AE-30/AE-20 MIDI Implementation
Model : AE-30/AE-20
Date : Jan 1, 2022
Version : 2.01

1. Data Reception

■ Channel Voice Messages

● Note Off

Status	2nd byte	3rd byte
8nH	kkH	vvH
9nH	kkH	00H

n = MIDI channel number: 0H - FH (ch.1 - ch.16)
kk = Note number: 00H - 7FH (0 - 127)
vv = Note off velocity: 00H - 7FH (0 - 127)

● 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)

● Control Change
* If you select a controller number that corresponds to an MFX Src 1-4 parameter, the respective effect is applied according to the setting.

○ Bank Select (Controller number 0, 32)

Status	2nd byte	3rd byte
BnH	00H	mmH
BnH	20H	llH

n = MIDI channel number: 0H - FH (ch.1 - ch.16)
mm, ll = Bank number: 00 00H - 7F 7FH (bank.1 - bank.16384)

The Scenes corresponding to each Bank Select are as follows.

BANK SELECT MSB	BANK SELECT LSB	PROGRAM NUMBER	CATEGORY
085	000	001 - 050	U01 User Bank 01
	:		:
085	011	001 - 050	U12 User Bank 12
085	064	001 -	P01 SYNTH HARD LEAD
085	065	001 -	P02 SYNTH SOFT LEAD
085	066	001 -	P03 SYNTH PAD/STRINGS
085	067	001 -	P04 SYNTH BRASS/BASS
085	068	001 -	P05 WOODWINDS
085	069	001 -	P06 BRASSWINDS
085	070	001 -	P07 STRINGS
085	071	001 -	P08 ETHNIC
085	072	001 -	P09 KEYBOARD
085	073	001 -	P10 GUITAR/BASS
085	074	001 -	P11 VOX/CHOIR
085	075	001 -	P12 PERCUSSION

The Tones corresponding to each Bank Select are as follows.

BANK SELECT MSB	BANK SELECT LSB	PROGRAM NUMBER	GROUP
071	008	001 - 128	User Tone
	:		:
071	011	001 - 128	User Tone
071	072	001 -	ZEN-Core PR-A
071	073	001 -	ZEN-Core PR-B
071	074	001 -	ZEN-Core PR-C
089	066	001 -	SupperNATURAL Acoustic
070	066	001 -	Drum Kit

* Tone can't be changed by receiving Control Change and Program Change.

○ Modulation (Controller number 1)

Status	2nd byte	3rd byte
BnH	01H	vvH

n = MIDI channel number: 0H - FH (ch.1 - ch.16)
vv = Modulation depth: 00H - 7FH (0 - 127)

○ Breath Type (Controller number 2)

Status	2nd byte	3rd byte
BnH	02H	vvH

n = MIDI channel number: 0H - FH (ch.1 - ch.16)
vv = Modulation depth: 00H - 7FH (0 - 127)

○ Portamento Time (Controller number 5)

Status	2nd byte	3rd byte
BnH	05H	vvH

n = MIDI channel number: 0H - FH (ch.1 - ch.16)
vv = Portamento Time: 00H - 7FH (0 - 127)
* The Portamento Time parameter (SCENE/PART/CONTROL) will change.

○ Data Entry (Controller number 6, 38)

Status	2nd byte	3rd byte
BnH	06H	mmH
BnH	26H	llH

n = MIDI channel number: 0H - FH (ch.1 - ch.16)
mm, ll = the value of the parameter specified by RPN/NRPN
mm = MSB, ll = LSB

○ Volume (Controller number 7)

Status	2nd byte	3rd byte
BnH	07H	vvH

n = MIDI channel number: 0H - FH (ch.1 - ch.16)
vv = Volume: 00H - 7FH (0 - 127)
* Not received when the Rx Volume parameter (SCENE PART EDIT: MIDI) is OFF.
* The Part Level parameter (SCENE/PART/OUTPUT) will change.

○ Panpot (Controller number 10)

Status	2nd byte	3rd byte
BnH	0AH	vvH

n = MIDI channel number: 0H - FH (ch.1 - ch.16)
vv = Panpot: 00H - 40H - 7FH (Left - Center - Right)
* The Part Pan parameter (SCENE/PART/OUTPUT) will change.

○ Expression (Controller number 11)

Status	2nd byte	3rd byte
BnH	0BH	vvH

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

○ Hold 1 (Controller number 64)

Status	2nd byte	3rd byte
BnH	40H	vvH

n = MIDI channel number: 0H - FH (ch.1 - ch.16)
vv = Control value: 00H - 7FH (0 - 127)
0-63 = OFF, 64-127 = ON

○ Portamento (Controller number 65)

Status	2nd byte	3rd byte
BnH	41H	vvH

n = MIDI channel number: 0H - FH (ch.1 - ch.16)
vv = Control value: 00H - 7FH (0 - 127)
0-63 = OFF, 64-127 = ON
* The Portamento Switch parameter (SCENE/PART/CONTROL) will change.

○ Sostenuto (Controller number 66)

Status	2nd byte	3rd byte
BnH	42H	vvH

n = MIDI channel number: 0H - FH (ch.1 - ch.16)
vv = Control value: 00H - 7FH (0 - 127)
0-63 = OFF, 64-127 = ON
○ Legato Foot Switch (Controller number 68)

Status	2nd byte	3rd byte
BnH	44H	vvH

n = MIDI channel number: 0H - FH (ch.1 - ch.16)
vv = Control value: 00H - 7FH (0 - 127)
0-63 = OFF, 64-127 = ON
* The Legato Switch parameter (SCENE/PART/CONTROL) will change.

○ Resonance (Controller number 71)

Status	2nd byte	3rd byte
BnH	47H	vvH

n = MIDI channel number: 0H - FH (ch.1 - 16)
vv= Resonance value (relative change): 00H - 40H - 7FH (-64 - 0 - +63)
* The Resonance parameter (SCENE/PART/OFFSET) will change.

○ Release Time (Controller number 72)

Status	2nd byte	3rd byte
BnH	48H	vvH

n = MIDI channel number: 0H - FH (ch.1 - 16)
vv = Release Time value (relative change): 00H - 40H - 7FH (-64 - 0 - +63)
* The Release Time parameter (SCENE/PART/OFFSET) will change.

○ Attack time (Controller number 73)

Status	2nd byte	3rd byte
BnH	49H	vvH

n = MIDI channel number: 0H - FH (ch.1 - 16)
vv = Attack time value (relative change): 00H - 40H - 7FH (-64 - 0 - +63)
* The Attack Time parameter (SCENE/PART/OFFSET) will change.

○ Cutoff (Controller number 74)

Status	2nd byte	3rd byte
BnH	4AH	vvH

n = MIDI channel number: 0H - FH (ch.1 - 16)
vv = Cutoff value (relative change): 00H - 40H - 7FH (-64 - 0 - +63)
* The Cutoff parameter (SCENE/PART/OFFSET) will change.

○ Decay Time (Controller number 75)

Status	2nd byte	3rd byte
BnH	4BH	vvH

n = MIDI channel number: 0H - FH (ch.1 - 16)
vv = Decay Time value (relative change): 00H - 40H - 7FH (-64 - 0 - +63)
* The Decay Time parameter (SCENE/PART/OFFSET) will change.

○ Vibrato Rate (Controller number 76)

Status	2nd byte	3rd byte
BnH	4CH	vvH

n = MIDI channel number: 0H - FH (ch.1 - 16)
vv = Vibrato Rate value (relative change): 00H - 40H - 7FH (-64 - 0 - +63)
* The Vibrato Rate parameter (SCENE/PART/OFFSET) will change.

○ Vibrato Depth (Controller number 77)

Status	2nd byte	3rd byte
BnH	4DH	vvH

n = MIDI channel number: 0H - FH (ch.1 - 16)
vv = Vibrato Depth Value (relative change): 00H - 40H - 7FH (-64 - 0 - +63)
* The Vibrato Depth parameter (SCENE/PART/OFFSET) will change.

○ Vibrato Delay (Controller number 78)

Status	2nd byte	3rd byte
BnH	4EH	vvH

n = MIDI channel number: 0H - FH (ch.1 - 16)
vv = Vibrato Delay value (relative change): 00H - 40H - 7FH (-64 - 0 - +63)
* The Vibrato Delay parameter (SCENE/PART/OFFSET) will change.

○ Portamento control (Controller number 84)

Status	2nd byte	3rd byte
BnH	54H	kkH

n = MIDI channel number: 0H - FH (ch.1 - ch.16)
kk = source note number: 00H - 7FH (0 - 127)
* A Note-on received immediately after a Portamento Control message will change continuously in pitch, starting from the pitch of the Source Note Number.
* If a voice is already sounding for a note number identical to the Source Note Number, this voice will continue sounding (i.e., legato) and will, when the next Note-on is received, smoothly change to the pitch of that Note-on.
* The rate of the pitch change caused by Portamento Control is determined by the Portamento Time value.

○ General Purpose Effect 1 (Reverb Send Level)
(Controller number 91)

Status	2nd byte	3rd byte
BnH	5BH	vvH

n = MIDI channel number: 0H - FH (ch.1 - ch.16)
vv = Reverb Send Level: 00H - 7FH (0 - 127)
* The Reverb Send parameter (SCENE/PART/OUTPUT) will change.

○ General Purpose Effect 3 (Chorus Send Level)
(Controller number 93)

Status	2nd byte	3rd byte
BnH	5DH	vvH

n = MIDI channel number: 0H - FH (ch.1 - ch.16)
vv = Chorus Send Level: 00H - 7FH (0 - 127)
* The Chorus Send parameter (SCENE/PART/OUTPUT) will change.

○ RPN MSB/LSB (Controller number 100, 101)

Status	2nd byte	3rd byte
BnH	65H	mmH
BnH	64H	llH

n = MIDI channel number: 0H - FH (ch.1 - ch.16)
mm = upper byte (MSB) of parameter number specified by RPN
ll = lower byte (LSB) of parameter number specified by RPN
<<< RPN >>>
Control Changes include RPN (Registered Parameter Numbers), which are extended.
When using RPNs, first RPN (Controller numbers 100 and 101; they can be sent in any order) should be sent in order to select the parameter, then Data Entry (Controller numbers 6 and 38) should be sent to set the value. Once RPN messages are received, Data Entry messages that is received at the same MIDI channel after that are recognized as changing toward the value of the RPN messages. In order not to make any mistakes, transmitting RPN Null is recommended after setting parameters you need.
This device receives the following RPNs.

RPN	Data entry	
MSB, LSB	MSB, LSB	Notes
00H, 00H	mmH, llH	Pitch Bend Sensitivity mm: 00H - 18H (0 - 24 semitones) ll: ignored (processed as 00H) Up to 2 octave can be specified in semitone steps.

* The Fine Tune parameter (SCENE/PART/PITCH) will change.

00H, 02H	mmH, llH	Channel Coarse Tuning mm: 10H - 40H - 70H (-48 - 0 - +48 semitones) ll: ignored (processed as 00H)

* The Coarse Tune parameter (SCENE/PART/PITCH) will change.

7FH, 7FH	---, ---	RPN null RPN and NRPN will be set as "unspecified." Once this setting has been made, subsequent Parameter values that were previously set will not change. mm, ll: ignored

● 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)

● Channel Pressure

Status	2nd byte
DnH	vvH

n = MIDI channel number: 0H - FH (ch.1 - ch.16)
vv = Channel Pressure: 00H - 7FH (0 - 127)

● Pitch Bend Change

Status	2nd byte	3rd byte
EnH	llH	mmH

n = MIDI channel number: 0H - FH (ch.1 - ch.16)
mm, ll = Pitch Bend value: 00 00H - 40 00H - 7F 7FH (-8192 - 0 - +8191)

■ Channel Mode Messages

● 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 notes currently sounding on the corresponding channel will be turned off.

● Reset All Controllers
(Controller number 121)

Status	2nd byte	3rd byte
BnH	79H	00H

n = MIDI channel number: 0H - FH (ch.1 - ch.16)
* When this message is received, the following controllers will be set to their reset values.

Controller	Reset value
Pitch Bend Change	+/-0 (center)
Polyphonic Key Pressure	0 (off)
Channel Pressure	0 (off)
Modulation	0 (off)
Breath Type	0 (min)
Foot Type	0 (min)
Expression	127 (max) However the controller will be at minimum.
Hold 1	0 (off)
Sostenuto	0 (off)
Soft	0 (off)
RPN	unset; previously set data will not change
NRPN	unset; previously set data will not change

● All Notes Off
(Controller number 123)

Status	2nd byte	3rd byte
BnH	7BH	00H

n = MIDI channel number: 0H - FH (ch.1 - ch.16)
* When All Notes Off is received, all notes on the corresponding channel will be turned off. However, if Hold 1 or Sostenuto is ON, the sound will be continued until these are turned off.

● 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 Notes 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 Notes Off is received. OMNI ON will not be turned on.

● 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 Notes Off is received.
* The Mono/Poly parameter (SCENE/PART/CONTROL) will change.

● 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 Notes Off is received.
* The Mono/Poly parameter (SCENE/PART/CONTROL) will change.

■ System Realtime Message

● Active Sensing

Status
FEH

* When Active Sensing is received, the unit will begin monitoring the intervals of all further messages. While monitoring, if the interval between messages exceeds 420 ms, the same processing will be carried out as when All Sounds Off, All Notes Off and Reset All Controllers are received, and message interval monitoring will be halted.

■ System Exclusive Message

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

F0H:	System Exclusive Message status
ii = ID number:	an ID number (manufacturer ID) to indicate the manufacturer whose Exclusive message this is. 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)

The System Exclusive messages received by this device are the Universal Nonrealtime System Exclusive messages and the Universal Realtime System Exclusive messages and the Data Request (RQ1) messages and the Data Set (DT1) messages.

● 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 (dev: 10H - 1FH, 7FH)
06H	Sub ID#1 (General Information)
01H	Sub ID#2 (Identity Request)
F7H	EOX (End Of Exclusive)

* When this message is received, Identity Reply message will be transmitted.

● 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 7DH.

○ 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, 7DH, 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 (AE-30/AE-20)
00H	model ID #2 (AE-30/AE-20)
00H	model ID #3 (AE-30/AE-20)
7DH	model ID #4 (AE-30/AE-20)
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 fro 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 Parameter Address Map.
* For the checksum, refer to "How to calculate the checksum".

○ Data set 1 (DT1)
This is the message that actually performs data transmission, and is used when you wish to transmit the data.

Status	data byte	Status
F0H	41H, dev, 00H, 00H, 00H, 7DH, 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 (AE-30/AE-20)
00H	model ID #2 (AE-30/AE-20)
00H	model ID #3 (AE-30/AE-20)
7DH	model ID #4 (AE-30/AE-20)
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 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.
* For the checksum, refer to "How to calculate the checksum".

2. Data Transmission

■ Channel Voice Messages

● 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: 00H - 7FH (0 - 127)

● 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)

● Control Change
* By selecting a controller number that corresponds to the setting of parameters of controllers, this unit can transmit any control change message.

○ Bank Select (Controller number 0, 32)

Status	2nd byte	3rd byte
BnH	00H	mmH
BnH	20H	llH

n = MIDI channel number: 0H - FH (ch.1 - ch.16)
mm, ll = Bank number: 00 00H - 7F 7FH (bank.1 - bank.16384)

○ Modulation (Controller number 1)

Status	2nd byte	3rd byte
BnH	01H	vvH

n = MIDI channel number: 0H - FH (ch.1 - ch.16)
vv = Modulation depth: 00H - 7FH (0 - 127)

○ Breath Type (Controller number 2)

Status	2nd byte	3rd byte
BnH	02H	vvH

n = MIDI channel number: 0H - FH (ch.1 - ch.16)
vv = Modulation depth: 00H - 7FH (0 - 127)

○ Portamento Time (Controller number 5)

Status	2nd byte	3rd byte
BnH	05H	vvH

n = MIDI channel number: 0H - FH (ch.1 - ch.16)
vv = Portamento Time: 00H - 7FH (0 - 127)

○ Data Entry (Controller number 6, 38)

Status	2nd byte	3rd byte
BnH	06H	mmH
BnH	26H	llH

n = MIDI channel number: 0H - FH (ch.1 - ch.16)
mm, ll = the value of the parameter specified by RPN/NRPN
mm = MSB, ll = LSB

○ Volume (Controller number 7)

Status	2nd byte	3rd byte
BnH	07H	vvH

n = MIDI channel number: 0H - FH (ch.1 - ch.16)
vv = Volume: 00H - 7FH (0 - 127)

○ Panpot (Controller number 10)

Status	2nd byte	3rd byte
BnH	0AH	vvH

n = MIDI channel number: 0H - FH (ch.1 - ch.16)
vv = Panpot: 00H - 40H - 7FH (Left - Center - Right)
* The Part Pan parameter (SCENE/PART/OUTPUT) will change.

○ Expression (Controller number 11)

Status	2nd byte	3rd byte
BnH	0BH	vvH

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

○ Hold 1 (Controller number 64)

Status	2nd byte	3rd byte
BnH	40H	vvH

n = MIDI channel number: 0H - FH (ch.1 - ch.16)
vv = Control value: 00H - 7FH (0 - 127)
0-63 = OFF, 64-127 = ON

○ Portamento (Controller number 65)

Status	2nd byte	3rd byte
BnH	41H	vvH

n = MIDI channel number: 0H - FH (ch.1 - ch.16)
vv = Control value: 00H - 7FH (0 - 127)
0-63 = OFF, 64-127 = ON

○ Resonance (Controller number 71)

Status	2nd byte	3rd byte
BnH	47H	vvH

n = MIDI channel number: 0H - FH (ch.1 - 16)
vv= Resonance value (relative change): 00H - 40H - 7FH (-64 - 0 - +63)

○ Release Time (Controller number 72)

Status	2nd byte	3rd byte
BnH	48H	vvH

n = MIDI channel number: 0H - FH (ch.1 - 16)
vv = Release Time value (relative change): 00H - 40H - 7FH (-64 - 0 - +63)

○ Attack time (Controller number 73)

Status	2nd byte	3rd byte
BnH	49H	vvH

n = MIDI channel number: 0H - FH (ch.1 - 16)
vv = Attack time value (relative change): 00H - 40H - 7FH (-64 - 0 - +63)

○ Cutoff (Controller number 74)

Status	2nd byte	3rd byte
BnH	4AH	vvH

n = MIDI channel number: 0H - FH (ch.1 - 16)
vv = Cutoff value (relative change): 00H - 40H - 7FH (-64 - 0 - +63)

● Channel Pressure

Status	2nd byte
DnH	vvH

n = MIDI channel number: 0H - FH (ch.1 - ch.16)
vv = Channel Pressure: 00H - 7FH (0 - 127)

● Pitch Bend Change

Status	2nd byte	3rd byte
EnH	llH	mmH

n = MIDI channel number: 0H - FH (ch.1 - ch.16)
mm, ll = Pitch Bend value: 00 00H - 40 00H - 7F 7FH (-8192 - 0 - +8191)

■ System Realtime Message

● Active Sensing

Status
FEH

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

■ System Exclusive Message
Universal Non-realtime System Exclusive Message and Data Set 1 (DT1) are the only System Exclusive messages transmitted by this unit.

● Universal Non-realtime System Exclusive Messages

○ Identity Reply Message

Status	data byte	Status
F0H	7EH, 7F, 06H, 02H, 41H, 7DH, 03H, aaH, 00H, 01H, 01H, 00H, 01H,	F7H

Byte	Explanation
F0H	Exclusive status
7EH	ID number (Universal Non-realtime Message)
dev	Device ID (dev: 10H - 1FH, 7FH)
06H	Sub ID#1 (General Information)
02H	Sub ID#2 (Identity Reply)
41H	ID number (Roland)
7DH 03H	Device family code
aaH 00H	Device family number code (AE-30: 00H, AE-20: 01H)
00H 01H 00H 00H	Software revision level
F7H	EOX (End Of Exclusive)

● Data Transmission
○ Data set 1 (DT1)

Status	data byte	Status
F0H	41H, dev, 00H, 00H, 00H, 7DH, 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 (AE-30/AE-20)
00H	model ID #2 (AE-30/AE-20)
00H	model ID #3 (AE-30/AE-20)
7DH	model ID #4 (AE-30/AE-20)
12H	Command ID (DT1)
aaH	Address MSB: upper byte of the starting address of the data to be sent
bbH	Address: upper middle byte of the starting address of the data to be sent
ccH	Address: ower middle byte of the starting address of the data to be sent
ddH	Address LSB: lower byte of the starting address of the data to be sent.
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 size of data that can be transmitted at one time is fixed fro 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 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 some packets. For example, ABH in hexadecimal notation will be divided to 0AH and 0BH, and is sent/received in this order.

AE-30/AE-20 (ModelID = 00H 00H 00H 7DH)

Start Address	Description	
00 00 00 00	System	[System]
00 10 00 00	Setup	[Setup]
01 00 00 00	Temporary Scene	[Scene]
02 00 00 00	Temporary Tone PCM (1)	[Tone]
02 01 00 00	Temporary Tone PCM (2)	[Tone]
:		
02 03 00 00	Temporary Tone PCM (4)	[Tone]
40 00 00 00	User Scene (001)	[Scene]
40 01 00 00	User Scene (002)	[Scene]
:		
44 57 00 00	User Scene (600)	[Scene]
50 00 00 00	Preset Scene (001)	[Scene]
50 01 00 00	Preset Scene (002)	[Scene]
:		
53 5F 00 00	Preset Scene (480)	[Scene]

* [System]

Offset Address	Description	
00 00 00	System Common	[System Common]
00 02 00	S1 Button Assign	[Assign2]
00 03 00	S2 Button Assign	[Assign2]
00 04 00	Side Key (X) Assign	[Assign2]
00 05 00	Side Key (C1) Assign	[Assign2]
00 06 00	Side Key (C2) Assign	[Assign2]
00 07 00	Side Key (C3) Assign	[Assign2]
00 08 00	Side Key (C4) Assign	[Assign2]
00 09 00	Side Key (C5) Assign	[Assign2]
00 0A 00	Side Key (Tc) Assign	[Assign2]
00 0B 00	Side Key (Ta) Assign	[Assign2]
00 0C 00	Breath Controller Assign	[Assign8]
00 0E 00	Bite Controller (Down) Assign	[Assign4]
00 0F 00	Bite Controller (Up) Assign	[Assign4]
00 10 00	Wheel Controller (Down) Assign	[Assign2]
00 11 00	Wheel Controller (Up) Assign	[Assign2]
00 12 00	Thumb Pad Controller Assign (Only for AE-30)	[Assign4]
00 13 00	Motion Controller Assign (Only for AE-30)	[Assign2]
00 14 00	S1 Button MIDI OUT	[Assign2]
00 15 00	S2 Button MIDI OUT	[Assign2]
00 16 00	Side Key (X) MIDI OUT	[Assign2]
00 17 00	Side Key (C1) MIDI OUT	[Assign2]
00 18 00	Side Key (C2) MIDI OUT	[Assign2]
00 19 00	Side Key (C3) MIDI OUT	[Assign2]
00 1A 00	Side Key (C4) MIDI OUT	[Assign2]
00 1B 00	Side Key (C5) MIDI OUT	[Assign2]
00 1C 00	Side Key (Tc) MIDI OUT	[Assign2]
00 1D 00	Side Key (Ta) MIDI OUT	[Assign2]
00 1E 00	Breath Controller MIDI OUT	[Assign8]
00 20 00	Bite Controller (Down) MIDI OUT	[Assign4]
00 21 00	Bite Controller (Up) MIDI OUT	[Assign4]
00 22 00	Wheel Controller (Down) MIDI OUT	[Assign2]
00 23 00	Wheel Controller (Up) MIDI OUT	[Assign2]
00 24 00	Thumb Pad Controller MIDI OUT (Only for AE-30)	[Assign4]
00 25 00	Motion Controller MIDI OUT (Only for AE-30)	[Assign2]
00 40 00	Fingering Setting (01)	[Fingering]
00 40 20	Fingering Setting (02)	[Fingering]
:		
00 48 60	Fingering Setting (36)	[Fingering]
00 60 00	Favorite (01)	[Favorite]
00 60 04	Favorite (02)	[Favorite]
:		
00 60 2C	Favorite (12)	[Favorite]

* [Scene]

Offset Address	Description	
00 00 00	Scene Common	[Scene Common]
00 01 00	S1 Button Assign	[Assign2]
00 02 00	S2 Button Assign	[Assign2]
00 03 00	Side Key (X) Assign	[Assign2]
00 04 00	Side Key (C1) Assign	[Assign2]
00 05 00	Side Key (C2) Assign	[Assign2]
00 06 00	Side Key (C3) Assign	[Assign2]
00 07 00	Side Key (C4) Assign	[Assign2]
00 08 00	Side Key (C5) Assign	[Assign2]
00 09 00	Side Key (Tc) Assign	[Assign2]
00 0A 00	Side Key (Ta) Assign	[Assign2]
00 0B 00	Breath Controller Assign	[Assign8]
00 0D 00	Bite Controller (Down) Assign	[Assign4]
00 0E 00	Bite Controller (Up) Assign	[Assign4]
00 0F 00	Wheel Controller (Down) Assign	[Assign2]
00 10 00	Wheel Controller (Up) Assign	[Assign2]
00 11 00	Thumb Pad Controller Assign (Only for AE-30)	[Assign4]
00 12 00	Motion Controller Assign (Only for AE-30)	[Assign2]
00 13 00	S1 Button MIDI OUT	[Assign2]
00 14 00	S2 Button MIDI OUT	[Assign2]
00 15 00	Side Key (X) MIDI OUT	[Assign2]
00 16 00	Side Key (C1) MIDI OUT	[Assign2]
00 17 00	Side Key (C2) MIDI OUT	[Assign2]
00 18 00	Side Key (C3) MIDI OUT	[Assign2]
00 19 00	Side Key (C4) MIDI OUT	[Assign2]
00 1A 00	Side Key (C5) MIDI OUT	[Assign2]
00 1B 00	Side Key (Tc) MIDI OUT	[Assign2]
00 1C 00	Side Key (Ta) MIDI OUT	[Assign2]
00 1D 00	Breath Controller MIDI OUT	[Assign8]
00 1F 00	Bite Controller (Down) MIDI OUT	[Assign4]
00 20 00	Bite Controller (Up) MIDI OUT	[Assign4]
00 21 00	Wheel Controller (Down) MIDI OUT	[Assign2]
00 22 00	Wheel Controller (Up) MIDI OUT	[Assign2]
00 23 00	Thumb Pad Controller MIDI OUT (Only for AE-30)	[Assign4]
00 24 00	Motion Controller MIDI OUT (Only for AE-30)	[Assign2]
00 30 00	Scene Tone (01)	[Scene Part]
00 31 00	Scene Tone (02)	[Scene Part]
:		
00 34 00	Scene Tone (05)	[Scene Part]
00 40 00	Scene EQ (01)	[Part EQ]
00 41 00	Scene EQ (02)	[Part EQ]
:		
00 44 00	Scene EQ (05)	[Part EQ]
00 50 00	Scene MFX (01)	[MFX]
00 52 00	Scene MFX (02)	[MFX]
:		
00 58 00	Scene MFX (05)	[MFX]
00 60 00	MIDI Control Mode (01)	[MIDI Control]
00 61 00	MIDI Control Mode (02)	[MIDI Control]
00 70 00	Scene Chorus	[Chorus/Delay]
00 71 00	Scene Delay	[Chorus/Delay]
00 72 00	Scene Reverb	[Reverb]
00 73 00	Scene IFX	[MFX]

* [Tone]

Offset Address	Description	
00 00 00	common	[Tone Common]
00 01 00	mfx	[MFX]
00 10 00	pmt	[Tone PartialMixTable]
00 20 00	ptl 1	[Tone Partial]
00 21 00	ptl 2	[Tone Partial]
:		
00 23 00	ptl 4	[Tone Partial]

