 bbbb		
	00 08	0000 cccc		
	00 09	0000 dddd	Drive Switch	(0 - 1) OFF, ON
#	00 0A	0000 aaaa		
	00 0B	0000 bbbb		
	00 0C	0000 cccc		
	00 0D	0000 dddd	Drive Type	(0 - 1) OVERDRIVE, DIST
#	00 0E	0000 aaaa		
	00 0F	0000 bbbb		
	00 10	0000 cccc		
	00 11	0000 dddd	Drive	(0 - 127) 0 - 127
#	00 12	0000 aaaa		
	00 13	0000 bbbb		
	00 14	0000 cccc		
	00 15	0000 dddd	Tone	(0 - 127) 0 - 127
#	00 16	0000 aaaa		
	00 17	0000 bbbb		
	00 18	0000 cccc		
	00 19	0000 dddd	Amp Switch	(0 - 1) OFF, ON
#	00 1A	0000 aaaa		
	00 1B	0000 bbbb		
	00 1C	0000 cccc		
	00 1D	0000 dddd	Amp Type	(0 - 3) SMALL, BUILT-IN, 2-STACK, 3-STACK
#	00 1E	0000 aaaa		
	00 1F	0000 bbbb		
	00 20	0000 cccc		
	00 21	0000 dddd	Touch Wah Switch	(0 - 1) OFF, ON
#	00 22	0000 aaaa		
	00 23	0000 bbbb		

	00 24	0000 cccc		
	00 25	0000 dddd	Touch Wah Mode	(0 - 1) LPF, BPF
#	00 26	0000 aaaa		
	00 27	0000 bbbb		
	00 28	0000 cccc		
	00 29	0000 dddd	Touch Wah Polarity	(0 - 1) DOWN, UP
#	00 2A	0000 aaaa		
	00 2B	0000 bbbb		
	00 2C	0000 cccc		
	00 2D	0000 dddd	Touch Wah Sens	(0 - 127) 0 - 127
#	00 2E	0000 aaaa		
	00 2F	0000 bbbb		
	00 30	0000 cccc		
	00 31	0000 dddd	Touch Wah Manual	(0 - 127) 0 - 127
#	00 32	0000 aaaa		
	00 33	0000 bbbb		
	00 34	0000 cccc		
	00 35	0000 dddd	Touch Wah Peak	(0 - 127) 0 - 127
#	00 36	0000 aaaa		
	00 37	0000 bbbb		
	00 38	0000 cccc		
	00 39	0000 dddd	Touch Wah Balance	(0 - 100) D100:0W - D0:100W
#	00 3A	0000 aaaa		
	00 3B	0000 bbbb		
	00 3C	0000 cccc		
	00 3D	0000 dddd	Low Gain	(0 - 30) -15 - +15 [dB]
#	00 3E	0000 aaaa		
	00 3F	0000 bbbb		
	00 40	0000 cccc		
	00 41	0000 dddd	High Gain	(0 - 30) -15 - +15 [dB]
#	00 42	0000 aaaa		
	00 43	0000 bbbb		
	00 44	0000 cccc		
	00 45	0000 dddd	Level	(0 - 127) 0 - 127

MFX Type: LOFI COMPRESS

Offset Address		Description	
#	00 06	0000 aaaa	
	00 07	0000 bbbb	
	00 08	0000 cccc	
	00 09	0000 dddd	Pre Filter Type (0 - 5) 1, 2, 3, 4, 5, 6
#	00 0A	0000 aaaa	
	00 0B	0000 bbbb	
	00 0C	0000 cccc	
	00 0D	0000 dddd	LoFi Type (0 - 8) 1, 2, 3, 4, 5, 6, 7, 8, 9
#	00 0E	0000 aaaa	
	00 0F	0000 bbbb	
	00 10	0000 cccc	
	00 11	0000 dddd	PostFilter Type (0 - 2) OFF, LPF, HPF
#	00 12	0000 aaaa	
	00 13	0000 bbbb	
	00 14	0000 cccc	
	00 15	0000 dddd	PostFilter Cutoff (0 - 16) 200, 250, 315, 400, 500, 630, 800, 1000, 1250, 1600, 2000, 2500, 3150, 4000, 5000, 6300, 8000 [Hz]
#	00 16	0000 aaaa	
	00 17	0000 bbbb	
	00 18	0000 cccc	
	00 19	0000 dddd	Low Gain (0 - 30) -15 - +15 [dB]
#	00 1A	0000 aaaa	
	00 1B	0000 bbbb	
	00 1C	0000 cccc	
	00 1D	0000 dddd	High Gain (0 - 30) -15 - +15 [dB]
#	00 1E	0000 aaaa	
	00 1F	0000 bbbb	
	00 20	0000 cccc	
	00 21	0000 dddd	dummy (ignored)
#	00 22	0000 aaaa	

