

MIDI Implementation

Model : DD-500
Date : Aug. 05, 2015
Version : 1.00

1. Recognized data

Received messages are transmitted without change according to the "MIDI: MIDI IN->OUT" and "MIDI: USB IN->OUT" settings.

■Channel Voice Messages

These messages are received if the "MIDI: Rx CHANNEL" setting matches the MIDI channel number of the incoming message.

●Control Change

oBank Select

Status	2nd Byte	3rd Byte
-----	-----	-----
BnH	00H	mmH
BnH	20H	00H

n = MIDI Channel Number : 0H - FH (0 - 15) 0 = ch.1, 15 = ch.16
mm = Bank Number (MSB) : 00H - 02H (0 - 2)

* After this unit starts up, it operates with 00H as the bank number until a bank select message is received.

oControl Change Number #1 - #31, #64 - #95

Status	2nd Byte	3rd Byte
-----	-----	-----
BnH	ccH	vvH

n = MIDI Channel Number : 0H - FH (0 - 15) 0 = ch.1, 15 = ch.16
cc = Control Change Number : 01H - 1FH, 40H - 5FH (1 - 31, 64 - 95)
vv = Value : 00H - 7FH (0 - 127)

5Recognized if "MIDI CC IN" = ON.

5Recognized if the "Assign: SRC" setting is CC#1--#31 or CC#64--#95.

5When a CC# matching the CC# that is specified as "MIDI: A SW CC," "MIDI: B SW CC," "MIDI: TAP/CTL SW CC," "MIDI: FEEDBACK CC," "MIDI: E.LEVEL CC," "MIDI: TONE CC," "MIDI: MOD DEPTH CC," "MIDI: CTL1 CC," "MIDI: CTL2 CC," or "MIDI: EXP CC" is received, that controller is controlled.

5When a CC# matching the CC# that is specified as "MIDI: EFFECT SW," "MIDI: LOOP ON/OFF," "MIDI: LOOP REC/DUB," "MIDI: LOOP PLAY," "MIDI: LOOP STOP," or "MIDI: LOOP CLEAR" is received, that operation is performed.

●Program Change

Status	2nd Byte
-----	-----
CnH	ppH

n = MIDI Channel Number : 0H - FH (0 - 15) 0 = ch.1, 15 = ch.16
pp = Program Number : 00H - 7FH (0 - 127) 0 = PC#1, 127 = PC#128

* This message switches to the patch that is specified by "MIDI PC MAP."

●Pitch Bend Change

Status	2nd Byte	3rd Byte
-----	-----	-----
EnH	11H	mmH

n = MIDI Channel Number : 0H - FH (0 - 15) 0 = ch.1, 15 = ch.16
mm, 11 = Pitch Bend value: 00 00H - 40 00H - 7F 7FH (-8192 - 0 - +8191)

* If "MIDI: TIME CONTROL" = ON, this message changes the "DELAY TIME" setting.

■System Realtime Messages

●Timing Clock

Status

F8H

* Recognized if the "MIDI: SYNC" setting is other than INTERNAL.

●Active Sensing

Status

FEH

* When an Active Sensing message is received, the interval of all subsequent messages will begin to be monitored.
When the message interval is being monitored, and the interval exceeds 400 ms, the display indicates "MIDI OFFLINE" and the unit returns to a state in which message interval is not monitored.

■System Exclusive Messages

Status	Data Byte	Status
-----	-----	-----
F0H,	iiH, dev, ddH, ..., eeH,	F7H
Byte	Explanation	
-----	----	
F0H	System Exclusive Message status	
iiH	an ID number	
	41H : Roland's manufacturer ID	

```

7EH : Universal Non-realtime messages
dev      Device ID (dev: 00H - 1FH, 7FH) * 7FH = Broadcast
dd,...,ee = data
00H - 7FH (0 - 127)
F7H      EOX (End Of Exclusive)

```

●Universal Non-Realtime System Exclusive Messages

◦Identity Request Message (Device Inquiry)

Status	Data Byte	Status
FOH,	7EH, dev, 06H, 01H,	F7H

Byte	Explanation
FOH	System Exclusive Message status
7EH	Universal Non-realtime Message
dev	Device ID (dev: 00H - 1FH, 7FH) * 7FH = Broadcast
06H	Sub ID # 1 (General Information)
01H	Sub ID # 2 (Identity Request)
F7H	EOX (End Of Exclusive)

When this message is received, this unit transmits the prescribed identity reply message (see transmitted data).

●ONE WAY COMMUNICATION

◦Request Data 1 RQ1 (11H)

Status	Data Byte	Status
FOH,	41H, dev, 00H, 00H, 00H, 1AH, 11H, aaH, bbH, ccH, ddH, ssH, ttH, uuH, vvH, sum,	F7H

Byte	Explanation
FOH	System Exclusive Message status
41H	Manufacturer ID (Roland)
dev	Device ID (dev: 00H - 1FH, 7FH) * 7FH = Broadcast
00H	Model ID # 1 (DD-500)
00H	Model ID # 2 (DD-500)
00H	Model ID # 3 (DD-500)
1AH	Model ID # 4 (DD-500)
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)

◦Data Set 1 DT1 (12H)

Status	Data Byte	Status
FOH,	41H, dev, 00H, 00H, 00H, 1AH, 12H, aaH, bbH, ccH, ddH, eeH, ... hhH, sum,	F7H

Byte	Explanation
FOH	System Exclusive Message status
41H	Manufacturer ID (Roland)
dev	Device ID (dev: 00H - 1FH, 7FH) * 7FH = Broadcast
00H	Model ID # 1 (DD-500)
00H	Model ID # 2 (DD-500)
00H	Model ID # 3 (DD-500)
1AH	Model ID # 4 (DD-500)
12H	Model ID (DT1)
aaH	Address MSB
bbH	Address
ccH	Address
ddH	Address LSB
eeH	Data
:	
ffH	Data
sum	Checksum
F7H	EOX (End Of Exclusive)

2. Transmitted data

■Channel Voice Messages

* Set the channel voice message transmit MIDI channel number to "MIDI: Tx CHANNEL."

●Control Change

◦Bank Select

Status	2nd Byte	3rd Byte
BnH	00H	mmH
BnH	20H	00H

n = MIDI Channel Number : 0H - FH (0 - 15) 0 = ch.1, 15 = ch.16
mm = Bank number (MSB) : 00H - 02H (0 - 2)

* If the "MIDI: PC OUT" setting is ON, this message is transmitted when you switch patches. If the "BANK SEL OUT" setting is MSB, only BnH 00H mmH (MSB) is transmitted.

oControl Change Number #1 - #31, #64 - #95

Status	2nd Byte	3rd Byte
-----	-----	-----
BnH	ccH	vvH

n = MIDI Channel Number : 0H - FH (0 - 15) 0 = ch.1, 15 = ch.16
cc = Control Change Number : 01H - 1FH, 40H - 5FH (1 - 31, 64 - 95)
vv = Value : 00H - 7FH (0 - 127)

* Transmitted if "MIDI CC OUT" = ON.

* When you operate a controller, the CC# specified by "MIDI: A SW CC," "MIDI: B SW CC," "MIDI: TAP/CTL SW CC," "MIDI: FEEDBACK CC," "MIDI: E.LEVEL CC," "MIDI: TONE CC," "MIDI: MOD DEPTH CC," "MIDI: CTL1 CC," "MIDI: CTL2 CC," or "MIDI: EXP CC" is transmitted.

●Program Change

Status	2nd Byte
-----	-----
CnH	ppH

n = MIDI Channel Number : 0H - FH (0 - 15) 0 = ch.1, 15 = ch.16
pp = Program Number : 00H - 7FH (0 - 127) 0 = PC#:1, 127 = PC#:128

* If the "MIDI: PC OUT" setting is ON, this message is transmitted when you switch patches.

* Patch numbers correspond to program numbers as follows.

PATCH#	BANK SEL.		PROG#
	MSB	LSB	
01A	00H	00H	00H
:	:	:	:
43B	00H	00H	7FH
43C	01H	00H	00H
:	:	:	:
86A	01H	00H	7FH
86B	02H	00H	00H
:	:	:	:
99C	02H	00H	28H

●Pitch Bend Change

Status	2nd Byte	3rd Byte
-----	-----	-----
EnH	11H	mmH

n = MIDI Channel Number : 0H - FH (0 - 15) 0 = ch.1, 15 = ch.16
mm, 11 = value : 00 00H - 40 00H - 7F 7FH (-8192 - 0 - +8191)

* If "MIDI: TIME CONTROL" = ON, this message is transmitted when the "DELAY TIME" setting is changed.

■System Realtime Message

●Timing Clock

Status

F8H

* If both "MIDI: SYNC" = INTERNAL and "MIDI: REALTIME SRC" = INT, this message is transmitted at intervals corresponding to the tempo.

* If the "MIDI: REALTIME SRC" setting is other than INT, this message is transmitted when timing clock messages corresponding to the setting are received.

●Active Sensing

Status

FEH

* This message is always transmitted at intervals of approximately 250 ms.

■System Exclusive Message

Status	Data Byte	Status
-----	-----	-----
FOH,	iiH, dev, ddH, ..., eeH, F7H	

Byte	Explanation
-----	----
FOH	System Exclusive Message status
iiH	an ID number 41H : Roland's manufacturer ID 7EH : Universal Non-realtime messages
dev	Device ID (dev: 00H - 1FH, 7FH) * 7FH = Broadcast
dd,...,ee = data	00H - 7FH (0 - 127)
F7H	EOX (End Of Exclusive)

●Universal Non-Realtime System Exclusive Messages

oIdentity Reply Message (Device Inquiry)

Status	Data Byte	Status
-----	-----	-----
FOH,	7EH, dev, 06H, 02H, 41H, 1AH, 03H, 00H, 00H, 00H, 00H, 01H,	F7

Byte	Explanation
-----	----
FOH	System Exclusive Message status
7EH	Universal Non-Realtime Message

```

dev      Device ID (dev: 00H - 1FH)
06H      Sub ID # 1 (General Information)
02H      Sub ID # 2 (Identity Reply)
41H      Manufacturer ID (Roland)
1AH 03H  Device family code # 1 (DD-500)
00H 00H  Device family code # 2 (DD-500)
00H      Software revision level # 1
00H      Software revision level # 2
00H      Software revision level # 3
01H      Software revision level # 4
F7H      EOX (End Of Exclusive)

```

* This message is transmitted when an identity request message is received.

●ONE WAY COMMUNICATION

◦Data Set1 DT1 (12H)

Status	Data Byte	Status
F0H,	41H, dev, 00H, 00H, 00H, 1AH, 12H, aaH, bbH, ccH, ddH, eeH, ... hhH, sum,	F7H

Byte	Explanation
F0H	System Exclusive Message status
41H	Manufacturer ID (Roland)
dev	Device ID (dev: 00H - 1FH)
00H	Model ID # 1 (DD-500)
00H	Model ID # 2 (DD-500)
00H	Model ID # 3 (DD-500)
1AH	Model ID # 4 (DD-500)
12H	Command ID (DT1)
aaH	Address MSB
bbH	Address
ccH	Address
ddH	Address LSB
eeH	Data
:	:
ffH	Data
sum	Checksum
F7H	EOX (End Of Exclusive)

3. System Exclusive Address Map

DD-500 (Model ID = 00H 00H 00H 1AH)

All the numbers of address are indicated in 7-bit Hexadecimal-form.

Start	Address	Description	
	00 00 00 00	Setup	*1-1
	10 00 00 00	System	*1-2
	20 00 00 00	Program change map	*1-3
	30 00 00 00	Patch (Temporary)	*1-4
	30 04 00 00	Patch (01A)	
	30 08 00 00	Patch (01B)	
	30 0C 00 00	Patch (01C)	
	:	:	
	39 1C 00 00	Patch (99A)	
	39 20 00 00	Patch (99B)	
	39 24 00 00	Patch (99C)	

*1-1 Setup

Offset	Address	Description	
	00 00 00	Setup Common	*2-1

*1-2 System

Offset	Address	Description	
	00 00 00	System Common	*2-2
	00 10 00	System CONTROL	*2-3

*1-3 Program change map

Offset	Address	Description	
	00 00 00	PC map	*2-4

*1-4 Patch

Offset	Address	Description

	00 00 00	Patch Common	*2-5
	00 10 00	Patch DELAY	*2-6

*2-1 Setup Common Parameters Offset Address

Offset		Description	
Address			
	00 00	0000 000a Current Patch Number	(0 - 296) 01A - 99C
		0000 bbbb	
		0000 cccc	