00 24 00	ptlPenv 1	[Partial Pitch Env]
00 25 00	ptlPenv 2	[Partial Pitch Env]
:		
00 27 00	ptlPenv 4	[Partial Pitch Env]
00 28 00	ptlFenv 1	[Partial Filter Env]
00 29 00	ptlFenv 2	[Partial Filter Env]
:		
00 2B 00	ptlFenv 4	[Partial Filter Env]
00 2C 00	ptlAenv 1	[Partial Amp Env]
00 2D 00	ptlAenv 2	[Partial Amp Env]
:		
00 2F 00	ptlAenv 4	[Partial Amp Env]
00 30 00	ptlLfo 1	[Partial LFO]
00 32 00	ptlLfo 2	[Partial LFO]
:		
00 36 00	ptlLfo 4	[Partial LFO]
00 38 00	ptlEq 1	[Partial EQ]
00 39 00	ptlEq 2	[Partial EQ]
:		
00 3B 00	ptlEq 4	[Partial EQ]
00 3C 00	synCom	[Tone Synth Common]
00 3D 00	synPmt	[Tone Synth PartialMixTable]
00 3E 00	synPtl 1	[Tone Synth Partial]
00 3F 00	synPtl 2	[Tone Synth Partial]
:		
00 41 00	synPtl 4	[Tone Synth Partial]

* [Setup]

	Offset Address		Description	
	00 00	0aaa aaaa	Scene BS MSB (CC# 0)	(0 - 127)
	00 01	0aaa aaaa	Scene BS LSB (CC# 32)	(0 - 127)
	00 02	0aaa aaaa	Scene PC (PC)	(0 - 127)
	00 03	0000 aaaa	Favorite Number	(0 - 11)
	00 04	0000 0000	(reserved)	(0 - 0)
	00 05	0000 0000	(reserved)	(0 - 0)
	00 06	0000 0aaa	Battery Level	(0 - 4)
	00 07	0000 000a	Transmit Edit Data	(0 - 1) Off, On
#	00 08	0000 aaaa		
	00 09	0000 bbbb		
	00 0A	0000 cccc		
	00 0B	0000 dddd		
	00 0C	0000 eeee		
	00 0D	0000 ffff		
	00 0E	0000 gggg		
	00 0F	0000 hhhh	Fingering Status	(0 - 268435455)
	00 10	0000 000a	Fingering Status Switch	(0 - 1)
	00 11	0000 000a	Drone Switch	(0 - 1) OFF, ON
	00 12	0000 000a	Harmony Sw (CC#28)	(0 - 1) Off, On
	00 13	0000 0000	(reserved)	(0 - 0)
	00 14	0000 0000	(reserved)	(0 - 0)
	00 15	0000 0000	(reserved)	(0 - 0)
	00 16	0000 0000	(reserved)	(0 - 0)
	00 17	0000 0000	(reserved)	(0 - 0)
	00 18	0000 0000	(reserved)	(0 - 0)
	00 19	0000 0000	(reserved)	(0 - 0)
	00 1A	0000 0000	(reserved)	(0 - 0)
	00 1B	0000 0000	(reserved)	(0 - 0)
	00 1C	0000 0000	(reserved)	(0 - 0)
	00 1D	0000 0000	(reserved)	(0 - 0)
	00 1E	0000 0000	(reserved)	(0 - 0)
	00 1F	0000 0000	(reserved)	(0 - 0)
	00 20	0000 0000	(reserved)	(0 - 0)
	00 21	0000 0000	(reserved)	(0 - 0)
	00 22	0000 0000	(reserved)	(0 - 0)
	00 23	0000 0000	(reserved)	(0 - 0)
	00 24	0000 0000	(reserved)	(0 - 0)
	00 25	0000 0000	(reserved)	(0 - 0)
	00 26	0000 0000	(reserved)	(0 - 0)
	00 27	0000 0000	(reserved)	(0 - 0)
	00 28	0000 0000	(reserved)	(0 - 0)
	00 29	0000 0000	(reserved)	(0 - 0)
	00 2A	0000 0000	(reserved)	(0 - 0)
	00 2B	0000 0000	(reserved)	(0 - 0)
	00 2C	0000 0000	(reserved)	(0 - 0)
	00 2D	0000 0000	(reserved)	(0 - 0)
	00 2E	0000 0000	(reserved)	(0 - 0)

00 2F	0000 0000	(reserved)	(0 - 0)
00 30	0000 0000	(reserved)	(0 - 0)
00 31	0000 0000	(reserved)	(0 - 0)
00 32	0000 0000	(reserved)	(0 - 0)
00 33	0000 0000	(reserved)	(0 - 0)
00 34	0000 0000	(reserved)	(0 - 0)
00 35	0000 0000	(reserved)	(0 - 0)
00 36	0000 0000	(reserved)	(0 - 0)
00 37	0000 0000	(reserved)	(0 - 0)
00 38	0000 0000	(reserved)	(0 - 0)
00 39	0000 0000	(reserved)	(0 - 0)
00 3A	0000 0000	(reserved)	(0 - 0)
00 3B	0000 0000	(reserved)	(0 - 0)
00 3C	0000 0000	(reserved)	(0 - 0)
00 3D	0000 0000	(reserved)	(0 - 0)
00 3E	0000 0000	(reserved)	(0 - 0)
00 3F	0000 0000	(reserved)	(0 - 0)
00 40	0000 0000	(reserved)	(0 - 0)
00 41	0000 0000	(reserved)	(0 - 0)
00 42	0000 0000	(reserved)	(0 - 0)
00 43	0000 0000	(reserved)	(0 - 0)
00 44	0000 0000	(reserved)	(0 - 0)
00 45	0000 0000	(reserved)	(0 - 0)
00 46	0000 0000	(reserved)	(0 - 0)
00 47	0000 0000	(reserved)	(0 - 0)
00 48	0000 0000	(reserved)	(0 - 0)
00 49	0000 0000	(reserved)	(0 - 0)
00 4A	0000 0000	(reserved)	(0 - 0)
00 4B	0000 0000	(reserved)	(0 - 0)
00 4C	0000 0000	(reserved)	(0 - 0)
00 4D	0000 0000	(reserved)	(0 - 0)
00 4E	0000 0000	(reserved)	(0 - 0)
00 4F	0000 0000	(reserved)	(0 - 0)
00 50	0000 0000	(reserved)	(0 - 0)
00 51	0000 0000	(reserved)	(0 - 0)
00 52	0000 0000	(reserved)	(0 - 0)
00 53	0000 0000	(reserved)	(0 - 0)
00 54	0000 0000	(reserved)	(0 - 0)
00 55	0000 0000	(reserved)	(0 - 0)
00 56	0000 0000	(reserved)	(0 - 0)
00 57	0000 0000	(reserved)	(0 - 0)
00 58	0000 0000	(reserved)	(0 - 0)
00 59	0000 0000	(reserved)	(0 - 0)
00 5A	0000 0000	(reserved)	(0 - 0)
00 5B	0000 0000	(reserved)	(0 - 0)
00 5C	0000 0000	(reserved)	(0 - 0)
00 5D	0000 0000	(reserved)	(0 - 0)
00 5E	0000 0000	(reserved)	(0 - 0)
00 5F	0000 0000	(reserved)	(0 - 0)
00 60	0000 0000	(reserved)	(0 - 0)
00 61	0000 0000	(reserved)	(0 - 0)
00 62	0000 0000	(reserved)	(0 - 0)
00 63	0000 0000	(reserved)	(0 - 0)
00 64	0000 0000	(reserved)	(0 - 0)
00 65	0000 0000	(reserved)	(0 - 0)
00 66	0000 0000	(reserved)	(0 - 0)
00 67	0000 0000	(reserved)	(0 - 0)
00 68	0000 0000	(reserved)	(0 - 0)
00 69	0000 0000	(reserved)	(0 - 0)
00 6A	0000 0000	(reserved)	(0 - 0)
00 6B	0000 0000	(reserved)	(0 - 0)
00 6C	0000 0000	(reserved)	(0 - 0)
00 6D	0000 0000	(reserved)	(0 - 0)
00 6E	0000 0000	(reserved)	(0 - 0)
00 6F	0000 0000	(reserved)	(0 - 0)
00 70	0000 0000	(reserved)	(0 - 0)
00 71	0000 0000	(reserved)	(0 - 0)
00 72	0000 0000	(reserved)	(0 - 0)
00 73	0000 0000	(reserved)	(0 - 0)
00 74	0000 0000	(reserved)	(0 - 0)
00 75	0000 0000	(reserved)	(0 - 0)
00 76	0000 0000	(reserved)	(0 - 0)
00 77	0000 0000	(reserved)	(0 - 0)
00 78	0000 0000	(reserved)	(0 - 0)
00 79	0000 0000	(reserved)	(0 - 0)
00 00 00 7A	Total Size		

* [System Common]

Offset Address		Description	
00 00	0000 0aaa	Display Contrast	(1 - 5)
00 01	0000 0aaa	Display Off Time Always On, 3sec, 10sec, 30sec, 1min, 2min, 3min	(0 - 6)
00 02	0000 00aa	Auto Off Always On, 5min, 30min	(0 - 2)
00 03	0000 00aa	Category Knob Mode Category, User, Favorite	(0 - 2)
00 04	0000 0000	(reserved)	(0 - 0)
00 05	0000 000a	MIDI Control Sound Off, On	(0 - 1)
00 06	0000 000a	Transpose Mode System, Scene	(0 - 1)

	00 07	0000 0000	(reserved)	(0 - 0)
#	00 08	0000 aaaa		
	00 09	0000 bbbb		
	00 0A	0000 cccc		
	00 0B	0000 dddd	Master Tune	(24 - 2024) -1000 - 1000
	00 0C	0aaa aaaa	Master Key Shift	(40 - 88) -24 - 24
	00 0D	0000 0000	(reserved)	(0 - 0)
#	00 0E	0000 aaaa		
	00 0F	0000 bbbb	Output Volume	(32 - 140) -96 - 12[dB]
	00 10	0000 00aa	Speaker Setting	(0 - 2) Off, On, Auto
#	00 11	0000 aaaa		
	00 12	0000 bbbb	Speaker Volume	(32 - 140) -96 - 12[dB]
	00 13	0000 0000	(reserved)	(0 - 0)
	00 14	0000 000a	Output Mode	(0 - 1) Stereo, Mono
	00 15	0000 0000	(reserved)	(0 - 0)
	00 16	0000 0000	(reserved)	(0 - 0)
	00 17	0000 0000	(reserved)	(0 - 0)
	00 18	0000 0000	(reserved)	(0 - 0)
	00 19	0000 0000	(reserved)	(0 - 0)
	00 1A	0000 0000	(reserved)	(0 - 0)
	00 1B	0000 0000	(reserved)	(0 - 0)
	00 1C	0000 0000	(reserved)	(0 - 0)
	00 1D	0000 0000	(reserved)	(0 - 0)
	00 1E	0000 0000	(reserved)	(0 - 0)
	00 1F	0000 0000	(reserved)	(0 - 0)
	00 20	0000 0000	(reserved)	(0 - 0)
	00 21	0000 0000	(reserved)	(0 - 0) Off, On
	00 22	0aaa aaaa	MIDI OUT Velocity	(0 - 127) Tongued,Fixed 1,Fixed 2,Fixed 3,Fixed 4,Fixed 5, Fixed 6,Fixed 7,Fixed 8,Fixed 9,Fixed 10,Fixed 11, Fixed 12,Fixed 13,Fixed 14,Fixed 15,Fixed 16, Fixed 17,Fixed 18,Fixed 19,Fixed 20,Fixed 21, Fixed 22,Fixed 23,Fixed 24,Fixed 25,Fixed 26, Fixed 27,Fixed 28,Fixed 29,Fixed 30,Fixed 31, Fixed 32,Fixed 33,Fixed 34,Fixed 35,Fixed 36, Fixed 37,Fixed 38,Fixed 39,Fixed 40,Fixed 41, Fixed 42,Fixed 43,Fixed 44,Fixed 45,Fixed 46, Fixed 47,Fixed 48,Fixed 49,Fixed 50,Fixed 51, Fixed 52,Fixed 53,Fixed 54,Fixed 55,Fixed 56, Fixed 57,Fixed 58,Fixed 59,Fixed 60,Fixed 61, Fixed 62,Fixed 63,Fixed 64,Fixed 65,Fixed 66, Fixed 67,Fixed 68,Fixed 69,Fixed 70,Fixed 71, Fixed 72,Fixed 73,Fixed 74,Fixed 75,Fixed 76, Fixed 77,Fixed 78,Fixed 79,Fixed 80,Fixed 81, Fixed 82,Fixed 83,Fixed 84,Fixed 85,Fixed 86, Fixed 87,Fixed 88,Fixed 89,Fixed 90,Fixed 91, Fixed 92,Fixed 93,Fixed 94,Fixed 95,Fixed 96, Fixed 97,Fixed 98,Fixed 99,Fixed 100,Fixed 101, Fixed 102,Fixed 103,Fixed 104,Fixed 105,Fixed 106, Fixed 107,Fixed 108,Fixed 109,Fixed 110,Fixed 111, Fixed 112,Fixed 113,Fixed 114,Fixed 115,Fixed 116, Fixed 117,Fixed 118,Fixed 119,Fixed 120,Fixed 121, Fixed 122,Fixed 123,Fixed 124,Fixed 125,Fixed 126, Fixed 127
	00 23	0000 0000	(reserved)	(0 - 0)
	00 24	0000 0000	(reserved)	(0 - 0)
	00 25	0000 0000	(reserved)	(0 - 0)
	00 26	0000 0000	(reserved)	(0 - 0)
	00 27	0000 0000	(reserved)	(0 - 0)
	00 28	0000 0000	(reserved)	(0 - 0)
	00 29	0000 0000	(reserved)	(0 - 0)
	00 2A	0000 0000	(reserved)	(0 - 0)
	00 2B	0000 0000	(reserved)	(0 - 0)
	00 2C	0000 0000	(reserved)	(0 - 0)
	00 2D	0000 0000	(reserved)	(0 - 0)
	00 2E	0000 0000	(reserved)	(0 - 0)
	00 2F	0000 0000	(reserved)	(0 - 0)
	00 30	0000 0000	(reserved)	(0 - 0)
	00 31	0000 0000	(reserved)	(0 - 0)
	00 32	0000 0000	(reserved)	(0 - 0)
	00 33	0000 0000	(reserved)	(0 - 0)
	00 34	0000 0000	(reserved)	(0 - 0)
	00 35	0000 0000	(reserved)	(0 - 0)
	00 36	0000 0000	(reserved)	(0 - 0)
	00 37	0000 0000	(reserved)	(0 - 0)
	00 38	0000 0000	(reserved)	(0 - 0)
	00 39	0000 0aaa	Fingering Mode	(0 - 5) Sax, Recorder, E-Wind, Trumpet, Left Hand, Right Hand, Flute, Clarinet
	00 3A	0000 aaaa	Key Delay	(0 - 10)
	00 3B	0000 00aa	Octave Key	(0 - 3) Oct2, Oct3, Sax1, Sax2
	00 3C	0000 0000	(reserved)	(0 - 0)
	00 3D	00aa aaaa	Breath Adjust	(0 - 49) 1 - 50

00 3E	0000 aaaa	Breath Curve (0 - 10) L5, L4, L3, L2, L1, M, H1, H2, H3, H4, H5
00 3F	0000 0000	(reserved) (0 - 0)
00 40	0000 0000	(reserved) (0 - 0)
00 41	0000 000a	Bite Control Mode (0 - 2) Sax, E-Wind, Off
00 42	0000 0aaa	E-WIND Bite Sense (0 - 9) 1 - 10
00 43	0000 aaaa	Thumb Pad Sense (0 - 9) (Only for AE-30) 1 - 10
00 44	0000 0000	(reserved) (0 - 0)
00 45	0000 000a	Control Source Select (0 - 1) System, Scene
00 46	0000 0000	(reserved) (0 - 0)
00 47	0000 0000	(reserved) (0 - 0)
00 48	0000 0000	(reserved) (0 - 0)
00 49	0aaa aaaa	System Control Source(1) (0 - 96) OFF,CC 01,CC 02,CC 03,CC 04,CC 05,CC 06,CC 07, CC 08,CC 09,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 33,CC 34,CC 35,CC 36,CC 37,CC 38,CC 39,CC 40, CC 41,CC 42,CC 43,CC 44,CC 45,CC 46,CC 47,CC 48, CC 49,CC 50,CC 51,CC 52,CC 53,CC 54,CC 55,CC 56, CC 57,CC 58,CC 59,CC 60,CC 61,CC 62,CC 63,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, Bend, After Touch
00 4A	0aaa aaaa	System Control Source(2) (0 - 96) OFF,CC 01,CC 02,CC 03,CC 04,CC 05,CC 06,CC 07, CC 08,CC 09,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 33,CC 34,CC 35,CC 36,CC 37,CC 38,CC 39,CC 40, CC 41,CC 42,CC 43,CC 44,CC 45,CC 46,CC 47,CC 48, CC 49,CC 50,CC 51,CC 52,CC 53,CC 54,CC 55,CC 56, CC 57,CC 58,CC 59,CC 60,CC 61,CC 62,CC 63,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, Bend, After Touch
00 4B	0aaa aaaa	System Control Source(3) (0 - 96) OFF,CC 01,CC 02,CC 03,CC 04,CC 05,CC 06,CC 07, CC 08,CC 09,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 33,CC 34,CC 35,CC 36,CC 37,CC 38,CC 39,CC 40, CC 41,CC 42,CC 43,CC 44,CC 45,CC 46,CC 47,CC 48, CC 49,CC 50,CC 51,CC 52,CC 53,CC 54,CC 55,CC 56, CC 57,CC 58,CC 59,CC 60,CC 61,CC 62,CC 63,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, Bend, After Touch
00 4C	0aaa aaaa	System Control Source(4) (0 - 96) OFF,CC 01,CC 02,CC 03,CC 04,CC 05,CC 06,CC 07, CC 08,CC 09,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 33,CC 34,CC 35,CC 36,CC 37,CC 38,CC 39,CC 40, CC 41,CC 42,CC 43,CC 44,CC 45,CC 46,CC 47,CC 48, CC 49,CC 50,CC 51,CC 52,CC 53,CC 54,CC 55,CC 56, CC 57,CC 58,CC 59,CC 60,CC 61,CC 62,CC 63,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, Bend, After Touch
00 4D	000a aaaa	Harmony1 Assign (0 - 24) OFF,H-8,H-7,H-7-,H-6,H-6-,H-5,H-4+,H-4, H-3,H-3-,H-2,H-2-,H+2-,H+2,H+3-,H+3, H+4,H+4+,H+5,H+6-,H+6,H+7-,H+7,H+8
00 4E	000a aaaa	Harmony2 Assign (0 - 24) OFF,H-8,H-7,H-7-,H-6,H-6-,H-5,H-4+,H-4, H-3,H-3-,H-2,H-2-,H+2-,H+2,H+3-,H+3, H+4,H+4+,H+5,H+6-,H+6,H+7-,H+7,H+8
00 4F	000a aaaa	Harmony3 Assign (0 - 24) OFF,H-8,H-7,H-7-,H-6,H-6-,H-5,H-4+,H-4, H-3,H-3-,H-2,H-2-,H+2-,H+2,H+3-,H+3, H+4,H+4+,H+5,H+6-,H+6,H+7-,H+7,H+8
00 50	000a aaaa	Harmony4 Assign (0 - 24) OFF,H-8,H-7,H-7-,H-6,H-6-,H-5,H-4+,H-4, H-3,H-3-,H-2,H-2-,H+2-,H+2,H+3-,H+3, H+4,H+4+,H+5,H+6-,H+6,H+7-,H+7,H+8
00 51	0000 000a	Edit Confirm Sw (0 - 1) Off, On
00 52	0000 aaaa	MIDI Speed (1 - 15) 1ms, 2ms, 3ms, 4ms, 5ms, 6ms, 7ms, 8ms, 9ms, 10ms, 11ms, 12ms, 13ms, 14ms, 15ms
00 53	0000 00aa	Hold Mode (0 - 2)

		Off, Breath, Key
00 54	0000 0aaa	Key Function (Oct+1) (0 - 5) Off, Sax Key, Semitone Down, Semitone Up, Wholetone Down, Wholetone Up
00 55	0000 0aaa	Key Function (Oct+2) (0 - 5) Off, Sax Key, Semitone Down, Semitone Up, Wholetone Down, Wholetone Up
00 56	0000 0aaa	Key Function (Oct-1) (0 - 5) Off, Sax Key, Semitone Down, Semitone Up, Wholetone Down, Wholetone Up
00 57	0000 0aaa	Key Function (Oct-2) (0 - 5) Off, Sax Key, Semitone Down, Semitone Up, Wholetone Down, Wholetone Up
00 58	0000 0aaa	Key Function (X) (0 - 5) Off, Sax Key, Semitone Down, Semitone Up, Wholetone Down, Wholetone Up
00 59	0000 0aaa	Key Function (1) (0 - 5) Off, Sax Key, Semitone Down, Semitone Up, Wholetone Down, Wholetone Up
00 5A	0000 0aaa	Key Function (2) (0 - 5) Off, Sax Key, Semitone Down, Semitone Up, Wholetone Down, Wholetone Up
00 5B	0000 0aaa	Key Function (3) (0 - 5) Off, Sax Key, Semitone Down, Semitone Up, Wholetone Down, Wholetone Up
00 5C	0000 0aaa	Key Function (4) (0 - 5) Off, Sax Key, Semitone Down, Semitone Up, Wholetone Down, Wholetone Up
00 5D	0000 0aaa	Key Function (5) (0 - 5) Off, Sax Key, Semitone Down, Semitone Up, Wholetone Down, Wholetone Up
00 5E	0000 0aaa	Key Function (6) (0 - 5) Off, Sax Key, Semitone Down, Semitone Up, Wholetone Down, Wholetone Up
00 5F	0000 0aaa	Key Function (C) (0 - 5) Off, Sax Key, Semitone Down, Semitone Up, Wholetone Down, Wholetone Up
00 60	0000 0aaa	Key Function (B) (0 - 5) Off, Sax Key, Semitone Down, Semitone Up, Wholetone Down, Wholetone Up
00 61	0000 0aaa	Key Function (P) (0 - 5) Off, Sax Key, Semitone Down, Semitone Up, Wholetone Down, Wholetone Up
00 62	0000 0aaa	Key Function (C1) (0 - 5) Off, Sax Key, Semitone Down, Semitone Up, Wholetone Down, Wholetone Up
00 63	0000 0aaa	Key Function (C2) (0 - 5) Off, Sax Key, Semitone Down, Semitone Up, Wholetone Down, Wholetone Up
00 64	0000 0aaa	Key Function (C3) (0 - 5) Off, Sax Key, Semitone Down, Semitone Up, Wholetone Down, Wholetone Up
00 65	0000 0aaa	Key Function (C4) (0 - 5) Off, Sax Key, Semitone Down, Semitone Up, Wholetone Down, Wholetone Up
00 66	0000 0aaa	Key Function (Tc) (0 - 5) Off, Sax Key, Semitone Down, Semitone Up, Wholetone Down, Wholetone Up
00 67	0000 0aaa	Key Function (Ta) (0 - 5) Off, Sax Key, Semitone Down, Semitone Up, Wholetone Down, Wholetone Up
00 68	0000 0aaa	Key Function (Tf) (0 - 5) Off, Sax Key, Semitone Down, Semitone Up, Wholetone Down, Wholetone Up
00 69	0000 0aaa	Key Function (Eb) (0 - 5) Off, Sax Key, Semitone Down, Semitone Up, Wholetone Down, Wholetone Up
00 6A	0000 0aaa	Key Function (Bb) (0 - 5) Off, Sax Key, Semitone Down, Semitone Up, Wholetone Down, Wholetone Up
00 6B	0000 0aaa	Key Function (G#) (0 - 5) Off, Sax Key, Semitone Down, Semitone Up, Wholetone Down, Wholetone Up
00 6C	0000 0aaa	Key Function (C#) (0 - 5) Off, Sax Key, Semitone Down, Semitone Up, Wholetone Down, Wholetone Up
00 6D	0000 0aaa	Key Function (C5) (0 - 5) Off, Sax Key, Semitone Down, Semitone Up, Wholetone Down, Wholetone Up
00 6E	0aaa aaaa	Bite Center (0 - 70) AUTO, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70
00 6F	0000 0000	(reserved) (0 - 0)
00 70	0000 0000	(reserved) (0 - 0)
00 71	0000 0000	(reserved) (0 - 0)
00 72	00aa aaaa	Bite Range Down (0 - 34) 0 cent, 5 cent, 10 cent, 20 cent, 30 cent, 40 cent, 50 cent, 60 cent, 70 cent, 80 cent, 90 cent, 100 cent, 200 cent, 300 cent, 400 cent, 500 cent, 600 cent, 700 cent, 800 cent, 900 cent, 1000 cent, 1100 cent, 1200 cent, 1300 cent, 1400 cent, 1500 cent, 1600 cent, 1700 cent, 1800 cent, 1900 cent, 2000 cent, 2100 cent,

		2200 cent, 2300 cent, 2400 cent
00 73	00aa aaaa	Bite Range Up (0 - 34) 0 cent, 5 cent, 10 cent, 20 cent, 30 cent, 40 cent, 50 cent, 60 cent, 70 cent, 80 cent, 90 cent, 100 cent, 200 cent, 300 cent, 400 cent, 500 cent, 600 cent, 700 cent, 800 cent, 900 cent, 1000 cent, 1100 cent, 1200 cent, 1300 cent, 1400 cent, 1500 cent, 1600 cent, 1700 cent, 1800 cent, 1900 cent, 2000 cent, 2100 cent, 2200 cent, 2300 cent, 2400 cent
00 74	000a aaaa	Control Bend Range (0 - 24) 0 - 24
00 75	0000 0000	(reserved) (0 - 0)
00 76	0000 00aa	Transpose (Volume) Knob Mode (0 - 3) System Transpose, Speaker Volume, Output Volume, Speaker & Output
00 77	0aaa aaaa	System Transpose (59 - 70) -5 - 6
00 78	0000 000a	Bend Range Mode (0 - 1) Normal, Advance
00 79	0000 000a	Bend Range Source Select (0 - 1) System, Scene
00 7A	0000 000a	Assign Source Select S1 S2 (0 - 1) System, Scene
00 7B	0000 000a	Assign Source Select Key (0 - 1) System, Scene
00 7C	0000 000a	Assign Source Select Breath (0 - 1) System, Scene
00 7D	0000 000a	Assign Source Select Bite (0 - 1) System, Scene
00 7E	0000 000a	Assign Source Select Lever (0 - 1) System, Scene
00 7F	0000 000a	Assign Source Select Pad (0 - 1) (Only for AE-30) System, Scene
01 00	0000 000a	Assign Source Select Motion (0 - 1) (Only for AE-30) System, Scene
01 01	0000 000a	Harmony Source Select (0 - 1) System, Scene
01 02	0000 000a	Scene Shortcut (0 - 1) Off, On
01 03	0000 000a	Out PC On Midi Control Mode (0 - 1) Off, On
01 04	0000 000a	Out BS On Midi Control Mode (0 - 1) Off, On
01 05	0000 00aa	Language (0 - 2) English, Japanese, Chinese
01 06	0000 0000	(reserved) (0 - 0)
01 07	0000 00aa	Motion Control Mode (0 - 2) (Only for AE-30) Off, Normal, Vibrato
01 08	0000 0aaa	Motion_1 Setting (0 - 4) (Only for AE-30) Elevation, Tilt, Tilt Full, Tilt Left, Tilt Right
01 09	0000 0aaa	Motion_2 Setting (0 - 4) (Only for AE-30) Elevation, Tilt, Tilt Full, Tilt Left, Tilt Right
01 0A	0000 0000	(reserved) (0 - 0)
01 0B	0000 aaaa	Motion Sense (Vib) (0 - 9) (Only for AE-30) 1 - 10
01 0C	00aa aaaa	Bend Range Motion Down (0 - 34) (Only for AE-30) 0 cent, 5 cent, 10 cent, 20 cent, 30 cent, 40 cent, 50 cent, 60 cent, 70 cent, 80 cent, 90 cent, 100 cent, 200 cent, 300 cent, 400 cent, 500 cent, 600 cent, 700 cent, 800 cent, 900 cent, 1000 cent, 1100 cent, 1200 cent, 1300 cent, 1400 cent, 1500 cent, 1600 cent, 1700 cent, 1800 cent, 1900 cent, 2000 cent, 2100 cent, 2200 cent, 2300 cent, 2400 cent
01 0D	00aa aaaa	Bend Range Motion Up (0 - 34) (Only for AE-30) 0 cent, 5 cent, 10 cent, 20 cent, 30 cent, 40 cent, 50 cent, 60 cent, 70 cent, 80 cent, 90 cent, 100 cent, 200 cent, 300 cent, 400 cent, 500 cent, 600 cent, 700 cent, 800 cent, 900 cent, 1000 cent, 1100 cent, 1200 cent, 1300 cent, 1400 cent, 1500 cent, 1600 cent, 1700 cent, 1800 cent, 1900 cent, 2000 cent, 2100 cent, 2200 cent, 2300 cent, 2400 cent
01 0E	00aa aaaa	Bite Range (E Wind) Down (0 - 34) 0 cent, 5 cent, 10 cent, 20 cent, 30 cent, 40 cent, 50 cent, 60 cent, 70 cent, 80 cent, 90 cent, 100 cent, 200 cent, 300 cent, 400 cent, 500 cent, 600 cent, 700 cent, 800 cent, 900 cent, 1000 cent, 1100 cent, 1200 cent, 1300 cent, 1400 cent, 1500 cent, 1600 cent, 1700 cent, 1800 cent, 1900 cent, 2000 cent, 2100 cent, 2200 cent, 2300 cent, 2400 cent
01 0F	00aa aaaa	Bite Range (E Wind) Up (0 - 34) 0 cent, 5 cent, 10 cent, 20 cent, 30 cent, 40 cent, 50 cent, 60 cent, 70 cent, 80 cent, 90 cent, 100 cent, 200 cent, 300 cent, 400 cent, 500 cent, 600 cent, 700 cent, 800 cent, 900 cent, 1000 cent, 1100 cent, 1200 cent, 1300 cent, 1400 cent, 1500 cent, 1600 cent, 1700 cent, 1800 cent, 1900 cent, 2000 cent, 2100 cent, 2200 cent, 2300 cent, 2400 cent