	00 23	0000 bbbb		
	00 24	0000 cccc		
	00 25	0000 dddd	Level	(0 - 127) 0 - 127

MFX Type: DISTORTION

Offset Address			Description	
#	00 06	0000 aaaa		
	00 07	0000 bbbb		
	00 08	0000 cccc		
	00 09	0000 dddd	Drive	(0 - 127) 0 - 127
#	00 0A	0000 aaaa		
	00 0B	0000 bbbb		
	00 0C	0000 cccc		
	00 0D	0000 dddd	Tone	(0 - 127) 0 - 127
#	00 0E	0000 aaaa		
	00 0F	0000 bbbb		
	00 10	0000 cccc		
	00 11	0000 dddd	Amp Sw	(0 - 1) OFF, ON
#	00 12	0000 aaaa		
	00 13	0000 bbbb		
	00 14	0000 cccc		
	00 15	0000 dddd	Amp Type	(0 - 3) SMALL, BUILT-IN, 2-STACK, 3-STACK
#	00 16	0000 aaaa		
	00 17	0000 bbbb		
	00 18	0000 cccc		
	00 19	0000 dddd	Low Gain	(0 - 30) -15 - +15 [dB]
#	00 1A	0000 aaaa		
	00 1B	0000 bbbb		
	00 1C	0000 cccc		
	00 1D	0000 dddd	High Gain	(0 - 30) -15 - +15 [dB]
#	00 1E	0000 aaaa		
	00 1F	0000 bbbb		
	00 20	0000 cccc		
	00 21	0000 dddd	Pan	(0 - 127) L64 - 63R
#	00 22	0000 aaaa		
	00 23	0000 bbbb		
	00 24	0000 cccc		
	00 25	0000 dddd	Level	(0 - 127) 0 - 127

MFX Type: OVERDRIVE

Offset Address			Description	
#	00 06	0000 aaaa		
	00 07	0000 bbbb		
	00 08	0000 cccc		
	00 09	0000 dddd	Drive	(0 - 127) 0 - 127
#	00 0A	0000 aaaa		
	00 0B	0000 bbbb		
	00 0C	0000 cccc		
	00 0D	0000 dddd	Tone	(0 - 127) 0 - 127
#	00 0E	0000 aaaa		
	00 0F	0000 bbbb		
	00 10	0000 cccc		
	00 11	0000 dddd	Amp Sw	(0 - 1) OFF, ON
#	00 12	0000 aaaa		
	00 13	0000 bbbb		
	00 14	0000 cccc		
	00 15	0000 dddd	Amp Type	(0 - 3) SMALL, BUILT-IN, 2-STACK, 3-STACK
#	00 16	0000 aaaa		
	00 17	0000 bbbb		
	00 18	0000 cccc		
	00 19	0000 dddd	Low Gain	(0 - 30) -15 - +15 [dB]
#	00 1A	0000 aaaa		
	00 1B	0000 bbbb		
	00 1C	0000 cccc		
	00 1D	0000 dddd	High Gain	(0 - 30)

			-15 - +15 [dB]
#	00 1E	0000 aaaa	
	00 1F	0000 bbbb	
	00 20	0000 cccc	
	00 21	0000 dddd	Pan (0 - 127) L64 - 63R
#	00 22	0000 aaaa	
	00 23	0000 bbbb	
	00 24	0000 cccc	
	00 25	0000 dddd	Level (0 - 127) 0 - 127