*2-2 System Common Parameters Offset Address

Offset		Description	
Address			
	00 00	0000 00dd Output Mode	(0 - 2) STEREO, A:DIR B:EFX, DIRECT MUTE
	00 01	0000 000d Bank wait mode	(0 - 1) WAIT, IMMEDIATE
	00 02	0ddd dddd Bank Extent Min	(0 - 98) bank 1 - bank 99
	00 03	0ddd dddd Bank Extent Max	(0 - 98) bank 1 - bank 99
	00 04	0000 000d Knob Lock Switch	(0 - 1) OFF, ON
	00 05	0000 000d Knob Mode	(0 - 1) IMMEDIATE, HOOK
	00 06	0000 00dd Phrase Loop Mode	(0 - 2) 96k MONO, 48k ST, 48k MONO
	00 07	0000 000d Bypass Mode	(0 - 1) BUFFERED, TRUE
	00 08	0000 000d Pedal Action	(0 - 1) PUSH, RELEASE
	00 09	0000 0ddd Foot Switch Hold Time	(0 - 4) 1sec, 2sec, 3sec, 4sec, 5sec
	00 0A	0000 00dd Foot Switch Mode	(0 - 3) NORMAL, A/B/C, A/B SIMUL, SW DN/UP
	00 0B	0000 00dd Display Type	(0 - 3) TIME, BPM, PATCH, PARAM
	00 0C	000d dddd MIDI Rx Channel	(0 - 16) Ch.1, Ch.2, Ch.3, Ch.4, Ch.5, Ch.6, Ch.7, Ch.8, Ch.9, Ch.10, Ch.11, Ch.12, Ch.13, Ch.14, Ch.15, Ch.16, OFF
	00 0D	000d dddd MIDI Tx Channel	(0 - 17) Ch.1, Ch.2, Ch.3, Ch.4, Ch.5, Ch.6, Ch.7, Ch.8, Ch.9, Ch.10, Ch.11, Ch.12, Ch.13, Ch.14, Ch.15, Ch.16, Rx, OFF
	00 0E	0000 000d MIDI Program Change IN Switch	(0 - 1) OFF, ON
	00 0F	0000 000d MIDI Program Change OUT Switch	(0 - 1) OFF, ON
	00 10	0000 000d MIDI Bank Select OUT	(0 - 1) MSB, M+L(MSB+LSB)
	00 11	0000 000d MIDI Control Change IN Switch	(0 - 1) OFF, ON
	00 12	0000 000d MIDI Control Change OUT Switch	(0 - 1) OFF, ON
	00 13	0000 000d MIDI Time control Switch	(0 - 1) OFF, ON
	00 14	00dd dddd MIDI Pedal A Switch Control Change	(0 - 63) OFF, CC#1, CC#2, CC#3, CC#4, CC#5, CC#6, CC#7, CC#8, CC#9, CC#10, CC#11, CC#12, CC#13, CC#14, CC#15, CC#16, CC#17, CC#18, CC#19, CC#20, CC#21, CC#22, CC#23, CC#24, CC#25, CC#26, CC#27, CC#28, CC#29, CC#30, CC#31, CC#64, CC#65, CC#66, CC#67, CC#68, CC#69, CC#70, CC#71, CC#72, CC#73, CC#74, CC#75, CC#76, CC#77, CC#78, CC#79, CC#80, CC#81, CC#82, CC#83, CC#84, CC#85, CC#86, CC#87, CC#88, CC#89, CC#90, CC#91, CC#92, CC#93, CC#94, CC#95
	00 15	00dd dddd MIDI Pedal B Switch Control Change	(0 - 63) OFF, CC#1, CC#2, CC#3, CC#4, CC#5, CC#6, CC#7, CC#8, CC#9, CC#10, CC#11, CC#12, CC#13, CC#14, CC#15, CC#16, CC#17, CC#18, CC#19, CC#20, CC#21, CC#22, CC#23, CC#24, CC#25, CC#26, CC#27, CC#28, CC#29, CC#30, CC#31, CC#64, CC#65, CC#66, CC#67, CC#68, CC#69, CC#70, CC#71, CC#72, CC#73, CC#74, CC#75, CC#76, CC#77, CC#78, CC#79, CC#80, CC#81, CC#82, CC#83, CC#84, CC#85, CC#86, CC#87, CC#88, CC#89, CC#90, CC#91, CC#92, CC#93, CC#94, CC#95
	00 16	00dd dddd MIDI TAP/CTL Switch Control Change	(0 - 63) OFF, CC#1, CC#2, CC#3, CC#4, CC#5, CC#6, CC#7, CC#8, CC#9, CC#10, CC#11, CC#12, CC#13, CC#14, CC#15, CC#16, CC#17, CC#18, CC#19, CC#20, CC#21, CC#22, CC#23, CC#24, CC#25, CC#26, CC#27, CC#28, CC#29, CC#30, CC#31, CC#64, CC#65, CC#66, CC#67, CC#68, CC#69, CC#70, CC#71, CC#72, CC#73, CC#74, CC#75, CC#76, CC#77, CC#78, CC#79, CC#80, CC#81, CC#82, CC#83, CC#84, CC#85, CC#86, CC#87, CC#88, CC#89, CC#90, CC#91, CC#92, CC#93, CC#94, CC#95
	00 17	00dd dddd MIDI Feedback Control Change	(0 - 63) OFF, CC#1, CC#2, CC#3, CC#4, CC#5, CC#6, CC#7, CC#8, CC#9, CC#10, CC#11, CC#12, CC#13, CC#14, CC#15, CC#16, CC#17, CC#18, CC#19, CC#20, CC#21, CC#22, CC#23, CC#24, CC#25, CC#26, CC#27, CC#28, CC#29, CC#30, CC#31, CC#64, CC#65, CC#66, CC#67, CC#68, CC#69, CC#70, CC#71, CC#72, CC#73, CC#74, CC#75, CC#76, CC#77, CC#78, CC#79, CC#80, CC#81, CC#82, CC#83, CC#84, CC#85, CC#86, CC#87, CC#88, CC#89, CC#90, CC#91, CC#92, CC#93, CC#94, CC#95
	00 18	00dd dddd MIDI E.Level Control Change	(0 - 63) OFF, CC#1, CC#2, CC#3, CC#4, CC#5, CC#6, CC#7, CC#8, CC#9, CC#10, CC#11, CC#12, CC#13, CC#14, CC#15, CC#16, CC#17, CC#18, CC#19, CC#20, CC#21, CC#22, CC#23, CC#24, CC#25, CC#26, CC#27, CC#28, CC#29, CC#30, CC#31, CC#64, CC#65, CC#66, CC#67, CC#68, CC#69, CC#70, CC#71, CC#72, CC#73, CC#74, CC#75, CC#76, CC#77, CC#78, CC#79, CC#80, CC#81, CC#82, CC#83, CC#84, CC#85, CC#86, CC#87, CC#88, CC#89, CC#90, CC#91, CC#92, CC#93, CC#94, CC#95
	00 19	00dd dddd MIDI Tone Control Change	(0 - 63) OFF, CC#1, CC#2, CC#3, CC#4, CC#5, CC#6, CC#7, CC#8, CC#9, CC#10, CC#11, CC#12, CC#13, CC#14, CC#15, CC#16, CC#17, CC#18, CC#19, CC#20, CC#21, CC#22, CC#23, CC#24, CC#25, CC#26, CC#27, CC#28, CC#29, CC#30, CC#31, CC#64, CC#65, CC#66, CC#67, CC#68, CC#69, CC#70, CC#71, CC#72, CC#73, CC#74, CC#75, CC#76, CC#77, CC#78, CC#79, CC#80, CC#81, CC#82, CC#83, CC#84, CC#85, CC#86, CC#87, CC#88, CC#89, CC#90, CC#91, CC#92, CC#93, CC#94, CC#95
	00 1A	00dd dddd MIDI Mod Depth Control Change	(0 - 63) OFF, CC#1, CC#2, CC#3, CC#4, CC#5, CC#6, CC#7, CC#8, CC#9, CC#10, CC#11, CC#12, CC#13, CC#14, CC#15, CC#16, CC#17, CC#18, CC#19, CC#20, CC#21, CC#22, CC#23, CC#24, CC#25, CC#26, CC#27, CC#28, CC#29, CC#30, CC#31, CC#64, CC#65, CC#66, CC#67, CC#68, CC#69, CC#70, CC#71, CC#72, CC#73, CC#74, CC#75, CC#76, CC#77, CC#78, CC#79, CC#80, CC#81, CC#82, CC#83, CC#84, CC#85, CC#86, CC#87, CC#88, CC#89, CC#90, CC#91, CC#92, CC#93, CC#94, CC#95
	00 1B	00dd dddd MIDI CTL1 switch Control Change	(0 - 63) OFF, CC#1, CC#2, CC#3, CC#4, CC#5, CC#6, CC#7, CC#8, CC#9, CC#10, CC#11, CC#12, CC#13, CC#14, CC#15, CC#16, CC#17, CC#18, CC#19, CC#20, CC#21, CC#22, CC#23, CC#24, CC#25, CC#26, CC#27, CC#28, CC#29, CC#30, CC#31, CC#64, CC#65, CC#66, CC#67, CC#68, CC#69, CC#70, CC#71, CC#72, CC#73, CC#74, CC#75, CC#76, CC#77, CC#78, CC#79, CC#80, CC#81, CC#82, CC#83, CC#84, CC#85, CC#86, CC#87, CC#88, CC#89, CC#90, CC#91, CC#92, CC#93, CC#94, CC#95
	00 1C	00dd dddd MIDI CTL2 switch Control Change	(0 - 63)

				OFF, CC#1, CC#2, CC#3, CC#4, CC#5, CC#6, CC#7, CC#8, CC#9, CC#10, CC#11, CC#12, CC#13, CC#14, CC#15, CC#16, CC#17, CC#18, CC#19, CC#20, CC#21, CC#22, CC#23, CC#24, CC#25, CC#26, CC#27, CC#28, CC#29, CC#30, CC#31, CC#64, CC#65, CC#66, CC#67, CC#68, CC#69, CC#70, CC#71, CC#72, CC#73, CC#74, CC#75, CC#76, CC#77, CC#78, CC#79, CC#80, CC#81, CC#82, CC#83, CC#84, CC#85, CC#86, CC#87, CC#88, CC#89, CC#90, CC#91, CC#92, CC#93, CC#94, CC#95
00 1D	00dd dddd	MIDI EXP Control Change	(0 - 63)	OFF, CC#1, CC#2, CC#3, CC#4, CC#5, CC#6, CC#7, CC#8, CC#9, CC#10, CC#11, CC#12, CC#13, CC#14, CC#15, CC#16, CC#17, CC#18, CC#19, CC#20, CC#21, CC#22, CC#23, CC#24, CC#25, CC#26, CC#27, CC#28, CC#29, CC#30, CC#31, CC#64, CC#65, CC#66, CC#67, CC#68, CC#69, CC#70, CC#71, CC#72, CC#73, CC#74, CC#75, CC#76, CC#77, CC#78, CC#79, CC#80, CC#81, CC#82, CC#83, CC#84, CC#85, CC#86, CC#87, CC#88, CC#89, CC#90, CC#91, CC#92, CC#93, CC#94, CC#95
00 1E	00dd dddd	MIDI EFFECT ON/OFF Control Change	(0 - 63)	OFF, CC#1, CC#2, CC#3, CC#4, CC#5, CC#6, CC#7, CC#8, CC#9, CC#10, CC#11, CC#12, CC#13, CC#14, CC#15, CC#16, CC#17, CC#18, CC#19, CC#20, CC#21, CC#22, CC#23, CC#24, CC#25, CC#26, CC#27, CC#28, CC#29, CC#30, CC#31, CC#64, CC#65, CC#66, CC#67, CC#68, CC#69, CC#70, CC#71, CC#72, CC#73, CC#74, CC#75, CC#76, CC#77, CC#78, CC#79, CC#80, CC#81, CC#82, CC#83, CC#84, CC#85, CC#86, CC#87, CC#88, CC#89, CC#90, CC#91, CC#92, CC#93, CC#94, CC#95
00 1F	00dd dddd	MIDI LOOPER ON/OFF Control Change	(0 - 63)	OFF, CC#1, CC#2, CC#3, CC#4, CC#5, CC#6, CC#7, CC#8, CC#9, CC#10, CC#11, CC#12, CC#13, CC#14, CC#15, CC#16, CC#17, CC#18, CC#19, CC#20, CC#21, CC#22, CC#23, CC#24, CC#25, CC#26, CC#27, CC#28, CC#29, CC#30, CC#31, CC#64, CC#65, CC#66, CC#67, CC#68, CC#69, CC#70, CC#71, CC#72, CC#73, CC#74, CC#75, CC#76, CC#77, CC#78, CC#79, CC#80, CC#81, CC#82, CC#83, CC#84, CC#85, CC#86, CC#87, CC#88, CC#89, CC#90, CC#91, CC#92, CC#93, CC#94, CC#95
00 20	00dd dddd	MIDI LOOPER [REC/DUB] Control Change	(0 - 63)	OFF, CC#1, CC#2, CC#3, CC#4, CC#5, CC#6, CC#7, CC#8, CC#9, CC#10, CC#11, CC#12, CC#13, CC#14, CC#15, CC#16, CC#17, CC#18, CC#19, CC#20, CC#21, CC#22, CC#23, CC#24, CC#25, CC#26, CC#27, CC#28, CC#29, CC#30, CC#31, CC#64, CC#65, CC#66, CC#67, CC#68, CC#69, CC#70, CC#71, CC#72, CC#73, CC#74, CC#75, CC#76, CC#77, CC#78, CC#79, CC#80, CC#81, CC#82, CC#83, CC#84, CC#85, CC#86, CC#87, CC#88, CC#89, CC#90, CC#91, CC#92, CC#93, CC#94, CC#95
00 21	00dd dddd	MIDI LOOPER [PLAY] Control Change	(0 - 63)	OFF, CC#1, CC#2, CC#3, CC#4, CC#5, CC#6, CC#7, CC#8, CC#9, CC#10, CC#11, CC#12, CC#13, CC#14, CC#15, CC#16, CC#17, CC#18, CC#19, CC#20, CC#21, CC#22, CC#23, CC#24, CC#25, CC#26, CC#27, CC#28, CC#29, CC#30, CC#31, CC#64, CC#65, CC#66, CC#67, CC#68, CC#69, CC#70, CC#71, CC#72, CC#73, CC#74, CC#75, CC#76, CC#77, CC#78, CC#79, CC#80, CC#81, CC#82, CC#83, CC#84, CC#85, CC#86, CC#87, CC#88, CC#89, CC#90, CC#91, CC#92, CC#93, CC#94, CC#95
00 22	00dd dddd	MIDI LOOPER [STOP] Control Change	(0 - 63)	OFF, CC#1, CC#2, CC#3, CC#4, CC#5, CC#6, CC#7, CC#8, CC#9, CC#10, CC#11, CC#12, CC#13, CC#14, CC#15, CC#16, CC#17, CC#18, CC#19, CC#20, CC#21, CC#22, CC#23, CC#24, CC#25, CC#26, CC#27, CC#28, CC#29, CC#30, CC#31, CC#64, CC#65, CC#66, CC#67, CC#68, CC#69, CC#70, CC#71, CC#72, CC#73, CC#74, CC#75, CC#76, CC#77, CC#78, CC#79, CC#80, CC#81, CC#82, CC#83, CC#84, CC#85, CC#86, CC#87, CC#88, CC#89, CC#90, CC#91, CC#92, CC#93, CC#94, CC#95
00 23	00dd dddd	MIDI LOOPER [CLEAR] Control Change	(0 - 63)	OFF, CC#1, CC#2, CC#3, CC#4, CC#5, CC#6, CC#7, CC#8, CC#9, CC#10, CC#11, CC#12, CC#13, CC#14, CC#15, CC#16, CC#17, CC#18, CC#19, CC#20, CC#21, CC#22, CC#23, CC#24, CC#25, CC#26, CC#27, CC#28, CC#29, CC#30, CC#31, CC#64, CC#65, CC#66, CC#67, CC#68, CC#69, CC#70, CC#71, CC#72, CC#73, CC#74, CC#75, CC#76, CC#77, CC#78, CC#79, CC#80, CC#81, CC#82, CC#83, CC#84, CC#85, CC#86, CC#87, CC#88, CC#89, CC#90, CC#91, CC#92, CC#93, CC#94, CC#95
00 24	0000 00dd	MIDI Sync	(0 - 3)	INTERNAL, EXT(USB), EXT(MIDI), AUTO
00 25	0000 00dd	MIDI source of realtime message to output	(0 - 2)	INT, USB, MIDI
00 26	0000 00dd	MIDI In THRU into Out	(0 - 3)	OFF, USB, MIDI, U+M(USB+MIDI)
00 27	0000 00dd	USB In THRU into Out	(0 - 3)	OFF, USB, MIDI, U+M(USB+MIDI)
00 28	0000 000d	effect Switch A (A side for A/B SIMUL)	(0 - 1)	OFF, ON *1
00 29	0000 000d	effect Switch B (B side for A/B SIMUL)	(0 - 1)	OFF, ON *1

*1 The specified value is applied when the power turns on.