01 10	00aa aaaa	Bend Range (Vib) Motion Down (Only for AE-30) 0 cent,5 cent,10 cent,20 cent,30 cent,40 cent, 50 cent,60 cent,70 cent,80 cent,90 cent,100 cent, 200 cent,300 cent,400 cent,500 cent,600 cent, 700 cent,800 cent,900 cent,1000 cent,1100 cent, 1200 cent,1300 cent,1400 cent,1500 cent,1600 cent, 1700 cent,1800 cent,1900 cent,2000 cent,2100 cent, 2200 cent,2300 cent,2400 cent	(0 - 34)
01 11	00aa aaaa	Bend Range (Vib) Motion Up (Only for AE-30) 0 cent,5 cent,10 cent,20 cent,30 cent,40 cent, 50 cent,60 cent,70 cent,80 cent,90 cent,100 cent, 200 cent,300 cent,400 cent,500 cent,600 cent, 700 cent,800 cent,900 cent,1000 cent,1100 cent, 1200 cent,1300 cent,1400 cent,1500 cent,1600 cent, 1700 cent,1800 cent,1900 cent,2000 cent,2100 cent, 2200 cent,2300 cent,2400 cent	(0 - 34)
01 12	0000 0000	(reserved)	(0 - 0)
01 13	0000 0000	(reserved)	(0 - 0)
01 14	0000 0000	(reserved)	(0 - 0)
01 15	0000 0000	(reserved)	(0 - 0)
01 16	0000 0000	(reserved)	(0 - 0)
01 17	0000 0000	(reserved)	(0 - 0)
01 18	0000 0000	(reserved)	(0 - 0)
01 19	0000 0000	(reserved)	(0 - 0)
01 1A	0000 0000	(reserved)	(0 - 0)
01 1B	0000 0000	(reserved)	(0 - 0)
01 1C	0000 0000	(reserved)	(0 - 0)
01 1D	0000 0000	(reserved)	(0 - 0)
01 1E	0000 0000	(reserved)	(0 - 0)
01 1F	0000 0000	(reserved)	(0 - 0)
01 20	0000 0000	(reserved)	(0 - 0)
01 21	0000 0000	(reserved)	(0 - 0)
01 22	0000 0000	(reserved)	(0 - 0)
01 23	0000 0000	(reserved)	(0 - 0)
01 24	0000 0000	(reserved)	(0 - 0)
01 25	0000 0000	(reserved)	(0 - 0)
01 26	0000 0000	(reserved)	(0 - 0)
01 27	0000 0000	(reserved)	(0 - 0)
01 28	0000 0000	(reserved)	(0 - 0)
01 29	0000 0000	(reserved)	(0 - 0)
01 2A	0000 0000	(reserved)	(0 - 0)
01 2B	0000 0000	(reserved)	(0 - 0)
01 2C	0000 0000	(reserved)	(0 - 0)
01 2D	0000 0000	(reserved)	(0 - 0)
01 2E	0000 0000	(reserved)	(0 - 0)
01 2F	0000 0000	(reserved)	(0 - 0)
01 30	0000 0000	(reserved)	(0 - 0)
01 31	0000 0000	(reserved)	(0 - 0)
01 32	0000 0000	(reserved)	(0 - 0)
01 33	0000 0000	(reserved)	(0 - 0)
01 34	0000 0000	(reserved)	(0 - 0)
01 35	0000 0000	(reserved)	(0 - 0)
01 36	0000 0000	(reserved)	(0 - 0)
01 37	0000 0000	(reserved)	(0 - 0)
01 38	0000 0000	(reserved)	(0 - 0)
01 39	0000 0000	(reserved)	(0 - 0)
01 3A	0000 0000	(reserved)	(0 - 0)
01 3B	0000 0000	(reserved)	(0 - 0)
01 3C	0000 0000	(reserved)	(0 - 0)
01 3D	0000 0000	(reserved)	(0 - 0)
01 3E	0000 0000	(reserved)	(0 - 0)
01 3F	0000 0000	(reserved)	(0 - 0)
01 40	0000 0000	(reserved)	(0 - 0)
01 41	0000 0000	(reserved)	(0 - 0)
01 42	0000 0000	(reserved)	(0 - 0)
01 43	0000 0000	(reserved)	(0 - 0)
01 44	0000 0000	(reserved)	(0 - 0)
01 45	0000 0000	(reserved)	(0 - 0)
01 46	0000 0000	(reserved)	(0 - 0)
01 47	0000 0000	(reserved)	(0 - 0)
01 48	0000 0000	(reserved)	(0 - 0)
01 49	0000 0000	(reserved)	(0 - 0)
01 4A	0000 0000	(reserved)	(0 - 0)
01 4B	0000 0000	(reserved)	(0 - 0)
01 4C	0000 0000	(reserved)	(0 - 0)
01 4D	0000 0000	(reserved)	(0 - 0)
01 4E	0000 0000	(reserved)	(0 - 0)
01 4F	0000 0000	(reserved)	(0 - 0)
01 50	0000 0000	(reserved)	(0 - 0)
01 51	0000 0000	(reserved)	(0 - 0)
01 52	0000 0000	(reserved)	(0 - 0)
01 53	0000 0000	(reserved)	(0 - 0)
01 54	0000 0000	(reserved)	(0 - 0)
01 55	0000 0000	(reserved)	(0 - 0)
01 56	0000 0000	(reserved)	(0 - 0)
01 57	0000 0000	(reserved)	(0 - 0)
01 58	0000 0000	(reserved)	(0 - 0)
01 59	0000 0000	(reserved)	(0 - 0)
01 5A	0000 0000	(reserved)	(0 - 0)
01 5B	0000 0000	(reserved)	(0 - 0)
01 5C	0000 0000	(reserved)	(0 - 0)
01 5D	0000 0000	(reserved)	(0 - 0)
01 5E	0000 0000	(reserved)	(0 - 0)
01 5F	0000 0000	(reserved)	(0 - 0)
01 60	0000 0000	(reserved)	(0 - 0)
01 61	0000 0000	(reserved)	(0 - 0)

01 62	0000 0000	(reserved)	(0 - 0)
01 63	0000 0000	(reserved)	(0 - 0)
01 64	0000 0000	(reserved)	(0 - 0)
01 65	0000 0000	(reserved)	(0 - 0)
01 66	0000 0000	(reserved)	(0 - 0)
01 67	0000 0000	(reserved)	(0 - 0)
01 68	0000 0000	(reserved)	(0 - 0)
01 69	0000 0000	(reserved)	(0 - 0)
01 6A	0000 0000	(reserved)	(0 - 0)
01 6B	0000 0000	(reserved)	(0 - 0)
01 6C	0000 0000	(reserved)	(0 - 0)
01 6D	0000 0000	(reserved)	(0 - 0)
01 6E	0000 0000	(reserved)	(0 - 0)
01 6F	0000 0000	(reserved)	(0 - 0)
01 70	0000 0000	(reserved)	(0 - 0)
01 71	0000 0000	(reserved)	(0 - 0)
01 72	0000 0000	(reserved)	(0 - 0)
01 73	0000 0000	(reserved)	(0 - 0)
01 74	0000 0000	(reserved)	(0 - 0)
01 75	0000 0000	(reserved)	(0 - 0)
01 76	0000 0000	(reserved)	(0 - 0)
01 77	0000 0000	(reserved)	(0 - 0)
01 78	0000 0000	(reserved)	(0 - 0)
01 79	0000 0000	(reserved)	(0 - 0)
01 7A	0000 0000	(reserved)	(0 - 0)
01 7B	0000 0000	(reserved)	(0 - 0)
01 7C	0000 0000	(reserved)	(0 - 0)
01 7D	0000 0000	(reserved)	(0 - 0)
00 00 01 7E	Total Size		

* [Assign2]

Offset Address		Description	
00 00	0aaa aaaa	Assign 1 Function Off,CC 01,CC 02,CC 03,CC 04,CC 05,CC 06,CC 07, CC 08,CC 09,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 33,CC 34,CC 35,CC 36,CC 37,CC 38,CC 39,CC 40, CC 41,CC 42,CC 43,CC 44,CC 45,CC 46,CC 47,CC 48, CC 49,CC 50,CC 51,CC 52,CC 53,CC 54,CC 55,CC 56, CC 57,CC 58,CC 59,CC 60,CC 61,CC 62,CC 63,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, Bend Down, Bend Up, After Touch, Scene Down, Scene Up, Favorite Down, Favorite Up, Chorus Sw, Reverb Sw, Delay Sw, IFX Sw, Unison Sw, Oct Down, Oct Up, Transpose Down, Transpose Up, Drone Sw, Harmony Sw, Start(FA)/Stop(FC), X-Fade	(0 - 113)
00 01	0000 0000	(reserved)	(0 - 0)
00 02	0aaa aaaa	Assign 1 Input Min	(0 - 127)
00 03	0aaa aaaa	Assign 1 Input Max	(0 - 127)
00 04	0aaa aaaa	Assign 1 Output Min	(0 - 127)
00 05	0aaa aaaa	Assign 1 Output Max	(0 - 127)
00 06	0000 000a	Assign 1 Mode Latch, Momentary	(0 - 1)
00 07	0000 aaaa	Assign 1 Curve 1 Linear, 2 Exp L, 3 Exp M1, 4 Exp M2, 5 Exp H, 6 Log L, 7 Log M1, 8 Log M2, 9 Log H, 10 S-Shape, 11 Reverse S, 12 Step	(0 - 11)
00 08	0000 0000	(reserved)	(0 - 0)
00 09	0000 0000	(reserved)	(0 - 0)
00 0A	0000 0000	(reserved)	(0 - 0)
00 0B	0000 0000	(reserved)	(0 - 0)
00 0C	0000 0000	(reserved)	(0 - 0)
00 0D	0000 0000	(reserved)	(0 - 0)
00 0E	0000 0000	(reserved)	(0 - 0)
00 0F	0000 0000	(reserved)	(0 - 0)
00 10	0aaa aaaa	Assign 2 Function Off,CC 01,CC 02,CC 03,CC 04,CC 05,CC 06,CC 07, CC 08,CC 09,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 33,CC 34,CC 35,CC 36,CC 37,CC 38,CC 39,CC 40, CC 41,CC 42,CC 43,CC 44,CC 45,CC 46,CC 47,CC 48, CC 49,CC 50,CC 51,CC 52,CC 53,CC 54,CC 55,CC 56, CC 57,CC 58,CC 59,CC 60,CC 61,CC 62,CC 63,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, Bend Down, Bend Up, After Touch, Scene Down, Scene Up, Favorite Down, Favorite Up, Chorus Sw, Reverb Sw, Delay Sw, IFX Sw, Unison Sw, Oct Down, Oct Up, Transpose Down, Transpose Up, Drone Sw, Harmony Sw, Start(FA)/Stop(FC), X-Fade	(0 - 113)

00 11	0000 0000	(reserved) (0 - 0)
00 12	0aaa aaaa	Assign 2 Input Min (0 - 127)
00 13	0aaa aaaa	Assign 2 Input Max (0 - 127)
00 14	0aaa aaaa	Assign 2 Output Min (0 - 127)
00 15	0aaa aaaa	Assign 2 Output Max (0 - 127)
00 16	0000 000a	Assign 2 Mode (0 - 1) Latch, Momentary
00 17	0000 aaaa	Assign 2 Curve (0 - 11) 1 Linear, 2 Exp L, 3 Exp M1, 4 Exp M2, 5 Exp H, 6 Log L, 7 Log M1, 8 Log M2, 9 Log H, 10 S-Shape, 11 Reverse S, 12 Step
00 18	0000 0000	(reserved) (0 - 0)
00 19	0000 0000	(reserved) (0 - 0)
00 1A	0000 0000	(reserved) (0 - 0)
00 1B	0000 0000	(reserved) (0 - 0)
00 1C	0000 0000	(reserved) (0 - 0)
00 1D	0000 0000	(reserved) (0 - 0)
00 1E	0000 0000	(reserved) (0 - 0)
00 1F	0000 0000	(reserved) (0 - 0)
00 00 00 20	Total Size	

* [Assign4]

Offset Address		Description
00 00	0aaa aaaa	Assign 1 Function (0 - 113) Off,CC 01,CC 02,CC 03,CC 04,CC 05,CC 06,CC 07, CC 08,CC 09,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 33,CC 34,CC 35,CC 36,CC 37,CC 38,CC 39,CC 40, CC 41,CC 42,CC 43,CC 44,CC 45,CC 46,CC 47,CC 48, CC 49,CC 50,CC 51,CC 52,CC 53,CC 54,CC 55,CC 56, CC 57,CC 58,CC 59,CC 60,CC 61,CC 62,CC 63,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, Bend Down, Bend Up, After Touch, Scene Down, Scene Up, Favorite Down, Favorite Up, Chorus Sw, Reverb Sw, Delay Sw, IFX Sw, Unison Sw, Oct Down, Oct Up, Transpose Down, Transpose Up, Drone Sw, Harmony Sw, Start(FA)/Stop(FC), X-Fade
00 01	0000 0000	(reserved) (0 - 0)
00 02	0aaa aaaa	Assign 1 Input Min (0 - 127)
00 03	0aaa aaaa	Assign 1 Input Max (0 - 127)
00 04	0aaa aaaa	Assign 1 Output Min (0 - 127)
00 05	0aaa aaaa	Assign 1 Output Max (0 - 127)
00 06	0000 000a	Assign 1 Mode (0 - 1) Latch, Momentary
00 07	0000 aaaa	Assign 1 Curve (0 - 11) 1 Linear, 2 Exp L, 3 Exp M1, 4 Exp M2, 5 Exp H, 6 Log L, 7 Log M1, 8 Log M2, 9 Log H, 10 S-Shape, 11 Reverse S, 12 Step
00 08	0000 0000	(reserved) (0 - 0)
00 09	0000 0000	(reserved) (0 - 0)
00 0A	0000 0000	(reserved) (0 - 0)
00 0B	0000 0000	(reserved) (0 - 0)
00 0C	0000 0000	(reserved) (0 - 0)
00 0D	0000 0000	(reserved) (0 - 0)
00 0E	0000 0000	(reserved) (0 - 0)
00 0F	0000 0000	(reserved) (0 - 0)
00 10	0aaa aaaa	Assign 2 Function (0 - 113) Off,CC 01,CC 02,CC 03,CC 04,CC 05,CC 06,CC 07, CC 08,CC 09,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 33,CC 34,CC 35,CC 36,CC 37,CC 38,CC 39,CC 40, CC 41,CC 42,CC 43,CC 44,CC 45,CC 46,CC 47,CC 48, CC 49,CC 50,CC 51,CC 52,CC 53,CC 54,CC 55,CC 56, CC 57,CC 58,CC 59,CC 60,CC 61,CC 62,CC 63,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, Bend Down, Bend Up, After Touch, Scene Down, Scene Up, Favorite Down, Favorite Up, Chorus Sw, Reverb Sw, Delay Sw, IFX Sw, Unison Sw, Oct Down, Oct Up, Transpose Down, Transpose Up, Drone Sw, Harmony Sw, Start(FA)/Stop(FC), X-Fade
00 11	0000 0000	(reserved) (0 - 0)
00 12	0aaa aaaa	Assign 2 Input Min (0 - 127)

00 13	0aaa aaaa	Assign 2 Input Max (0 - 127)
00 14	0aaa aaaa	Assign 2 Output Min (0 - 127)
00 15	0aaa aaaa	Assign 2 Output Max (0 - 127)
00 16	0000 000a	Assign 2 Mode (0 - 1) Latch, Momentary
00 17	0000 aaaa	Assign 2 Curve (0 - 11) 1 Linear, 2 Exp L, 3 Exp M1, 4 Exp M2, 5 Exp H, 6 Log L, 7 Log M1, 8 Log M2, 9 Log H, 10 S-Shape, 11 Reverse S, 12 Step
00 18	0000 0000	(reserved) (0 - 0)
00 19	0000 0000	(reserved) (0 - 0)
00 1A	0000 0000	(reserved) (0 - 0)
00 1B	0000 0000	(reserved) (0 - 0)
00 1C	0000 0000	(reserved) (0 - 0)
00 1D	0000 0000	(reserved) (0 - 0)
00 1E	0000 0000	(reserved) (0 - 0)
00 1F	0000 0000	(reserved) (0 - 0)
00 20	0aaa aaaa	Assign 3 Function (0 - 113) Off,CC 01,CC 02,CC 03,CC 04,CC 05,CC 06,CC 07, CC 08,CC 09,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 33,CC 34,CC 35,CC 36,CC 37,CC 38,CC 39,CC 40, CC 41,CC 42,CC 43,CC 44,CC 45,CC 46,CC 47,CC 48, CC 49,CC 50,CC 51,CC 52,CC 53,CC 54,CC 55,CC 56, CC 57,CC 58,CC 59,CC 60,CC 61,CC 62,CC 63,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, Bend Down, Bend Up, After Touch, Scene Down, Scene Up, Favorite Down, Favorite Up, Chorus Sw, Reverb Sw, Delay Sw, IFX Sw, Unison Sw, Oct Down, Oct Up, Transpose Down, Transpose Up, Drone Sw, Harmony Sw, Start(FA)/Stop(FC), X-Fade
00 21	0000 0000	(reserved) (0 - 0)
00 22	0aaa aaaa	Assign 3 Input Min (0 - 127)
00 23	0aaa aaaa	Assign 3 Input Max (0 - 127)
00 24	0aaa aaaa	Assign 3 Output Min (0 - 127)
00 25	0aaa aaaa	Assign 3 Output Max (0 - 127)
00 26	0000 000a	Assign 3 Mode (0 - 1) Latch, Momentary
00 27	0000 aaaa	Assign 3 Curve (0 - 11) 1 Linear, 2 Exp L, 3 Exp M1, 4 Exp M2, 5 Exp H, 6 Log L, 7 Log M1, 8 Log M2, 9 Log H, 10 S-Shape, 11 Reverse S, 12 Step
00 28	0000 0000	(reserved) (0 - 0)
00 29	0000 0000	(reserved) (0 - 0)
00 2A	0000 0000	(reserved) (0 - 0)
00 2B	0000 0000	(reserved) (0 - 0)
00 2C	0000 0000	(reserved) (0 - 0)
00 2D	0000 0000	(reserved) (0 - 0)
00 2E	0000 0000	(reserved) (0 - 0)
00 2F	0000 0000	(reserved) (0 - 0)
00 30	0aaa aaaa	Assign 4 Function (0 - 113) Off,CC 01,CC 02,CC 03,CC 04,CC 05,CC 06,CC 07, CC 08,CC 09,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 33,CC 34,CC 35,CC 36,CC 37,CC 38,CC 39,CC 40, CC 41,CC 42,CC 43,CC 44,CC 45,CC 46,CC 47,CC 48, CC 49,CC 50,CC 51,CC 52,CC 53,CC 54,CC 55,CC 56, CC 57,CC 58,CC 59,CC 60,CC 61,CC 62,CC 63,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, Bend Down, Bend Up, After Touch, Scene Down, Scene Up, Favorite Down, Favorite Up, Chorus Sw, Reverb Sw, Delay Sw, IFX Sw, Unison Sw, Oct Down, Oct Up, Transpose Down, Transpose Up, Drone Sw, Harmony Sw, Start(FA)/Stop(FC), X-Fade
00 31	0000 0000	(reserved) (0 - 0)
00 32	0aaa aaaa	Assign 4 Input Min (0 - 127)
00 33	0aaa aaaa	Assign 4 Input Max (0 - 127)
00 34	0aaa aaaa	Assign 4 Output Min (0 - 127)
00 35	0aaa aaaa	Assign 4 Output Max (0 - 127)
00 36	0000 000a	Assign 4 Mode (0 - 1) Latch, Momentary
00 37	0000 aaaa	Assign 4 Curve (0 - 11) 1 Linear, 2 Exp L, 3 Exp M1, 4 Exp M2, 5 Exp H, 6 Log L, 7 Log M1, 8 Log M2, 9 Log H, 10 S-Shape, 11 Reverse S, 12 Step

00 38	0000 0000	(reserved)	(0 - 0)
00 39	0000 0000	(reserved)	(0 - 0)
00 3A	0000 0000	(reserved)	(0 - 0)
00 3B	0000 0000	(reserved)	(0 - 0)
00 3C	0000 0000	(reserved)	(0 - 0)
00 3D	0000 0000	(reserved)	(0 - 0)
00 3E	0000 0000	(reserved)	(0 - 0)
00 3F	0000 0000	(reserved)	(0 - 0)
00 00 00 40	Total Size		

* [Assign8]

Offset Address		Description	
00 00	0aaa aaaa	Assign 1 Function	(0 - 113)
		Off,CC 01,CC 02,CC 03,CC 04,CC 05,CC 06,CC 07, CC 08,CC 09,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 33,CC 34,CC 35,CC 36,CC 37,CC 38,CC 39,CC 40, CC 41,CC 42,CC 43,CC 44,CC 45,CC 46,CC 47,CC 48, CC 49,CC 50,CC 51,CC 52,CC 53,CC 54,CC 55,CC 56, CC 57,CC 58,CC 59,CC 60,CC 61,CC 62,CC 63,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, Bend Down, Bend Up, After Touch, Scene Down, Scene Up, Favorite Down, Favorite Up, Chorus Sw, Reverb Sw, Delay Sw, IFX Sw, Unison Sw, Oct Down, Oct Up, Transpose Down, Transpose Up, Drone Sw, Harmony Sw, Start(FA)/Stop(FC), X-Fade	
00 01	0000 0000	(reserved)	(0 - 0)
00 02	0aaa aaaa	Assign 1 Input Min	(0 - 127)
00 03	0aaa aaaa	Assign 1 Input Max	(0 - 127)
00 04	0aaa aaaa	Assign 1 Output Min	(0 - 127)
00 05	0aaa aaaa	Assign 1 Output Max	(0 - 127)
00 06	0000 000a	Assign 1 Mode	(0 - 1) Latch, Momentary
00 07	0000 aaaa	Assign 1 Curve	(0 - 11) 1 Linear, 2 Exp L, 3 Exp M1, 4 Exp M2, 5 Exp H, 6 Log L, 7 Log M1, 8 Log M2, 9 Log H, 10 S-Shape, 11 Reverse S, 12 Step
00 08	0000 0000	(reserved)	(0 - 0)
00 09	0000 0000	(reserved)	(0 - 0)
00 0A	0000 0000	(reserved)	(0 - 0)
00 0B	0000 0000	(reserved)	(0 - 0)
00 0C	0000 0000	(reserved)	(0 - 0)
00 0D	0000 0000	(reserved)	(0 - 0)
00 0E	0000 0000	(reserved)	(0 - 0)
00 0F	0000 0000	(reserved)	(0 - 0)
00 10	0aaa aaaa	Assign 2 Function	(0 - 113)
		Off,CC 01,CC 02,CC 03,CC 04,CC 05,CC 06,CC 07, CC 08,CC 09,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 33,CC 34,CC 35,CC 36,CC 37,CC 38,CC 39,CC 40, CC 41,CC 42,CC 43,CC 44,CC 45,CC 46,CC 47,CC 48, CC 49,CC 50,CC 51,CC 52,CC 53,CC 54,CC 55,CC 56, CC 57,CC 58,CC 59,CC 60,CC 61,CC 62,CC 63,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, Bend Down, Bend Up, After Touch, Scene Down, Scene Up, Favorite Down, Favorite Up, Chorus Sw, Reverb Sw, Delay Sw, IFX Sw, Unison Sw, Oct Down, Oct Up, Transpose Down, Transpose Up, Drone Sw, Harmony Sw, Start(FA)/Stop(FC), X-Fade	
00 11	0000 0000	(reserved)	(0 - 0)
00 12	0aaa aaaa	Assign 2 Input Min	(0 - 127)
00 13	0aaa aaaa	Assign 2 Input Max	(0 - 127)
00 14	0aaa aaaa	Assign 2 Output Min	(0 - 127)
00 15	0aaa aaaa	Assign 2 Output Max	(0 - 127)
00 16	0000 000a	Assign 2 Mode	(0 - 1) Latch, Momentary
00 17	0000 aaaa	Assign 2 Curve	(0 - 11) 1 Linear, 2 Exp L, 3 Exp M1, 4 Exp M2, 5 Exp H, 6 Log L, 7 Log M1, 8 Log M2, 9 Log H, 10 S-Shape, 11 Reverse S, 12 Step
00 18	0000 0000	(reserved)	(0 - 0)
00 19	0000 0000	(reserved)	(0 - 0)
00 1A	0000 0000	(reserved)	(0 - 0)
00 1B	0000 0000	(reserved)	(0 - 0)