MFX Type: SATURATOR

Offset Address		Description	
#	00 06	0000 aaaa	
	00 07	0000 bbbb	
	00 08	0000 cccc	
	00 09	0000 dddd	Saturator Gain (0 - 127) 0 - 127
#	00 0A	0000 aaaa	
	00 0B	0000 bbbb	
	00 0C	0000 cccc	
	00 0D	0000 dddd	Saturator Drive (0 - 127) 0 - 127
#	00 0E	0000 aaaa	
	00 0F	0000 bbbb	
	00 10	0000 cccc	
	00 11	0000 dddd	Saturator Level (0 - 127) 0 - 127
#	00 12	0000 aaaa	
	00 13	0000 bbbb	
	00 14	0000 cccc	
	00 15	0000 dddd	Comp Depth (0 - 127) 0 - 127
#	00 16	0000 aaaa	
	00 17	0000 bbbb	
	00 18	0000 cccc	
	00 19	0000 dddd	Comp Level (0 - 127) 0 - 127
#	00 1A	0000 aaaa	
	00 1B	0000 bbbb	
	00 1C	0000 cccc	
	00 1D	0000 dddd	Hi Gain (3 - 21) -12 - +6 [dB]
#	00 1E	0000 aaaa	
	00 1F	0000 bbbb	
	00 20	0000 cccc	
	00 21	0000 dddd	Level (0 - 127) 0 - 127

MFX Type: T-SCREAM

Offset Address		Description	
#	00 06	0000 aaaa	
	00 07	0000 bbbb	
	00 08	0000 cccc	
	00 09	0000 dddd	Distortion (0 - 127) 0 - 127
#	00 0A	0000 aaaa	
	00 0B	0000 bbbb	
	00 0C	0000 cccc	
	00 0D	0000 dddd	Tone (0 - 127) 0 - 127
#	00 0E	0000 aaaa	
	00 0F	0000 bbbb	
	00 10	0000 cccc	
	00 11	0000 dddd	Level (0 - 127) 0 - 127

MFX Type: BIT CRUSHER

Offset Address		Description	
#	00 06	0000 aaaa	
	00 07	0000 bbbb	
	00 08	0000 cccc	
	00 09	0000 dddd	Sample Rate (0 - 127) 0 - 127

	Offset Address		Description	
#	00 0A	0000 aaaa		
	00 0B	0000 bbbb		
	00 0C	0000 cccc		
	00 0D	0000 dddd	Bit Down	(0 - 18) 0 - 18
#	00 0E	0000 aaaa		
	00 0F	0000 bbbb		
	00 10	0000 cccc		
	00 11	0000 dddd	Filter	(0 - 127) 0 - 127
#	00 12	0000 aaaa		
	00 13	0000 bbbb		
	00 14	0000 cccc		
	00 15	0000 dddd	Low Gain	(0 - 30) -15 - +15 [dB]
#	00 16	0000 aaaa		
	00 17	0000 bbbb		
	00 18	0000 cccc		
	00 19	0000 dddd	High Gain	(0 - 30) -15 - +15 [dB]
#	00 1A	0000 aaaa		
	00 1B	0000 bbbb		
	00 1C	0000 cccc		
	00 1D	0000 dddd	Level	(0 - 127) 0 - 127