*2-3 System CONTROL Parameters Offset Address

Offset Address	Description	
00 00 0000 000d	TAP/CTL preference	(0 - 1) PATCH, SYSTEM
00 01 0000 dddd	TAP/CTL Function	(0 - 10) TAP, HOLD, WARP, TWIST, MOMENT, ROLL 1/2, ROLL 1/4, ROLL 1/8, FADE IN, FADE OUT, ASSIGN
00 02 0000 000d	CTL1 preference	(0 - 1) PATCH, SYSTEM
00 03 0000 dddd	CTL1 Function	(0 - 15) OFF, TAP, HOLD, WARP, TWIST, MOMENTARY, ROLL 1/2, ROLL 1/4, ROLL 1/8, FADE IN, time, FADE OUT, time, EFFECT SW, BANK UP, BANK DOWN, LOOPonOff, LOOP CLR
00 04 0000 000d	CTL1 Mode	(0 - 1) MOMENT, TOGGLE
00 05 0000 000d	CTL2 preference	(0 - 1) PATCH, SYSTEM
00 06 0000 dddd	CTL2 Function	(0 - 15) OFF, TAP, HOLD, WARP, TWIST, MOMENTARY, ROLL 1/2, ROLL 1/4, ROLL 1/8, FADE IN, time, FADE OUT, time, EFFECT SW, BANK UP, BANK DOWN, LOOPonOff, LOOP CLR
00 07 0000 000d	CTL2 Mode	(0 - 1) MOMENT, TOGGLE
00 08 0000 000d	EXP preference	(0 - 1) PATCH, SYSTEM
00 09 0000 00dd	EXP Pedal Function	(0 - 6) OFF, TIME, min, max, FEEDBACK, min, max, TONE, min, max, E.LEVEL, min, max, MOD DEPTH, min, max, MOD RATE, min, max
00 0A 0000 0aaa	EXP target max	(0 - 23000) offset:100 -100 - 23100
	0000 bbbb	
	0000 cccc	
	0000 dddd	
00 0E 0000 0aaa	EXP target min	(0 - 23000) offset:100 -100 - 23100
	0000 bbbb	
	0000 cccc	
	0000 dddd	

*2-4 PC map Parameters Offset Address

Offset				
Address	Description			
00 00	0000 000a	BANK:1 PC#:001	(0 - 296)	01A - 99C
	0000 bbbb			
	0000 cccc			
00 03	0000 000a	BANK:1 PC#:002	(0 - 296)	01A - 99C
	0000 bbbb			
	0000 cccc			
00 06	0000 000a	BANK:1 PC#:003	(0 - 296)	01A - 99C
	0000 bbbb			
	0000 cccc			
00 09	0000 000a	BANK:1 PC#:004	(0 - 296)	01A - 99C
	0000 bbbb			
	0000 cccc			
00 0C	0000 000a	BANK:1 PC#:005	(0 - 296)	01A - 99C
	0000 bbbb			
	0000 cccc			
00 0F	0000 000a	BANK:1 PC#:006	(0 - 296)	01A - 99C
	0000 bbbb			
	0000 cccc			
00 12	0000 000a	BANK:1 PC#:007	(0 - 296)	01A - 99C
	0000 bbbb			
	0000 cccc			
00 15	0000 000a	BANK:1 PC#:008	(0 - 296)	01A - 99C
	0000 bbbb			
	0000 cccc			
00 18	0000 000a	BANK:1 PC#:009	(0 - 296)	01A - 99C
	0000 bbbb			
	0000 cccc			
00 1B	0000 000a	BANK:1 PC#:010	(0 - 296)	01A - 99C
	0000 bbbb			
	0000 cccc			
00 1E	0000 000a	BANK:1 PC#:011	(0 - 296)	01A - 99C
	0000 bbbb			
	0000 cccc			
00 21	0000 000a	BANK:1 PC#:012	(0 - 296)	01A - 99C
	0000 bbbb			
	0000 cccc			
00 24	0000 000a	BANK:1 PC#:013	(0 - 296)	01A - 99C
	0000 bbbb			
	0000 cccc			
00 27	0000 000a	BANK:1 PC#:014	(0 - 296)	01A - 99C
	0000 bbbb			
	0000 cccc			
00 2A	0000 000a	BANK:1 PC#:015	(0 - 296)	01A - 99C
	0000 bbbb			
	0000 cccc			
00 2D	0000 000a	BANK:1 PC#:016	(0 - 296)	01A - 99C
	0000 bbbb			
	0000 cccc			
00 30	0000 000a	BANK:1 PC#:017	(0 - 296)	01A - 99C
	0000 bbbb			
	0000 cccc			
00 33	0000 000a	BANK:1 PC#:018	(0 - 296)	01A - 99C
	0000 bbbb			
	0000 cccc			
00 36	0000 000a	BANK:1 PC#:019	(0 - 296)	01A - 99C
	0000 bbbb			
	0000 cccc			
00 39	0000 000a	BANK:1 PC#:020	(0 - 296)	01A - 99C
	0000 bbbb			
	0000 cccc			
00 3C	0000 000a	BANK:1 PC#:021	(0 - 296)	01A - 99C
	0000 bbbb			
	0000 cccc			
00 3F	0000 000a	BANK:1 PC#:022	(0 - 296)	01A - 99C
	0000 bbbb			
	0000 cccc			
00 42	0000 000a	BANK:1 PC#:023	(0 - 296)	01A - 99C
	0000 bbbb			
	0000 cccc			
00 45	0000 000a	BANK:1 PC#:024	(0 - 296)	01A - 99C
	0000 bbbb			
	0000 cccc			
00 48	0000 000a	BANK:1 PC#:025	(0 - 296)	01A - 99C
	0000 bbbb			
	0000 cccc			
00 4B	0000 000a	BANK:1 PC#:026	(0 - 296)	01A - 99C
	0000 bbbb			
	0000 cccc			
00 4E	0000 000a	BANK:1 PC#:027	(0 - 296)	01A - 99C
	0000 bbbb			
	0000 cccc			
00 51	0000 000a	BANK:1 PC#:028	(0 - 296)	01A - 99C
	0000 bbbb			
	0000 cccc			
00 54	0000 000a	BANK:1 PC#:029	(0 - 296)	01A - 99C
	0000 bbbb			
	0000 cccc			
00 57	0000 000a	BANK:1 PC#:030	(0 - 296)	01A - 99C
	0000 bbbb			
	0000 cccc			
00 5A	0000 000a	BANK:1 PC#:031	(0 - 296)	01A - 99C
	0000 bbbb			
	0000 cccc			
00 5D	0000 000a	BANK:1 PC#:032	(0 - 296)	01A - 99C
	0000 bbbb			
	0000 cccc			
00 60	0000 000a	BANK:1 PC#:033	(0 - 296)	01A - 99C
	0000 bbbb			
	0000 cccc			
00 63	0000 000a	BANK:1 PC#:034	(0 - 296)	01A - 99C

8

10

11

12

13

14

15

16

17

		0000 cccc		
	08 6B	0000 000a	BANK:3 PC#:122	(0 - 296) 01A - 99C
		0000 bbbb		
		0000 cccc		
	08 6E	0000 000a	BANK:3 PC#:123	(0 - 296) 01A - 99C
		0000 bbbb		
		0000 cccc		
	08 71	0000 000a	BANK:3 PC#:124	(0 - 296) 01A - 99C
		0000 bbbb		
		0000 cccc		
	08 74	0000 000a	BANK:3 PC#:125	(0 - 296) 01A - 99C
		0000 bbbb		
		0000 cccc		
	08 77	0000 000a	BANK:3 PC#:126	(0 - 296) 01A - 99C
		0000 bbbb		
		0000 cccc		
	08 7A	0000 000a	BANK:3 PC#:127	(0 - 296) 01A - 99C
		0000 bbbb		
		0000 cccc		
	08 7D	0000 000a	BANK:3 PC#:128	(0 - 296) 01A - 99C
		0000 bbbb		
		0000 cccc		

*2-5 Patch Common Parameters Offset Address

Offset	Address	Description	
	00 00	0ddd dddd	Patch Name1 (32 - 126) ' ' - '~' [ASCII]
	00 01	0ddd dddd	Patch Name2 (32 - 126) ' ' - '~' [ASCII]
	00 02	0ddd dddd	Patch Name3 (32 - 126) ' ' - '~' [ASCII]
	00 03	0ddd dddd	Patch Name4 (32 - 126) ' ' - '~' [ASCII]
	00 04	0ddd dddd	Patch Name5 (32 - 126) ' ' - '~' [ASCII]
	00 05	0ddd dddd	Patch Name6 (32 - 126) ' ' - '~' [ASCII]
	00 06	0ddd dddd	Patch Name7 (32 - 126) ' ' - '~' [ASCII]
	00 07	0ddd dddd	Patch Name8 (32 - 126) ' ' - '~' [ASCII]
	00 08	0ddd dddd	Patch Name9 (32 - 126) ' ' - '~' [ASCII]
	00 09	0ddd dddd	Patch Name10 (32 - 126) ' ' - '~' [ASCII]
	00 0A	0ddd dddd	Patch Name11 (32 - 126) ' ' - '~' [ASCII]
	00 0B	0ddd dddd	Patch Name12 (32 - 126) ' ' - '~' [ASCII]
	00 0C	0ddd dddd	Patch Name13 (32 - 126) ' ' - '~' [ASCII]
	00 0D	0ddd dddd	Patch Name14 (32 - 126) ' ' - '~' [ASCII]
	00 0E	0ddd dddd	Patch Name15 (32 - 126) ' ' - '~' [ASCII]
	00 0F	0ddd dddd	Patch Name16 (32 - 126) ' ' - '~' [ASCII]
	00 10	0000 dddd	MODE (0 - 11)
			STANDARD, TERA ECHO, SLOW ATTACK, FILTER, SHIMMER, SFX, REVERSE, PATTERN, DUAL, VINTAGE DIGITAL, TAPE, ANALOG
	00 11	0000 00aa	Delay Time (1 - 10000) 1ms - 10000ms(10.0S)
		0000 bbbb	
		0000 cccc	
		0000 dddd	
	00 15	0000 00aa	BPM (15 - 2400000) BPM=1.5 - BPM=240000.0
		0000 bbbb	(value of BPM x 10)
		0000 cccc	
		0000 dddd	
		0000 eeee	
		0000 ffff	
	00 1B	0000 dddd	Note (0 - 12)
			16th, 8th triplet, dotted 16th, 8th, quarter triplet, dotted 8th, quarter, 2nd triplet, dotted quarter, half, whole triplet, dotted half, whole
	00 1C	0ddd dddd	Feedback (0 - 100)
	00 1D	0ddd dddd	Tone (0 - 100) -50 - +50
	00 1E	0ddd dddd	Effect Level (0 - 120)
	00 1F	0ddd dddd	Modulation Depth (0 - 100)
	00 20	0ddd dddd	Modulation Rate (0 - 113)
			0 - 100, whole, dotted half, whole triplet, half, dotted quarter, half triplet, quarter, dotted 8th, quarter triplet, 8th, dotted 16th, 8th triplet, 16th
	00 21	0000 000d	Carryover (0 - 1) OFF, ON
	00 22	0ddd dddd	Direct Level (0 - 100)
	00 23	0000 000d	EQ SW (0 - 1) OFF, ON
	00 24	0ddd dddd	EQ Total Level (0 - 40) -20dB - +20dB
	00 25	000d dddd	EQ Low Cut Filter Freq (0 - 17)
			FLAT, 20.0Hz, 25.0Hz, 31.5Hz, 40.0Hz, 50.0Hz, 63.0Hz, 80.0Hz, 100Hz, 125Hz, 160Hz, 200Hz, 250Hz, 315Hz, 400Hz, 500Hz, 630Hz, 800Hz
	00 26	00dd dddd	EQ Low Gain (0 - 40) -20dB - +20dB
	00 27	00dd dddd	EQ Low Mid Gain (0 - 40) -20dB - +20dB
	00 28	000d dddd	EQ Low Mid Freq (0 - 27)
			20.0Hz, 25.0Hz, 31.5Hz, 40.0Hz, 50.0Hz, 63.0Hz, 80.0Hz, 100Hz, 125Hz, 160Hz, 200Hz, 250Hz, 315Hz, 400Hz, 500Hz, 630Hz, 800Hz, 1.00kHz, 1.25kHz, 1.60kHz, 2.00kHz, 2.50kHz, 3.15kHz, 4.00kHz, 5.00kHz, 6.30kHz, 8.00kHz, 10.0kHz
	00 29	0000 0ddd	EQ Low Mid Q (0 - 5) 0.5, 1, 2, 4, 8, 16
	00 2A	00dd dddd	EQ High Mid Gain (0 - 40) -20dB - +20dB
	00 2B	000d dddd	EQ High Mid Freq (0 - 27)
			20.0Hz, 25.0Hz, 31.5Hz, 40.0Hz, 50.0Hz, 63.0Hz, 80.0Hz, 100Hz, 125Hz, 160Hz, 200Hz, 250Hz, 315Hz, 400Hz, 500Hz, 630Hz, 800Hz, 1.00kHz, 1.25kHz, 1.60kHz, 2.00kHz, 2.50kHz, 3.15kHz, 4.00kHz, 5.00kHz, 6.30kHz, 8.00kHz, 10.0kHz
	00 2C	0000 0ddd	EQ High Mid Q (0 - 5) 0.5, 1, 2, 4, 8, 16
	00 2D	00dd dddd	High EQ Gain (0 - 40) -20dB - +20dB
	00 2E	0000 dddd	High Cut Filter Freq (0 - 14)
			630Hz, 800Hz, 1.00kHz, 1.25kHz, 1.60kHz, 2.00kHz, 2.50kHz, 3.15kHz, 4.00kHz, 5.00kHz, 6.30kHz, 8.00kHz, 10.0kHz, 12.5kHz, FLAT
	00 2F	000d dddd	Low DAMP (0 - 20) -20dB - +0dB
	00 30	000d dddd	Low DAMP FREQ (0 - 16)
			20.0Hz, 25.0Hz, 31.5Hz, 40.0Hz, 50.0Hz, 63.0Hz, 80.0Hz, 100Hz, 125Hz, 160Hz, 200Hz, 250Hz, 315Hz, 400Hz, 500Hz, 630Hz, 800Hz
	00 31	000d dddd	Hi Damp GAIN (0 - 20) -20dB - +0dB
	00 32	0000 dddd	Hi Damp FREQ (0 - 13)
			630Hz, 800Hz, 1.00kHz, 1.25kHz, 1.60kHz, 2.00kHz, 2.50kHz, 3.15kHz, 4.00kHz, 5.00kHz, 6.30kHz, 8.00kHz, 10.0kHz, 12.5kHz
	00 33	0ddd dddd	DUCK Sens (0 - 100)
	00 34	0ddd dddd	DUCK Pre Depth (0 - 100)