00 1C	0000 0000	(reserved)	(0 - 0)
00 1D	0000 0000	(reserved)	(0 - 0)
00 1E	0000 0000	(reserved)	(0 - 0)
00 1F	0000 0000	(reserved)	(0 - 0)
00 20	0aaa aaaa	Assign 3 Function Off, CC 01, CC 02, CC 03, CC 04, CC 05, CC 06, CC 07, CC 08, CC 09, 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 33, CC 34, CC 35, CC 36, CC 37, CC 38, CC 39, CC 40, CC 41, CC 42, CC 43, CC 44, CC 45, CC 46, CC 47, CC 48, CC 49, CC 50, CC 51, CC 52, CC 53, CC 54, CC 55, CC 56, CC 57, CC 58, CC 59, CC 60, CC 61, CC 62, CC 63, 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, Bend Down, Bend Up, After Touch, Scene Down, Scene Up, Favorite Down, Favorite Up, Chorus Sw, Reverb Sw, Delay Sw, IFX Sw, Unison Sw, Oct Down, Oct Up, Transpose Down, Transpose Up, Drone Sw, Harmony Sw, Start(FA)/Stop(FC), X-Fade	(0 - 113)
00 21	0000 0000	(reserved)	(0 - 0)
00 22	0aaa aaaa	Assign 3 Input Min	(0 - 127)
00 23	0aaa aaaa	Assign 3 Input Max	(0 - 127)
00 24	0aaa aaaa	Assign 3 Output Min	(0 - 127)
00 25	0aaa aaaa	Assign 3 Output Max	(0 - 127)
00 26	0000 000a	Assign 3 Mode Latch, Momentary	(0 - 1)
00 27	0000 aaaa	Assign 3 Curve 1 Linear, 2 Exp L, 3 Exp M1, 4 Exp M2, 5 Exp H, 6 Log L, 7 Log M1, 8 Log M2, 9 Log H, 10 S-Shape, 11 Reverse S, 12 Step	(0 - 11)
00 28	0000 0000	(reserved)	(0 - 0)
00 29	0000 0000	(reserved)	(0 - 0)
00 2A	0000 0000	(reserved)	(0 - 0)
00 2B	0000 0000	(reserved)	(0 - 0)
00 2C	0000 0000	(reserved)	(0 - 0)
00 2D	0000 0000	(reserved)	(0 - 0)
00 2E	0000 0000	(reserved)	(0 - 0)
00 2F	0000 0000	(reserved)	(0 - 0)
00 30	0aaa aaaa	Assign 4 Function Off, CC 01, CC 02, CC 03, CC 04, CC 05, CC 06, CC 07, CC 08, CC 09, 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 33, CC 34, CC 35, CC 36, CC 37, CC 38, CC 39, CC 40, CC 41, CC 42, CC 43, CC 44, CC 45, CC 46, CC 47, CC 48, CC 49, CC 50, CC 51, CC 52, CC 53, CC 54, CC 55, CC 56, CC 57, CC 58, CC 59, CC 60, CC 61, CC 62, CC 63, 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, Bend Down, Bend Up, After Touch, Scene Down, Scene Up, Favorite Down, Favorite Up, Chorus Sw, Reverb Sw, Delay Sw, IFX Sw, Unison Sw, Oct Down, Oct Up, Transpose Down, Transpose Up, Drone Sw, Harmony Sw, Start(FA)/Stop(FC), X-Fade	(0 - 113)
00 31	0000 0000	(reserved)	(0 - 0)
00 32	0aaa aaaa	Assign 4 Input Min	(0 - 127)
00 33	0aaa aaaa	Assign 4 Input Max	(0 - 127)
00 34	0aaa aaaa	Assign 4 Output Min	(0 - 127)
00 35	0aaa aaaa	Assign 4 Output Max	(0 - 127)
00 36	0000 000a	Assign 4 Mode Latch, Momentary	(0 - 1)
00 37	0000 aaaa	Assign 4 Curve 1 Linear, 2 Exp L, 3 Exp M1, 4 Exp M2, 5 Exp H, 6 Log L, 7 Log M1, 8 Log M2, 9 Log H, 10 S-Shape, 11 Reverse S, 12 Step	(0 - 11)
00 38	0000 0000	(reserved)	(0 - 0)
00 39	0000 0000	(reserved)	(0 - 0)
00 3A	0000 0000	(reserved)	(0 - 0)
00 3B	0000 0000	(reserved)	(0 - 0)
00 3C	0000 0000	(reserved)	(0 - 0)
00 3D	0000 0000	(reserved)	(0 - 0)
00 3E	0000 0000	(reserved)	(0 - 0)
00 3F	0000 0000	(reserved)	(0 - 0)
00 40	0aaa aaaa	Assign 5 Function Off, CC 01, CC 02, CC 03, CC 04, CC 05, CC 06, CC 07, CC 08, CC 09, 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 33, CC 34, CC 35, CC 36, CC 37, CC 38, CC 39, CC 40, CC 41, CC 42, CC 43, CC 44, CC 45, CC 46, CC 47, CC 48,	(0 - 113)

		CC 49,CC 50,CC 51,CC 52,CC 53,CC 54,CC 55,CC 56, CC 57,CC 58,CC 59,CC 60,CC 61,CC 62,CC 63,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, Bend Down, Bend Up, After Touch, Scene Down, Scene Up, Favorite Down, Favorite Up, Chorus Sw, Reverb Sw, Delay Sw, IFX Sw, Unison Sw, Oct Down, Oct Up, Transpose Down, Transpose Up, Drone Sw, Harmony Sw, Start(FA)/Stop(FC), X-Fade
00 41	0000 0000	(reserved) (0 - 0)
00 42	0aaa aaaa	Assign 5 Input Min (0 - 127)
00 43	0aaa aaaa	Assign 5 Input Max (0 - 127)
00 44	0aaa aaaa	Assign 5 Output Min (0 - 127)
00 45	0aaa aaaa	Assign 5 Output Max (0 - 127)
00 46	0000 000a	Assign 5 Mode (0 - 1) Latch, Momentary
00 47	0000 aaaa	Assign 5 Curve (0 - 11) 1 Linear, 2 Exp L, 3 Exp M1, 4 Exp M2, 5 Exp H, 6 Log L, 7 Log M1, 8 Log M2, 9 Log H, 10 S-Shape, 11 Reverse S, 12 Step
00 48	0000 0000	(reserved) (0 - 0)
00 49	0000 0000	(reserved) (0 - 0)
00 4A	0000 0000	(reserved) (0 - 0)
00 4B	0000 0000	(reserved) (0 - 0)
00 4C	0000 0000	(reserved) (0 - 0)
00 4D	0000 0000	(reserved) (0 - 0)
00 4E	0000 0000	(reserved) (0 - 0)
00 4F	0000 0000	(reserved) (0 - 0)
00 50	0aaa aaaa	Assign 6 Function (0 - 113) Off,CC 01,CC 02,CC 03,CC 04,CC 05,CC 06,CC 07, CC 08,CC 09,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 33,CC 34,CC 35,CC 36,CC 37,CC 38,CC 39,CC 40, CC 41,CC 42,CC 43,CC 44,CC 45,CC 46,CC 47,CC 48, CC 49,CC 50,CC 51,CC 52,CC 53,CC 54,CC 55,CC 56, CC 57,CC 58,CC 59,CC 60,CC 61,CC 62,CC 63,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, Bend Down, Bend Up, After Touch, Scene Down, Scene Up, Favorite Down, Favorite Up, Chorus Sw, Reverb Sw, Delay Sw, IFX Sw, Unison Sw, Oct Down, Oct Up, Transpose Down, Transpose Up, Drone Sw, Harmony Sw, Start(FA)/Stop(FC), X-Fade
00 51	0000 0000	(reserved) (0 - 0)
00 52	0aaa aaaa	Assign 6 Input Min (0 - 127)
00 53	0aaa aaaa	Assign 6 Input Max (0 - 127)
00 54	0aaa aaaa	Assign 6 Output Min (0 - 127)
00 55	0aaa aaaa	Assign 6 Output Max (0 - 127)
00 56	0000 000a	Assign 6 Mode (0 - 1) Latch, Momentary
00 57	0000 aaaa	Assign 6 Curve (0 - 11) 1 Linear, 2 Exp L, 3 Exp M1, 4 Exp M2, 5 Exp H, 6 Log L, 7 Log M1, 8 Log M2, 9 Log H, 10 S-Shape, 11 Reverse S, 12 Step
00 58	0000 0000	(reserved) (0 - 0)
00 59	0000 0000	(reserved) (0 - 0)
00 5A	0000 0000	(reserved) (0 - 0)
00 5B	0000 0000	(reserved) (0 - 0)
00 5C	0000 0000	(reserved) (0 - 0)
00 5D	0000 0000	(reserved) (0 - 0)
00 5E	0000 0000	(reserved) (0 - 0)
00 5F	0000 0000	(reserved) (0 - 0)
00 60	0aaa aaaa	Assign 7 Function (0 - 113) Off,CC 01,CC 02,CC 03,CC 04,CC 05,CC 06,CC 07, CC 08,CC 09,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 33,CC 34,CC 35,CC 36,CC 37,CC 38,CC 39,CC 40, CC 41,CC 42,CC 43,CC 44,CC 45,CC 46,CC 47,CC 48, CC 49,CC 50,CC 51,CC 52,CC 53,CC 54,CC 55,CC 56, CC 57,CC 58,CC 59,CC 60,CC 61,CC 62,CC 63,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, Bend Down, Bend Up, After Touch, Scene Down, Scene Up, Favorite Down, Favorite Up, Chorus Sw, Reverb Sw, Delay Sw, IFX Sw, Unison Sw, Oct Down, Oct Up, Transpose Down, Transpose Up, Drone Sw, Harmony Sw, Start(FA)/Stop(FC), X-Fade
00 61	0000 0000	(reserved) (0 - 0)

00 62	0aaa aaaa	Assign 7 Input Min	(0 - 127)
00 63	0aaa aaaa	Assign 7 Input Max	(0 - 127)
00 64	0aaa aaaa	Assign 7 Output Min	(0 - 127)
00 65	0aaa aaaa	Assign 7 Output Max	(0 - 127)
00 66	0000 000a	Assign 7 Mode	(0 - 1) Latch, Momentary
00 67	0000 aaaa	Assign 7 Curve 1 Linear, 2 Exp L, 3 Exp M1, 4 Exp M2, 5 Exp H, 6 Log L, 7 Log M1, 8 Log M2, 9 Log H, 10 S-Shape, 11 Reverse S, 12 Step	(0 - 11)
00 68	0000 0000	(reserved)	(0 - 0)
00 69	0000 0000	(reserved)	(0 - 0)
00 6A	0000 0000	(reserved)	(0 - 0)
00 6B	0000 0000	(reserved)	(0 - 0)
00 6C	0000 0000	(reserved)	(0 - 0)
00 6D	0000 0000	(reserved)	(0 - 0)
00 6E	0000 0000	(reserved)	(0 - 0)
00 6F	0000 0000	(reserved)	(0 - 0)
00 70	0aaa aaaa	Assign 8 Function Off,CC 01,CC 02,CC 03,CC 04,CC 05,CC 06,CC 07, CC 08,CC 09,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 33,CC 34,CC 35,CC 36,CC 37,CC 38,CC 39,CC 40, CC 41,CC 42,CC 43,CC 44,CC 45,CC 46,CC 47,CC 48, CC 49,CC 50,CC 51,CC 52,CC 53,CC 54,CC 55,CC 56, CC 57,CC 58,CC 59,CC 60,CC 61,CC 62,CC 63,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, Bend Down, Bend Up, After Touch, Scene Down, Scene Up, Favorite Down, Favorite Up, Chorus Sw, Reverb Sw, Delay Sw, IFX Sw, Unison Sw, Oct Down, Oct Up, Transpose Down, Transpose Up, Drone Sw, Harmony Sw, Start(FA)/Stop(FC), X-Fade	(0 - 113)
00 71	0000 0000	(reserved)	(0 - 0)
00 72	0aaa aaaa	Assign 8 Input Min	(0 - 127)
00 73	0aaa aaaa	Assign 8 Input Max	(0 - 127)
00 74	0aaa aaaa	Assign 8 Output Min	(0 - 127)
00 75	0aaa aaaa	Assign 8 Output Max	(0 - 127)
00 76	0000 000a	Assign 8 Mode	(0 - 1) Latch, Momentary
00 77	0000 aaaa	Assign 8 Curve 1 Linear, 2 Exp L, 3 Exp M1, 4 Exp M2, 5 Exp H, 6 Log L, 7 Log M1, 8 Log M2, 9 Log H, 10 S-Shape, 11 Reverse S, 12 Step	(0 - 11)
00 78	0000 0000	(reserved)	(0 - 0)
00 79	0000 0000	(reserved)	(0 - 0)
00 7A	0000 0000	(reserved)	(0 - 0)
00 7B	0000 0000	(reserved)	(0 - 0)
00 7C	0000 0000	(reserved)	(0 - 0)
00 7D	0000 0000	(reserved)	(0 - 0)
00 7E	0000 0000	(reserved)	(0 - 0)
00 7F	0000 0000	(reserved)	(0 - 0)
00 00 01 00	Total Size		

* [Favorite]

Offset Address		Description	
00 00	0000 000a	Favorite Switch	(0 - 1) Off, On
00 01	0aaa aaaa	Scene Bank Select MSB	(0 - 127) 0 - 127
00 02	0aaa aaaa	Scene Bank Select LSB	(0 - 127) 0 - 127
00 03	0aaa aaaa	Scene Program Change	(0 - 127) 1 - 128
00 00 00 04	Total Size		

* [Fingering]

Offset Address		Description	
00 00	0000 000a	Fingering Switch	(0 - 1) Off, On
00 01	0aaa aaaa	Fingering Key C 3, C#3, D 3, Eb3, E 3, F 3, F#3, G 3, G#3, A 3, Bb3, B 3, C 4, C#4, D 4, Eb4, E 4, F 4, F#4, G 4, G#4, A 4, Bb4, B 4, C 5, C#5, D 5, Eb5, E 5, F 5,	(48 - 96)

		F#5, G 5, G#5, A 5, Bb5, B 5, C 6, C#6, D 6, Eb6, E 6, F 6, F#6, G 6, G#6, A 6, Bb6, B 6, C 7	
	00 02	0000 0000	(reserved) (0 - 0)
	00 03	0000 0000	(reserved) (0 - 0)
	00 04	0000 0000	(reserved) (0 - 0)
	00 05	0000 0000	(reserved) (0 - 0)
	00 06	0000 0000	(reserved) (0 - 0)
	00 07	0000 0000	(reserved) (0 - 0)
#	00 08	0000 aaaa	
	00 09	0000 bbbb	
	00 0A	0000 cccc	
	00 0B	0000 dddd	
	00 0C	0000 eeee	
	00 0D	0000 ffff	
	00 0E	0000 gggg	
	00 0F	0000 hhhh	Fingering Setting (0 - 268435455)
	00 10	0000 0000	(reserved) (0 - 0)
	00 11	0000 0000	(reserved) (0 - 0)
	00 12	0000 0000	(reserved) (0 - 0)
	00 13	0000 0000	(reserved) (0 - 0)
	00 14	0000 0000	(reserved) (0 - 0)
	00 15	0000 0000	(reserved) (0 - 0)
	00 16	0000 0000	(reserved) (0 - 0)
	00 17	0000 0000	(reserved) (0 - 0)
	00 18	0000 0000	(reserved) (0 - 0)
	00 19	0000 0000	(reserved) (0 - 0)
	00 1A	0000 0000	(reserved) (0 - 0)
	00 1B	0000 0000	(reserved) (0 - 0)
	00 1C	0000 0000	(reserved) (0 - 0)
	00 1D	0000 0000	(reserved) (0 - 0)
	00 1E	0000 0000	(reserved) (0 - 0)
	00 1F	0000 0000	(reserved) (0 - 0)
00 00 00 20		Total Size	

* [Scene Common]

Offset Address		Description	
	00 00	0aaa aaaa	NAME 1 (32 - 127)
	00 01	0aaa aaaa	NAME 2 (32 - 127)
	00 02	0aaa aaaa	NAME 3 (32 - 127)
	00 03	0aaa aaaa	NAME 4 (32 - 127)
	00 04	0aaa aaaa	NAME 5 (32 - 127)
	00 05	0aaa aaaa	NAME 6 (32 - 127)
	00 06	0aaa aaaa	NAME 7 (32 - 127)
	00 07	0aaa aaaa	NAME 8 (32 - 127)
	00 08	0aaa aaaa	NAME 9 (32 - 127)
	00 09	0aaa aaaa	NAME 10 (32 - 127)
	00 0A	0aaa aaaa	NAME 11 (32 - 127)
	00 0B	0aaa aaaa	NAME 12 (32 - 127)
	00 0C	0aaa aaaa	NAME 13 (32 - 127)
	00 0D	0aaa aaaa	NAME 14 (32 - 127)
	00 0E	0aaa aaaa	NAME 15 (32 - 127)
	00 0F	0aaa aaaa	NAME 16 (32 - 127)
#	00 10	0000 aaaa	
	00 11	0000 bbbb	
	00 12	0000 cccc	
	00 13	0000 dddd	Scene Tempo (2000 - 30000) 20.00 - 300.00
	00 14	0aaa aaaa	Scene Transpose (59 - 70) -5 - 6
	00 15	0aaa aaaa	Scene Octave Shift (61 - 67) -3 - 3
	00 16	0000 0000	(reserved) (0 - 0)
	00 17	0000 0000	(reserved) (0 - 0)
	00 18	0aaa aaaa	Scene Volume (0 - 127) 0 - 127
	00 19	0aaa aaaa	IFX Delay Send Level (0 - 127) 0 - 127
	00 1A	0000 0000	(reserved) (0 - 0)
	00 1B	000a aaaa	Controller Bend Range (0 - 24) 0 - 24
	00 1C	0aaa aaaa	Control Source(1) (0 - 96) Off,CC 01,CC 02,CC 03,CC 04,CC 05,CC 06,CC 07, CC 08,CC 09,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 33,CC 34,CC 35,CC 36,CC 37,CC 38,CC 39,CC 40, CC 41,CC 42,CC 43,CC 44,CC 45,CC 46,CC 47,CC 48, CC 49,CC 50,CC 51,CC 52,CC 53,CC 54,CC 55,CC 56, CC 57,CC 58,CC 59,CC 60,CC 61,CC 62,CC 63,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, Bend, After Touch
	00 1D	0aaa aaaa	Control Source(2) (0 - 96) Off,CC 01,CC 02,CC 03,CC 04,CC 05,CC 06,CC 07, CC 08,CC 09,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 33,CC 34,CC 35,CC 36,CC 37,CC 38,CC 39,CC 40, CC 41,CC 42,CC 43,CC 44,CC 45,CC 46,CC 47,CC 48, CC 49,CC 50,CC 51,CC 52,CC 53,CC 54,CC 55,CC 56, CC 57,CC 58,CC 59,CC 60,CC 61,CC 62,CC 63,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, Bend, After Touch
00 1E	0aaa aaaa	Control Source(3) (0 - 96) Off,CC 01,CC 02,CC 03,CC 04,CC 05,CC 06,CC 07, CC 08,CC 09,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 33,CC 34,CC 35,CC 36,CC 37,CC 38,CC 39,CC 40, CC 41,CC 42,CC 43,CC 44,CC 45,CC 46,CC 47,CC 48, CC 49,CC 50,CC 51,CC 52,CC 53,CC 54,CC 55,CC 56, CC 57,CC 58,CC 59,CC 60,CC 61,CC 62,CC 63,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, Bend, After Touch
00 1F	0aaa aaaa	Control Source(4) (0 - 96) Off,CC 01,CC 02,CC 03,CC 04,CC 05,CC 06,CC 07, CC 08,CC 09,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 33,CC 34,CC 35,CC 36,CC 37,CC 38,CC 39,CC 40, CC 41,CC 42,CC 43,CC 44,CC 45,CC 46,CC 47,CC 48, CC 49,CC 50,CC 51,CC 52,CC 53,CC 54,CC 55,CC 56, CC 57,CC 58,CC 59,CC 60,CC 61,CC 62,CC 63,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, Bend, After Touch
00 20	00aa aaaa	Bite Range Down (0 - 34) 0 cent,5 cent,10 cent,20 cent,30 cent,40 cent, 50 cent,60 cent,70 cent,80 cent,90 cent,100 cent, 200 cent,300 cent,400 cent,500 cent,600 cent, 700 cent,800 cent,900 cent,1000 cent,1100 cent, 1200 cent,1300 cent,1400 cent,1500 cent,1600 cent, 1700 cent,1800 cent,1900 cent,2000 cent,2100 cent, 2200 cent,2300 cent,2400 cent
00 21	00aa aaaa	Bite Range Up (0 - 34) 0 cent,5 cent,10 cent,20 cent,30 cent,40 cent, 50 cent,60 cent,70 cent,80 cent,90 cent,100 cent, 200 cent,300 cent,400 cent,500 cent,600 cent, 700 cent,800 cent,900 cent,1000 cent,1100 cent, 1200 cent,1300 cent,1400 cent,1500 cent,1600 cent, 1700 cent,1800 cent,1900 cent,2000 cent,2100 cent, 2200 cent,2300 cent,2400 cent
00 22	0000 0000	(reserved) (0 - 0)
00 23	0000 0000	(reserved) (0 - 0)
00 24	0000 0000	(reserved) (0 - 0)
00 25	0000 0000	(reserved) (0 - 0)
00 26	0000 0000	(reserved) (0 - 0)
00 27	0000 0000	(reserved) (0 - 0)
00 28	0000 0000	(reserved) (0 - 0)
00 29	000a aaaa	Harmony1 Assign (0 - 24) Off,H-8,H-7,H-7-,H-6,H-6-,H-5,H-4+,H-4, H-3,H-3-,H-2,H-2-,H+2-,H+2,H+3-,H+3, H+4,H+4+,H+5,H+6-,H+6,H+7-,H+7,H+8
00 2A	000a aaaa	Harmony2 Assign (0 - 24) Off,H-8,H-7,H-7-,H-6,H-6-,H-5,H-4+,H-4, H-3,H-3-,H-2,H-2-,H+2-,H+2,H+3-,H+3, H+4,H+4+,H+5,H+6-,H+6,H+7-,H+7,H+8
00 2B	000a aaaa	Harmony3 Assign (0 - 24) Off,H-8,H-7,H-7-,H-6,H-6-,H-5,H-4+,H-4, H-3,H-3-,H-2,H-2-,H+2-,H+2,H+3-,H+3, H+4,H+4+,H+5,H+6-,H+6,H+7-,H+7,H+8
00 2C	000a aaaa	Harmony4 Assign (0 - 24) Off,H-8,H-7,H-7-,H-6,H-6-,H-5,H-4+,H-4, H-3,H-3-,H-2,H-2-,H+2-,H+2,H+3-,H+3, H+4,H+4+,H+5,H+6-,H+6,H+7-,H+7,H+8
00 2D	0000 0000	(reserved) (0 - 0)
00 2E	0000 0000	(reserved) (0 - 0)
00 2F	0000 0000	(reserved) (0 - 0)
00 30	0000 0000	(reserved) (0 - 0)
00 31	0000 0000	(reserved) (0 - 0)
00 32	0000 0000	(reserved) (0 - 0)
00 33	00aa aaaa	Bend Range Motion Down (0 - 34) (Only for AE-30) 0 cent,5 cent,10 cent,20 cent,30 cent,40 cent, 50 cent,60 cent,70 cent,80 cent,90 cent,100 cent, 200 cent,300 cent,400 cent,500 cent,600 cent, 700 cent,800 cent,900 cent,1000 cent,1100 cent, 1200 cent,1300 cent,1400 cent,1500 cent,1600 cent, 1700 cent,1800 cent,1900 cent,2000 cent,2100 cent, 2200 cent,2300 cent,2400 cent
00 34	00aa aaaa	Bend Range Motion Up (0 - 34) (Only for AE-30) 0 cent,5 cent,10 cent,20 cent,30 cent,40 cent, 50 cent,60 cent,70 cent,80 cent,90 cent,100 cent,

		200 cent,300 cent,400 cent,500 cent,600 cent, 700 cent,800 cent,900 cent,1000 cent,1100 cent, 1200 cent,1300 cent,1400 cent,1500 cent,1600 cent, 1700 cent,1800 cent,1900 cent,2000 cent,2100 cent, 2200 cent,2300 cent,2400 cent
00 35	0000 0aaa	Motion_1 Setting (0 - 4) (Only for AE-30) Elevation, Tilt, Tilt Full, Tilt Left, Tilt Right
00 36	0000 0aaa	Motion_2 Setting (0 - 4) (Only for AE-30) Elevation, Tilt, Tilt Full, Tilt Left, Tilt Right
00 37	0000 0000	(reserved) (0 - 0)
00 38	0000 0000	(reserved) (0 - 0)
00 39	0000 0000	(reserved) (0 - 0)
00 3A	0000 0000	(reserved) (0 - 0)
00 3B	0000 0000	(reserved) (0 - 0)
00 3C	0000 0000	(reserved) (0 - 0)
00 3D	0000 0000	(reserved) (0 - 0)
00 3E	0000 0000	(reserved) (0 - 0)
00 3F	0000 0000	(reserved) (0 - 0)
00 40	0000 0000	(reserved) (0 - 0)
00 41	0000 0000	(reserved) (0 - 0)
00 42	0000 0000	(reserved) (0 - 0)
00 43	0000 0000	(reserved) (0 - 0)
00 44	0000 0000	(reserved) (0 - 0)
00 45	0000 0000	(reserved) (0 - 0)
00 46	0000 0000	(reserved) (0 - 0)
00 47	0000 0000	(reserved) (0 - 0)
00 48	0000 0000	(reserved) (0 - 0)
00 49	0000 0000	(reserved) (0 - 0)
00 4A	0000 0000	(reserved) (0 - 0)
00 4B	0000 0000	(reserved) (0 - 0)
00 4C	0000 0000	(reserved) (0 - 0)
00 4D	0000 0000	(reserved) (0 - 0)
00 4E	0000 0000	(reserved) (0 - 0)
00 4F	0000 0000	(reserved) (0 - 0)
00 50	0000 0000	(reserved) (0 - 0)
00 51	0000 0000	(reserved) (0 - 0)
00 52	0000 0000	(reserved) (0 - 0)
00 53	0000 0000	(reserved) (0 - 0)
00 54	0000 0000	(reserved) (0 - 0)
00 55	0000 0000	(reserved) (0 - 0)
00 56	0000 0000	(reserved) (0 - 0)
00 57	0000 0000	(reserved) (0 - 0)
00 58	0000 0000	(reserved) (0 - 0)
00 59	0000 0000	(reserved) (0 - 0)
00 00 00 5A	Total Size	

* [Scene Part]

Offset Address		Description
00 00	0000 000a	Part Mode (0 - 1) Lead, Drone
00 01	0000 000a	Part Switch (0 - 1) Off, On
00 02	0aaa aaaa	Tone Bank Select MSB (CC#0) (0 - 127)
00 03	0aaa aaaa	Tone Bank Select LSB (CC#32) (0 - 127)
00 04	0aaa aaaa	Tone Program Change (PC) (0 - 127)
00 05	0aaa aaaa	Part Level (CC#7) (0 - 127)
00 06	0aaa aaaa	Part Pan (CC#10) (0 - 127) L 64,L 63,L 62,L 61,L 60,L 59,L 58,L 57,L 56,L 55, L 54,L 53,L 52,L 51,L 50,L 49,L 48,L 47,L 46,L 45, L 44,L 43,L 42,L 41,L 40,L 39,L 38,L 37,L 36,L 35, L 34,L 33,L 32,L 31,L 30,L 29,L 28,L 27,L 26,L 25, L 24,L 23,L 22,L 21,L 20,L 19,L 18,L 17,L 16,L 15, L 14,L 13,L 12,L 11,L 10,L 09,L 08,L 07,L 06,L 05, L 04,L 03,L 02,L 01,Center,R 01,R 02,R 03,R 04, R 05,R 06,R 07,R 08,R 09,R 10,R 11,R 12,R 13,R 14, R 15,R 16,R 17,R 18,R 19,R 20,R 21,R 22,R 23,R 24, R 25,R 26,R 27,R 28,R 29,R 30,R 31,R 32,R 33,R 34, R 35,R 36,R 37,R 38,R 39,R 40,R 41,R 42,R 43,R 44, R 45,R 46,R 47,R 48,R 49,R 50,R 51,R 52,R 53,R 54, R 55,R 56,R 57,R 58,R 59,R 60,R 61,R 62,R 63
00 07	0aaa aaaa	Part Reverb Send Level (CC#91) (0 - 127)
00 08	0aaa aaaa	Part Chorus Send Level (CC#93) (0 - 127)
00 09	0aaa aaaa	Part Delay Send Level (0 - 127)
00 0A	0000 0000	(reserved) (0 - 0)
00 0B	0000 000a	Output Assign (0 - 1) Dry, Ifx
00 0C	0000 0000	(reserved) (0 - 0)
00 0D	0000 0000	(reserved) (0 - 0)
00 0E	0aaa aaaa	Keyboard Range Lower (0 - 127)
00 0F	0aaa aaaa	Keyboard Range Upper (0 - 127)