MFX Type: ISOLATOR

	Offset Address		Description	
#	00 06	0000 aaaa		
	00 07	0000 bbbb		
	00 08	0000 cccc		
	00 09	0000 dddd	Boost/Cut Low	(0 - 64) -60 - +4 [dB]
#	00 0A	0000 aaaa		
	00 0B	0000 bbbb		
	00 0C	0000 cccc		
	00 0D	0000 dddd	Boost/Cut Mid	(0 - 64) -60 - +4 [dB]
#	00 0E	0000 aaaa		
	00 0F	0000 bbbb		
	00 10	0000 cccc		
	00 11	0000 dddd	Boost/Cut High	(0 - 64) -60 - +4 [dB]
#	00 12	0000 aaaa		
	00 13	0000 bbbb		
	00 14	0000 cccc		
	00 15	0000 dddd	Anti Phase Low Sw	(0 - 1) OFF, ON
#	00 16	0000 aaaa		
	00 17	0000 bbbb		
	00 18	0000 cccc		
	00 19	0000 dddd	Anti Phase Low Level	(0 - 127) 0 - 127
#	00 1A	0000 aaaa		
	00 1B	0000 bbbb		
	00 1C	0000 cccc		
	00 1D	0000 dddd	Anti Phase Mid Sw	(0 - 1) OFF, ON
#	00 1E	0000 aaaa		
	00 1F	0000 bbbb		
	00 20	0000 cccc		
	00 21	0000 dddd	Anti Phase Mid Level	(0 - 127) 0 - 127
#	00 22	0000 aaaa		
	00 23	0000 bbbb		
	00 24	0000 cccc		
	00 25	0000 dddd	Low Boost Sw	(0 - 1) OFF, ON
#	00 26	0000 aaaa		
	00 27	0000 bbbb		
	00 28	0000 cccc		
	00 29	0000 dddd	Low Boost Level	(0 - 127) 0 - 127
#	00 2A	0000 aaaa		
	00 2B	0000 bbbb		
	00 2C	0000 cccc		
	00 2D	0000 dddd	Level	(0 - 127) 0 - 127

MFX Type: RING MODULATOR

Offset	

Address		Description	
# 00 06	0000 aaaa		
00 07	0000 bbbb		
00 08	0000 cccc		
00 09	0000 dddd	Frequency	(0 - 127) 0 - 127
# 00 0A	0000 aaaa		
00 0B	0000 bbbb		
00 0C	0000 cccc		
00 0D	0000 dddd	Sens	(0 - 127) 0 - 127
# 00 0E	0000 aaaa		
00 0F	0000 bbbb		
00 10	0000 cccc		
00 11	0000 dddd	Polarity	(0 - 1) UP, DOWN
# 00 12	0000 aaaa		
00 13	0000 bbbb		
00 14	0000 cccc		
00 15	0000 dddd	Low Gain	(0 - 30) -15 - +15 [dB]
# 00 16	0000 aaaa		
00 17	0000 bbbb		
00 18	0000 cccc		
00 19	0000 dddd	High Gain	(0 - 30) -15 - +15 [dB]
# 00 1A	0000 aaaa		
00 1B	0000 bbbb		
00 1C	0000 cccc		
00 1D	0000 dddd	dummy (ignored)	
# 00 1E	0000 aaaa		
00 1F	0000 bbbb		
00 20	0000 cccc		
00 21	0000 dddd	Level	(0 - 127) 0 - 127

MFX Type: PITCH SHIFTER

Offset Address		Description	
# 00 06	0000 aaaa		
00 07	0000 bbbb		
00 08	0000 cccc		
00 09	0000 dddd	Coarse	(0 - 36) -24 - +12 [semi]
# 00 0A	0000 aaaa		
00 0B	0000 bbbb		
00 0C	0000 cccc		
00 0D	0000 dddd	Fine	(0 - 100) -100 - +100 [cent]
# 00 0E	0000 aaaa		
00 0F	0000 bbbb		
00 10	0000 cccc		
00 11	0000 dddd	Tempo Sync	(0 - 1) OFF, ON
# 00 12	0000 aaaa		
00 13	0000 bbbb		
00 14	0000 cccc		
00 15	0000 dddd	Delay Time (msec)	(1 - 1300) 1 - 1300 [msec]
# 00 16	0000 aaaa		
00 17	0000 bbbb		
00 18	0000 cccc		
00 19	0000 dddd	Delay Time (note)	(0 - 21) MUSICAL-NOTES
# 00 1A	0000 aaaa		
00 1B	0000 bbbb		
00 1C	0000 cccc		
00 1D	0000 dddd	Feedback	(0 - 98) -98 - +98 [%]
# 00 1E	0000 aaaa		
00 1F	0000 bbbb		
00 20	0000 cccc		
00 21	0000 dddd	Low Gain	(0 - 30) -15 - +15 [dB]
# 00 22	0000 aaaa		
00 23	0000 bbbb		
00 24	0000 cccc		
00 25	0000 dddd	High Gain	(0 - 30) -15 - +15 [dB]
# 00 26	0000 aaaa		
00 27	0000 bbbb		
00 28	0000 cccc		
00 29	0000 dddd	dummy (ignored)	