00 35	0ddd dddd	DUCK Post Depth	(0 - 100)
00 36	0ddd dddd	Effect Pan	(0 - 100) L50 - CENTER - R50
00 37	0ddd dddd	Direct Pan	(0 - 100) L50 - CENTER - R50
00 38	0000 dddd	TAP/CTL Function	(0 - 10)
		TAP, HOLD, WARP, TWIST, MOMENT, ROLL 1/2, ROLL 1/4, ROLL 1/8, FADE IN, FADE OUT, ASSIGN	
00 39	0000 0ddd	CTL value	(0 - 6)
		OFF, HOLD, WARP, TWIST, MOMENTARY, ROLL, FADE IN/OUT	
00 3A	0000 dddd	CTL1 Function	(0 - 15)
		OFF, TAP, HOLD, WARP, TWIST, MOMENTARY, ROLL 1/2, ROLL 1/4, ROLL 1/8, FADE IN, time, FADE OUT, time, EFFECT SW, BANK UP, BANK DOWN, LOOPonOff, LOOP CLR	
00 3B	0000 000d	CTL1 Mode	(0 - 1) MOMENT, TOGGLE
00 3C	0000 dddd	CTL2 Function	(0 - 15)
		OFF, TAP, HOLD, WARP, TWIST, MOMENTARY, ROLL 1/2, ROLL 1/4, ROLL 1/8, FADE IN, time, FADE OUT, time, EFFECT SW, BANK UP, BANK DOWN, LOOPonOff, LOOP CLR	
00 3D	0000 000d	CTL2 Mode	(0 - 1) MOMENT, TOGGLE
00 3E	0000 0ddd	EXP Pedal Function	(0 - 6)
		OFF, TIME, min, max, FEEDBACK, min, max, TONE, min, max, E.LEVEL, min, max, MOD DEPTH, min, max, MOD RATE, min, max	
00 3F	0000 00aa	Exp target max	(0 - 10100) offset:100
		-100 - 10000	
	0000 bbbb		
	0000 cccc		
	0000 dddd		
00 43	0000 00aa	Exp target min	(0 - 10100) offset:100
		-100 - 10000	
	0000 bbbb		
	0000 cccc		
	0000 dddd		
00 47	0000 000d	Assign1 sw	(0 - 1) OFF, ON
00 48	0ddd dddd	Assign1 source	(0 - 69)
		TAP/CTL, EXP PDL, CTL1 PDL, CTL2 PDL, INT PDL, WAVE PDL, INPUT, CC#1, CC#2, CC#3, CC#4, CC#5, CC#6, CC#7, CC#8, CC#9, CC#10, CC#11, CC#12, CC#13, CC#14, CC#15, CC#16, CC#17, CC#18, CC#19, CC#20, CC#21, CC#22, CC#23, CC#24, CC#25, CC#26, CC#27, CC#28, CC#29, CC#30, CC#31, CC#64, CC#65, CC#66, CC#67, CC#68, CC#69, CC#70, CC#71, CC#72, CC#73, CC#74, CC#75, CC#76, CC#77, CC#78, CC#79, CC#80, CC#81, CC#82, CC#83, CC#84, CC#85, CC#86, CC#87, CC#88, CC#89, CC#90, CC#91, CC#92, CC#93, CC#94, CC#95	
00 49	0000 000d	Assign1 source mode	(0 - 1) MOMENT, TOGGLE
00 4A	0ddd dddd	Assign1 target	(0 - 121)
		EFFECT SW, MODE, TIME, BPM, NOTE, FEEDBACK, TONE, EFFECT LEVEL, MOD DEPTH, MOD RATE, CARRYOVER, DIRECT LEVEL, INPUT LEVEL, EQ SW, EQ LEVEL, EQ LO.CUT, EQ LO.GAIN, EQ LM.GAIN, EQ LM.FREQ, EQ LM.Q, EQ HM.GAIN, EQ HM.FREQ, EQ HM.Q, EQ HI.GAIN, EQ HI.CUT, LO DAMP, LO DAMP F, HI DAMP, HI DAMP F, DUCK SENS, DUCK PreDepth, DUCK PostDepth, EFFECT PAN, DIRECT PAN, TERA RESO, SLOW SENS, SLOW RISE TIME, LFO TYPE, LFO RATE, LFO DEPTH, FILTER TYPE, CUTOFF, RESONANCE, FILTER POS, PITCH SHIFT, PITCH FINE, PITCH BAL, DIRECT FB, SFX LOFI BIT, SFX LOFI RATE, SFX LOFI BAL, SFX TREM WAVE, SFX TREM RATE, SFX TREM DEPTH, SFX TREM POS, PATTERN, DELAY1 TIME, DELAY1 LEVEL, DELAY1 PAN, DELAY2 TIME, DELAY2 LEVEL, DELAY2 PAN, DELAY3 TIME, DELAY3 LEVEL, DELAY3 PAN, DELAY4 TIME, DELAY4 LEVEL, DELAY4 PAN, DELAY5 TIME, DELAY5 LEVEL, DELAY5 PAN, DELAY6 TIME, DELAY6 LEVEL, DELAY6 PAN, DELAY7 TIME, DELAY7 LEVEL, DELAY7 PAN, DELAY8 TIME, DELAY8 LEVEL, DELAY8 PAN, DELAY9 TIME, DELAY9 LEVEL, DELAY9 PAN, DELAY10 TIME, DELAY10 LEVEL, DELAY10 PAN, DELAY11 TIME, DELAY11 LEVEL, DELAY11 PAN, DELAY12 TIME, DELAY12 LEVEL, DELAY12 PAN, DELAY13 TIME, DELAY13 LEVEL, DELAY13 PAN, DELAY14 TIME, DELAY14 LEVEL, DELAY14 PAN, DELAY15 TIME, DELAY15 LEVEL, DELAY15 PAN, DELAY16 TIME, DELAY16 LEVEL, DELAY16 PAN, DUAL MODE, DUAL TYPE, D1 E.LEVEL, DUAL LINK, D2 TIME, D2 FEEDBACK, D2 TIME LINK, D2 FB LINK, D2 E.LEVEL, V. DIGI TYPE, FILTER, TIMEx2, DELAY PHASE, FEEDBACK PHASE, TAPE TYPE, TAPE HEAD, STAGE, TAP/CTL LED	
00 4B	0000 00aa	Assign1 target min	(0 - 2400100) offset:100
		-100 - 2400000	
	0000 bbbb		
	0000 cccc		
	0000 dddd		
	0000 eeee		
	0000 ffff		
00 51	0000 00aa	Assign1 target max	(0 - 2400100) offset:100
		-100 - 2400000	
	0000 bbbb		
	0000 cccc		
	0000 dddd		
	0000 eeee		
	0000 ffff		
00 57	0ddd dddd	Assign1 Active Range LO	(0 - 126)
00 58	0ddd dddd	Assign1 Active Range HI	(1 - 127)
00 59	0ddd dddd	Assign1 Wave Rate	(0 - 113)
		0 - 100, whole, dotted half, whole triplet, half, dotted quarter, half triplet, quarter, dotted 8th, quarter triplet, 8th, dotted 16th, 8th triplet, 16th	
00 5A	0000 00dd	Assign1 Wave Form	(0 - 2) SAW, TRI, SIN
00 5B	0ddd dddd	Assign1 Internal Pedal Trigger	(0 - 68)
		PAT CNG, EXP LO, EXP MID, EXP HI, CTL1 PDL, CTL2 PDL, CC#1, CC#2, CC#3, CC#4, CC#5, CC#6, CC#7, CC#8, CC#9, CC#10, CC#11, CC#12, CC#13, CC#14, CC#15, CC#16, CC#17, CC#18, CC#19, CC#20, CC#21, CC#22, CC#23, CC#24, CC#25, CC#26, CC#27, CC#28, CC#29, CC#30, CC#31, CC#64, CC#65, CC#66, CC#67, CC#68, CC#69, CC#70, CC#71, CC#72, CC#73, CC#74, CC#75, CC#76, CC#77, CC#78, CC#79, CC#80, CC#81, CC#82, CC#83, CC#84, CC#85, CC#86, CC#87, CC#88, CC#89, CC#90, CC#91, CC#92, CC#93, CC#94, CC#95	
00 5C	0ddd dddd	Assign1 Internal Pedal Time	(0 - 100)
00 5D	0000 00dd	Assign1 Internal Pedal Curve	(0 - 2) LINEAR, SLOW, FAST
00 5E	0000 000d	Assign2 sw	(0 - 1) OFF, ON
00 5F	0ddd dddd	Assign2 source	(0 - 69)
		TAP/CTL, EXP PDL, CTL1 PDL, CTL2 PDL, INT PDL, WAVE PDL, INPUT, CC#1, CC#2, CC#3, CC#4, CC#5, CC#6, CC#7, CC#8, CC#9, CC#10, CC#11, CC#12, CC#13, CC#14, CC#15, CC#16, CC#17, CC#18, CC#19, CC#20, CC#21, CC#22, CC#23, CC#24, CC#25, CC#26, CC#27, CC#28, CC#29, CC#30, CC#31, CC#64, CC#65, CC#66, CC#67, CC#68, CC#69, CC#70, CC#71, CC#72, CC#73, CC#74, CC#75, CC#76, CC#77, CC#78, CC#79, CC#80, CC#81, CC#82, CC#83, CC#84, CC#85, CC#86, CC#87, CC#88, CC#89, CC#90, CC#91, CC#92, CC#93, CC#94, CC#95	
00 60	0000 000d	Assign2 source mode	(0 - 1) MOMENT, TOGGLE
00 61	0ddd dddd	Assign2 target	(0 - 121)
		EFFECT SW, MODE, TIME, BPM, NOTE, FEEDBACK, TONE, EFFECT LEVEL, MOD DEPTH,	