	00 10	0aaa aaaa	Keyboard Fade Width Lower	(0 - 127)
	00 11	0aaa aaaa	Keyboard Fade Width Upper	(0 - 127)
	00 12	0aaa aaaa	Velocity Range Lower	(1 - 127)
	00 13	0aaa aaaa	Velocity Range Upper	(1 - 127)
	00 14	0aaa aaaa	Velocity Fade Width Lower	(0 - 127)
	00 15	0aaa aaaa	Velocity Fade Width Upper	(0 - 127)
	00 16	0aaa aaaa	Part Coarse Tune (RPN#2)	(16 - 112) -48 - 48
	00 17	0aaa aaaa	Part Fine Tune (RPN#1)	(14 - 114) -50 - 50
	00 18	0aaa aaaa	Part Octave Shift	(61 - 67) -3 - 3
	00 19	0000 0000	(reserved)	(0 - 0)
	00 1A	0000 0000	(reserved)	(0 - 0)
	00 1B	0aaa aaaa	Part Cutoff Offset (CC#74)	(0 - 127) -64 - 63
	00 1C	0aaa aaaa	Part Resonance Offset (CC#71)	(0 - 127) -64 - 63
	00 1D	0aaa aaaa	Part Attack Time Offset (CC#73)	(0 - 127) -64 - 63
	00 1E	0aaa aaaa	Part Decay Time Offset (CC#75)	(0 - 127) -64 - 63
	00 1F	0aaa aaaa	Part Release Time Offset (CC#72)	(0 - 127) -64 - 63
	00 20	0aaa aaaa	Part Vibrato Rate (CC#76)	(0 - 127) -64 - 63
	00 21	0aaa aaaa	Part Vibrato Depth (CC#77)	(0 - 127) -64 - 63
	00 22	0aaa aaaa	Part Vibrato Delay (CC#78)	(0 - 127) -64 - 63
	00 23	0000 0000	(reserved)	(0 - 0)
	00 24	0000 00aa	Part Mono/Poly	(0 - 2) Mono, Poly, Tone
	00 25	0000 00aa	Part Legato Switch	(0 - 2) Off, On, Tone
	00 26	0000 00aa	Part Portamento Switch (CC#65)	(0 - 2) Off, On, Tone
	00 27	0000 0000	(reserved)	(0 - 0)
#	00 28	0000 aaaa		
	00 29	0000 bbbb	Part Portamento Time (CC#5)	(0 - 128) 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, TONE
	00 2A	0000 00aa	Unison Switch	(0 - 2) Off, On, Tone
	00 2B	0000 0000	(reserved)	(0 - 0)
	00 2C	0000 0000	(reserved)	(0 - 0)
	00 2D	0000 0000	(reserved)	(0 - 0)
	00 2E	0000 0000	(reserved)	(0 - 0)
	00 2F	0000 0000	(reserved)	(0 - 0)
	00 30	0000 0000	(reserved)	(0 - 0)
	00 31	0000 0000	(reserved)	(0 - 0)
	00 32	0000 0000	(reserved)	(0 - 0)
	00 33	0000 0000	(reserved)	(0 - 0)
	00 34	0000 0000	(reserved)	(0 - 0)
	00 35	0000 0000	(reserved)	(0 - 0)
	00 36	0000 0000	(reserved)	(0 - 0)
	00 37	0000 0000	(reserved)	(0 - 0)
	00 38	0000 0000	(reserved)	(0 - 0)
	00 39	0000 0000	(reserved)	(0 - 0)
	00 3A	0000 000a	Keyboard Velocity Mode	(0 - 1) Real, Fixed
	00 3B	0aaa aaaa	Keyboard Fixed Velocity	(1 - 127)
	00 3C	0000 0000	(reserved)	(0 - 0)
	00 3D	0000 0000	(reserved)	(0 - 0)
	00 3E	0000 0000	(reserved)	(0 - 0)
	00 3F	0000 0000	(reserved)	(0 - 0)
	00 40	0000 0000	(reserved)	(0 - 0)
	00 41	0000 0000	(reserved)	(0 - 0)
	00 42	0000 0000	(reserved)	(0 - 0)
	00 43	0000 0000	(reserved)	(0 - 0)
	00 44	0000 0000	(reserved)	(0 - 0)
	00 45	0000 0000	(reserved)	(0 - 0)
	00 46	0000 0000	(reserved)	(0 - 0)
	00 47	0000 0000	(reserved)	(0 - 0)
	00 48	0000 000a	Rx S1 Button	(0 - 1) Off, On
	00 49	0000 000a	Rx S2 Button	(0 - 1) Off, On

00 4A	0000 000a	Rx Side Key (X)	(0 - 1) Off, On
00 4B	0000 000a	Rx Side Key (C1)	(0 - 1) Off, On
00 4C	0000 000a	Rx Side Key (C2)	(0 - 1) Off, On
00 4D	0000 000a	Rx Side Key (C3)	(0 - 1) Off, On
00 4E	0000 000a	Rx Side Key (C4)	(0 - 1) Off, On
00 4F	0000 000a	Rx Side Key (C5)	(0 - 1) Off, On
00 50	0000 000a	Rx Side Key (Tc)	(0 - 1) Off, On
00 51	0000 000a	Rx Side Key (Ta)	(0 - 1) Off, On
00 52	0000 000a	Rx Breath Controller	(0 - 1) Off, On
00 53	0000 000a	Rx Bite Controller (Down)	(0 - 1) Off, On
00 54	0000 000a	Rx Bite Controller (Up)	(0 - 1) Off, On
00 55	0000 000a	Rx Wheel Controller (Down)	(0 - 1) Off, On
00 56	0000 000a	Rx Wheel Controller (Up)	(0 - 1) Off, On
00 57	0000 000a	Rx ThumbPad Controller (Only for AE-30)	(0 - 1) Off, On
00 58	0000 000a	Rx Motion Controller (Only for AE-30)	(0 - 1) Off, On
00 59	0aaa aaaa	X-Fade Range Low	(0 - 127)
00 5A	0aaa aaaa	X-Fade Range Up	(0 - 127)
00 5B	0aaa aaaa	X-Fade Range Fade Low	(0 - 127)
00 5C	0aaa aaaa	X-Fade Range Fade Up	(0 - 127)
00 5D	0aaa aaaa	X-Fade Position	(0 - 127)
00 5E	0000 0000	(reserved)	(0 - 0)
00 5F	0000 0000	(reserved)	(0 - 0)
00 60	0000 0000	(reserved)	(0 - 0)
00 61	0000 0000	(reserved)	(0 - 0)
00 62	0000 0000	(reserved)	(0 - 0)
00 63	0000 0000	(reserved)	(0 - 0)
00 64	0000 0000	(reserved)	(0 - 0)
00 00 00 65	Total Size		

* [MIDI Control]

Offset Address		Description	
00 00	0000 aaaa	MIDI Controller Mode Tx CH	(0 - 15) 1 - 16
00 01	0000 0000	(reserved)	(0 - 0)
# 00 02	0000 aaaa		
00 03	0000 bbbb	Ext Bank MSB (CC#0)	(0 - 128) Off,0,1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17, 18,19,20,21,22,23,24,25,26,27,28,29,30,31,32,33, 34,35,36,37,38,39,40,41,42,43,44,45,46,47,48,49, 50,51,52,53,54,55,56,57,58,59,60,61,62,63,64,65, 66,67,68,69,70,71,72,73,74,75,76,77,78,79,80,81, 82,83,84,85,86,87,88,89,90,91,92,93,94,95,96,97, 98,99,100,101,102,103,104,105,106,107,108,109, 110,111,112,113,114,115,116,117,118,119,120, 121,122,123,124,125,126,127
# 00 04	0000 aaaa		
00 05	0000 bbbb	Ext Bank LSB (CC#32)	(0 - 128) Off,0,1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17, 18,19,20,21,22,23,24,25,26,27,28,29,30,31,32,33, 34,35,36,37,38,39,40,41,42,43,44,45,46,47,48,49, 50,51,52,53,54,55,56,57,58,59,60,61,62,63,64,65, 66,67,68,69,70,71,72,73,74,75,76,77,78,79,80,81, 82,83,84,85,86,87,88,89,90,91,92,93,94,95,96,97, 98,99,100,101,102,103,104,105,106,107,108,109, 110,111,112,113,114,115,116,117,118,119,120, 121,122,123,124,125,126,127
# 00 06	0000 aaaa		
00 07	0000 bbbb	Ext Program Change	(0 - 128) Off,1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17, 18,19,20,21,22,23,24,25,26,27,28,29,30,31,32,33, 34,35,36,37,38,39,40,41,42,43,44,45,46,47,48,49, 50,51,52,53,54,55,56,57,58,59,60,61,62,63,64,65, 66,67,68,69,70,71,72,73,74,75,76,77,78,79,80,81, 82,83,84,85,86,87,88,89,90,91,92,93,94,95,96,97, 98,99,100,101,102,103,104,105,106,107,108,109, 110,111,112,113,114,115,116,117,118,119,120, 121,122,123,124,125,126,127,128
# 00 08	0000 aaaa		
00 09	0000 bbbb	Ext Velocity	(0 - 128) Tongued,Fixed 0,Fixed 1,Fixed 2,Fixed 3,Fixed 4,

			Fixed 5,Fixed 6,Fixed 7,Fixed 8,Fixed 9,Fixed 10, Fixed 11,Fixed 12,Fixed 13,Fixed 14,Fixed 15, Fixed 16,Fixed 17,Fixed 18,Fixed 19,Fixed 20, Fixed 21,Fixed 22,Fixed 23,Fixed 24,Fixed 25, Fixed 26,Fixed 27,Fixed 28,Fixed 29,Fixed 30, Fixed 31,Fixed 32,Fixed 33,Fixed 34,Fixed 35, Fixed 36,Fixed 37,Fixed 38,Fixed 39,Fixed 40, Fixed 41,Fixed 42,Fixed 43,Fixed 44,Fixed 45, Fixed 46,Fixed 47,Fixed 48,Fixed 49,Fixed 50, Fixed 51,Fixed 52,Fixed 53,Fixed 54,Fixed 55, Fixed 56,Fixed 57,Fixed 58,Fixed 59,Fixed 60, Fixed 61,Fixed 62,Fixed 63,Fixed 64,Fixed 65, Fixed 66,Fixed 67,Fixed 68,Fixed 69,Fixed 70, Fixed 71,Fixed 72,Fixed 73,Fixed 74,Fixed 75, Fixed 76,Fixed 77,Fixed 78,Fixed 79,Fixed 80, Fixed 81,Fixed 82,Fixed 83,Fixed 84,Fixed 85, Fixed 86,Fixed 87,Fixed 88,Fixed 89,Fixed 90, Fixed 91,Fixed 92,Fixed 93,Fixed 94,Fixed 95, Fixed 96,Fixed 97,Fixed 98,Fixed 99,Fixed 100, Fixed 101,Fixed 102,Fixed 103,Fixed 104,Fixed 105, Fixed 106,Fixed 107,Fixed 108,Fixed 109,Fixed 110, Fixed 111,Fixed 112,Fixed 113,Fixed 114,Fixed 115, Fixed 116,Fixed 117,Fixed 118,Fixed 119,Fixed 120, Fixed 121,Fixed 122,Fixed 123,Fixed 124,Fixed 125, Fixed 126,Fixed 127
#	00 0A	0000 aaaa	
	00 0B	0000 bbbb	Ext Volume (CC#7) (0 - 128) Off,0,1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17, 18,19,20,21,22,23,24,25,26,27,28,29,30,31,32,33, 34,35,36,37,38,39,40,41,42,43,44,45,46,47,48,49, 50,51,52,53,54,55,56,57,58,59,60,61,62,63,64,65, 66,67,68,69,70,71,72,73,74,75,76,77,78,79,80,81, 82,83,84,85,86,87,88,89,90,91,92,93,94,95,96,97, 98,99,100,101,102,103,104,105,106,107,108,109, 110,111,112,113,114,115,116,117,118,119,120, 121,122,123,124,125,126,127
#	00 0C	0000 aaaa	
	00 0D	0000 bbbb	Ext PAN (CC#10) (0 - 128) Off, L 64,L 63,L 62,L 61,L 60,L 59,L 58,L 57,L 56, L 55,L 54,L 53,L 52,L 51,L 50,L 49,L 48,L 47,L 46, L 45,L 44,L 43,L 42,L 41,L 40,L 39,L 38,L 37,L 36, L 35,L 34,L 33,L 32,L 31,L 30,L 29,L 28,L 27,L 26, L 25,L 24,L 23,L 22,L 21,L 20,L 19,L 18,L 17,L 16, L 15,L 14,L 13,L 12,L 11,L 10,L 09,L 08,L 07,L 06, L 05,L 04,L 03,L 02,L 01,Center,R 01,R 02,R 03, R 04,R 05,R 06,R 07,R 08,R 09,R 10,R 11,R 12,R 13, R 14,R 15,R 16,R 17,R 18,R 19,R 20,R 21,R 22,R 23, R 24,R 25,R 26,R 27,R 28,R 29,R 30,R 31,R 32,R 33, R 34,R 35,R 36,R 37,R 38,R 39,R 40,R 41,R 42,R 43, R 44,R 45,R 46,R 47,R 48,R 49,R 50,R 51,R 52,R 53, R 54,R 55,R 56,R 57,R 58,R 59,R 60,R 61,R 62,R 63
#	00 0E	0000 aaaa	
	00 0F	0000 bbbb	Ext Reverb Send Level (CC#91) (0 - 128) Off,0,1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17, 18,19,20,21,22,23,24,25,26,27,28,29,30,31,32,33, 34,35,36,37,38,39,40,41,42,43,44,45,46,47,48,49, 50,51,52,53,54,55,56,57,58,59,60,61,62,63,64,65, 66,67,68,69,70,71,72,73,74,75,76,77,78,79,80,81, 82,83,84,85,86,87,88,89,90,91,92,93,94,95,96,97, 98,99,100,101,102,103,104,105,106,107,108,109, 110,111,112,113,114,115,116,117,118,119,120, 121,122,123,124,125,126,127
#	00 10	0000 aaaa	
	00 11	0000 bbbb	Ext Chorus Send Level (CC#93) (0 - 128) Off,0,1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17, 18,19,20,21,22,23,24,25,26,27,28,29,30,31,32,33, 34,35,36,37,38,39,40,41,42,43,44,45,46,47,48,49, 50,51,52,53,54,55,56,57,58,59,60,61,62,63,64,65, 66,67,68,69,70,71,72,73,74,75,76,77,78,79,80,81, 82,83,84,85,86,87,88,89,90,91,92,93,94,95,96,97, 98,99,100,101,102,103,104,105,106,107,108,109, 110,111,112,113,114,115,116,117,118,119,120, 121,122,123,124,125,126,127
	00 12	0aaa aaaa	Ext Coarse Tune (RPN#2) (0 - 97) Off, -48,-47,-46,-45,-44,-43,-42,-41,-40,-39,-38, -37,-36,-35,-34,-33,-32,-31,-30,-29,-28,-27,-26, -25,-24,-23,-22,-21,-20,-19,-18,-17,-16,-15,-14, -13,-12,-11,-10,-9,-8,-7,-6,-5,-4,-3,-2,-1,0,+1, +2,+3,+4,+5,+6,+7,+8,+9,+10,+11,+12,+13,+14,+15, +16,+17,+18,+19,+20,+21,+22,+23,+24,+25,+26,+27, +28,+29,+30,+31,+32,+33,+34,+35,+36,+37,+38,+39, +40,+41,+42,+43,+44,+45,+46,+47,+48
	00 13	0aaa aaaa	Ext Fine Tune (RPN#1) (0 - 101) Off, -50,-49,-48,-47,-46,-45,-44,-43,-42,-41, -40,-39,-38,-37,-36,-35,-34,-33,-32,-31,-30, -29,-28,-27,-26,-25,-24,-23,-22,-21,-20,-19, -18,-17,-16,-15,-14,-13,-12,-11,-10,-9,-8,-7, -6,-5,-4,-3,-2,-1,0,+1,+2,+3,+4,+5,+6,+7,+8, +9,+10,+11,+12,+13,+14,+15,+16,+17,+18,+19, +20,+21,+22,+23,+24,+25+26,+27,+28,+29,+30, +31,+32,+33,+34,+35,+36,+37,+38,+39,+40,+41, +42,+43,+44,+45,+46,+47,+48,+49,+50
	00 14	000a aaaa	Ext Bend Range (RPN#0) (0 - 25) Off,0,1,2,3,4,5,6,7,8,9,10,11,12,13, 14,15,16,17,18,19,20,21,22,23,24
	00 15	0000 0000	(reserved) (0 - 0)
#	00 16	0000 aaaa	

	00 17	0000 bbbb	Ext Modulation (CC#1) (0 - 128) Off,0,1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17, 18,19,20,21,22,23,24,25,26,27,28,29,30,31,32,33, 34,35,36,37,38,39,40,41,42,43,44,45,46,47,48,49, 50,51,52,53,54,55,56,57,58,59,60,61,62,63,64,65, 66,67,68,69,70,71,72,73,74,75,76,77,78,79,80,81, 82,83,84,85,86,87,88,89,90,91,92,93,94,95,96,97, 98,99,100,101,102,103,104,105,106,107,108,109, 110,111,112,113,114,115,116,117,118,119,120, 121,122,123,124,125,126,127
#	00 18	0000 aaaa	
	00 19	0000 bbbb	Ext Cutoff Offset (CC#74) (0 - 128) Off,0,1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17, 18,19,20,21,22,23,24,25,26,27,28,29,30,31,32,33, 34,35,36,37,38,39,40,41,42,43,44,45,46,47,48,49, 50,51,52,53,54,55,56,57,58,59,60,61,62,63,64,65, 66,67,68,69,70,71,72,73,74,75,76,77,78,79,80,81, 82,83,84,85,86,87,88,89,90,91,92,93,94,95,96,97, 98,99,100,101,102,103,104,105,106,107,108,109, 110,111,112,113,114,115,116,117,118,119,120, 121,122,123,124,125,126,127
#	00 1A	0000 aaaa	
	00 1B	0000 bbbb	Ext Resonance Offset (CC#71) (0 - 128) Off,0,1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17, 18,19,20,21,22,23,24,25,26,27,28,29,30,31,32,33, 34,35,36,37,38,39,40,41,42,43,44,45,46,47,48,49, 50,51,52,53,54,55,56,57,58,59,60,61,62,63,64,65, 66,67,68,69,70,71,72,73,74,75,76,77,78,79,80,81, 82,83,84,85,86,87,88,89,90,91,92,93,94,95,96,97, 98,99,100,101,102,103,104,105,106,107,108,109, 110,111,112,113,114,115,116,117,118,119,120, 121,122,123,124,125,126,127
#	00 1C	0000 aaaa	
	00 1D	0000 bbbb	Ext Attack Time Offset (CC#73) (0 - 128) Off,0,1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17, 18,19,20,21,22,23,24,25,26,27,28,29,30,31,32,33, 34,35,36,37,38,39,40,41,42,43,44,45,46,47,48,49, 50,51,52,53,54,55,56,57,58,59,60,61,62,63,64,65, 66,67,68,69,70,71,72,73,74,75,76,77,78,79,80,81, 82,83,84,85,86,87,88,89,90,91,92,93,94,95,96,97, 98,99,100,101,102,103,104,105,106,107,108,109, 110,111,112,113,114,115,116,117,118,119,120, 121,122,123,124,125,126,127
#	00 1E	0000 aaaa	
	00 1F	0000 bbbb	Ext Decay Time Offset (CC#75) (0 - 128) Off,0,1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17, 18,19,20,21,22,23,24,25,26,27,28,29,30,31,32,33, 34,35,36,37,38,39,40,41,42,43,44,45,46,47,48,49, 50,51,52,53,54,55,56,57,58,59,60,61,62,63,64,65, 66,67,68,69,70,71,72,73,74,75,76,77,78,79,80,81, 82,83,84,85,86,87,88,89,90,91,92,93,94,95,96,97, 98,99,100,101,102,103,104,105,106,107,108,109, 110,111,112,113,114,115,116,117,118,119,120, 121,122,123,124,125,126,127
#	00 20	0000 aaaa	
	00 21	0000 bbbb	Ext Release Time Offset (CC#72) (0 - 128) Off,0,1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17, 18,19,20,21,22,23,24,25,26,27,28,29,30,31,32,33, 34,35,36,37,38,39,40,41,42,43,44,45,46,47,48,49, 50,51,52,53,54,55,56,57,58,59,60,61,62,63,64,65, 66,67,68,69,70,71,72,73,74,75,76,77,78,79,80,81, 82,83,84,85,86,87,88,89,90,91,92,93,94,95,96,97, 98,99,100,101,102,103,104,105,106,107,108,109, 110,111,112,113,114,115,116,117,118,119,120, 121,122,123,124,125,126,127
	00 22	0000 00aa	Ext Mono/Poly (CC#126/127) (0 - 2) Off, Mono, Poly
	00 23	0000 0000	(reserved) (0 - 0)
	00 24	0000 0000	(reserved) (0 - 0)
	00 25	0000 0000	(reserved) (0 - 0)
	00 26	0000 0000	(reserved) (0 - 0)
	00 27	0000 0000	(reserved) (0 - 0)
	00 28	0000 0000	(reserved) (0 - 0)
	00 29	0000 0000	(reserved) (0 - 0)
	00 2A	0000 0000	(reserved) (0 - 0)
	00 2B	0000 0000	(reserved) (0 - 0)
	00 2C	0000 0000	(reserved) (0 - 0)
	00 2D	0000 0000	(reserved) (0 - 0)
	00 00 00 2E		Total Size

* [Part EQ]

Offset Address		Description
00 00	0aaa aaaa	EQ Input Gain (40 - 88) -24 - +24 [dB]
00 01	0aaa aaaa	EQ Low Gain (40 - 88) -24 - +24 [dB]
00 02	0aaa aaaa	EQ Mid Gain (40 - 88) -24 - +24 [dB]
00 03	0aaa aaaa	EQ High Gain (40 - 88) -24 - +24 [dB]
00 04	000a aaaa	EQ Low Frequency (0 - 29) 20, 25, 31, 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, 12600, 16000 [Hz]
	00 05	000a aaaa	EQ Mid Frequency (0 - 29) 20, 25, 31, 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, 12600, 16000 [Hz]
	00 06	000a aaaa	EQ High Frequency (0 - 29) 20, 25, 31, 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, 12600, 16000 [Hz]
	00 07	0000 0aaa	EQ Mid Q (0 - 5) 0.5, 1.0, 2.0, 4.0, 8.0, 16.0
	00 08	0000 000a	EQ Switch (0 - 1) Off, On
00 00 00 09	Total Size		

* [Partial EQ]

Offset Address		Description
# 00 00	0000 aaaa	
00 01	0000 bbbb	
00 02	0000 cccc	
00 03	0000 dddd	EQ Low Gain (784 - 1264) -24.0 - +24.0 [EQGAIN]
# 00 04	0000 aaaa	
00 05	0000 bbbb	
00 06	0000 cccc	
00 07	0000 dddd	EQ Mid Gain (784 - 1264) -24.0 - +24.0 [EQGAIN]
# 00 08	0000 aaaa	
00 09	0000 bbbb	
00 0A	0000 cccc	
00 0B	0000 dddd	EQ High Gain (784 - 1264) -24.0 - +24.0 [EQGAIN]
# 00 0C	0000 aaaa	
00 0D	0000 bbbb	
00 0E	0000 cccc	
00 0F	0000 dddd	EQ Low Frequency (20 - 16000) 20 - 16000 [EQFREQ]
# 00 10	0000 aaaa	
00 11	0000 bbbb	
00 12	0000 cccc	
00 13	0000 dddd	EQ Mid Frequency (20 - 16000) 20 - 16000 [EQFREQ]
# 00 14	0000 aaaa	
00 15	0000 bbbb	
00 16	0000 cccc	
00 17	0000 dddd	EQ High Frequency (20 - 16000) 20 - 16000 [EQFREQ]
# 00 18	0000 aaaa	
00 19	0000 bbbb	EQ Mid Q (5 - 160) 0.5 - 16.0 [EQQ]
00 1A	0000 000a	EQ Switch (0 - 1) OFF, ON
00 00 00 1B	Total Size	

* [Partial LFO]

Offset Address		Description
00 00	0000 aaaa	Waveform (0 - 10) SIN, TRI, SAW-UP, SAW-DW, SQR, RND, TRP, S&H, CHS, VSIN, STEP
00 01	0000 000a	Rate Sync (0 - 1) OFF, ON
00 02	000a aaaa	Rate (note) (0 - 22) 1/64T, 1/64, 1/32T, 1/32, 1/16T, 1/32., 1/16, 1/8T, 1/16., 1/8, 1/4T, 1/8., 1/4, 1/2T, 1/4., 1/2, 1T, 1/2., 1, 2T, 1., 2, 4
00 03	0000 aaaa	Step Size (0 - 15) 1 - 16
# 00 04	0000 aaaa	
00 05	0000 bbbb	
00 06	0000 cccc	
00 07	0000 dddd	Rate (0 - 1023) 0 - 1023
# 00 08	0000 aaaa	
00 09	0000 bbbb	Offset (28 - 228) -100 - +100
00 0A	0aaa aaaa	Rate Detune (0 - 127) 0 - 127
# 00 0B	0000 aaaa	
00 0C	0000 bbbb	
00 0D	0000 cccc	
00 0E	0000 dddd	Delay Time (0 - 1023) 0 - 1023
# 00 0F	0000 aaaa	
00 10	0000 bbbb	Delay Time Keyfolow (28 - 228) -100 - +100

	00 11	0000 00aa	Fade Mode	(0 - 3) ON-IN, ON-OUT, OFF-IN, OFF-OUT
#	00 12	0000 aaaa		
	00 13	0000 bbbb		
	00 14	0000 cccc		
	00 15	0000 dddd	Fade Time	(0 - 1023) 0 - 1023
	00 16	0000 000a	Key Trigger	(0 - 1) OFF, ON
#	00 17	0000 aaaa		
	00 18	0000 bbbb	Pitch Depth	(28 - 228) -100 - +100
#	00 19	0000 aaaa		
	00 1A	0000 bbbb	TVF Depth	(28 - 228) -100 - +100
#	00 1B	0000 aaaa		
	00 1C	0000 bbbb	TVA Depth	(28 - 228) -100 - +100
	00 1D	0aaa aaaa	PAN Depth	(1 - 127) -63 - +63
	00 1E	0000 00aa	Phase Position	(0 - 3) 0 - 3
#	00 1F	0000 aaaa		
	00 20	0000 bbbb	Step	(56 - 200) -72 - +72
#	00 21	0000 aaaa		
	00 22	0000 bbbb	Step	(56 - 200) -72 - +72
#	00 23	0000 aaaa		
	00 24	0000 bbbb	Step	(56 - 200) -72 - +72
#	00 25	0000 aaaa		
	00 26	0000 bbbb	Step	(56 - 200) -72 - +72
#	00 27	0000 aaaa		
	00 28	0000 bbbb	Step	(56 - 200) -72 - +72
#	00 29	0000 aaaa		
	00 2A	0000 bbbb	Step	(56 - 200) -72 - +72
#	00 2B	0000 aaaa		
	00 2C	0000 bbbb	Step	(56 - 200) -72 - +72
#	00 2D	0000 aaaa		
	00 2E	0000 bbbb	Step	(56 - 200) -72 - +72
#	00 2F	0000 aaaa		
	00 30	0000 bbbb	Step	(56 - 200) -72 - +72
#	00 31	0000 aaaa		
	00 32	0000 bbbb	Step	(56 - 200) -72 - +72
#	00 33	0000 aaaa		
	00 34	0000 bbbb	Step	(56 - 200) -72 - +72
#	00 35	0000 aaaa		
	00 36	0000 bbbb	Step	(56 - 200) -72 - +72
#	00 37	0000 aaaa		
	00 38	0000 bbbb	Step	(56 - 200) -72 - +72
#	00 39	0000 aaaa		
	00 3A	0000 bbbb	Step	(56 - 200) -72 - +72
#	00 3B	0000 aaaa		
	00 3C	0000 bbbb	Step	(56 - 200) -72 - +72
#	00 3D	0000 aaaa		
	00 3E	0000 bbbb	Step	(56 - 200) -72 - +72
	00 3F	00aa aaaa	Step Curve	(0 - 36) 0 - 36
	00 40	00aa aaaa	Step Curve	(0 - 36) 0 - 36
	00 41	00aa aaaa	Step Curve	(0 - 36) 0 - 36
	00 42	00aa aaaa	Step Curve	(0 - 36) 0 - 36
	00 43	00aa aaaa	Step Curve	(0 - 36) 0 - 36
	00 44	00aa aaaa	Step Curve	(0 - 36) 0 - 36
	00 45	00aa aaaa	Step Curve	(0 - 36) 0 - 36
	00 46	00aa aaaa	Step Curve	(0 - 36) 0 - 36
	00 47	00aa aaaa	Step Curve	(0 - 36) 0 - 36
	00 48	00aa aaaa	Step Curve	(0 - 36) 0 - 36
	00 49	00aa aaaa	Step Curve	(0 - 36) 0 - 36
	00 4A	00aa aaaa	Step Curve	(0 - 36) 0 - 36
	00 4B	00aa aaaa	Step Curve	(0 - 36) 0 - 36
	00 4C	00aa aaaa	Step Curve	(0 - 36) 0 - 36