#	00 2A	0000 aaaa		
	00 2B	0000 bbbb		
	00 2C	0000 cccc		
	00 2D	0000 dddd	Level	(0 - 127) 0 - 127

MFX Type: AUTO PAN

Offset Address		Description	
#	00 06	0000 aaaa	
	00 07	0000 bbbb	
	00 08	0000 cccc	
	00 09	0000 dddd	Mod Wave (0 - 5) TRI, SQR, SIN, SAW1, SAW2, TRP
#	00 0A	0000 aaaa	
	00 0B	0000 bbbb	
	00 0C	0000 cccc	
	00 0D	0000 dddd	Tempo Sync (0 - 1) OFF, ON
#	00 0E	0000 aaaa	
	00 0F	0000 bbbb	
	00 10	0000 cccc	
	00 11	0000 dddd	Rate (Hz) (1 - 200) 0.05 - 10.00 [Hz]
#	00 12	0000 aaaa	
	00 13	0000 bbbb	
	00 14	0000 cccc	
	00 15	0000 dddd	Rate (note) (0 - 21) MUSICAL-NOTES
#	00 16	0000 aaaa	
	00 17	0000 bbbb	
	00 18	0000 cccc	
	00 19	0000 dddd	Depth (0 - 127) 0 - 127
#	00 1A	0000 aaaa	
	00 1B	0000 bbbb	
	00 1C	0000 cccc	
	00 1D	0000 dddd	Low Gain (0 - 30) -15 - +15 [dB]
#	00 1E	0000 aaaa	
	00 1F	0000 bbbb	
	00 20	0000 cccc	
	00 21	0000 dddd	High Gain (0 - 30) -15 - +15 [dB]
#	00 22	0000 aaaa	
	00 23	0000 bbbb	
	00 24	0000 cccc	
	00 25	0000 dddd	Level (0 - 127) 0 - 127

* [KitUnitCommon]

Offset Address		Description	
#	00 00	0000 aaaa	
	00 01	0000 bbbb	Pan (-30 - 30) L30 - 1, CTR, R1 - 30
#	00 02	0000 aaaa	
	00 03	0000 bbbb	
	00 04	0000 cccc	
	00 05	0000 dddd	Mfx Send Level (-601 - 60) -INF, -60.0 - +6.0 [dB]
#	00 06	0000 aaaa	
	00 07	0000 bbbb	
	00 08	0000 cccc	
	00 09	0000 dddd	Room Send Level (-601 - 60) -INF, -60.0 - +6.0 [dB]
#	00 0A	0000 aaaa	
	00 0B	0000 bbbb	
	00 0C	0000 cccc	
	00 0D	0000 dddd	Overhead Send Level (-601 - 60) -INF, -60.0 - +6.0 [dB]
	00 0E	0000 000a	Eq Switch (0 - 1) OFF, ON
	00 0F	000a aaaa	Eq Low Freq (0 - 17) 20Hz, 25Hz, 31.5Hz, 40Hz, 50Hz, 63Hz, 80Hz, 100Hz, 125Hz, 160Hz, 200Hz, 250Hz, 315Hz, 400Hz, 500Hz, 630Hz, 800Hz, 1KHz
#	00 10	0000 aaaa	