				MOD RATE, CARRYOVER, DIRECT LEVEL, INPUT LEVEL, EQ SW, EQ LEVEL, EQ LO.CUT, EQ LO.GAIN, EQ LM.GAIN, EQ LM.FREQ, EQ LM.Q, EQ HM.GAIN, EQ HM.FREQ, EQ HM.Q, EQ HI.GAIN, EQ HI.CUT, LO DAMP, LO DAMP F, HI DAMP, HI DAMP F, DUCK SENS, DUCK PreDepth, DUCK PostDepth, EFFECT PAN, DIRECT PAN, TERA RESO, SLOW SENS, SLOW RISE TIME, LFO TYPE, LFO RATE, LFO DEPTH, FILTER TYPE, CUTOFF, RESONANCE, FILTER POS, PITCH SHIFT, PITCH FINE, PITCH BAL, DIRECT FB, SFX LOFI BIT, SFX LOFI RATE, SFX LOFI BAL, SFX TREM WAVE, SFX TREM RATE, SFX TREM DEPTH, SFX TREM POS, PATTERN, DELAY1 TIME, DELAY1 LEVEL, DELAY1 PAN, DELAY2 TIME, DELAY2 LEVEL, DELAY2 PAN, DELAY3 TIME, DELAY3 LEVEL, DELAY3 PAN, DELAY4 TIME, DELAY4 LEVEL, DELAY4 PAN, DELAY5 TIME, DELAY5 LEVEL, DELAY5 PAN, DELAY6 TIME, DELAY6 LEVEL, DELAY6 PAN, DELAY7 TIME, DELAY7 LEVEL, DELAY7 PAN, DELAY8 TIME, DELAY8 LEVEL, DELAY8 PAN, DELAY9 TIME, DELAY9 LEVEL, DELAY9 PAN, DELAY10 TIME, DELAY10 LEVEL, DELAY10 PAN, DELAY11 TIME, DELAY11 LEVEL, DELAY11 PAN, DELAY12 TIME, DELAY12 LEVEL, DELAY12 PAN, DELAY13 TIME, DELAY13 LEVEL, DELAY13 PAN, DELAY14 TIME, DELAY14 LEVEL, DELAY14 PAN, DELAY15 TIME, DELAY15 LEVEL, DELAY15 PAN, DELAY16 TIME, DELAY16 LEVEL, DELAY16 PAN, DUAL MODE, DUAL TYPE, D1 E.LEVEL, DUAL LINK, D2 TIME, D2 FEEDBACK, D2 TIME LINK, D2 FB LINK, D2 E.LEVEL, V. DIGI TYPE, FILTER, TIMEx2, DELAY PHASE, FEEDBACK PHASE, TAPE TYPE, TAPE HEAD, STAGE, TAP/CTL LED
00 62	0000 00aa	Assign2 target min	(0 - 2400100) offset:100 -100 - 2400000	
	0000 bbbb			
	0000 cccc			
	0000 dddd			
	0000 eeee			
	0000 ffff			
00 68	0000 00aa	Assign2 target max	(0 - 2400100) offset:100 -100 - 2400000	
	0000 bbbb			
	0000 cccc			
	0000 dddd			
	0000 eeee			
	0000 ffff			
00 6E	0ddd dddd	ASSIGN2 Active Range LO	(0 - 126)	
00 6F	0ddd dddd	ASSIGN2 Active Range HI	(1 - 127)	
00 70	0ddd dddd	ASSIGN2 Wave Rate	(0 - 113) 0 - 100, whole, dotted half, whole triplet, half, dotted quarter, half triplet, quarter, dotted 8th, quarter triplet, 8th, dotted 16th, 8th triplet, 16th	
00 71	0000 00dd	ASSIGN2 Wave Form	(0 - 2) SAW, TRI, SIN	
00 72	0ddd dddd	ASSIGN2 Internal Pedal Trigger	(0 - 68) PAT CNG, EXP LO, EXP MID, EXP HI, CTL1 PDL, CTL2 PDL, CC#1, CC#2, CC#3, CC#4, CC#5, CC#6, CC#7, CC#8, CC#9, CC#10, CC#11, CC#12, CC#13, CC#14, CC#15, CC#16, CC#17, CC#18, CC#19, CC#20, CC#21, CC#22, CC#23, CC#24, CC#25, CC#26, CC#27, CC#28, CC#29, CC#30, CC#31, CC#64, CC#65, CC#66, CC#67, CC#68, CC#69, CC#70, CC#71, CC#72, CC#73, CC#74, CC#75, CC#76, CC#77, CC#78, CC#79, CC#80, CC#81, CC#82, CC#83, CC#84, CC#85, CC#86, CC#87, CC#88, CC#89, CC#90, CC#91, CC#92, CC#93, CC#94, CC#95	
00 73	0ddd dddd	ASSIGN2 Internal Pedal Time	(0 - 100)	
00 74	0000 00dd	ASSIGN2 Internal Pedal Curve	(0 - 2) LINEAR, SLOW, FAST	
00 75	0000 000d	Assign3 sw	(0 - 1) OFF, ON	
00 76	0ddd dddd	Assign3 source	(0 - 69) TAP/CTL, EXP PDL, CTL1 PDL, CTL2 PDL, INT PDL, WAVE PDL, INPUT, CC#1, CC#2, CC#3, CC#4, CC#5, CC#6, CC#7, CC#8, CC#9, CC#10, CC#11, CC#12, CC#13, CC#14, CC#15, CC#16, CC#17, CC#18, CC#19, CC#20, CC#21, CC#22, CC#23, CC#24, CC#25, CC#26, CC#27, CC#28, CC#29, CC#30, CC#31, CC#64, CC#65, CC#66, CC#67, CC#68, CC#69, CC#70, CC#71, CC#72, CC#73, CC#74, CC#75, CC#76, CC#77, CC#78, CC#79, CC#80, CC#81, CC#82, CC#83, CC#84, CC#85, CC#86, CC#87, CC#88, CC#89, CC#90, CC#91, CC#92, CC#93, CC#94, CC#95	
00 77	0000 000d	Assign3 source mode	(0 - 1) MOMENT, TOGGLE	
00 78	0ddd dddd	Assign3 target	(0 - 121) EFFECT SW, MODE, TIME, BPM, NOTE, FEEDBACK, TONE, EFFECT LEVEL, MOD DEPTH, MOD RATE, CARRYOVER, DIRECT LEVEL, INPUT LEVEL, EQ SW, EQ LEVEL, EQ LO.CUT, EQ LO.GAIN, EQ LM.GAIN, EQ LM.FREQ, EQ LM.Q, EQ HM.GAIN, EQ HM.FREQ, EQ HM.Q, EQ HI.GAIN, EQ HI.CUT, LO DAMP, LO DAMP F, HI DAMP, HI DAMP F, DUCK SENS, DUCK PreDepth, DUCK PostDepth, EFFECT PAN, DIRECT PAN, TERA RESO, SLOW SENS, SLOW RISE TIME, LFO TYPE, LFO RATE, LFO DEPTH, FILTER TYPE, CUTOFF, RESONANCE, FILTER POS, PITCH SHIFT, PITCH FINE, PITCH BAL, DIRECT FB, SFX LOFI BIT, SFX LOFI RATE, SFX LOFI BAL, SFX TREM WAVE, SFX TREM RATE, SFX TREM DEPTH, SFX TREM POS, PATTERN, DELAY1 TIME, DELAY1 LEVEL, DELAY1 PAN, DELAY2 TIME, DELAY2 LEVEL, DELAY2 PAN, DELAY3 TIME, DELAY3 LEVEL, DELAY3 PAN, DELAY4 TIME, DELAY4 LEVEL, DELAY4 PAN, DELAY5 TIME, DELAY5 LEVEL, DELAY5 PAN, DELAY6 TIME, DELAY6 LEVEL, DELAY6 PAN, DELAY7 TIME, DELAY7 LEVEL, DELAY7 PAN, DELAY8 TIME, DELAY8 LEVEL, DELAY8 PAN, DELAY9 TIME, DELAY9 LEVEL, DELAY9 PAN, DELAY10 TIME, DELAY10 LEVEL, DELAY10 PAN, DELAY11 TIME, DELAY11 LEVEL, DELAY11 PAN, DELAY12 TIME, DELAY12 LEVEL, DELAY12 PAN, DELAY13 TIME, DELAY13 LEVEL, DELAY13 PAN, DELAY14 TIME, DELAY14 LEVEL, DELAY14 PAN, DELAY15 TIME, DELAY15 LEVEL, DELAY15 PAN, DELAY16 TIME, DELAY16 LEVEL, DELAY16 PAN, DUAL MODE, DUAL TYPE, D1 E.LEVEL, DUAL LINK, D2 TIME, D2 FEEDBACK, D2 TIME LINK, D2 FB LINK, D2 E.LEVEL, V. DIGI TYPE, FILTER, TIMEx2, DELAY PHASE, FEEDBACK PHASE, TAPE TYPE, TAPE HEAD, STAGE, TAP/CTL LED	
00 79	0000 00aa	Assign3 target min	(0 - 2400100) offset:100 -100 - 2400000	
	0000 bbbb			
	0000 cccc			
	0000 dddd			
	0000 eeee			
	0000 ffff			
00 7F	0000 00aa	Assign3 target max	(0 - 2400100) offset:100 -100 - 2400000	
	0000 bbbb			
	0000 cccc			
	0000 dddd			
	0000 eeee			
	0000 ffff			
01 05	0ddd dddd	ASSIGN3 Active Range LO	(0 - 126)	
01 06	0ddd dddd	ASSIGN3 Active Range HI	(1 - 127)	
01 07	0ddd dddd	ASSIGN3 Wave Rate	(0 - 113) 0 - 100, whole, dotted half, whole triplet, half, dotted quarter, half triplet, quarter, dotted 8th, quarter triplet, 8th, dotted 16th, 8th triplet, 16th	
01 08	0000 00dd	ASSIGN3 Wave Form	(0 - 2) SAW, TRI, SIN	