	00 4D	00aa aaaa	Step Curve	(0 - 36) 0 - 36
	00 4E	00aa aaaa	Step Curve	(0 - 36) 0 - 36
	00 4F	0000 aaaa	Waveform	(0 - 10) SIN, TRI, SAW-UP, SAW-DW, SQR, RND, TRP, S&H, CHS, VSIN, STEP
	00 50	0000 000a	Rate Sync	(0 - 1) OFF, ON
	00 51	000a aaaa	Rate (note)	(0 - 22) 1/64T, 1/64, 1/32T, 1/32, 1/16T, 1/32., 1/16, 1/8T, 1/16., 1/8, 1/4T, 1/8., 1/4, 1/2T, 1/4., 1/2, 1T, 1/2., 1, 2T, 1., 2, 4
	00 52	0000 aaaa	Step Size	(0 - 15) 1 - 16
#	00 53	0000 aaaa		
	00 54	0000 bbbb		
	00 55	0000 cccc		
	00 56	0000 dddd	Rate	(0 - 1023) 0 - 1023
#	00 57	0000 aaaa		
	00 58	0000 bbbb	Offset	(28 - 228) -100 - +100
	00 59	0aaa aaaa	Rate Detune	(0 - 127) 0 - 127
#	00 5A	0000 aaaa		
	00 5B	0000 bbbb		
	00 5C	0000 cccc		
	00 5D	0000 dddd	Delay Time	(0 - 1023) 0 - 1023
#	00 5E	0000 aaaa		
	00 5F	0000 bbbb	Delay Time Keyfolow	(28 - 228) -100 - +100
	00 60	0000 00aa	Fade Mode	(0 - 3) ON-IN, ON-OUT, OFF-IN, OFF-OUT
#	00 61	0000 aaaa		
	00 62	0000 bbbb		
	00 63	0000 cccc		
	00 64	0000 dddd	Fade Time	(0 - 1023) 0 - 1023
	00 65	0000 000a	Key Trigger	(0 - 1) OFF, ON
#	00 66	0000 aaaa		
	00 67	0000 bbbb	Pitch Depth	(28 - 228) -100 - +100
#	00 68	0000 aaaa		
	00 69	0000 bbbb	TVF Depth	(28 - 228) -100 - +100
#	00 6A	0000 aaaa		
	00 6B	0000 bbbb	TVA Depth	(28 - 228) -100 - +100
	00 6C	0aaa aaaa	PAN Depth	(1 - 127) -63 - +63
	00 6D	0000 00aa	Phase Position	(0 - 3) 0 - 3
#	00 6E	0000 aaaa		
	00 6F	0000 bbbb	Step	(56 - 200) -72 - +72
#	00 70	0000 aaaa		
	00 71	0000 bbbb	Step	(56 - 200) -72 - +72
#	00 72	0000 aaaa		
	00 73	0000 bbbb	Step	(56 - 200) -72 - +72
#	00 74	0000 aaaa		
	00 75	0000 bbbb	Step	(56 - 200) -72 - +72
#	00 76	0000 aaaa		
	00 77	0000 bbbb	Step	(56 - 200) -72 - +72
#	00 78	0000 aaaa		
	00 79	0000 bbbb	Step	(56 - 200) -72 - +72
#	00 7A	0000 aaaa		
	00 7B	0000 bbbb	Step	(56 - 200) -72 - +72
#	00 7C	0000 aaaa		
	00 7D	0000 bbbb	Step	(56 - 200) -72 - +72
#	00 7E	0000 aaaa		
	00 7F	0000 bbbb	Step	(56 - 200) -72 - +72
#	01 00	0000 aaaa		
	01 01	0000 bbbb	Step	(56 - 200) -72 - +72
#	01 02	0000 aaaa		
	01 03	0000 bbbb	Step	(56 - 200) -72 - +72
#	01 04	0000 aaaa		
	01 05	0000 bbbb	Step	(56 - 200) -72 - +72
#	01 06	0000 aaaa		
	01 07	0000 bbbb	Step	(56 - 200) -72 - +72
#	01 08	0000 aaaa		
	01 09	0000 bbbb	Step	(56 - 200) -72 - +72
#	01 0A	0000 aaaa		

	01 0B	0000 bbbb	Step	(56 - 200) -72 - +72
#	01 0C	0000 aaaa		
	01 0D	0000 bbbb	Step	(56 - 200) -72 - +72
	01 0E	00aa aaaa	Step Curve	(0 - 36) 0 - 36
	01 0F	00aa aaaa	Step Curve	(0 - 36) 0 - 36
	01 10	00aa aaaa	Step Curve	(0 - 36) 0 - 36
	01 11	00aa aaaa	Step Curve	(0 - 36) 0 - 36
	01 12	00aa aaaa	Step Curve	(0 - 36) 0 - 36
	01 13	00aa aaaa	Step Curve	(0 - 36) 0 - 36
	01 14	00aa aaaa	Step Curve	(0 - 36) 0 - 36
	01 15	00aa aaaa	Step Curve	(0 - 36) 0 - 36
	01 16	00aa aaaa	Step Curve	(0 - 36) 0 - 36
	01 17	00aa aaaa	Step Curve	(0 - 36) 0 - 36
	01 18	00aa aaaa	Step Curve	(0 - 36) 0 - 36
	01 19	00aa aaaa	Step Curve	(0 - 36) 0 - 36
	01 1A	00aa aaaa	Step Curve	(0 - 36) 0 - 36
	01 1B	00aa aaaa	Step Curve	(0 - 36) 0 - 36
	01 1C	00aa aaaa	Step Curve	(0 - 36) 0 - 36
	01 1D	00aa aaaa	Step Curve	(0 - 36) 0 - 36
00 00 01 1E			Total Size	

* [Partial Pitch Env]

Offset Address			Description	
#	00 00	0000 aaaa		
	00 01	0000 bbbb	Pitch Env Depth	(28 - 228) -100 - +100
#	00 02	0000 aaaa		
	00 03	0000 bbbb	Pitch Env Velocity Sens	(28 - 228) -100 - +100
#	00 04	0000 aaaa		
	00 05	0000 bbbb	Pitch Env T1 Velocity Sens	(28 - 228) -100 - +100
#	00 06	0000 aaaa		
	00 07	0000 bbbb	Pitch Env T4 Velocity Sens	(28 - 228) -100 - +100
#	00 08	0000 aaaa		
	00 09	0000 bbbb		
	00 0A	0000 cccc		
	00 0B	0000 dddd	Pitch Env Time1	(0 - 1023) 0 - 1023
#	00 0C	0000 aaaa		
	00 0D	0000 bbbb		
	00 0E	0000 cccc		
	00 0F	0000 dddd	Pitch Env Time2	(0 - 1023) 0 - 1023
#	00 10	0000 aaaa		
	00 11	0000 bbbb		
	00 12	0000 cccc		
	00 13	0000 dddd	Pitch Env Time3	(0 - 1023) 0 - 1023
#	00 14	0000 aaaa		
	00 15	0000 bbbb		
	00 16	0000 cccc		
	00 17	0000 dddd	Pitch Env Time4	(0 - 1023) 0 - 1023
#	00 18	0000 aaaa		
	00 19	0000 bbbb		
	00 1A	0000 cccc		
	00 1B	0000 dddd	Pitch Env Level0	(513 - 1535) -511 - +511
#	00 1C	0000 aaaa		
	00 1D	0000 bbbb		
	00 1E	0000 cccc		
	00 1F	0000 dddd	Pitch Env Level1	(513 - 1535) -511 - +511
#	00 20	0000 aaaa		
	00 21	0000 bbbb		
	00 22	0000 cccc		
	00 23	0000 dddd	Pitch Env Level2	(513 - 1535) -511 - +511
#	00 24	0000 aaaa		
	00 25	0000 bbbb		
	00 26	0000 cccc		
	00 27	0000 dddd	Pitch Env Level3	(513 - 1535) -511 - +511

#	00 28	0000 aaaa		
	00 29	0000 bbbb		
	00 2A	0000 cccc		
	00 2B	0000 dddd	Pitch Env Level4	(513 - 1535) -511 - +511
	00 2C	0000 0aaa	Pitch Env Velocity Curve	(0 - 7) 0 - 7
00 00 00 2D			Total Size	

* [Partial Filter Env]

Offset Address		Description	
00 00	0aaa aaaa	TVF Env Depth	(1 - 127) -63 - +63
00 01	0000 0aaa	TVF Env Velocity Curve	(0 - 7) 0 - 7
# 00 02	0000 aaaa		
00 03	0000 bbbb	TVF Env Velocity Sens	(28 - 228) -100 - +100
# 00 04	0000 aaaa		
00 05	0000 bbbb	TVF Env T1 Velocity Sens	(28 - 228) -100 - +100
# 00 06	0000 aaaa		
00 07	0000 bbbb	TVF Env T4 Velocity Sens	(28 - 228) -100 - +100
# 00 08	0000 aaaa		
00 09	0000 bbbb		
00 0A	0000 cccc		
00 0B	0000 dddd	TVF Env Time1	(0 - 1023) 0 - 1023
# 00 0C	0000 aaaa		
00 0D	0000 bbbb		
00 0E	0000 cccc		
00 0F	0000 dddd	TVF Env Time2	(0 - 1023) 0 - 1023
# 00 10	0000 aaaa		
00 11	0000 bbbb		
00 12	0000 cccc		
00 13	0000 dddd	TVF Env Time3	(0 - 1023) 0 - 1023
# 00 14	0000 aaaa		
00 15	0000 bbbb		
00 16	0000 cccc		
00 17	0000 dddd	TVF Env Time4	(0 - 1023) 0 - 1023
# 00 18	0000 aaaa		
00 19	0000 bbbb		
00 1A	0000 cccc		
00 1B	0000 dddd	TVF Env Level0	(0 - 1023) 0 - 1023
# 00 1C	0000 aaaa		
00 1D	0000 bbbb		
00 1E	0000 cccc		
00 1F	0000 dddd	TVF Env Level1	(0 - 1023) 0 - 1023
# 00 20	0000 aaaa		
00 21	0000 bbbb		
00 22	0000 cccc		
00 23	0000 dddd	TVF Env Level2	(0 - 1023) 0 - 1023
# 00 24	0000 aaaa		
00 25	0000 bbbb		
00 26	0000 cccc		
00 27	0000 dddd	TVF Env Level3	(0 - 1023) 0 - 1023
# 00 28	0000 aaaa		
00 29	0000 bbbb		
00 2A	0000 cccc		
00 2B	0000 dddd	TVF Env Level4	(0 - 1023) 0 - 1023
00 00 00 2C		Total Size	

* [Partial Amp Env]

Offset Address		Description	
# 00 00	0000 aaaa		
00 01	0000 bbbb	TVA Env Time1 Velocity Sens	(28 - 228) -100 - +100
# 00 02	0000 aaaa		
00 03	0000 bbbb	TVA Env Time4 Velocity Sens	(28 - 228) -100 - +100
# 00 04	0000 aaaa		
00 05	0000 bbbb		
00 06	0000 cccc		
00 07	0000 dddd	TVA Env Time1	(0 - 1023) 0 - 1023
# 00 08	0000 aaaa		
00 09	0000 bbbb		
00 0A	0000 cccc		
00 0B	0000 dddd	TVA Env Time2	(0 - 1023)

			0 - 1023
#	00 0C	0000 aaaa	
	00 0D	0000 bbbb	
	00 0E	0000 cccc	
	00 0F	0000 dddd	TVA Env Time3 (0 - 1023)
			0 - 1023
#	00 10	0000 aaaa	
	00 11	0000 bbbb	
	00 12	0000 cccc	
	00 13	0000 dddd	TVA Env Time4 (0 - 1023)
			0 - 1023
#	00 14	0000 aaaa	
	00 15	0000 bbbb	
	00 16	0000 cccc	
	00 17	0000 dddd	TVA Env Level1 (0 - 1023)
			0 - 1023
#	00 18	0000 aaaa	
	00 19	0000 bbbb	
	00 1A	0000 cccc	
	00 1B	0000 dddd	TVA Env Level2 (0 - 1023)
			0 - 1023
#	00 1C	0000 aaaa	
	00 1D	0000 bbbb	
	00 1E	0000 cccc	
	00 1F	0000 dddd	TVA Env Level3 (0 - 1023)
			0 - 1023
00 00 00 20		Total Size	

* [Tone Common]

Offset Address		Description	
00 00	0aaa aaaa	Name	(32 - 127)
			32 - 127 [ASCII]
00 01	0aaa aaaa	Name	(32 - 127)
			32 - 127 [ASCII]
00 02	0aaa aaaa	Name	(32 - 127)
			32 - 127 [ASCII]
00 03	0aaa aaaa	Name	(32 - 127)
			32 - 127 [ASCII]
00 04	0aaa aaaa	Name	(32 - 127)
			32 - 127 [ASCII]
00 05	0aaa aaaa	Name	(32 - 127)
			32 - 127 [ASCII]
00 06	0aaa aaaa	Name	(32 - 127)
			32 - 127 [ASCII]
00 07	0aaa aaaa	Name	(32 - 127)
			32 - 127 [ASCII]
00 08	0aaa aaaa	Name	(32 - 127)
			32 - 127 [ASCII]
00 09	0aaa aaaa	Name	(32 - 127)
			32 - 127 [ASCII]
00 0A	0aaa aaaa	Name	(32 - 127)
			32 - 127 [ASCII]
00 0B	0aaa aaaa	Name	(32 - 127)
			32 - 127 [ASCII]
00 0C	0aaa aaaa	Name	(32 - 127)
			32 - 127 [ASCII]
00 0D	0aaa aaaa	Name	(32 - 127)
			32 - 127 [ASCII]
00 0E	0aaa aaaa	Name	(32 - 127)
			32 - 127 [ASCII]
00 0F	0aaa aaaa	Name	(32 - 127)
			32 - 127 [ASCII]
00 10	00aa aaaa	Category	(0 - 49)
			0 - 49
#	00 11	0000 aaaa	
	00 12	0000 bbbb	
	00 13	0000 cccc	
	00 14	0000 dddd	Reserved (0 - 0)
	00 15	0aaa aaaa	Level (0 - 127)
			0 - 127
	00 16	0aaa aaaa	Pan (0 - 127)
			L64 - 63R
	00 17	0000 000a	Priority (0 - 1)
			LAST, LOUDEST
	00 18	0aaa aaaa	Tone Coarse Tune (16 - 112)
			-48 - +48 [semitone]
	00 19	0aaa aaaa	Tone Fine Tune (14 - 114)
			-50 - +50 [cent]
	00 1A	0aaa aaaa	Octave Shift (61 - 67)
			-3 - +3
	00 1B	0000 00aa	Stretch Tune Depth (0 - 3)
			OFF, 1, 2, 3
	00 1C	0aaa aaaa	Analog Feel (0 - 127)
			0 - 127
	00 1D	0000 000a	Mono/Poly (0 - 1)
			MONO, POLY
	00 1E	0000 000a	Legato Switch (0 - 1)
			OFF, ON
	00 1F	0000 aaaa	Legato Retrigger Interval (0 - 13)
			0,1,2,3,4,5,6,7,8,9,10,11,12,OFF
	00 20	0000 000a	Portamento Switch (0 - 1)
			OFF, ON
	00 21	0000 000a	Portamento Mode (0 - 1)

			NORMAL, LEGATO
	00 22	0000 000a	Portamento Type (0 - 1)
			RATE, TIME
	00 23	0000 000a	Portamento Start (0 - 1)
			PITCH, NOTE
#	00 24	0000 aaaa	
	00 25	0000 bbbb	
	00 26	0000 cccc	
	00 27	0000 dddd	Portamento Time (0 - 1023)
			0 - 1023
	00 28	00aa aaaa	Bend Range Up (0 - 48)
			0 - 48
	00 29	00aa aaaa	Bend Range Down (0 - 48)
			0 - 48
	00 2A	0000 000a	Bend Mode (0 - 1)
			NORMAL, CATCH+LAST
	00 2B	0aaa aaaa	Soft Level Sens (0 - 100)
			0 - 100
#	00 2C	0000 aaaa	
	00 2D	0000 bbbb	Reserved (0 - 0)
#	00 2E	0000 aaaa	
	00 2F	0000 bbbb	Reserved (0 - 0)
#	00 30	0000 aaaa	
	00 31	0000 bbbb	Reserved (0 - 0)
#	00 32	0000 aaaa	
	00 33	0000 bbbb	Reserved (0 - 0)
	00 34	0000 00aa	Portamento Curve Type (0 - 2)
			0 - 2
	00 35	0000 000a	Reserved (0 - 0)
00 00 00 36	Total Size		

* [Tone PartialMixTable]

Offset Address		Description	
	00 00	0000 00aa	Velocity Control (0 - 3)
			OFF, ON, RANDOM, CYCLE
	00 01	0000 000a	PMT Level Curve (0 - 1)
			EXP, LINEAR
	00 02	0000 000a	Partial Switch (0 - 1)
			OFF, ON
	00 03	0aaa aaaa	KeyRange Lower (0 - 127)
			0 - 127
	00 04	0aaa aaaa	KeyRange Upper (0 - 127)
			0 - 127
	00 05	0aaa aaaa	KeyFade Lower (0 - 127)
			0 - 127
	00 06	0aaa aaaa	KeyFade Upper (0 - 127)
			0 - 127
	00 07	0aaa aaaa	VeloRange Lower (1 - 127)
			1 - 127
	00 08	0aaa aaaa	VeloRange Upper (1 - 127)
			1 - 127
	00 09	0aaa aaaa	VeloFade Lower (0 - 127)
			0 - 127
	00 0A	0aaa aaaa	VeloFade Upper (0 - 127)
			0 - 127
	00 0B	0000 000a	Partial Switch (0 - 1)
			OFF, ON
	00 0C	0aaa aaaa	KeyRange Lower (0 - 127)
			0 - 127
	00 0D	0aaa aaaa	KeyRange Upper (0 - 127)
			0 - 127
	00 0E	0aaa aaaa	KeyFade Lower (0 - 127)
			0 - 127
	00 0F	0aaa aaaa	KeyFade Upper (0 - 127)
			0 - 127
	00 10	0aaa aaaa	VeloRange Lower (1 - 127)
			1 - 127
	00 11	0aaa aaaa	VeloRange Upper (1 - 127)
			1 - 127
	00 12	0aaa aaaa	VeloFade Lower (0 - 127)
			0 - 127
	00 13	0aaa aaaa	VeloFade Upper (0 - 127)
			0 - 127
	00 14	0000 000a	Partial Switch (0 - 1)
			OFF, ON
	00 15	0aaa aaaa	KeyRange Lower (0 - 127)
			0 - 127
	00 16	0aaa aaaa	KeyRange Upper (0 - 127)
			0 - 127
	00 17	0aaa aaaa	KeyFade Lower (0 - 127)
			0 - 127
	00 18	0aaa aaaa	KeyFade Upper (0 - 127)
			0 - 127
	00 19	0aaa aaaa	VeloRange Lower (1 - 127)
			1 - 127
	00 1A	0aaa aaaa	VeloRange Upper (1 - 127)
			1 - 127
	00 1B	0aaa aaaa	VeloFade Lower (0 - 127)
			0 - 127
	00 1C	0aaa aaaa	VeloFade Upper (0 - 127)
			0 - 127
	00 1D	0000 000a	Partial Switch (0 - 1)

			OFF, ON
	00 1E	0aaa aaaa	KeyRange Lower (0 - 127) 0 - 127
	00 1F	0aaa aaaa	KeyRange Upper (0 - 127) 0 - 127
	00 20	0aaa aaaa	KeyFade Lower (0 - 127) 0 - 127
	00 21	0aaa aaaa	KeyFade Upper (0 - 127) 0 - 127
	00 22	0aaa aaaa	VeloRange Lower (1 - 127) 1 - 127
	00 23	0aaa aaaa	VeloRange Upper (1 - 127) 1 - 127
	00 24	0aaa aaaa	VeloFade Lower (0 - 127) 0 - 127
	00 25	0aaa aaaa	VeloFade Upper (0 - 127) 0 - 127
00 00 00 26			Total Size

* [Tone Partial]

Offset Address		Description	
	00 00	0aaa aaaa	Level (0 - 127) 0 - 127
	00 01	0aaa aaaa	Coarse Tune (16 - 112) -48 - 48
	00 02	0aaa aaaa	Fine Tune (14 - 114) -50 - 50 [cent]
#	00 03	0000 aaaa	
	00 04	0000 bbbb	
	00 05	0000 cccc	
	00 06	0000 dddd	Random Pitch Depth (0 - 1200) 0 - 1200 [cent]
	00 07	0aaa aaaa	Pan (0 - 127) L64 - 63R
#	00 08	0000 aaaa	
	00 09	0000 bbbb	Pan Keyfollow (28 - 228) -100 - +100
	00 0A	00aa aaaa	Random Pan Depth (0 - 63) 0 - 63
	00 0B	0aaa aaaa	Alternate Pan Depth (0 - 127) L64 - 63R
	00 0C	0000 000a	Envelope Mode (0 - 1) NO-SUS, SUSTAIN
	00 0D	0000 00aa	Delay Mode (0 - 3) NORMAL, HOLD, KEYOFF-NORMAL, KEYOFF-DECAY
	00 0E	0000 000a	DelayTime Sync (0 - 1) OFF, ON
	00 0F	000a aaaa	DelayTime (note) (0 - 21) 1/64T, 1/64, 1/32T, 1/32, 1/16T, 1/32., 1/16, 1/8T, 1/16., 1/8, 1/4T, 1/8., 1/4, 1/2T, 1/4., 1/2, 1T, 1/2., 1, 2T, 1., 2
#	00 10	0000 aaaa	
	00 11	0000 bbbb	
	00 12	0000 cccc	
	00 13	0000 dddd	DelayTime (0 - 1023) 0 - 1023
	00 14	0aaa aaaa	Chorus Send Level (0 - 127) 0 - 127
	00 15	0aaa aaaa	Reverb Send Level (0 - 127) 0 - 127
	00 16	0000 000a	Receive Bender (0 - 1) OFF, ON
	00 17	0000 000a	Receive Expression (0 - 1) OFF, ON
	00 18	0000 000a	Receive Hold-1 (0 - 1) OFF, ON
	00 19	0000 000a	Redamper Switch (0 - 1) OFF, ON
	00 1A	0000 000a	Output Assign (0 - 1) DRY, MFX
	00 1B	0000 00aa	Wave Group Type (0 - 3) INT, EXP, SAMP, MSAMP
#	00 1C	0000 aaaa	
	00 1D	0000 bbbb	
	00 1E	0000 cccc	
	00 1F	0000 dddd	Wave Group ID (0 - 16383) 0 - 16383
#	00 20	0000 aaaa	
	00 21	0000 bbbb	
	00 22	0000 cccc	
	00 23	0000 dddd	Wave Number L (0 - 16383) 0 - 16383
#	00 24	0000 aaaa	
	00 25	0000 bbbb	
	00 26	0000 cccc	
	00 27	0000 dddd	Wave Number R (0 - 16383) 0 - 16383
	00 28	0000 0aaa	Gain (0 - 5) -18, -12, -6, 0, +6, +12[dB]
	00 29	0000 000a	FXM Switch (0 - 1) OFF, ON
	00 2A	0000 0aaa	FXM Color (1 - 4) 1 - 4

	00 2B	000a aaaa	FXM Depth	(0 - 16) 0 - 16
#	00 2C	0000 aaaa		
	00 2D	0000 bbbb		
	00 2E	0000 cccc		
	00 2F	0000 dddd	Pitch Keyfollow	(824 - 1224) -200 - +200
	00 30	0aaa aaaa	Soft EQ Sens	(0 - 100) 0 - 100
	00 31	0000 0aaa	TVF Filter Type	(0 - 6) OFF, LPF, BPF, HPF, PKG, LPF2, LPF3
#	00 32	0000 aaaa		
	00 33	0000 bbbb		
	00 34	0000 cccc		
	00 35	0000 dddd	TVF Cutoff Frequency	(0 - 1023) 0 - 1023
#	00 36	0000 aaaa		
	00 37	0000 bbbb		
	00 38	0000 cccc		
	00 39	0000 dddd	TVF Cutoff Keyfollow	(824 - 1224) -200 - +200
	00 3A	0000 0aaa	TVF Cutoff Velocity Curve	(0 - 7) 0 - 7
#	00 3B	0000 aaaa		
	00 3C	0000 bbbb	TVF Cutoff Velocity Sens	(28 - 228) -100 - +100
#	00 3D	0000 aaaa		
	00 3E	0000 bbbb		
	00 3F	0000 cccc		
	00 40	0000 dddd	TVF Resonance	(0 - 1023) 0 - 1023
#	00 41	0000 aaaa		
	00 42	0000 bbbb	TVF Resonance Velocity Sens	(28 - 228) -100 - +100
#	00 43	0000 aaaa		
	00 44	0000 bbbb	Bias Level	(28 - 228) -100 - +100
	00 45	0aaa aaaa	Bias Position	(0 - 127) 0 - 127
	00 46	0000 00aa	Bias Direction	(0 - 3) LOWER, UPPER, LOWER&UPPER, ALL
	00 47	0000 0aaa	TVA Level Velocity Curve	(0 - 7) 0 - 7
#	00 48	0000 aaaa		
	00 49	0000 bbbb	TVA Level Velocity Sens	(28 - 228) -100 - +100
#	00 4A	0000 aaaa		
	00 4B	0000 bbbb	Pitch Env Time Keyfollow	(28 - 228) -100 - +100
#	00 4C	0000 aaaa		
	00 4D	0000 bbbb	TVF Env Time Keyfollow	(28 - 228) -100 - +100
#	00 4E	0000 aaaa		
	00 4F	0000 bbbb	TVA Env Time Keyfollow	(28 - 228) -100 - +100
#	00 50	0000 aaaa		
	00 51	0000 bbbb	Vibrato Pitch Sens	(28 - 228) -100 - +100
#	00 52	0000 aaaa		
	00 53	0000 bbbb	Vibrato Cutoff Sens	(28 - 228) -100 - +100
#	00 54	0000 aaaa		
	00 55	0000 bbbb	Vibrato Level Sens	(28 - 228) -100 - +100
	00 56	0aaa aaaa	Source	(0 - 108) OFF, CC01, CC02, CC03, CC04, CC05, CC06, CC07, CC08, CC09, CC10, CC11, CC12, CC13, CC14, CC15, CC16, CC17, CC18, CC19, CC20, CC21, CC22, CC23, CC24, CC25, CC26, CC27, CC28, CC29, CC30, CC31, CC33, CC34, CC35, CC36, CC37, CC38, CC39, CC40, CC41, CC42, CC43, CC44, CC45, CC46, CC47, CC48, CC49, CC50, CC51, CC52, CC53, CC54, CC55, CC56, CC57, CC58, CC59, CC60, CC61, CC62, CC63, CC64, CC65, CC66, CC67, CC68, CC69, CC70, CC71, CC72, CC73, CC74, CC75, CC76, CC77, CC78, CC79, CC80, CC81, CC82, CC83, CC84, CC85, CC86, CC87, CC88, CC89, CC90, CC91, CC92, CC93, CC94, CC95, BEND, AFT, SYS-CTRL1, SYS-CTRL2, SYS-CTRL3, SYS-CTRL4, VELOCITY, KEYFOLLOW, TEMPO, LFO1, LFO2, PIT-ENV, TVF-ENV, TVA-ENV
	00 57	00aa aaaa	Destination 1	(0 - 48) OFF, PCH, CUT, RES, LEV, PAN, CHO, REV, PIT-LFO1, PIT-LFO2, TVF-LFO1, TVF-LFO2, TVA-LFO1, TVA-LFO2, PAN-LFO1, PAN-LFO2, LFO1-RATE, LFO2-RATE, PIT-ATK, PIT-DCY, PIT-REL, TVF-ATK, TVF-DCY, TVF-REL, TVA-ATK, TVA-DCY, TVA-REL, PMT, FXM, MFX-CTRL1, MFX-CTRL2, MFX-CTRL3, MFX-CTRL4, PW, PWM, FAT, XMOD, LFO1_STEP, LFO2_STEP, SSAW-DETN, PIT_DEPTH, TVF-DEPTH, TVA-DEPTH, XMOD2, ATT, RING-OSC1-LEV, RING-OSC2-LEV, XMOD-OSC1-LEV, XMOD-OSC2-LEV
	00 58	0aaa aaaa	Sens 1	(1 - 127) -63 - +63
	00 59	00aa aaaa	Destination 2	(0 - 48) OFF, PCH, CUT, RES, LEV, PAN, CHO, REV, PIT-LFO1, PIT-LFO2, TVF-LFO1, TVF-LFO2, TVA-LFO1, TVA-LFO2, PAN-LFO1, PAN-LFO2, LFO1-RATE, LFO2-RATE, PIT-ATK, PIT-DCY, PIT-REL, TVF-ATK, TVF-DCY, TVF-REL, TVA-ATK, TVA-DCY, TVA-REL, PMT, FXM, MFX-CTRL1, MFX-CTRL2, MFX-CTRL3, MFX-CTRL4, PW, PWM, FAT, XMOD, LFO1_STEP, LFO2_STEP, SSAW-DETN, PIT_DEPTH, TVF-DEPTH, TVA-DEPTH, XMOD2, ATT, RING-OSC1-LEV,