	00 11	0000 bbbb	Eq Low Gain (-15 - 15) -15 - +15 [dB]
	00 12	000a aaaa	Eq Mid Freq (0 - 29) 20Hz, 25Hz, 31.5Hz, 40Hz, 50Hz, 63Hz, 80Hz, 100Hz, 125Hz, 160Hz, 200Hz, 250Hz, 315Hz, 400Hz, 500Hz, 630Hz, 800Hz, 1kHz, 1.25kHz, 1.6kHz, 2kHz, 2.5kHz, 3.15kHz, 4kHz, 5kHz, 3.3kHz, 8kHz, 10kHz, 12.5kHz, 16kHz
	00 13	0000 0aaa	Eq Mid Q (0 - 4) 0.5, 1.0, 2.0, 4.0, 8.0
#	00 14	0000 aaaa	
	00 15	0000 bbbb	Eq Mid Gain (-15 - 15) -15 - +15 [dB]
	00 16	0000 aaaa	Eq High Freq (0 - 12) 1kHz, 1.25kHz, 1.6kHz, 2kHz, 2.5kHz, 3.15kHz, 4kHz, 5kHz, 6.3kHz, 8kHz, 10kHz, 12.5kHz, 16kHz
#	00 17	0000 aaaa	
	00 18	0000 bbbb	Eq High Gain (-15 - 15) -15 - +15 [dB]
00 00 00 19			Total Size

* [KitUnitLayer]

Offset Address		Description	
#	00 00	0000 aaaa	
	00 01	0000 bbbb	
	00 02	0000 cccc	
	00 03	0000 dddd	Instrument (0 - 999)
#	00 04	0000 aaaa	
	00 05	0000 bbbb	
	00 06	0000 cccc	
	00 07	0000 dddd	Volume (-601 - 60) -INF, -60.0 - +6.0 [dB]
	00 08	0000 000a	Transient Switch (0 - 1) OFF, ON
	00 09	0000 aaaa	Transient Time (1 - 10) 1 - 10
#	00 0A	0000 aaaa	
	00 0B	0000 bbbb	Transient Attack (-100 - 100) -100 - 100
#	00 0C	0000 aaaa	
	00 0D	0000 bbbb	Transient Release (-100 - 100) -100 - 100
#	00 0E	0000 aaaa	
	00 0F	0000 bbbb	Transient Gain (-120 - 60) -12.0 - +6.0 [dB]
00 00 00 10			Total Size

* [KitUnitVEdit]

Offset Address		Description	
	00 00	0000 0000	(reserve)
#	00 01	0000 aaaa	
	00 02	0000 bbbb	V-Edit Parameter 1 (*2)
#	00 03	0000 aaaa	
	00 04	0000 bbbb	V-Edit Parameter 2 (*2)
#	00 05	0000 aaaa	
	00 06	0000 bbbb	V-Edit Parameter 3 (*2)
#	00 07	0000 aaaa	
	00 08	0000 bbbb	V-Edit Parameter 4 (*2)
#	00 09	0000 aaaa	
	00 0A	0000 bbbb	V-Edit Parameter 5 (*2)
#	00 0B	0000 aaaa	
	00 0C	0000 bbbb	V-Edit Parameter 6 (*2)
#	00 0D	0000 aaaa	
	00 0E	0000 bbbb	V-Edit Parameter 7 (*2)
#	00 0F	0000 aaaa	
	00 10	0000 bbbb	V-Edit Parameter 8 (*2)
#	00 11	0000 aaaa	
	00 12	0000 bbbb	V-Edit Parameter 9 (*2)
#	00 13	0000 aaaa	
	00 14	0000 bbbb	V-Edit Parameter 10 (*2)
#	00 15	0000 aaaa	
	00 16	0000 bbbb	V-Edit Parameter 11 (*2)
#	00 17	0000 aaaa	
	00 18	0000 bbbb	V-Edit Parameter 12 (*2)
#	00 19	0000 aaaa	
	00 1A	0000 bbbb	V-Edit Parameter 13 (*2)
#	00 1B	0000 aaaa	

	00 1C	0000 bbbb	V-Edit Parameter 14	(*2)
#	00 1D	0000 aaaa		
	00 1E	0000 bbbb	V-Edit Parameter 15	(*2)
#	00 1F	0000 aaaa		
	00 20	0000 bbbb	V-Edit Parameter 16	(*2)
	00 00 00 21	Total Size		

(*2) This area is assigned as follows according to the instrument that is assigned. Addresses for which the instrument has no assignment are ignored.