01 09	0ddd dddd	ASSIGN3 Internal Pedal Trigger	(0 - 68) PAT CNG, EXP LO, EXP MID, EXP HI, CTL1 PDL, CTL2 PDL, CC#1, CC#2, CC#3, CC#4, CC#5, CC#6, CC#7, CC#8, CC#9, CC#10, CC#11, CC#12, CC#13, CC#14, CC#15, CC#16, CC#17, CC#18, CC#19, CC#20, CC#21, CC#22, CC#23, CC#24, CC#25, CC#26, CC#27, CC#28, CC#29, CC#30, CC#31, CC#64, CC#65, CC#66, CC#67, CC#68, CC#69, CC#70, CC#71, CC#72, CC#73, CC#74, CC#75, CC#76, CC#77, CC#78, CC#79, CC#80, CC#81, CC#82, CC#83, CC#84, CC#85, CC#86, CC#87, CC#88, CC#89, CC#90, CC#91, CC#92, CC#93, CC#94, CC#95
01 0A	0ddd dddd	ASSIGN3 Internal Pedal Time	(0 - 100)
01 0B	0000 00dd	ASSIGN3 Internal Pedal Curve	(0 - 2) LINEAR, SLOW, FAST
01 0C	0000 000d	Assign4 sw	(0 - 1) OFF, ON
01 0D	0ddd dddd	Assign4 source	(0 - 69) TAP/CTL, EXP PDL, CTL1 PDL, CTL2 PDL, INT PDL, WAVE PDL, INPUT, CC#1, CC#2, CC#3, CC#4, CC#5, CC#6, CC#7, CC#8, CC#9, CC#10, CC#11, CC#12, CC#13, CC#14, CC#15, CC#16, CC#17, CC#18, CC#19, CC#20, CC#21, CC#22, CC#23, CC#24, CC#25, CC#26, CC#27, CC#28, CC#29, CC#30, CC#31, CC#64, CC#65, CC#66, CC#67, CC#68, CC#69, CC#70, CC#71, CC#72, CC#73, CC#74, CC#75, CC#76, CC#77, CC#78, CC#79, CC#80, CC#81, CC#82, CC#83, CC#84, CC#85, CC#86, CC#87, CC#88, CC#89, CC#90, CC#91, CC#92, CC#93, CC#94, CC#95
01 0E	0000 000d	Assign4 source mode	(0 - 1) MOMENT, TOGGLE
01 0F	0ddd dddd	Assign4 target	(0 - 121) EFFECT SW, MODE, TIME, BPM, NOTE, FEEDBACK, TONE, EFFECT LEVEL, MOD DEPTH, MOD RATE, CARRYOVER, DIRECT LEVEL, INPUT LEVEL, EQ SW, EQ LEVEL, EQ LO.CUT, EQ LO.GAIN, EQ LM.GAIN, EQ LM.FREQ, EQ LM.Q, EQ HM.GAIN, EQ HM.FREQ, EQ HM.Q, EQ HI.GAIN, EQ HI.CUT, LO DAMP, LO DAMP F, HI DAMP, HI DAMP F, DUCK SENS, DUCK PreDepth, DUCK PostDepth, EFFECT PAN, DIRECT PAN, TERA RESO, SLOW SENS, SLOW RISE TIME, LFO TYPE, LFO RATE, LFO DEPTH, FILTER TYPE, CUTOFF, RESONANCE, FILTER POS, PITCH SHIFT, PITCH FINE, PITCH BAL, DIRECT FB, SFX LOFI BIT, SFX LOFI RATE, SFX LOFI BAL, SFX TREM WAVE, SFX TREM RATE, SFX TREM DEPTH, SFX TREM POS, PATTERN, DELAY1 TIME, DELAY1 LEVEL, DELAY1 PAN, DELAY2 TIME, DELAY2 LEVEL, DELAY2 PAN, DELAY3 TIME, DELAY3 LEVEL, DELAY3 PAN, DELAY4 TIME, DELAY4 LEVEL, DELAY4 PAN, DELAY5 TIME, DELAY5 LEVEL, DELAY5 PAN, DELAY6 TIME, DELAY6 LEVEL, DELAY6 PAN, DELAY7 TIME, DELAY7 LEVEL, DELAY7 PAN, DELAY8 TIME, DELAY8 LEVEL, DELAY8 PAN, DELAY9 TIME, DELAY9 LEVEL, DELAY9 PAN, DELAY10 TIME, DELAY10 LEVEL, DELAY10 PAN, DELAY11 TIME, DELAY11 LEVEL, DELAY11 PAN, DELAY12 TIME, DELAY12 LEVEL, DELAY12 PAN, DELAY13 TIME, DELAY13 LEVEL, DELAY13 PAN, DELAY14 TIME, DELAY14 LEVEL, DELAY14 PAN, DELAY15 TIME, DELAY15 LEVEL, DELAY15 PAN, DELAY16 TIME, DELAY16 LEVEL, DELAY16 PAN, DUAL MODE, DUAL TYPE, D1 E.LEVEL, DUAL LINK, D2 TIME, D2 FEEDBACK, D2 TIME LINK, D2 FB LINK, D2 E.LEVEL, V. DIGI TYPE, FILTER, TIMEx2, DELAY PHASE, FEEDBACK PHASE, TAPE TYPE, TAPE HEAD, STAGE, TAP/CTL LED
01 10	0000 00aa	Assign4 target min	(0 - 2400100) offset:100 -100 - 2400000
	0000 bbbb		
	0000 cccc		
	0000 dddd		
	0000 eeee		
	0000 ffff		
01 16	0000 00aa	Assign4 target max	(0 - 2400100) offset:100 -100 - 2400000
	0000 bbbb		
	0000 cccc		
	0000 dddd		
	0000 eeee		
	0000 ffff		
01 1C	0ddd dddd	ASSIGN4 Active Range LO	(0 - 126)
01 1D	0ddd dddd	ASSIGN4 Active Range HI	(1 - 127)
01 1E	0ddd dddd	ASSIGN4 Wave Rate	(0 - 113) 0 - 100, whole, dotted half, whole triplet, half, dotted quarter, half triplet, quarter, dotted 8th, quarter triplet, 8th, dotted 16th, 8th triplet, 16th
01 1F	0000 00dd	ASSIGN4 Wave Form	(0 - 2) SAW, TRI, SIN
01 20	0ddd dddd	ASSIGN4 Internal Pedal Trigger	(0 - 68) PAT CNG, EXP LO, EXP MID, EXP HI, CTL1 PDL, CTL2 PDL, CC#1, CC#2, CC#3, CC#4, CC#5, CC#6, CC#7, CC#8, CC#9, CC#10, CC#11, CC#12, CC#13, CC#14, CC#15, CC#16, CC#17, CC#18, CC#19, CC#20, CC#21, CC#22, CC#23, CC#24, CC#25, CC#26, CC#27, CC#28, CC#29, CC#30, CC#31, CC#64, CC#65, CC#66, CC#67, CC#68, CC#69, CC#70, CC#71, CC#72, CC#73, CC#74, CC#75, CC#76, CC#77, CC#78, CC#79, CC#80, CC#81, CC#82, CC#83, CC#84, CC#85, CC#86, CC#87, CC#88, CC#89, CC#90, CC#91, CC#92, CC#93, CC#94, CC#95
01 21	0ddd dddd	ASSIGN4 Internal Pedal Time	(0 - 100)
01 22	0000 00dd	ASSIGN4 Internal Pedal Trigger	(0 - 2) LINEAR, SLOW, FAST
01 23	0000 000d	ASSIGN5 sw	(0 - 1) OFF, ON
01 24	0ddd dddd	ASSIGN5 source	(0 - 69) TAP/CTL, EXP PDL, CTL1 PDL, CTL2 PDL, INT PDL, WAVE PDL, INPUT, CC#1, CC#2, CC#3, CC#4, CC#5, CC#6, CC#7, CC#8, CC#9, CC#10, CC#11, CC#12, CC#13, CC#14, CC#15, CC#16, CC#17, CC#18, CC#19, CC#20, CC#21, CC#22, CC#23, CC#24, CC#25, CC#26, CC#27, CC#28, CC#29, CC#30, CC#31, CC#64, CC#65, CC#66, CC#67, CC#68, CC#69, CC#70, CC#71, CC#72, CC#73, CC#74, CC#75, CC#76, CC#77, CC#78, CC#79, CC#80, CC#81, CC#82, CC#83, CC#84, CC#85, CC#86, CC#87, CC#88, CC#89, CC#90, CC#91, CC#92, CC#93, CC#94, CC#95
01 25	0000 000d	ASSIGN5 source mode	(0 - 1) MOMENT, TOGGLE
01 26	0ddd dddd	ASSIGN5 target	(0 - 121) EFFECT SW, MODE, TIME, BPM, NOTE, FEEDBACK, TONE, EFFECT LEVEL, MOD DEPTH, MOD RATE, CARRYOVER, DIRECT LEVEL, INPUT LEVEL, EQ SW, EQ LEVEL, EQ LO.CUT, EQ LO.GAIN, EQ LM.GAIN, EQ LM.FREQ, EQ LM.Q, EQ HM.GAIN, EQ HM.FREQ, EQ HM.Q, EQ HI.GAIN, EQ HI.CUT, LO DAMP, LO DAMP F, HI DAMP, HI DAMP F, DUCK SENS, DUCK PreDepth, DUCK PostDepth, EFFECT PAN, DIRECT PAN, TERA RESO, SLOW SENS, SLOW RISE TIME, LFO TYPE, LFO RATE, LFO DEPTH, FILTER TYPE, CUTOFF, RESONANCE, FILTER POS, PITCH SHIFT, PITCH FINE, PITCH BAL, DIRECT FB, SFX LOFI BIT, SFX LOFI RATE, SFX LOFI BAL, SFX TREM WAVE, SFX TREM RATE, SFX TREM DEPTH, SFX TREM POS, PATTERN, DELAY1 TIME, DELAY1 LEVEL, DELAY1 PAN, DELAY2 TIME, DELAY2 LEVEL, DELAY2 PAN, DELAY3 TIME, DELAY3 LEVEL, DELAY3 PAN, DELAY4 TIME, DELAY4 LEVEL, DELAY4 PAN, DELAY5 TIME, DELAY5 LEVEL, DELAY5 PAN, DELAY6 TIME, DELAY6 LEVEL, DELAY6 PAN, DELAY7 TIME, DELAY7 LEVEL, DELAY7 PAN, DELAY8 TIME, DELAY8 LEVEL, DELAY8 PAN, DELAY9 TIME, DELAY9 LEVEL, DELAY9 PAN, DELAY10 TIME, DELAY10 LEVEL, DELAY10 PAN, DELAY11 TIME, DELAY11 LEVEL, DELAY11 PAN, DELAY12 TIME, DELAY12 LEVEL, DELAY12 PAN, DELAY13 TIME, DELAY13 LEVEL, DELAY13 PAN, DELAY14 TIME, DELAY14 LEVEL, DELAY14 PAN, DELAY15 TIME, DELAY15 LEVEL, DELAY15 PAN, DELAY16 TIME, DELAY16 LEVEL, DELAY16 PAN, DUAL MODE, DUAL TYPE, D1 E.LEVEL, DUAL LINK, D2 TIME, D2 FEEDBACK, D2 TIME LINK, D2 FB LINK, D2 E.LEVEL, V. DIGI TYPE, FILTER, TIMEx2, DELAY PHASE, FEEDBACK PHASE, TAPE TYPE, TAPE HEAD, STAGE, TAP/CTL LED

01 27	0000 00aa	ASSIGN5 target min	(0 - 2400100) offset:100 -100 - 2400000
	0000 bbbb		
	0000 cccc		
	0000 dddd		
	0000 eeee		
	0000 ffff		
01 2D	0000 00aa	ASSIGN5 target max	(0 - 2400100) offset:100 -100 - 2400000
	0000 bbbb		
	0000 cccc		
	0000 dddd		
	0000 eeee		
	0000 ffff		
01 33	0ddd dddd	ASSIGN5 Active Range LO	(0 - 126)
01 34	0ddd dddd	ASSIGN5 Active Range HI	(1 - 127)
01 35	0ddd dddd	ASSIGN5 Wave Rate	(0 - 113) 0 - 100, whole, dotted half, whole triplet, half, dotted quarter, half triplet, quarter, dotted 8th, quarter triplet, 8th, dotted 16th, 8th triplet, 16th
01 36	0000 00dd	ASSIGN5 Wave Form	(0 - 2) SAW, TRI, SIN
01 37	0ddd dddd	ASSIGN5 Internal Pedal Trigger	(0 - 68) PAT CNG, EXP LO, EXP MID, EXP HI, CTL1 PDL, CTL2 PDL, CC#1, CC#2, CC#3, CC#4, CC#5, CC#6, CC#7, CC#8, CC#9, CC#10, CC#11, CC#12, CC#13, CC#14, CC#15, CC#16, CC#17, CC#18, CC#19, CC#20, CC#21, CC#22, CC#23, CC#24, CC#25, CC#26, CC#27, CC#28, CC#29, CC#30, CC#31, CC#64, CC#65, CC#66, CC#67, CC#68, CC#69, CC#70, CC#71, CC#72, CC#73, CC#74, CC#75, CC#76, CC#77, CC#78, CC#79, CC#80, CC#81, CC#82, CC#83, CC#84, CC#85, CC#86, CC#87, CC#88, CC#89, CC#90, CC#91, CC#92, CC#93, CC#94, CC#95
01 38	0ddd dddd	ASSIGN5 Internal Pedal Time	(0 - 100)
01 39	0000 00dd	ASSIGN5 Internal Pedal Curve	(0 - 2) LINEAR, SLOW, FAST
01 3A	0000 000d	ASSIGN6 sw	(0 - 1) OFF, ON
01 3B	0ddd dddd	ASSIGN6 source	(0 - 69) TAP/CTL, EXP PDL, CTL1 PDL, CTL2 PDL, INT PDL, WAVE PDL, INPUT, CC#1, CC#2, CC#3, CC#4, CC#5, CC#6, CC#7, CC#8, CC#9, CC#10, CC#11, CC#12, CC#13, CC#14, CC#15, CC#16, CC#17, CC#18, CC#19, CC#20, CC#21, CC#22, CC#23, CC#24, CC#25, CC#26, CC#27, CC#28, CC#29, CC#30, CC#31, CC#64, CC#65, CC#66, CC#67, CC#68, CC#69, CC#70, CC#71, CC#72, CC#73, CC#74, CC#75, CC#76, CC#77, CC#78, CC#79, CC#80, CC#81, CC#82, CC#83, CC#84, CC#85, CC#86, CC#87, CC#88, CC#89, CC#90, CC#91, CC#92, CC#93, CC#94, CC#95
01 3C	0000 000d	ASSIGN6 source mode	(0 - 1) MOMENT, TOGGLE
01 3D	0ddd dddd	ASSIGN6 target	(0 - 121) EFFECT SW, MODE, TIME, BPM, NOTE, FEEDBACK, TONE, EFFECT LEVEL, MOD DEPTH, MOD RATE, CARRYOVER, DIRECT LEVEL, INPUT LEVEL, EQ SW, EQ LEVEL, EQ LO.CUT, EQ LO.GAIN, EQ LM.GAIN, EQ LM.FREQ, EQ LM.Q, EQ HM.GAIN, EQ HM.FREQ, EQ HM.Q, EQ HI.GAIN, EQ HI.CUT, LO DAMP, LO DAMP F, HI DAMP, HI DAMP F, DUCK SENS, DUCK PreDepth, DUCK PostDepth, EFFECT PAN, DIRECT PAN, TERA RESO, SLOW SENS, SLOW RISE TIME, LFO TYPE, LFO RATE, LFO DEPTH, FILTER TYPE, CUTOFF, RESONANCE, FILTER POS, PITCH SHIFT, PITCH FINE, PITCH BAL, DIRECT FB, SFX LOFI BIT, SFX LOFI RATE, SFX LOFI BAL, SFX TREM WAVE, SFX TREM RATE, SFX TREM DEPTH, SFX TREM POS, PATTERN, DELAY1 TIME, DELAY1 LEVEL, DELAY1 PAN, DELAY2 TIME, DELAY2 LEVEL, DELAY2 PAN, DELAY3 TIME, DELAY3 LEVEL, DELAY3 PAN, DELAY4 TIME, DELAY4 LEVEL, DELAY4 PAN, DELAY5 TIME, DELAY5 LEVEL, DELAY5 PAN, DELAY6 TIME, DELAY6 LEVEL, DELAY6 PAN, DELAY7 TIME, DELAY7 LEVEL, DELAY7 PAN, DELAY8 TIME, DELAY8 LEVEL, DELAY8 PAN, DELAY9 TIME, DELAY9 LEVEL, DELAY9 PAN, DELAY10 TIME, DELAY10 LEVEL, DELAY10 PAN, DELAY11 TIME, DELAY11 LEVEL, DELAY11 PAN, DELAY12 TIME, DELAY12 LEVEL, DELAY12 PAN, DELAY13 TIME, DELAY13 LEVEL, DELAY13 PAN, DELAY14 TIME, DELAY14 LEVEL, DELAY14 PAN, DELAY15 TIME, DELAY15 LEVEL, DELAY15 PAN, DELAY16 TIME, DELAY16 LEVEL, DELAY16 PAN, DUAL MODE, DUAL TYPE, D1 E.LEVEL, DUAL LINK, D2 TIME, D2 FEEDBACK, D2 TIME LINK, D2 FB LINK, D2 E.LEVEL, V. DIGI TYPE, FILTER, TIMEX2, DELAY PHASE, FEEDBACK PHASE, TAPE TYPE, TAPE HEAD, STAGE, TAP/CTL LED
01 3E	0000 00aa	ASSIGN6 target min	(0 - 2400100) offset:100 -100 - 2400000
	0000 bbbb		
	0000 cccc		
	0000 dddd		
	0000 eeee		
	0000 ffff		
01 44	0000 00aa	ASSIGN6 target max	(0 - 2400100) offset:100 -100 - 2400000
	0000 bbbb		
	0000 cccc		
	0000 dddd		
	0000 eeee		
	0000 ffff		
01 4A	0ddd dddd	ASSIGN6 Active Range LO	(0 - 126)
01 4B	0ddd dddd	ASSIGN6 Active Range HI	(1 - 127)
01 4C	0ddd dddd	ASSIGN6 Wave Rate	(0 - 113) 0 - 100, whole, dotted half, whole triplet, half, dotted quarter, half triplet, quarter, dotted 8th, quarter triplet, 8th, dotted 16th, 8th triplet, 16th
01 4D	0000 00dd	ASSIGN6 Wave Form	(0 - 2) SAW, TRI, SIN
01 4E	0ddd dddd	ASSIGN6 Internal Pedal Trigger	(0 - 68) PAT CNG, EXP LO, EXP MID, EXP HI, CTL1 PDL, CTL2 PDL, CC#1, CC#2, CC#3, CC#4, CC#5, CC#6, CC#7, CC#8, CC#9, CC#10, CC#11, CC#12, CC#13, CC#14, CC#15, CC#16, CC#17, CC#18, CC#19, CC#20, CC#21, CC#22, CC#23, CC#24, CC#25, CC#26, CC#27, CC#28, CC#29, CC#30, CC#31, CC#64, CC#65, CC#66, CC#67, CC#68, CC#69, CC#70, CC#71, CC#72, CC#73, CC#74, CC#75, CC#76, CC#77, CC#78, CC#79, CC#80, CC#81, CC#82, CC#83, CC#84, CC#85, CC#86, CC#87, CC#88, CC#89, CC#90, CC#91, CC#92, CC#93, CC#94, CC#95
01 4F	0ddd dddd	ASSIGN6 Internal Pedal Time	(0 - 100)
01 50	0000 00dd	ASSIGN6 Internal Pedal Curve	(0 - 2) LINEAR, SLOW, FAST
01 51	0000 000d	ASSIGN7 sw	(0 - 1) OFF, ON
01 52	0ddd dddd	ASSIGN7 source	(0 - 69) TAP/CTL, EXP PDL, CTL1 PDL, CTL2 PDL, INT PDL, WAVE PDL, INPUT, CC#1, CC#2, CC#3, CC#4, CC#5, CC#6, CC#7, CC#8, CC#9, CC#10, CC#11, CC#12, CC#13, CC#14, CC#15, CC#16, CC#17, CC#18, CC#19, CC#20, CC#21, CC#22, CC#23, CC#24, CC#25, CC#26, CC#27, CC#28, CC#29, CC#30, CC#31, CC#64, CC#65, CC#66, CC#67, CC#68, CC#69, CC#70, CC#71, CC#72, CC#73, CC#74, CC#75, CC#76, CC#77, CC#78, CC#79, CC#80, CC#81, CC#82, CC#83, CC#84, CC#85, CC#86, CC#87, CC#88, CC#89, CC#90, CC#91, CC#92, CC#93, CC#94, CC#95
01 53	0000 000d	ASSIGN7 source mode	(0 - 1) MOMENT, TOGGLE