		RING-OSC2-LEV, XMOD-OSC1-LEV, XMOD-OSC2-LEV
00 5A	0aaa aaaa	Sens 2 (1 - 127) -63 - +63
00 5B	00aa aaaa	Destination 3 (0 - 48) OFF, PCH, CUT, RES, LEV, PAN, CHO, REV, PIT-LFO1, PIT-LFO2, TVF-LFO1, TVF-LFO2, TVA-LFO1, TVA-LFO2, PAN-LFO1, PAN-LFO2, LFO1-RATE, LFO2-RATE, PIT-ATK, PIT-DCY, PIT-REL, TVF-ATK, TVF-DCY, TVF-REL, TVA-ATK, TVA-DCY, TVA-REL, PMT, FXM, MFX-CTRL1, MFX-CTRL2, MFX-CTRL3, MFX-CTRL4, PW, PWM, FAT, XMOD, LFO1_STEP, LFO2_STEP, SSAW-DETN, PIT_DEPTH, TVF-DEPTH, TVA-DEPTH, XMOD2, ATT, RING-OSC1-LEV, RING-OSC2-LEV, XMOD-OSC1-LEV, XMOD-OSC2-LEV
00 5C	0aaa aaaa	Sens 3 (1 - 127) -63 - +63
00 5D	00aa aaaa	Destination 4 (0 - 48) OFF, PCH, CUT, RES, LEV, PAN, CHO, REV, PIT-LFO1, PIT-LFO2, TVF-LFO1, TVF-LFO2, TVA-LFO1, TVA-LFO2, PAN-LFO1, PAN-LFO2, LFO1-RATE, LFO2-RATE, PIT-ATK, PIT-DCY, PIT-REL, TVF-ATK, TVF-DCY, TVF-REL, TVA-ATK, TVA-DCY, TVA-REL, PMT, FXM, MFX-CTRL1, MFX-CTRL2, MFX-CTRL3, MFX-CTRL4, PW, PWM, FAT, XMOD, LFO1_STEP, LFO2_STEP, SSAW-DETN, PIT_DEPTH, TVF-DEPTH, TVA-DEPTH, XMOD2, ATT, RING-OSC1-LEV, RING-OSC2-LEV, XMOD-OSC1-LEV, XMOD-OSC2-LEV
00 5E	0aaa aaaa	Sens 4 (1 - 127) -63 - +63
00 5F	0aaa aaaa	Source (0 - 108) OFF, CC01, CC02, CC03, CC04, CC05, CC06, CC07, CC08, CC09, CC10, CC11, CC12, CC13, CC14, CC15, CC16, CC17, CC18, CC19, CC20, CC21, CC22, CC23, CC24, CC25, CC26, CC27, CC28, CC29, CC30, CC31, CC33, CC34, CC35, CC36, CC37, CC38, CC39, CC40, CC41, CC42, CC43, CC44, CC45, CC46, CC47, CC48, CC49, CC50, CC51, CC52, CC53, CC54, CC55, CC56, CC57, CC58, CC59, CC60, CC61, CC62, CC63, CC64, CC65, CC66, CC67, CC68, CC69, CC70, CC71, CC72, CC73, CC74, CC75, CC76, CC77, CC78, CC79, CC80, CC81, CC82, CC83, CC84, CC85, CC86, CC87, CC88, CC89, CC90, CC91, CC92, CC93, CC94, CC95, BEND, AFT, SYS-CTRL1, SYS-CTRL2, SYS-CTRL3, SYS-CTRL4, VELOCITY, KEYFOLLOW, TEMPO, LFO1, LFO2, PIT-ENV, TVF-ENV, TVA-ENV
00 60	00aa aaaa	Destination 1 (0 - 48) OFF, PCH, CUT, RES, LEV, PAN, CHO, REV, PIT-LFO1, PIT-LFO2, TVF-LFO1, TVF-LFO2, TVA-LFO1, TVA-LFO2, PAN-LFO1, PAN-LFO2, LFO1-RATE, LFO2-RATE, PIT-ATK, PIT-DCY, PIT-REL, TVF-ATK, TVF-DCY, TVF-REL, TVA-ATK, TVA-DCY, TVA-REL, PMT, FXM, MFX-CTRL1, MFX-CTRL2, MFX-CTRL3, MFX-CTRL4, PW, PWM, FAT, XMOD, LFO1_STEP, LFO2_STEP, SSAW-DETN, PIT_DEPTH, TVF-DEPTH, TVA-DEPTH, XMOD2, ATT, RING-OSC1-LEV, RING-OSC2-LEV, XMOD-OSC1-LEV, XMOD-OSC2-LEV
00 61	0aaa aaaa	Sens 1 (1 - 127) -63 - +63
00 62	00aa aaaa	Destination 2 (0 - 48) OFF, PCH, CUT, RES, LEV, PAN, CHO, REV, PIT-LFO1, PIT-LFO2, TVF-LFO1, TVF-LFO2, TVA-LFO1, TVA-LFO2, PAN-LFO1, PAN-LFO2, LFO1-RATE, LFO2-RATE, PIT-ATK, PIT-DCY, PIT-REL, TVF-ATK, TVF-DCY, TVF-REL, TVA-ATK, TVA-DCY, TVA-REL, PMT, FXM, MFX-CTRL1, MFX-CTRL2, MFX-CTRL3, MFX-CTRL4, PW, PWM, FAT, XMOD, LFO1_STEP, LFO2_STEP, SSAW-DETN, PIT_DEPTH, TVF-DEPTH, TVA-DEPTH, XMOD2, ATT, RING-OSC1-LEV, RING-OSC2-LEV, XMOD-OSC1-LEV, XMOD-OSC2-LEV
00 63	0aaa aaaa	Sens 2 (1 - 127) -63 - +63
00 64	00aa aaaa	Destination 3 (0 - 48) OFF, PCH, CUT, RES, LEV, PAN, CHO, REV, PIT-LFO1, PIT-LFO2, TVF-LFO1, TVF-LFO2, TVA-LFO1, TVA-LFO2, PAN-LFO1, PAN-LFO2, LFO1-RATE, LFO2-RATE, PIT-ATK, PIT-DCY, PIT-REL, TVF-ATK, TVF-DCY, TVF-REL, TVA-ATK, TVA-DCY, TVA-REL, PMT, FXM, MFX-CTRL1, MFX-CTRL2, MFX-CTRL3, MFX-CTRL4, PW, PWM, FAT, XMOD, LFO1_STEP, LFO2_STEP, SSAW-DETN, PIT_DEPTH, TVF-DEPTH, TVA-DEPTH, XMOD2, ATT, RING-OSC1-LEV, RING-OSC2-LEV, XMOD-OSC1-LEV, XMOD-OSC2-LEV
00 65	0aaa aaaa	Sens 3 (1 - 127) -63 - +63
00 66	00aa aaaa	Destination 4 (0 - 48) OFF, PCH, CUT, RES, LEV, PAN, CHO, REV, PIT-LFO1, PIT-LFO2, TVF-LFO1, TVF-LFO2, TVA-LFO1, TVA-LFO2, PAN-LFO1, PAN-LFO2, LFO1-RATE, LFO2-RATE, PIT-ATK, PIT-DCY, PIT-REL, TVF-ATK, TVF-DCY, TVF-REL, TVA-ATK, TVA-DCY, TVA-REL, PMT, FXM, MFX-CTRL1, MFX-CTRL2, MFX-CTRL3, MFX-CTRL4, PW, PWM, FAT, XMOD, LFO1_STEP, LFO2_STEP, SSAW-DETN, PIT_DEPTH, TVF-DEPTH, TVA-DEPTH, XMOD2, ATT, RING-OSC1-LEV, RING-OSC2-LEV, XMOD-OSC1-LEV, XMOD-OSC2-LEV
00 67	0aaa aaaa	Sens 4 (1 - 127) -63 - +63
00 68	0aaa aaaa	Source (0 - 108) OFF, CC01, CC02, CC03, CC04, CC05, CC06, CC07, CC08, CC09, CC10, CC11, CC12, CC13, CC14, CC15, CC16, CC17, CC18, CC19, CC20, CC21, CC22, CC23, CC24, CC25, CC26, CC27, CC28, CC29, CC30, CC31, CC33, CC34, CC35, CC36, CC37, CC38, CC39, CC40, CC41, CC42, CC43, CC44, CC45, CC46, CC47, CC48, CC49, CC50, CC51, CC52, CC53, CC54, CC55, CC56, CC57, CC58, CC59, CC60, CC61, CC62, CC63, CC64, CC65, CC66, CC67, CC68, CC69, CC70, CC71, CC72, CC73, CC74, CC75, CC76, CC77, CC78, CC79, CC80, CC81, CC82, CC83, CC84, CC85, CC86, CC87,

		CC88, CC89, CC90, CC91, CC92, CC93, CC94, CC95, BEND, AFT, SYS-CTRL1, SYS-CTRL2, SYS-CTRL3, SYS-CTRL4, VELOCITY, KEYFOLLOW, TEMPO, LFO1, LFO2, PIT-ENV, TVF-ENV, TVA-ENV
00 69	00aa aaaa	Destination 1 (0 - 48) OFF, PCH, CUT, RES, LEV, PAN, CHO, REV, PIT-LFO1, PIT-LFO2, TVF-LFO1, TVF-LFO2, TVA-LFO1, TVA-LFO2, PAN-LFO1, PAN-LFO2, LFO1-RATE, LFO2-RATE, PIT-ATK, PIT-DCY, PIT-REL, TVF-ATK, TVF-DCY, TVF-REL, TVA-ATK, TVA-DCY, TVA-REL, PMT, FXM, MFX-CTRL1, MFX-CTRL2, MFX-CTRL3, MFX-CTRL4, PW, PWM, FAT, XMOD, LFO1_STEP, LFO2_STEP, SSAW-DETN, PIT_DEPTH, TVF-DEPTH, TVA-DEPTH, XMOD2, ATT, RING-OSC1-LEV, RING-OSC2-LEV, XMOD-OSC1-LEV, XMOD-OSC2-LEV
00 6A	0aaa aaaa	Sens 1 (1 - 127) -63 - +63
00 6B	00aa aaaa	Destination 2 (0 - 48) OFF, PCH, CUT, RES, LEV, PAN, CHO, REV, PIT-LFO1, PIT-LFO2, TVF-LFO1, TVF-LFO2, TVA-LFO1, TVA-LFO2, PAN-LFO1, PAN-LFO2, LFO1-RATE, LFO2-RATE, PIT-ATK, PIT-DCY, PIT-REL, TVF-ATK, TVF-DCY, TVF-REL, TVA-ATK, TVA-DCY, TVA-REL, PMT, FXM, MFX-CTRL1, MFX-CTRL2, MFX-CTRL3, MFX-CTRL4, PW, PWM, FAT, XMOD, LFO1_STEP, LFO2_STEP, SSAW-DETN, PIT_DEPTH, TVF-DEPTH, TVA-DEPTH, XMOD2, ATT, RING-OSC1-LEV, RING-OSC2-LEV, XMOD-OSC1-LEV, XMOD-OSC2-LEV
00 6C	0aaa aaaa	Sens 2 (1 - 127) -63 - +63
00 6D	00aa aaaa	Destination 3 (0 - 48) OFF, PCH, CUT, RES, LEV, PAN, CHO, REV, PIT-LFO1, PIT-LFO2, TVF-LFO1, TVF-LFO2, TVA-LFO1, TVA-LFO2, PAN-LFO1, PAN-LFO2, LFO1-RATE, LFO2-RATE, PIT-ATK, PIT-DCY, PIT-REL, TVF-ATK, TVF-DCY, TVF-REL, TVA-ATK, TVA-DCY, TVA-REL, PMT, FXM, MFX-CTRL1, MFX-CTRL2, MFX-CTRL3, MFX-CTRL4, PW, PWM, FAT, XMOD, LFO1_STEP, LFO2_STEP, SSAW-DETN, PIT_DEPTH, TVF-DEPTH, TVA-DEPTH, XMOD2, ATT, RING-OSC1-LEV, RING-OSC2-LEV, XMOD-OSC1-LEV, XMOD-OSC2-LEV
00 6E	0aaa aaaa	Sens 3 (1 - 127) -63 - +63
00 6F	00aa aaaa	Destination 4 (0 - 48) OFF, PCH, CUT, RES, LEV, PAN, CHO, REV, PIT-LFO1, PIT-LFO2, TVF-LFO1, TVF-LFO2, TVA-LFO1, TVA-LFO2, PAN-LFO1, PAN-LFO2, LFO1-RATE, LFO2-RATE, PIT-ATK, PIT-DCY, PIT-REL, TVF-ATK, TVF-DCY, TVF-REL, TVA-ATK, TVA-DCY, TVA-REL, PMT, FXM, MFX-CTRL1, MFX-CTRL2, MFX-CTRL3, MFX-CTRL4, PW, PWM, FAT, XMOD, LFO1_STEP, LFO2_STEP, SSAW-DETN, PIT_DEPTH, TVF-DEPTH, TVA-DEPTH, XMOD2, ATT, RING-OSC1-LEV, RING-OSC2-LEV, XMOD-OSC1-LEV, XMOD-OSC2-LEV
00 70	0aaa aaaa	Sens 4 (1 - 127) -63 - +63
00 71	0aaa aaaa	Source (0 - 108) OFF, CC01, CC02, CC03, CC04, CC05, CC06, CC07, CC08, CC09, CC10, CC11, CC12, CC13, CC14, CC15, CC16, CC17, CC18, CC19, CC20, CC21, CC22, CC23, CC24, CC25, CC26, CC27, CC28, CC29, CC30, CC31, CC33, CC34, CC35, CC36, CC37, CC38, CC39, CC40, CC41, CC42, CC43, CC44, CC45, CC46, CC47, CC48, CC49, CC50, CC51, CC52, CC53, CC54, CC55, CC56, CC57, CC58, CC59, CC60, CC61, CC62, CC63, CC64, CC65, CC66, CC67, CC68, CC69, CC70, CC71, CC72, CC73, CC74, CC75, CC76, CC77, CC78, CC79, CC80, CC81, CC82, CC83, CC84, CC85, CC86, CC87, CC88, CC89, CC90, CC91, CC92, CC93, CC94, CC95, BEND, AFT, SYS-CTRL1, SYS-CTRL2, SYS-CTRL3, SYS-CTRL4, VELOCITY, KEYFOLLOW, TEMPO, LFO1, LFO2, PIT-ENV, TVF-ENV, TVA-ENV
00 72	00aa aaaa	Destination 1 (0 - 48) OFF, PCH, CUT, RES, LEV, PAN, CHO, REV, PIT-LFO1, PIT-LFO2, TVF-LFO1, TVF-LFO2, TVA-LFO1, TVA-LFO2, PAN-LFO1, PAN-LFO2, LFO1-RATE, LFO2-RATE, PIT-ATK, PIT-DCY, PIT-REL, TVF-ATK, TVF-DCY, TVF-REL, TVA-ATK, TVA-DCY, TVA-REL, PMT, FXM, MFX-CTRL1, MFX-CTRL2, MFX-CTRL3, MFX-CTRL4, PW, PWM, FAT, XMOD, LFO1_STEP, LFO2_STEP, SSAW-DETN, PIT_DEPTH, TVF-DEPTH, TVA-DEPTH, XMOD2, ATT, RING-OSC1-LEV, RING-OSC2-LEV, XMOD-OSC1-LEV, XMOD-OSC2-LEV
00 73	0aaa aaaa	Sens 1 (1 - 127) -63 - +63
00 74	00aa aaaa	Destination 2 (0 - 48) OFF, PCH, CUT, RES, LEV, PAN, CHO, REV, PIT-LFO1, PIT-LFO2, TVF-LFO1, TVF-LFO2, TVA-LFO1, TVA-LFO2, PAN-LFO1, PAN-LFO2, LFO1-RATE, LFO2-RATE, PIT-ATK, PIT-DCY, PIT-REL, TVF-ATK, TVF-DCY, TVF-REL, TVA-ATK, TVA-DCY, TVA-REL, PMT, FXM, MFX-CTRL1, MFX-CTRL2, MFX-CTRL3, MFX-CTRL4, PW, PWM, FAT, XMOD, LFO1_STEP, LFO2_STEP, SSAW-DETN, PIT_DEPTH, TVF-DEPTH, TVA-DEPTH, XMOD2, ATT, RING-OSC1-LEV, RING-OSC2-LEV, XMOD-OSC1-LEV, XMOD-OSC2-LEV
00 75	0aaa aaaa	Sens 2 (1 - 127) -63 - +63
00 76	00aa aaaa	Destination 3 (0 - 48) OFF, PCH, CUT, RES, LEV, PAN, CHO, REV, PIT-LFO1, PIT-LFO2, TVF-LFO1, TVF-LFO2, TVA-LFO1, TVA-LFO2, PAN-LFO1, PAN-LFO2, LFO1-RATE, LFO2-RATE, PIT-ATK, PIT-DCY, PIT-REL, TVF-ATK, TVF-DCY, TVF-REL, TVA-ATK, TVA-DCY, TVA-REL, PMT, FXM, MFX-CTRL1, MFX-CTRL2, MFX-CTRL3, MFX-CTRL4, PW, PWM, FAT, XMOD, LFO1_STEP, LFO2_STEP, SSAW-DETN, PIT_DEPTH, TVF-DEPTH, TVA-DEPTH, XMOD2, ATT, RING-OSC1-LEV, RING-OSC2-LEV, XMOD-OSC1-LEV, XMOD-OSC2-LEV

	00 77	0aaa aaaa	Sens 3 (1 - 127) -63 - +63
	00 78	00aa aaaa	Destination 4 (0 - 48) OFF, PCH, CUT, RES, LEV, PAN, CHO, REV, PIT-LFO1, PIT-LFO2, TVF-LFO1, TVF-LFO2, TVA-LFO1, TVA-LFO2, PAN-LFO1, PAN-LFO2, LFO1-RATE, LFO2-RATE, PIT-ATK, PIT-DCY, PIT-REL, TVF-ATK, TVF-DCY, TVF-REL, TVA-ATK, TVA-DCY, TVA-REL, PMT, FXM, MFX-CTRL1, MFX-CTRL2, MFX-CTRL3, MFX-CTRL4, PW, PWM, FAT, XMOD, LFO1_STEP, LFO2_STEP, SSAW-DETN, PIT_DEPTH, TVF-DEPTH, TVA-DEPTH, XMOD2, ATT, RING-OSC1-LEV, RING-OSC2-LEV, XMOD-OSC1-LEV, XMOD-OSC2-LEV
	00 79	0aaa aaaa	Sens 4 (1 - 127) -63 - +63
	00 7A	0aaa aaaa	Damper Free Note (0 - 127) OFF, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127,
	00 7B	0aaa aaaa	Stereo Width (0 - 100) 0 - 100
	00 7C	0aaa aaaa	Stereo Detune (14 - 114) -50 - +50 [cent]
#	00 7D	0000 aaaa	
	00 7E	0000 bbbb	Damper Free Decay Offset (28 - 228) -100 - +100
	00 7F	0000 000a	Wave Tempo Sync (0 - 1) OFF, ON
	00 00 01 00		Total Size

* [Tone Synth Common]

Offset Address		Description	
	00 00	0000 000a	Unison Switch (0 - 1) OFF, ON
	00 01	0000 aaaa	Unison Size (2 - 8) 2 - 8
	00 02	0aaa aaaa	Unison Detune (0 - 100) 0 - 100
	00 03	0aaa aaaa	Bend Range Fine Up (0 - 100) 0 - 100
	00 04	0aaa aaaa	Bend Range Fine Down (0 - 100) 0 - 100
#	00 05	0000 aaaa	
	00 06	0000 bbbb	Pitch Drift (0 - 255) 0 - 255
	00 07	0000 aaaa	Reserved (0 - 0)
	00 08	0aaa aaaa	Condition (0 - 100) 0 - 100
	00 00 00 09		Total Size

* [Tone Synth PartialMixTable]

Offset Address		Description	
	00 00	0000 0aaa	Structure1-2 (0 - 4) OFF, SYNC, RING, XMOD, XMOD2
	00 01	0000 0aaa	Structure3-4 (0 - 4) OFF, SYNC, RING, XMOD, XMOD2
	00 02	0aaa aaaa	RING1-2 Level (0 - 127) 0 - 127
	00 03	0aaa aaaa	RING3-4 Level (0 - 127) 0 - 127
	00 04	0aaa aaaa	RING OSC1 Level (0 - 127) 0 - 127
	00 05	0aaa aaaa	RING OSC2 Level (0 - 127) 0 - 127
	00 06	0aaa aaaa	RING OSC3 Level (0 - 127) 0 - 127
	00 07	0aaa aaaa	RING OSC4 Level (0 - 127) 0 - 127
#	00 08	0000 aaaa	
	00 09	0000 bbbb	
	00 0A	0000 cccc	
	00 0B	0000 dddd	CrossMod1-2 Depth (0 - 10800) 0 - 10800 [cent]
#	00 0C	0000 aaaa	
	00 0D	0000 bbbb	
	00 0E	0000 cccc	
	00 0F	0000 dddd	CrossMod3-4 Depth (0 - 10800) 0 - 10800 [cent]
	00 10	0aaa aaaa	CrossMod OSC1 Level (0 - 127) 0 - 127
	00 11	0aaa aaaa	CrossMod OSC2 Level (0 - 127)

			0 - 127
00 12	0aaa aaaa	CrossMod OSC3 Level	(0 - 127)
			0 - 127
00 13	0aaa aaaa	CrossMod OSC4 Level	(0 - 127)
			0 - 127
00 14	0000 000a	Partial Phase Lock	(0 - 1)
			OFF, ON
00 15	0aaa aaaa	CrossMod2 1-2 Depth	(0 - 127)
			0 - 127
00 16	0aaa aaaa	CrossMod2 3-4 Depth	(0 - 127)
			0 - 127
00 00 00 17	Total Size		

* [Tone Synth Partial]

Offset Address		Description	
00 00	0000 0aaa	OSC Type	(0 - 4)
			PCM, VA, PCM-Sync, SuperSAW, Noise
00 01	0000 aaaa	VA Waveform	(0 - 8)
			SAW, SQR, TRI, SIN, RAMP, JUNO, TRI2, TRI3, SIN2
# 00 02	0000 aaaa		
00 03	0000 bbbb		
00 04	0000 cccc		
00 05	0000 dddd	PCM-Sync Wave Number	(0 - 16383)
			0 - 16383
00 06	0aaa aaaa	Pulse Width	(0 - 127)
			0 - 127
00 07	0aaa aaaa	PWM Depth	(1 - 127)
			-63 - +63
00 08	0aaa aaaa	SuperSAW Detune	(0 - 127)
			0 - 127
00 09	0000 00aa	Click Type	(0 - 3)
			SOFT, HARD, NATURAL, OFF
# 00 0A	0000 aaaa		
00 0B	0000 bbbb		
00 0C	0000 cccc		
00 0D	0000 dddd	HPF Cutoff	(0 - 1023)
			0 - 1023
00 0E	0000 000a	Filter Type	(0 - 1)
			TVF, VCF
00 0F	0000 00aa	Filter Slope	(0 - 2)
			-12, -18, -24 [dB/Oct]
00 10	0000 000a	ADSREnv Switch	(0 - 1)
			OFF, ON
00 11	0aaa aaaa	Fat	(0 - 127)
			0 - 127
00 12	0000 00aa	VCF Type	(0 - 3)
			1, 2, 3, 4
# 00 13	0000 aaaa		
00 14	0000 bbbb	OSC Attenuator	(0 - 255)
			0 - 255
00 15	0aaa aaaa	Cutoff Keyfollow Base Point	(0 - 127)
			0 - 127
00 16	0000 000a	VA Waveform Invert Switch	(0 - 1)
			OFF, ON
00 17	0aaa aaaa	TVF Env Fine Depth	(1 - 127)
			-63 - +63
00 18	0000 000a	PENV LFO Trigger Switch	(0 - 1)
			OFF, ON
00 19	0000 000a	FENV LFO Trigger Switch	(0 - 1)
			OFF, ON
00 1A	0000 000a	AENV LFO Trigger Switch	(0 - 1)
			OFF, ON
00 1B	0aaa aaaa	Reserved	(0 - 0)
00 1C	0aaa aaaa	Reserved	(0 - 0)
00 00 00 1D	Total Size		

* [MFX]

Offset Address		Description	
00 00	0aaa aaaa	MFX Type	(0 - 92)
00 01	0000 000a	MFX Switch	(0 - 1)
00 02	0aaa aaaa	MFX Chorus Send Level	(0 - 127)
			0 - 127
00 03	0aaa aaaa	MFX Reverb Send Level	(0 - 127)
			0 - 127
00 04	0aaa aaaa	MFX CtrlSrc 1	(0 - 100)
		OFF, CC01, CC02, CC03, CC04, CC05, CC06, CC07, CC08, CC09, CC10, CC11, CC12, CC13, CC14, CC15, CC16, CC17, CC18, CC19, CC20, CC21, CC22, CC23, CC24, CC25, CC26, CC27, CC28, CC29, CC30, CC31, CC33, CC34, CC35, CC36, CC37, CC38, CC39, CC40, CC41, CC42, CC43, CC44, CC45, CC46, CC47, CC48, CC49, CC50, CC51, CC52, CC53, CC54, CC55, CC56, CC57, CC58, CC59, CC60, CC61, CC62, CC63, CC64, CC65, CC66, CC67, CC68, CC69, CC70, CC71, CC72, CC73, CC74, CC75, CC76, CC77, CC78, CC79, CC80, CC81,	