INSTRUMENT GROUP: KICK

	Offset Address		Description	
	00 00	0000 0000	(reserve)	
#	00 01	0000 aaaa		
	00 02	0000 bbbb	Tuning	(-100 - 100) -100 - +100
#	00 03	0000 aaaa		
	00 04	0000 bbbb	Muffling	(0 - 9) OFF, 1 - 9
#	00 05	0000 aaaa		
	00 06	0000 bbbb	Head	(0 - 2) CLEAR, COATED, PINSTRIPE
#	00 07	0000 cccc		
	00 08	0000 dddd	Beater	(0 - 4) FELT1, FELT2, WOOD, PLSTIC1, PLSTIC2

* PINSTRIPE is registered trademark of REMO Inc. U.S.A.

INSTRUMENT GROUP: SNARE, TOM

	Offset Address		Description	
	00 00	0000 0000	(reserve)	
#	00 01	0000 aaaa		
	00 02	0000 bbbb	Tuning	(-100 - 100) -100 - 100
#	00 03	0000 aaaa		
	00 04	0000 bbbb	Muffling	(0 - 9) OFF, 1 - 9
#	00 05	0000 aaaa		
	00 06	0000 bbbb	Head	(0 - 2) CLEAR, COATED, PINSTRIPE

INSTRUMENT GROUP: HI-HAT

	Offset Address		Description	
	00 00	0000 0000	(reserve)	
#	00 01	0000 aaaa		
	00 02	0000 bbbb	Size	(0 - 78) 1.0 - 40.0
#	00 03	0000 aaaa		
	00 04	0000 bbbb	Fixed	(0 - 4) NORMAL, FIXED1 - 4

INSTRUMENT GROUP: RIDE, CRASH, RIDE, CHINA, SPLASH

	Offset Address		Description	
	00 00	0000 0000	(reserve)	
#	00 01	0000 aaaa		
	00 02	0000 bbbb	Size	(0 - 78) 1.0 - 40.0
#	00 03	0000 aaaa		
	00 04	0000 bbbb	Muffling	(0 - 19) OFF, 1 - 19

INSTRUMENT GROUP : OTHERS

	Offset Address		Description	
	00 00	0000 0000	(reserve)	
#	00 01	0000 aaaa		
	00 02	0000 bbbb	Pitch	(-100 - 100) -100 - 100
#	00 03	0000 aaaa		

	00 04	0000 bbbb	Decay (1 - 100) 1 - 100

* [KitMCRRoom]

	Offset Address		Description
	00 00	0000 000a	Switch (0 - 1) OFF, ON
#	00 01	0000 aaaa	
	00 02	0000 bbbb	
	00 03	0000 cccc	
	00 04	0000 dddd	Level (-601 - 60) -INF, -60.0 - +6.0 [dB]
#	00 05	0000 aaaa	
	00 06	0000 bbbb	
	00 07	0000 cccc	
	00 08	0000 dddd	Type (0 - 19) STUDIO1-1 - 4, STUDIO2-1 - 4, CLUB-1 - 4, STAGE-1 - 4, HALL-1 - 4
#	00 09	0000 aaaa	
	00 0A	0000 bbbb	
	00 0B	0000 cccc	
	00 0C	0000 dddd	Distance (0 - 6) 0 - 6
#	00 0D	0000 aaaa	
	00 0E	0000 bbbb	
	00 0F	0000 cccc	
	00 10	0000 dddd	Time (-64 - 0) -64 - 0
	00 00 00 11	Total Size	

* [KitMCROverhead]

	Offset Address		Description
	00 00	0000 000a	Switch (0 - 1) OFF, ON
	00 01	0000 aaaa	Mic (0 - 9) TYPE 1 - 10
	00 02	0000 0aaa	Width (0 - 4) 1 - 5
#	00 03	0000 aaaa	
	00 04	0000 bbbb	
	00 05	0000 cccc	
	00 06	0000 dddd	Level (-601 - 120) -INF, -60.0 - +12.0 [dB]
	00 00 00 07	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.