01 54	0ddd dddd	ASSIGN7 target	(0 - 121) EFFECT SW, MODE, TIME, BPM, NOTE, FEEDBACK, TONE, EFFECT LEVEL, MOD DEPTH, MOD RATE, CARRYOVER, DIRECT LEVEL, INPUT LEVEL, EQ SW, EQ LEVEL, EQ LO.CUT, EQ LO.GAIN, EQ LM.GAIN, EQ LM.FREQ, EQ LM.Q, EQ HM.GAIN, EQ HM.FREQ, EQ HM.Q, EQ HI.GAIN, EQ HI.CUT, LO DAMP, LO DAMP F, HI DAMP, HI DAMP F, DUCK SENS, DUCK PreDepth, DUCK PostDepth, EFFECT PAN, DIRECT PAN, TERA RESO, SLOW SENS, SLOW RISE TIME, LFO TYPE, LFO RATE, LFO DEPTH, FILTER TYPE, CUTOFF, RESONANCE, FILTER POS, PITCH SHIFT, PITCH FINE, PITCH BAL, DIRECT FB, SFX LOFI BIT, SFX LOFI RATE, SFX LOFI BAL, SFX TREM WAVE, SFX TREM RATE, SFX TREM DEPTH, SFX TREM POS, PATTERN, DELAY1 TIME, DELAY1 LEVEL, DELAY1 PAN, DELAY2 TIME, DELAY2 LEVEL, DELAY2 PAN, DELAY3 TIME, DELAY3 LEVEL, DELAY3 PAN, DELAY4 TIME, DELAY4 LEVEL, DELAY4 PAN, DELAY5 TIME, DELAY5 LEVEL, DELAY5 PAN, DELAY6 TIME, DELAY6 LEVEL, DELAY6 PAN, DELAY7 TIME, DELAY7 LEVEL, DELAY7 PAN, DELAY8 TIME, DELAY8 LEVEL, DELAY8 PAN, DELAY9 TIME, DELAY9 LEVEL, DELAY9 PAN, DELAY10 TIME, DELAY10 LEVEL, DELAY10 PAN, DELAY11 TIME, DELAY11 LEVEL, DELAY11 PAN, DELAY12 TIME, DELAY12 LEVEL, DELAY12 PAN, DELAY13 TIME, DELAY13 LEVEL, DELAY13 PAN, DELAY14 TIME, DELAY14 LEVEL, DELAY14 PAN, DELAY15 TIME, DELAY15 LEVEL, DELAY15 PAN, DELAY16 TIME, DELAY16 LEVEL, DELAY16 PAN, DUAL MODE, DUAL TYPE, D1 E.LEVEL, DUAL LINK, D2 TIME, D2 FEEDBACK, D2 TIME LINK, D2 FB LINK, D2 E.LEVEL, V. DIGI TYPE, FILTER, TIMEx2, DELAY PHASE, FEEDBACK PHASE, TAPE TYPE, TAPE HEAD, STAGE, TAP/CTL LED
01 55	0000 00aa	ASSIGN7 target min	(0 - 2400100) offset:100 -100 - 24000000
	0000 bbbb		
	0000 cccc		
	0000 dddd		
	0000 eeee		
	0000 ffff		
01 5B	0000 00aa	ASSIGN7 target max	(0 - 2400100) offset:100 -100 - 24000000
	0000 bbbb		
	0000 cccc		
	0000 dddd		
	0000 eeee		
	0000 ffff		
01 61	0ddd dddd	ASSIGN7 Active Range LO	(0 - 126)
01 62	0ddd dddd	ASSIGN7 Active Range HI	(1 - 127)
01 63	0ddd dddd	ASSIGN7 Wave Rate	(0 - 113) 0 - 100, whole, dotted half, whole triplet, half, dotted quarter, half triplet, quarter, dotted 8th, quarter triplet, 8th, dotted 16th, 8th triplet, 16th
01 64	0000 00dd	ASSIGN7 Wave Form	(0 - 2) SAW, TRI, SIN
01 65	0ddd dddd	ASSIGN7 Internal Pedal Trigger	(0 - 68) PAT CNG, EXP LO, EXP MID, EXP HI, CTL1 PDL, CTL2 PDL, CC#1, CC#2, CC#3, CC#4, CC#5, CC#6, CC#7, CC#8, CC#9, CC#10, CC#11, CC#12, CC#13, CC#14, CC#15, CC#16, CC#17, CC#18, CC#19, CC#20, CC#21, CC#22, CC#23, CC#24, CC#25, CC#26, CC#27, CC#28, CC#29, CC#30, CC#31, CC#64, CC#65, CC#66, CC#67, CC#68, CC#69, CC#70, CC#71, CC#72, CC#73, CC#74, CC#75, CC#76, CC#77, CC#78, CC#79, CC#80, CC#81, CC#82, CC#83, CC#84, CC#85, CC#86, CC#87, CC#88, CC#89, CC#90, CC#91, CC#92, CC#93, CC#94, CC#95
01 66	0ddd dddd	ASSIGN7 Internal Pedal Time	(0 - 100)
01 67	0000 00dd	ASSIGN7 Internal Pedal Curve	(0 - 2) LINEAR, SLOW, FAST
01 68	0000 000d	ASSIGN8 sw	(0 - 1) OFF, ON
01 69	0ddd dddd	ASSIGN8 source	(0 - 69) TAP/CTL, EXP PDL, CTL1 PDL, CTL2 PDL, INT PDL, WAVE PDL, INPUT, CC#1, CC#2, CC#3, CC#4, CC#5, CC#6, CC#7, CC#8, CC#9, CC#10, CC#11, CC#12, CC#13, CC#14, CC#15, CC#16, CC#17, CC#18, CC#19, CC#20, CC#21, CC#22, CC#23, CC#24, CC#25, CC#26, CC#27, CC#28, CC#29, CC#30, CC#31, CC#64, CC#65, CC#66, CC#67, CC#68, CC#69, CC#70, CC#71, CC#72, CC#73, CC#74, CC#75, CC#76, CC#77, CC#78, CC#79, CC#80, CC#81, CC#82, CC#83, CC#84, CC#85, CC#86, CC#87, CC#88, CC#89, CC#90, CC#91, CC#92, CC#93, CC#94, CC#95
01 6A	0000 000d	ASSIGN8 source mode	(0 - 1) MOMENT, TOGGLE
01 6B	0ddd dddd	ASSIGN8 target	(0 - 121) EFFECT SW, MODE, TIME, BPM, NOTE, FEEDBACK, TONE, EFFECT LEVEL, MOD DEPTH, MOD RATE, CARRYOVER, DIRECT LEVEL, INPUT LEVEL, EQ SW, EQ LEVEL, EQ LO.CUT, EQ LO.GAIN, EQ LM.GAIN, EQ LM.FREQ, EQ LM.Q, EQ HM.GAIN, EQ HM.FREQ, EQ HM.Q, EQ HI.GAIN, EQ HI.CUT, LO DAMP, LO DAMP F, HI DAMP, HI DAMP F, DUCK SENS, DUCK PreDepth, DUCK PostDepth, EFFECT PAN, DIRECT PAN, TERA RESO, SLOW SENS, SLOW RISE TIME, LFO TYPE, LFO RATE, LFO DEPTH, FILTER TYPE, CUTOFF, RESONANCE, FILTER POS, PITCH SHIFT, PITCH FINE, PITCH BAL, DIRECT FB, SFX LOFI BIT, SFX LOFI RATE, SFX LOFI BAL, SFX TREM WAVE, SFX TREM RATE, SFX TREM DEPTH, SFX TREM POS, PATTERN, DELAY1 TIME, DELAY1 LEVEL, DELAY1 PAN, DELAY2 TIME, DELAY2 LEVEL, DELAY2 PAN, DELAY3 TIME, DELAY3 LEVEL, DELAY3 PAN, DELAY4 TIME, DELAY4 LEVEL, DELAY4 PAN, DELAY5 TIME, DELAY5 LEVEL, DELAY5 PAN, DELAY6 TIME, DELAY6 LEVEL, DELAY6 PAN, DELAY7 TIME, DELAY7 LEVEL, DELAY7 PAN, DELAY8 TIME, DELAY8 LEVEL, DELAY8 PAN, DELAY9 TIME, DELAY9 LEVEL, DELAY9 PAN, DELAY10 TIME, DELAY10 LEVEL, DELAY10 PAN, DELAY11 TIME, DELAY11 LEVEL, DELAY11 PAN, DELAY12 TIME, DELAY12 LEVEL, DELAY12 PAN, DELAY13 TIME, DELAY13 LEVEL, DELAY13 PAN, DELAY14 TIME, DELAY14 LEVEL, DELAY14 PAN, DELAY15 TIME, DELAY15 LEVEL, DELAY15 PAN, DELAY16 TIME, DELAY16 LEVEL, DELAY16 PAN, DUAL MODE, DUAL TYPE, D1 E.LEVEL, DUAL LINK, D2 TIME, D2 FEEDBACK, D2 TIME LINK, D2 FB LINK, D2 E.LEVEL, V. DIGI TYPE, FILTER, TIMEx2, DELAY PHASE, FEEDBACK PHASE, TAPE TYPE, TAPE HEAD, STAGE, TAP/CTL LED
01 6C	0000 00aa	ASSIGN8 target min	(0 - 2400100) offset:100 -100 - 24000000
	0000 bbbb		
	0000 cccc		
	0000 dddd		
	0000 eeee		
	0000 ffff		
01 72	0000 00aa	ASSIGN8 target max	(0 - 2400100) offset:100 -100 - 24000000
	0000 bbbb		
	0000 cccc		
	0000 dddd		
	0000 eeee		
	0000 ffff		
01 78	0ddd dddd	ASSIGN8 Active Range LO	(0 - 126)
01 79	0ddd dddd	ASSIGN8 Active Range HI	(1 - 127)
01 7A	0ddd dddd	ASSIGN8 Wave Rate	(0 - 113) 0 - 100, whole, dotted half, whole triplet, half, dotted quarter, half triplet, quarter, dotted 8th, quarter triplet, 8th, dotted 16th, 8th triplet, 16th

01 7B	0000 00dd	ASSIGN8 Wave Form	(0 - 2) SAW, TRI, SIN
01 7C	0ddd dddd	ASSIGN8 Internal Pedal Trigger	(0 - 68)
			PAT CNG, EXP LO, EXP MID, EXP HI, CTL1 PDL, CTL2 PDL, CC#1, CC#2, CC#3, CC#4, CC#5, CC#6, CC#7, CC#8, CC#9, CC#10, CC#11, CC#12, CC#13, CC#14, CC#15, CC#16, CC#17, CC#18, CC#19, CC#20, CC#21, CC#22, CC#23, CC#24, CC#25, CC#26, CC#27, CC#28, CC#29, CC#30, CC#31, CC#64, CC#65, CC#66, CC#67, CC#68, CC#69, CC#70, CC#71, CC#72, CC#73, CC#74, CC#75, CC#76, CC#77, CC#78, CC#79, CC#80, CC#81, CC#82, CC#83, CC#84, CC#85, CC#86, CC#87, CC#88, CC#89, CC#90, CC#91, CC#92, CC#93, CC#94, CC#95
01 7D	0ddd dddd	ASSIGN8 Internal Pedal Time	(0 - 100)
01 7E	0000 00dd	ASSIGN8 Internal Pedal Curve	(0 - 2) LINEAR, SLOW, FAST
01 7F	0ddd dddd	Assign Input Sens	(0 - 100)