			CC82,CC83,CC84,CC85,CC86,CC87,CC88,CC89,CC90, CC91,CC92,CC93,CC94,CC95,BEND,AFT, SYS-CTRL1,SYS-CTRL2,SYS-CTRL3,SYS-CTRL4	
	00 05	0aaa aaaa	MFX CtrlSens 1	(1 - 127) -63 - +63
	00 06	0aaa aaaa	MFX CtrlSrc 2 OFF, CC01,CC02,CC03,CC04,CC05,CC06,CC07,CC08, CC09,CC10,CC11,CC12,CC13,CC14,CC15,CC16,CC17, CC18,CC19,CC20,CC21,CC22,CC23,CC24,CC25,CC26, CC27,CC28,CC29,CC30,CC31,CC33,CC34,CC35,CC36, CC37,CC38,CC39,CC40,CC41,CC42,CC43,CC44,CC45, CC46,CC47,CC48,CC49,CC50,CC51,CC52,CC53,CC54, CC55,CC56,CC57,CC58,CC59,CC60,CC61,CC62,CC63, CC64,CC65,CC66,CC67,CC68,CC69,CC70,CC71,CC72, CC73,CC74,CC75,CC76,CC77,CC78,CC79,CC80,CC81, CC82,CC83,CC84,CC85,CC86,CC87,CC88,CC89,CC90, CC91,CC92,CC93,CC94,CC95,BEND,AFT, SYS-CTRL1,SYS-CTRL2,SYS-CTRL3,SYS-CTRL4	(0 - 100)
	00 07	0aaa aaaa	MFX CtrlSens 2	(1 - 127) -63 - +63
	00 08	0aaa aaaa	MFX CtrlSrc 3 OFF, CC01,CC02,CC03,CC04,CC05,CC06,CC07,CC08, CC09,CC10,CC11,CC12,CC13,CC14,CC15,CC16,CC17, CC18,CC19,CC20,CC21,CC22,CC23,CC24,CC25,CC26, CC27,CC28,CC29,CC30,CC31,CC33,CC34,CC35,CC36, CC37,CC38,CC39,CC40,CC41,CC42,CC43,CC44,CC45, CC46,CC47,CC48,CC49,CC50,CC51,CC52,CC53,CC54, CC55,CC56,CC57,CC58,CC59,CC60,CC61,CC62,CC63, CC64,CC65,CC66,CC67,CC68,CC69,CC70,CC71,CC72, CC73,CC74,CC75,CC76,CC77,CC78,CC79,CC80,CC81, CC82,CC83,CC84,CC85,CC86,CC87,CC88,CC89,CC90, CC91,CC92,CC93,CC94,CC95,BEND,AFT, SYS-CTRL1,SYS-CTRL2,SYS-CTRL3,SYS-CTRL4	(0 - 100)
	00 09	0aaa aaaa	MFX CtrlSens 3	(1 - 127) -63 - +63
	00 0A	0aaa aaaa	MFX CtrlSrc 4 OFF, CC01,CC02,CC03,CC04,CC05,CC06,CC07,CC08, CC09,CC10,CC11,CC12,CC13,CC14,CC15,CC16,CC17, CC18,CC19,CC20,CC21,CC22,CC23,CC24,CC25,CC26, CC27,CC28,CC29,CC30,CC31,CC33,CC34,CC35,CC36, CC37,CC38,CC39,CC40,CC41,CC42,CC43,CC44,CC45, CC46,CC47,CC48,CC49,CC50,CC51,CC52,CC53,CC54, CC55,CC56,CC57,CC58,CC59,CC60,CC61,CC62,CC63, CC64,CC65,CC66,CC67,CC68,CC69,CC70,CC71,CC72, CC73,CC74,CC75,CC76,CC77,CC78,CC79,CC80,CC81, CC82,CC83,CC84,CC85,CC86,CC87,CC88,CC89,CC90, CC91,CC92,CC93,CC94,CC95,BEND,AFT, SYS-CTRL1,SYS-CTRL2,SYS-CTRL3,SYS-CTRL4	(0 - 100)
	00 0B	0aaa aaaa	MFX CtrlSens 4	(1 - 127) -63 - +63
	00 0C	0000 aaaa	MFX CtrlAsgn	(0 - 11)
	00 0D	0000 aaaa	MFX CtrlAsgn	(0 - 11)
	00 0E	0000 aaaa	MFX CtrlAsgn	(0 - 11)
	00 0F	0000 aaaa	MFX CtrlAsgn	(0 - 11)
#	00 10	0000 aaaa		
	00 11	0000 bbbb		
	00 12	0000 cccc		
	00 13	0000 dddd	MFX Parameter 1	(12768 - 52768) -20000 - 20000
#	00 14	0000 aaaa		
	00 15	0000 bbbb		
	00 16	0000 cccc		
	00 17	0000 dddd	MFX Parameter 2	(12768 - 52768) -20000 - 20000
#	00 18	0000 aaaa		
	00 19	0000 bbbb		
	00 1A	0000 cccc		
	00 1B	0000 dddd	MFX Parameter 3	(12768 - 52768) -20000 - 20000
#	00 1C	0000 aaaa		
	00 1D	0000 bbbb		
	00 1E	0000 cccc		
	00 1F	0000 dddd	MFX Parameter 4	(12768 - 52768) -20000 - 20000
#	00 20	0000 aaaa		
	00 21	0000 bbbb		
	00 22	0000 cccc		
	00 23	0000 dddd	MFX Parameter 5	(12768 - 52768) -20000 - 20000
#	00 24	0000 aaaa		
	00 25	0000 bbbb		
	00 26	0000 cccc		
	00 27	0000 dddd	MFX Parameter 6	(12768 - 52768) -20000 - 20000
#	00 28	0000 aaaa		
	00 29	0000 bbbb		
	00 2A	0000 cccc		
	00 2B	0000 dddd	MFX Parameter 7	(12768 - 52768) -20000 - 20000
#	00 2C	0000 aaaa		
	00 2D	0000 bbbb		
	00 2E	0000 cccc		
	00 2F	0000 dddd	MFX Parameter 8	(12768 - 52768) -20000 - 20000

#	00 30	0000 aaaa		
	00 31	0000 bbbb		
	00 32	0000 cccc		
	00 33	0000 dddd	MFX Parameter 9	(12768 - 52768) -20000 - 20000
#	00 34	0000 aaaa		
	00 35	0000 bbbb		
	00 36	0000 cccc		
	00 37	0000 dddd	MFX Parameter 10	(12768 - 52768) -20000 - 20000
#	00 38	0000 aaaa		
	00 39	0000 bbbb		
	00 3A	0000 cccc		
	00 3B	0000 dddd	MFX Parameter 11	(12768 - 52768) -20000 - 20000
#	00 3C	0000 aaaa		
	00 3D	0000 bbbb		
	00 3E	0000 cccc		
	00 3F	0000 dddd	MFX Parameter 12	(12768 - 52768) -20000 - 20000
#	00 40	0000 aaaa		
	00 41	0000 bbbb		
	00 42	0000 cccc		
	00 43	0000 dddd	MFX Parameter 13	(12768 - 52768) -20000 - 20000
#	00 44	0000 aaaa		
	00 45	0000 bbbb		
	00 46	0000 cccc		
	00 47	0000 dddd	MFX Parameter 14	(12768 - 52768) -20000 - 20000
#	00 48	0000 aaaa		
	00 49	0000 bbbb		
	00 4A	0000 cccc		
	00 4B	0000 dddd	MFX Parameter 15	(12768 - 52768) -20000 - 20000
#	00 4C	0000 aaaa		
	00 4D	0000 bbbb		
	00 4E	0000 cccc		
	00 4F	0000 dddd	MFX Parameter 16	(12768 - 52768) -20000 - 20000
#	00 50	0000 aaaa		
	00 51	0000 bbbb		
	00 52	0000 cccc		
	00 53	0000 dddd	MFX Parameter 17	(12768 - 52768) -20000 - 20000
#	00 54	0000 aaaa		
	00 55	0000 bbbb		
	00 56	0000 cccc		
	00 57	0000 dddd	MFX Parameter 18	(12768 - 52768) -20000 - 20000
#	00 58	0000 aaaa		
	00 59	0000 bbbb		
	00 5A	0000 cccc		
	00 5B	0000 dddd	MFX Parameter 19	(12768 - 52768) -20000 - 20000
#	00 5C	0000 aaaa		
	00 5D	0000 bbbb		
	00 5E	0000 cccc		
	00 5F	0000 dddd	MFX Parameter 20	(12768 - 52768) -20000 - 20000
#	00 60	0000 aaaa		
	00 61	0000 bbbb		
	00 62	0000 cccc		
	00 63	0000 dddd	MFX Parameter 21	(12768 - 52768) -20000 - 20000
#	00 64	0000 aaaa		
	00 65	0000 bbbb		
	00 66	0000 cccc		
	00 67	0000 dddd	MFX Parameter 22	(12768 - 52768) -20000 - 20000
#	00 68	0000 aaaa		
	00 69	0000 bbbb		
	00 6A	0000 cccc		
	00 6B	0000 dddd	MFX Parameter 23	(12768 - 52768) -20000 - 20000
#	00 6C	0000 aaaa		
	00 6D	0000 bbbb		
	00 6E	0000 cccc		
	00 6F	0000 dddd	MFX Parameter 24	(12768 - 52768) -20000 - 20000
#	00 70	0000 aaaa		
	00 71	0000 bbbb		
	00 72	0000 cccc		
	00 73	0000 dddd	MFX Parameter 25	(12768 - 52768) -20000 - 20000
#	00 74	0000 aaaa		
	00 75	0000 bbbb		
	00 76	0000 cccc		
	00 77	0000 dddd	MFX Parameter 26	(12768 - 52768) -20000 - 20000
#	00 78	0000 aaaa		
	00 79	0000 bbbb		
	00 7A	0000 cccc		
	00 7B	0000 dddd	MFX Parameter 27	(12768 - 52768) -20000 - 20000
#	00 7C	0000 aaaa		
	00 7D	0000 bbbb		
	00 7E	0000 cccc		

	00 7F	0000 dddd	MFX Parameter 28 (12768 - 52768) -20000 - 20000
#	01 00	0000 aaaa	
	01 01	0000 bbbb	
	01 02	0000 cccc	
	01 03	0000 dddd	MFX Parameter 29 (12768 - 52768) -20000 - 20000
#	01 04	0000 aaaa	
	01 05	0000 bbbb	
	01 06	0000 cccc	
	01 07	0000 dddd	MFX Parameter 30 (12768 - 52768) -20000 - 20000
#	01 08	0000 aaaa	
	01 09	0000 bbbb	
	01 0A	0000 cccc	
	01 0B	0000 dddd	MFX Parameter 31 (12768 - 52768) -20000 - 20000
#	01 0C	0000 aaaa	
	01 0D	0000 bbbb	
	01 0E	0000 cccc	
	01 0F	0000 dddd	MFX Parameter 32 (12768 - 52768) -20000 - 20000
	00 00 01 10	Total Size	

* [Reverb]

	Offset Address		Description	
	00 00	0000 000a	Switch	(0 - 1) OFF, ON
	00 01	0000 0aaa	Reverb Type	(0 - 7)
	00 02	0aaa aaaa	Reverb Level	(0 - 127)
#	00 03	0000 aaaa		
	00 04	0000 bbbb		
	00 05	0000 cccc		
	00 06	0000 dddd	Reverb Parameter 1	(12768 - 52768) -20000 - 20000
#	00 07	0000 aaaa		
	00 08	0000 bbbb		
	00 09	0000 cccc		
	00 0A	0000 dddd	Reverb Parameter 2	(12768 - 52768) -20000 - 20000
#	00 0B	0000 aaaa		
	00 0C	0000 bbbb		
	00 0D	0000 cccc		
	00 0E	0000 dddd	Reverb Parameter 3	(12768 - 52768) -20000 - 20000
#	00 0F	0000 aaaa		
	00 10	0000 bbbb		
	00 11	0000 cccc		
	00 12	0000 dddd	Reverb Parameter 4	(12768 - 52768) -20000 - 20000
#	00 13	0000 aaaa		
	00 14	0000 bbbb		
	00 15	0000 cccc		
	00 16	0000 dddd	Reverb Parameter 5	(12768 - 52768) -20000 - 20000
#	00 17	0000 aaaa		
	00 18	0000 bbbb		
	00 19	0000 cccc		
	00 1A	0000 dddd	Reverb Parameter 6	(12768 - 52768) -20000 - 20000
#	00 1B	0000 aaaa		
	00 1C	0000 bbbb		
	00 1D	0000 cccc		
	00 1E	0000 dddd	Reverb Parameter 7	(12768 - 52768) -20000 - 20000
#	00 1F	0000 aaaa		
	00 20	0000 bbbb		
	00 21	0000 cccc		
	00 22	0000 dddd	Reverb Parameter 8	(12768 - 52768) -20000 - 20000
#	00 23	0000 aaaa		
	00 24	0000 bbbb		
	00 25	0000 cccc		
	00 26	0000 dddd	Reverb Parameter 9	(12768 - 52768) -20000 - 20000
#	00 27	0000 aaaa		
	00 28	0000 bbbb		
	00 29	0000 cccc		
	00 2A	0000 dddd	Reverb Parameter 10	(12768 - 52768) -20000 - 20000
#	00 2B	0000 aaaa		
	00 2C	0000 bbbb		
	00 2D	0000 cccc		
	00 2E	0000 dddd	Reverb Parameter 11	(12768 - 52768) -20000 - 20000
#	00 2F	0000 aaaa		
	00 30	0000 bbbb		
	00 31	0000 cccc		
	00 32	0000 dddd	Reverb Parameter 12	(12768 - 52768) -20000 - 20000
#	00 33	0000 aaaa		

	00 34	0000 bbbb		
	00 35	0000 cccc		
	00 36	0000 dddd	Reverb Parameter 13	(12768 - 52768) -20000 - 20000
#	00 37	0000 aaaa		
	00 38	0000 bbbb		
	00 39	0000 cccc		
	00 3A	0000 dddd	Reverb Parameter 14	(12768 - 52768) -20000 - 20000
#	00 3B	0000 aaaa		
	00 3C	0000 bbbb		
	00 3D	0000 cccc		
	00 3E	0000 dddd	Reverb Parameter 15	(12768 - 52768) -20000 - 20000
#	00 3F	0000 aaaa		
	00 40	0000 bbbb		
	00 41	0000 cccc		
	00 42	0000 dddd	Reverb Parameter 16	(12768 - 52768) -20000 - 20000
#	00 43	0000 aaaa		
	00 44	0000 bbbb		
	00 45	0000 cccc		
	00 46	0000 dddd	Reverb Parameter 17	(12768 - 52768) -20000 - 20000
#	00 47	0000 aaaa		
	00 48	0000 bbbb		
	00 49	0000 cccc		
	00 4A	0000 dddd	Reverb Parameter 18	(12768 - 52768) -20000 - 20000
#	00 4B	0000 aaaa		
	00 4C	0000 bbbb		
	00 4D	0000 cccc		
	00 4E	0000 dddd	Reverb Parameter 19	(12768 - 52768) -20000 - 20000
#	00 4F	0000 aaaa		
	00 50	0000 bbbb		
	00 51	0000 cccc		
	00 52	0000 dddd	Reverb Parameter 20	(12768 - 52768) -20000 - 20000
00 00 00 53			Total Size	

* [Chorus/Delay]

Offset Address		Description	
00 00	0000 000a	Switch	(0 - 1) OFF, ON
00 01	0000 aaaa	Chorus Type	(0 - 9)
00 02	0aaa aaaa	Chorus Level	(0 - 127)
00 03	0aaa aaaa	Reverb Send Level	(0 - 127)
# 00 04	0000 aaaa		
00 05	0000 bbbb		
00 06	0000 cccc		
00 07	0000 dddd	Chorus Parameter 1	(12768 - 52768) -20000 - 20000
# 00 08	0000 aaaa		
00 09	0000 bbbb		
00 0A	0000 cccc		
00 0B	0000 dddd	Chorus Parameter 2	(12768 - 52768) -20000 - 20000
# 00 0C	0000 aaaa		
00 0D	0000 bbbb		
00 0E	0000 cccc		
00 0F	0000 dddd	Chorus Parameter 3	(12768 - 52768) -20000 - 20000
# 00 10	0000 aaaa		
00 11	0000 bbbb		
00 12	0000 cccc		
00 13	0000 dddd	Chorus Parameter 4	(12768 - 52768) -20000 - 20000
# 00 14	0000 aaaa		
00 15	0000 bbbb		
00 16	0000 cccc		
00 17	0000 dddd	Chorus Parameter 5	(12768 - 52768) -20000 - 20000
# 00 18	0000 aaaa		
00 19	0000 bbbb		
00 1A	0000 cccc		
00 1B	0000 dddd	Chorus Parameter 6	(12768 - 52768) -20000 - 20000
# 00 1C	0000 aaaa		
00 1D	0000 bbbb		
00 1E	0000 cccc		
00 1F	0000 dddd	Chorus Parameter 7	(12768 - 52768) -20000 - 20000
# 00 20	0000 aaaa		
00 21	0000 bbbb		
00 22	0000 cccc		
00 23	0000 dddd	Chorus Parameter 8	(12768 - 52768) -20000 - 20000
# 00 24	0000 aaaa		
00 25	0000 bbbb		

	00 26	0000 cccc		
	00 27	0000 dddd	Chorus Parameter 9	(12768 - 52768) -20000 - 20000
#	00 28	0000 aaaa		
	00 29	0000 bbbb		
	00 2A	0000 cccc		
	00 2B	0000 dddd	Chorus Parameter 10	(12768 - 52768) -20000 - 20000
#	00 2C	0000 aaaa		
	00 2D	0000 bbbb		
	00 2E	0000 cccc		
	00 2F	0000 dddd	Chorus Parameter 11	(12768 - 52768) -20000 - 20000
#	00 30	0000 aaaa		
	00 31	0000 bbbb		
	00 32	0000 cccc		
	00 33	0000 dddd	Chorus Parameter 12	(12768 - 52768) -20000 - 20000
#	00 34	0000 aaaa		
	00 35	0000 bbbb		
	00 36	0000 cccc		
	00 37	0000 dddd	Chorus Parameter 13	(12768 - 52768) -20000 - 20000
#	00 38	0000 aaaa		
	00 39	0000 bbbb		
	00 3A	0000 cccc		
	00 3B	0000 dddd	Chorus Parameter 14	(12768 - 52768) -20000 - 20000
#	00 3C	0000 aaaa		
	00 3D	0000 bbbb		
	00 3E	0000 cccc		
	00 3F	0000 dddd	Chorus Parameter 15	(12768 - 52768) -20000 - 20000
#	00 40	0000 aaaa		
	00 41	0000 bbbb		
	00 42	0000 cccc		
	00 43	0000 dddd	Chorus Parameter 16	(12768 - 52768) -20000 - 20000
#	00 44	0000 aaaa		
	00 45	0000 bbbb		
	00 46	0000 cccc		
	00 47	0000 dddd	Chorus Parameter 17	(12768 - 52768) -20000 - 20000
#	00 48	0000 aaaa		
	00 49	0000 bbbb		
	00 4A	0000 cccc		
	00 4B	0000 dddd	Chorus Parameter 18	(12768 - 52768) -20000 - 20000
#	00 4C	0000 aaaa		
	00 4D	0000 bbbb		
	00 4E	0000 cccc		
	00 4F	0000 dddd	Chorus Parameter 19	(12768 - 52768) -20000 - 20000
#	00 50	0000 aaaa		
	00 51	0000 bbbb		
	00 52	0000 cccc		
	00 53	0000 dddd	Chorus Parameter 20	(12768 - 52768) -20000 - 20000
00 00 00 54			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.

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 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 values which have a +/- sign, 00H = -64, 40H = +/-0, and 7FH = +63, so that the decimal expression would be 64 less than the value given in the above chart. In the case of two types, 00 00H = -8192, 40 00H = +/-0, and 7F 7FH = +8191.
  For example, if aa bbH were expressed as decimal, this would be aa bbH - 40 00H = aa x 128 + bb - 64 x 128.

* Data marked "Use nibbled data" is expressed in hexadecimal in 4-bit units. A value expressed as a 2-byte nibble 0a 0bH has the value of a x 16 + b.

<Example1> What is the decimal expression of 5AH?
From the preceding table, 5AH = 90

<Example2>
What is the decimal expression of the value 12 34H given as hexadecimal for each 7 bits?
From the preceding table, since 12H = 18 and 34H = 52
18 x 128 + 52 = 2356

<Example3>
What is the decimal expression of the nibbled value 0A 03 09 0D?
From the preceding table, since 0AH = 10, 03H = 3, 09H = 9, 0DH = 13
((10 x 16 + 3) x 16 + 9) x 16 + 13 = 41885

<Example4> What is the nibbled expression of the decimal value 1258?

```
16 ) 1258
16 )   78 ...10
16 )    4 ...14
---------
        0 ... 4
```

Since from the preceding table, 0 = 00H, 4 = 04H, 14 = 0EH, 10 = 0AH, the result is:
00 04 0E 0AH

■ Examples of Actual MIDI Messages

<Example1> 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.

<Example2> CE 49
CnH is the Program Change status, and n is the MIDI channel number. Since EH = 14 and 49H = 73, this is a Program Change message with MIDI CH = 15, program number 74.

<Example3> EA 00 28
EnH is the Pitch Bend Change status, and n is the MIDI channel number. The 2nd byte (00H = 0) is the LSB and the 3rd byte (28H = 40) is the MSB, but Pitch Bend Value is a signed number in which 40 00H (= 64 x 128 + 0 = 8192) is 0, so this Pitch Bend Value is
28 00H - 40 00H = 40 x 128 + 0 - (64 x 128 + 0) = 5120 - 8192 = -3072
If the Pitch Bend Sensitivity is set to 2 semitones, -8192 (00 00H) will cause the pitch to change -200 cents, so in this case -200 x (-3072) / (-8192) = -75 cents of Pitch Bend is being applied to MIDI channel 11.

<Example4> B3 64 00 65 00 06 0C 26 00 64 7F 65 7F
BnH is the Control Change status, and n is the MIDI channel number. For Control Changes, the 2nd byte is the control number, and the 3rd byte is the value.
In a case in which two or more messages consecutive messages have the same status, MIDI has a provision called "running status" which allows the status byte of the second and following messages to be omitted. Thus, the above messages have the following meaning.
 B3 64 00 MIDI ch.4, lower byte of RPN parameter number: 00H
(B3) 65 00 (MIDI ch.4) upper byte of RPN parameter number: 00H
(B3) 06 0C (MIDI ch.4) upper byte of parameter value: 0CH

(B3) 26 00 (MIDI ch.4) lower byte of parameter value: 00H
(B3) 64 7F (MIDI ch.4) lower byte of RPN parameter number: 7FH
(B3) 65 7F (MIDI ch.4) upper byte of RPN parameter number: 7FH
In other words, the above messages specify a value of 0C 00H for RPN parameter number 00 00H on MIDI channel 4, and then set the RPN parameter number to 7F 7FH.
RPN parameter number 00 00H is Pitch Bend Sensitivity, and the MSB of the value indicates semitone units, so a value of 0CH = 12 sets the maximum pitch bend range to +/-12 semitones (1 octave). (On GS sound generators the LSB of Pitch Bend Sensitivity is ignored, but the LSB should be transmitted anyway (with a value of 0) so that operation will be correct on any device.)
Once the parameter number has been specified for RPN or NRPN, al Data Entry messages transmitted on that same channel will be valid, so after the desired value has been transmitted, it is a good idea to set the parameter number to 7F 7FH to prevent accidents. This is the reason for the (B3) 64 7F (B3) 65 7F at the end.
It is not desirable for performance data (such as Standard MIDI File data) to contain many events with running status as given in <Example 4>. This is because if playback is halted during the song and then rewound or fastforwarded, the sequencer may not be able to transmit the correct status, and the sound generator will then misinterpret the data. Take care to give each event its own status.
It is also necessary that the RPN or NRPN parameter number setting and the value setting be done in the proper order. On some sequencers, events occurring in the same (or consecutive) clock may be transmitted in an order different than the order in which they were received. For this reason it is a good idea to slightly skew the time of each event (about 1 tick for TPQN = 96, and about 5 ticks for TPQN = 480).
* TPQN: Ticks Per Quarter Note

■ Example of an Exclusive Message and Calculating a Checksum
Roland Exclusive messages (RQ1, DT1) are transmitted with a checksum at the end (before F7) to make sure that the message was correctly received. The value of the checksum is determined by the address and data (or size) of the transmitted Exclusive message.

● How to calculate the checksum
(hexadecimal numbers are indicated by "H")
The checksum is a value derived by adding the address, size, 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 aabbccddH and the data or size is eeffH.
aa + bb + cc + dd + ee + ff = sum
sum / 128 = quotient ... remainder
128 - remainder = checksum
<Example> Setting program level to 74 (DT1).
According to the Parameter Address Map, the start address of Temporary Program is 01 00 00 00H, the offset address of Program common is 00 00 00H, and the address of Program level is 00 18H. Therefore the address is;

```
   01 00 00 00H
      00 00 00H
+)       00 18H
----------------
   01 00 00 18H
```

Level 74 of the Program has the value of 4AH. So the system exclusive message should be sent is;

F0	41	10	00 00 00 7D	12	01 00 00 18	4A	??	F7
(1)	(2)	(3)	(4)	(5)	address	data	checksum	(6)

(1) Exclusive Status (2) ID (Roland) (3) Device ID (17)
(4) Model ID (AE-30/AE-20) (5) Command ID (DT1) (6) End of Exclusive
Then calculate the checksum.
01H + 00H + 00H + 18H + 4AH = 1 + 0 + 0 + 24 + 74 = 99 (sum)
91 (sum) / 128 = 0 (quotient) … 99 (remainder)
checksum = 128 - 91 (remainder) = 29 = 1DH
This means that F0 41 10 00 00 00 7D 12 01 00 00 18 4A 1D F7 is the message should be sent.

ASCII Code Table
Program Name, etc., of MIDI data are described the ASCII code in the table below.

D	H	Char	D	H	Char	D	H	Char
32	20H	SP	64	40H	@	96	60H	`
33	21H	!	65	41H	A	97	61H	a
34	22H	"	66	42H	B	98	62H	b
35	23H	#	67	43H	C	99	63H	c
36	24H	$	68	44H	D	100	64H	d
37	25H	%	69	45H	E	101	65H	e
38	26H	&	70	46H	F	102	66H	f
39	27H	'	71	47H	G	103	67H	g
40	28H	(	72	48H	H	104	68H	h
41	29H	)	73	49H	I	105	69H	i
42	2AH	*	74	4AH	J	106	6AH	j
43	2BH	+	75	4BH	K	107	6BH	k
44	2CH	,	76	4CH	L	108	6CH	l
45	2DH	-	77	4DH	M	109	6DH	m
46	2EH	.	78	4EH	N	110	6EH	n
47	2FH	/	79	4FH	O	111	6FH	o
48	30H	0	80	50H	P	112	70H	p
49	31H	1	81	51H	Q	113	71H	q
50	32H	2	82	52H	R	114	72H	r
51	33H	3	83	53H	S	115	73H	s
52	34H	4	84	54H	T	116	74H	t
53	35H	5	85	55H	U	117	75H	u
54	36H	6	86	56H	V	118	76H	v
55	37H	7	87	57H	W	119	77H	w
56	38H	8	88	58H	X	120	78H	x
57	39H	9	89	59H	Y	121	79H	y
58	3AH	:	90	5AH	Z	122	7AH	z
59	3BH	;	91	5BH	[	123	7BH	{
60	3CH	<	92	5CH	¥	124	7CH	|
61	3DH	=	93	5DH	]	125	7DH	}
62	3EH	>	94	5EH	^			
63	3FH	?	95	5FH	_			

D: decimal
H: hexadecimal
* "SP" is space.

5.MIDI Implementation Chart

Model AE-30/AE-20 MIDI Implementation Chart Date : Jan 1, 2022 Version : 2.01

Function			Transmitted	Recognized	Remarks
Basic	Default		1-16	1-5	
Channel	Changed		1-16	1-5	
Mode	Default		Mode 3	Mode 3	
	Messages		Mono、Poly	Mode 3、4 (M=1)	
	Altered		**********		
Note Number	:True Voice		0-127	0-127	
			**********	0-127	
Velocity	Note On		o	o	
	Note Off		o	o	
After Touch	Key's		x	x	
	Channel's		o	o	
Pitch Bend			o	o	
Control Change		0, 32	o *1 *2	o	Bank Select
		1	o	o	Modulation
		2	o	o	Breath Type
		4	o	o	Foot Type
		5	o	o	Portamento Time
		6, 38	o	o	Data Entry
		7	o	o	Volume
		10	o	o	Panpot
		11	o	o	Expression
		16 - 19	o	o	General Purpose Controller 1-4
		64	o	o	Hold 1
		65	o	o	Portamento
		66	o	o	Sostenuto
		68	o	o	Legato Foot Switch
		71	o	o	Resonance
		72	o	o	Release Time
		73	o	o	Attack time
		74	o	o	Cutoff
		75	o	o	Decay Time
		76	o	o	Vibrato Rate
		77	o	o	Vibrato Depth
		78	o	o	Vibrato Delay
		80 - 83	o	o	General Purpose Controller 5-8
		91	o	o (Reverb)	General Purpose Effect 1
		93	o	o (Chorus)	General Purpose Effect 3
		1 - 31, 33 - 95	o	o	General Purpose Controller
		96, 97	x	x	Increment、Decrement
		98, 99	x	x	NRPN LSB、MSB
		100, 101	o	o	RPN LSB、MSB
Program Change	:True Number		o *1	o	Program No. 1-128
			**********	0-127	
System Exclusive			o *3	o	
System Common	:Song Position		x	x	
	:Song Select		x	x	
	:Tune Request		x	x	
System Real Time	:Clock		x	x	
	:Commands		x	x	
Aux Messages	:All Sound Off		x	o	
	:Reset All Controllers		o	o	
	:Local On/Off		x	x	
	:All Notes Off		x	o (120, 123-125)	
	:Active Sensing		o	o	
	:System Reset		x	x	
Notes			*1 ○× is selectable. *2 Transmitted if MIDI Control Sw is on. *3 Transmitted if Transmit Edit Data 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