<Example 3> B9 04 5A 99 2C 7F B9 04 2D

9n is the Note-on status, and n is the MIDI channel number. BnH is the Control Change status, and n is the MIDI channel number. Thus, the above messages have the following meaning.
B9 04 5A　　MIDI ch. 10, foot controller: 5AH
99 2C 7F　　MIDI ch. 10, Note On message
B9 04 2D　　MIDI ch. 10, foot controller: 2DH

In other words, with these messages a Note On message with a note number of 44 (G#2) and velocity of 127 is transmitted on MIDI Channel 10, and then the foot controller value is set from 90 to 45.
According to the settings made at the factory, the drum part is assigned to MIDI Channel 10, Note Number 44 is assigned to the pedal hi-hat, and the foot controller is set to Pedal CC; in this case, the TD-07 plays a foot splash when the message is received.

■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 a TUNING of +5 for the instrument assigned to the SNARE head of drum kit number 1
From the "parameter address map," the start address for drum kit number 1 is 03 00 00 00H, and the VEdit parameter of the instrument that is assigned to the SNARE head has an offset address of 00 61 00H, and the offset address of TUNING

is 00 01H; thus, the address is

```
   03 00 00 00H
      00 61 00H
+)       00 01H
---------------
   03 00 61 01H
```

Since +5 is the parameter value 00 05H

F0	41	10	00 00 00 75	12	03 00 61 01	00 05	??	F7
(1)	(2)	(3)	(4)	(5)	address	data	checksum(6)	

(1) Exclusive Status (2) ID (Roland)
(3) Device ID (17) (4) Model ID (TD-07)
(5) Command ID (DT1) (6) EOX

Then calculate the checksum.
03H + 00H + 61H + 01H + 00H + 05H = 3 + 0 + 97 + 1 + 0 + 5 = 106(sum)
106 (sum) ÷ 128 = 0 (quotient)… 106 (remainder) checksum = 128 - 106 (remainder) = 22 = 16H
This means that F0 41 10 00 00 00 75 12 03 00 61 01 00 05 16 F7 is the message should be sent.

<Example 2>
Requesting transmission of the pad EQ switch for the SNARE of drum kit number 1
"Parameter address map" indicates that the start address of drum kit 1 is 03 00 00 00H, the offset address of the SNARE pad parameters is 00 21 00H, and the offset address of the pad EQ switch is 00 0EH; therefore, the address is

```
   03 00 00 00H
      00 21 00H
+)       00 0EH
---------------
   03 00 21 0EH
```

Since the size is 00 00 00 01H

F0	41	10	00 00 00 75	11	03 00 21 0E	00 00 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 (TD-07)
(5) Command ID (RQ1) (6) EOX

Then calculate the checksum.
03H + 00H + 21H + 0EH + 00H + 00H + 00H + 01H = 3 + 0 + 33 + 14 + 0 + 0 + 0 + 1 = 51(sum)
51 (sum) ÷ 128 = 0 (quotient)…51 (remainder) checksum = 128 - 51 (remainder) = 77 = 4DH
This means that F0 41 10 00 00 00 75 11 03 00 21 0E 00 00 00 01 4D F7 is the message should be sent.

5.MIDI Implementation Chart

Date : Oct. 1, 2020
Model TD-07 MIDI Implementation Chart Version : 1.00

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 0-127	Memorized
Velocity	Note On	o 9nH, v = 1-127	o	
	Note Off	o 8nH, v = 64	x	
After Touch	Key's	o	o	
	Channel's	x	x	
Pitch Bend		x	x	
Control Change	4	o(Pedal) *1	o *1	Foot Controller
Program Change	:True Number	o 0-127 *2 **********	o 0-127 *2 0-127	Program No. 1-128
System Exclusive		o *4	o *2	
System Common	:Song Position	x	x	
	:Song Select	x	x	
	:Tune Request	x	x	
System Real Time	:Clock	x	x	
	:Commands	x	x	

	:All Sound Off	o	o (120, 123-127)	
	:Reset All Controllers	x	o	
Aux	:Local On/Off	x	x	
Messages	:All Notes Off	x	o *3	
	:Active Sensing	x	x	
	:System Reset	x	x	
Notes		*1 Handled as hi-hat control pedal position data. *2 ○× is selectable. *3 The same result as All Sound Off. *4 Transmitted if SysEx Tx is on, or when RQ1 is received.		

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