*2-6 Patch DELAY Parameters Offset Address

Offset	Address	Description	
00 00	0ddd dddd	TERA ECHO Resonance	(0 - 100)
00 01	0ddd dddd	SLOW ATTACK Sens	(0 - 100)
00 02	0ddd dddd	SLOW ATTACK Rise Time	(0 - 100)
00 03	0000 00dd	FILTER LFO Type	(0 - 2) TRI, SIN, SQR
00 04	0ddd dddd	FILTER LFO Rate	(0 - 113)
			0 - 100, whole, dotted half, whole triplet, half, dotted quarter, half triplet, quarter, dotted 8th, quarter triplet, 8th, dotted 16th, 8th triplet, 16th
00 05	0ddd dddd	FILTER LFO Depth	(0 - 100)
00 06	0000 00dd	FILTER Type	(0 - 2) LPF, BPF, HPF
00 07	000d dddd	FILTER Cutoff Frequency	(0 - 19)
			100Hz, 125Hz, 160Hz, 200Hz, 250Hz, 315Hz, 400Hz, 500Hz, 630Hz, 800Hz, 1.00kHz, 1.25kHz, 1.60kHz, 2.00kHz, 2.50kHz, 3.15kHz, 4.00kHz, 5.00kHz, 6.30kHz, 8.00kHz, 10.0kHz
00 08	0ddd dddd	FILTER RESONANCE	(0 - 100)
00 09	0000 000d	FILTER Position	(0 - 1) PRE, POST
00 0A	0ddd dddd	SHIMMER Pitch Pitch	(0 - 48) -24 - +24
00 0B	0ddd dddd	SHIMMER Pitch Fine	(0 - 100) -50 - +50
00 0C	0ddd dddd	SHIMMER Pitch/Direct Balance	(0 - 100)
00 0D	0ddd dddd	SHIMMER Direct Feedback	(0 - 100) 0% - 100%
00 0E	0000 dddd	SFX LoFi Bit Depth	(0 - 15)
			OFF, 15, 14, 13, 12, 11, 10, 9, 8, 7, 6, 5, 4, 3, 2, 1
00 0F	000d dddd	SFX LoFi Sample Rate	(0 - 31)
			OFF, 1/2, 1/3, 1/4, 1/5, 1/6, 1/7, 1/8, 1/9, 1/10, 1/11, 1/12, 1/13, 1/14, 1/15, 1/16, 1/17, 1/18, 1/19, 1/20, 1/21, 1/22, 1/23, 1/24, 1/25, 1/26, 1/27, 1/28, 1/29, 1/30, 1/31, 1/32
00 10	0ddd dddd	SFX LoFi Balance	(0 - 100)
00 11	0ddd dddd	SFX Tremolo Wave	(0 - 100)
00 12	0ddd dddd	SFX Tremolo Rate	(0 - 113)
			0 - 100, whole, dotted half, whole triplet, half, dotted quarter, half triplet, quarter, dotted 8th, quarter triplet, 8th, dotted 16th, 8th triplet, 16th
00 13	0ddd dddd	SFX Tremolo Depth	(0 - 100)
00 14	0000 000d	SFX Tremolo Position	(0 - 1) PRE, POST
00 15	0000 dddd	PATTERN type	(0 - 10)
			PAT1, PAT2, PAT3, PAT4, PAT5, PAT6, PAT7, PAT8, PAT9, PAT10, USER
00 16	0000 aaaa	PATTERN Delay1 Delay Time	(0 - 188)
	0000 bbbb		0% - 100%, 0/16 - 16/16, 0/12 - 12/12, 0/32 - 32/32, 0/24 - 24/24
00 18	0ddd dddd	PATTERN Delay1 Level	(0 - 100)
00 19	0ddd dddd	PATTERN Delay1 Pan	(0 - 100) L50 - CENTER - R50
00 1A	0000 aaaa	PATTERN Delay2 Delay Time	(0 - 188)
	0000 bbbb		0% - 100%, 0/16 - 16/16, 0/12 - 12/12, 0/32 - 32/32, 0/24 - 24/24
00 1C	0ddd dddd	PATTERN Delay2 Level	(0 - 100)
00 1D	0ddd dddd	PATTERN Delay2 Pan	(0 - 100) L50 - CENTER - R50
00 1E	0000 aaaa	PATTERN Delay3 Delay Time	(0 - 188)
	0000 bbbb		0% - 100%, 0/16 - 16/16, 0/12 - 12/12, 0/32 - 32/32, 0/24 - 24/24
00 20	0ddd dddd	PATTERN Delay3 Level	(0 - 100)
00 21	0ddd dddd	PATTERN Delay3 Pan	(0 - 100) L50 - CENTER - R50
00 22	0000 aaaa	PATTERN Delay4 Delay Time	(0 - 188)
	0000 bbbb		0% - 100%, 0/16 - 16/16, 0/12 - 12/12, 0/32 - 32/32, 0/24 - 24/24
00 24	0ddd dddd	PATTERN Delay4 Level	(0 - 100)
00 25	0ddd dddd	PATTERN Delay4 Pan	(0 - 100) L50 - CENTER - R50
00 26	0000 aaaa	PATTERN Delay5 Delay Time	(0 - 188)
	0000 bbbb		0% - 100%, 0/16 - 16/16, 0/12 - 12/12, 0/32 - 32/32, 0/24 - 24/24
00 28	0ddd dddd	PATTERN Delay5 Level	(0 - 100)
00 29	0ddd dddd	PATTERN Delay5 Pan	(0 - 100) L50 - CENTER - R50
00 2A	0000 aaaa	PATTERN Delay6 Delay Time	(0 - 188)
	0000 bbbb		0% - 100%, 0/16 - 16/16, 0/12 - 12/12, 0/32 - 32/32, 0/24 - 24/24
00 2C	0ddd dddd	PATTERN Delay6 Level	(0 - 100)
00 2D	0ddd dddd	PATTERN Delay6 Pan	(0 - 100) L50 - CENTER - R50
00 2E	0000 aaaa	PATTERN Delay7 Delay Time	(0 - 188)
	0000 bbbb		0% - 100%, 0/16 - 16/16, 0/12 - 12/12, 0/32 - 32/32, 0/24 - 24/24
00 30	0ddd dddd	PATTERN Delay7 Level	(0 - 100)
00 31	0ddd dddd	PATTERN Delay7 Pan	(0 - 100) L50 - CENTER - R50
00 32	0000 aaaa	PATTERN Delay8 Delay Time	(0 - 188)
	0000 bbbb		0% - 100%, 0/16 - 16/16, 0/12 - 12/12, 0/32 - 32/32, 0/24 - 24/24
00 34	0ddd dddd	PATTERN Delay8 Level	(0 - 100)
00 35	0ddd dddd	PATTERN Delay8 Pan	(0 - 100) L50 - CENTER - R50
00 36	0000 aaaa	PATTERN Delay9 Delay Time	(0 - 188)
	0000 bbbb		0% - 100%, 0/16 - 16/16, 0/12 - 12/12, 0/32 - 32/32, 0/24 - 24/24
00 38	0ddd dddd	PATTERN Delay9 Level	(0 - 100)
00 39	0ddd dddd	PATTERN Delay9 Pan	(0 - 100) L50 - CENTER - R50
00 3A	0000 aaaa	PATTERN Delay10 Delay Time	(0 - 188)
	0000 bbbb		0% - 100%, 0/16 - 16/16, 0/12 - 12/12, 0/32 - 32/32, 0/24 - 24/24

	00 3C	Oddd dddd	PATTERN Delay10 Level	(0 - 100)
	00 3D	Oddd dddd	PATTERN Delay10 Pan	(0 - 100) L50 - CENTER - R50
	00 3E	0000 aaaa	PATTERN Delay11 Delay Time	(0 - 188)
				0% - 100%, 0/16 - 16/16, 0/12 - 12/12, 0/32 - 32/32, 0/24 - 24/24
		0000 bbbb		
	00 40	Oddd dddd	PATTERN Delay11 Level	(0 - 100)
	00 41	Oddd dddd	PATTERN Delay11 Pan	(0 - 100) L50 - CENTER - R50
	00 42	0000 aaaa	PATTERN Delay12 Delay Time	(0 - 188)
				0% - 100%, 0/16 - 16/16, 0/12 - 12/12, 0/32 - 32/32, 0/24 - 24/24
		0000 bbbb		
	00 44	Oddd dddd	PATTERN Delay12 Level	(0 - 100)
	00 45	Oddd dddd	PATTERN Delay12 Pan	(0 - 100) L50 - CENTER - R50
	00 46	0000 aaaa	PATTERN Delay13 Delay Time	(0 - 188)
				0% - 100%, 0/16 - 16/16, 0/12 - 12/12, 0/32 - 32/32, 0/24 - 24/24
		0000 bbbb		
	00 48	Oddd dddd	PATTERN Delay13 Level	(0 - 100)
	00 49	Oddd dddd	PATTERN Delay13 Pan	(0 - 100) L50 - CENTER - R50
	00 4A	0000 aaaa	PATTERN Delay14 Delay Time	(0 - 188)
				0% - 100%, 0/16 - 16/16, 0/12 - 12/12, 0/32 - 32/32, 0/24 - 24/24
		0000 bbbb		
	00 4C	Oddd dddd	PATTERN Delay14 Level	(0 - 100)
	00 4D	Oddd dddd	PATTERN Delay14 Pan	(0 - 100) L50 - CENTER - R50
	00 4E	0000 aaaa	PATTERN Delay15 Delay Time	(0 - 188)
				0% - 100%, 0/16 - 16/16, 0/12 - 12/12, 0/32 - 32/32, 0/24 - 24/24
		0000 bbbb		
	00 50	Oddd dddd	PATTERN Delay15 Level	(0 - 100)
	00 51	Oddd dddd	PATTERN Delay15 Pan	(0 - 100) L50 - CENTER - R50
	00 52	0000 aaaa	PATTERN Delay16 Delay Time	(0 - 188)
				0% - 100%, 0/16 - 16/16, 0/12 - 12/12, 0/32 - 32/32, 0/24 - 24/24
		0000 bbbb		
	00 54	Oddd dddd	PATTERN Delay16 Level	(0 - 100)
	00 55	Oddd dddd	PATTERN Delay16 Pan	(0 - 100) L50 - CENTER - R50
	00 56	0000 dddd	PATTERN NOTE	(0 - 12) *1
				16th, 8th triplet, dotted 16th, 8th, quarter triplet, dotted 8th, quarter, 2nd triplet, dotted quarter, half, whole triplet, dotted half, whole
	00 57	0000 000d	DUAL Mode	(0 - 1) SERIES, PARALLEL
	00 58	0000 00dd	DUAL Type	(0 - 2) STANDARD, ANALOG, TAPE
	00 59	Oddd dddd	DUAL D1 Effect Level	(0 - 100)
	00 5A	0000 000d	DUAL Link Switch	(0 - 1) OFF, ON
	00 5B	0000 000a	DUAL D2 Time (LINK=OFF)	(1 - 5000)
		0000 bbbb		
		0000 cccc		
		0000 dddd		
	00 5F	Oddd dddd	DUAL D2 Time (LINK=ON)	(1 - 100) 1% - 100%
	00 60	Oddd dddd	DUAL D2 Feedback (LINK=OFF)	(0 - 100)
	00 61	Oddd dddd	DUAL D2 Feedback (LINK=ON)	(0 - 100) 0% - 100%
	00 62	Oddd dddd	DUAL D2 Effect Level	(0 - 100)
	00 63	0000 00dd	VINTAGE DIGITAL Type	(0 - 2) SDE-2000, SDE-3000, DD-2
	00 64	0000 000d	VINTAGE DIGITAL Filter Switch	(0 - 1) OFF, ON
	00 65	0000 000d	VINTAGE DIGITAL TIME x 2 Switch	(0 - 1) OFF, ON
	00 66	0000 000d	TAPE Type	(0 - 1) RE-201, EchoP
	00 67	0000 00dd	ANALOG BBD Stage	(0 - 2) 4096, 4096x2, 4096x4
	00 68	0000 000d	VINTAGE DIGITAL Delay Phase	(0 - 1) NOR, INV
	00 69	0000 000d	VINTAGE DIGITAL Feedback Phase	(0 - 1) NOR, INV
	00 6A	0000 0ddd	TAPE Head	(0 - 6) 1, 2, 3, 1+2, 1+3, 2+3, 1+2+3

 *1 This is used when "MODE" is set to PATTERN.

Function ...		Transmitted	Recognized	Remarks
Basic Channel	Default	1-16, OFF	1-16, OFF	Memorized
	Changed	1-16, OFF	1-16, OFF	
Mode	Default	Mode 3	Mode 3	
	Messages	x	x	
	Altered	*****	x	
Note Number:		x	x	
	True Voice	*****	*****	
Velocity	Note ON	x	x	
	Note OFF	x	x	
After Touch	Key's	x	x	
	Ch's	x	x	
Pitch Bend		o	*1 o	*2
Control Change	0	o (0 - 2)	o (0 - 2)	Bank Select (MSB)
	32	o (always 0)	*5 o	Bank Select (LSB)
	1 - 31	o	*3 o	*4
	64 - 95	o	*3 o	*4
Prog Change		o 0-127	o 0-127	
	:True Number	*****	0-127	Program Number 1-128
System Exclusive		o	o	
System Common	:Song Pos	x	x	
	:Song Sel	x	x	
	:Tune	x	x	
System Real Time	:Clock	o	o	
	:Start	x	x	
	:Continue	x	x	
	:Stop	x	x	
Aux Message	:All sound off	x	x	
	:Reset All Controller	x	x	
	:Local ON/OFF	x	x	
	:All Notes OFF	x	x	
Notes	:Active Sense	o	o	
	:Reset	x	x	
Notes		*1 Transmitted when "MIDI: TIME CONTROL" = ON *2 Recognized when "MIDI: TIME CONTROL" = ON *3 Transmitted with the CC# set by MIDI CC# parameter *4 Recognized with the CC# set by MIDI CC# parameter# or ASSIGN SRC *5 Transmitted when "MIDI: BANK SEL OUT" = M+L		

Mode 1 : OMNI ON, POLY

Mode 2 : OMNI ON, MONO

o : Yes

Mode 3 : OMNI OFF, POLY

Mode 4 : OMNI OFF, MONO

x : No