# 1. Receive data

## ■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)

* For Drum Parts, these messages are received when Rx.NOTE OFF = ON for each Instrument.
* The velocity values of Note Off messages are ignored.

### ●Note on

| Status | 2nd bytes | 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)

* Not received when Rx.NOTE MESSAGE = OFF. (Initial value is ON)
* For Drum Parts, not received when Rx.NOTE ON = OFF for each Instrument.

### ●Polyphonic Key Pressure

| Status | 2nd bytes | 3rd byte |
|---|---|---|
| AnH | kkH | vvH |

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

* Not received when Rx.POLY PRESSURE (PAf) = OFF. (Initial value is ON)
* The resulting effect is determined by System Exclusive messages. With the initial settings, there will be no effect.

### ●Control Change

* When Rx.CONTROL CHANGE = OFF, all control change messages except for Channel Mode messages will be ignored.
* The value specified by a Control Change message will not be reset even by a Program Change, etc.

### ○Bank Select (Controller number 0, 32)

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

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

* Not received when Rx.BANK SELECT = OFF.
* "Rx.BANK SELECT" is set to OFF by "GM1 System On," and Bank Select message will be ignored.
* "Rx.BANK SELECT" is set to ON by "GM2 System On."
* "Rx.BANK SELECT" is set to ON by power-on Reset or by receiving "GS RESET."
* When Rx.BANK SELECT LSB = OFF, Bank number LSB (llH) will be handled as 00H regardless of the received value. However, when sending Bank Select messages, you have to send both the MSB (mmH) and LSB (llH, the value should be 00H) together.
* Bank Select processing will be suspended until a Program Change message is received.
* The GS format "Variation number" is the value of the Bank Select MSB (Controller number 0) expressed in decimal.
* Some other GS devices do not recognize the Bank Select LSB (Controller number 32).

### ○Modulation (Controller number 1)

| Status | 2nd bytes | 3rd byte |
|---|---|---|
| BnH | 01H | vvH |

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

* Not received when Rx.MODULATION = OFF. (Initial value is ON)
* The resulting effect is determined by System Exclusive messages. With the initial settings, this is Pitch Modulation Depth.

### ○Portamento Time (Controller number 5)

| Status | 2nd bytes | 3rd byte |
|---|---|---|
| BnH | 05H | vvH |

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

* This adjusts the rate of pitch change when Portamento is ON or when using the Portamento Control. A value of 0 results in the fastest change.

### ○Data Entry (Controller number 6, 38)

| Status | 2nd bytes | 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 bytes | 3rd byte |
|---|---|---|
| BnH | 07H | vvH |

n = MIDI channel number: 0H-FH (ch.1-ch.16)
vv = Volume: 00H-7FH (0-127), Initial Value = 64H (100)

* Volume messages are used to adjust the volume balance of each Part.
* Not received when Rx.VOLUME = OFF. (Initial value is ON)

### ○Pan (Controller number 10)

| Status | 2nd bytes | 3rd byte |
|---|---|---|
| BnH | 0AH | vvH |

n = MIDI channel number: 0H-FH (ch.1-ch.16)
vv = pan: 00H-40H-7FH (Left-Center-Right), Initial Value = 40H (Center)

* For Rhythm Parts, this is a relative adjustment of each Instrument's pan setting.
* Some Tones are not capable of being panned all the way to the left or right.
* Not received when Rx.PANPOT = OFF. (Initial value is ON)

### ○Expression (Controller number 11)

| Status | 2nd bytes | 3rd byte |
|---|---|---|
| BnH | 0BH | vvH |

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

* This adjusts the volume of a Part. It can be used independently from Volume messages. Expression messages are used for musical expression within a performance; e.g., expression pedal movements, crescendo and decrescendo.
* Not received when Rx.EXPRESSION = OFF. (Initial value is ON)

### ○Hold 1 (Controller number 64)

| Status | 2nd bytes | 3rd byte |
|---|---|---|
| BnH | 40H | vvH |

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

* Not received when Rx.HOLD1 = OFF. (Initial value is ON)

### ○Portamento (Controller number 65)

| Status | 2nd bytes | 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

* Not received when Rx.PORTAMENTO = OFF. (Initial value is ON)

❍**Sostenuto (Controller number 66)**

| Status | 2nd bytes | 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

\* Not received when Rx.SOSTENUTO = OFF. (Initial value is ON)

❍**Soft (Controller number 67)**

| Status | 2nd bytes | 3rd byte |
|---|---|---|
| BnH | 43H | vvH |

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

\* Not received when Rx.SOFT = OFF. (Initial value is ON)
\* Some Tones will not exhibit any change.

❍**Filter Resonance (Timbre/Harmonic Intensity) (Controller number 71)**

| Status | 2nd byte | 3rd byte |
|---|---|---|
| BnH | 47H | vvH |

n = MIDI channel number: 0H-FH (ch.1-ch.16)
vv= Resonance value (relative change) : 00H-7FH(-64 - 0 - +63),
Initial value = 40H (no change)

\* Some Tones will not exhibit any change.

❍**Release Time (Controller number 72)**

| Status | 2nd byte | 3rd byte |
|---|---|---|
| BnH | 48H | vvH |

n = MIDI channel number: 0H-FH (ch.1-ch.16)
vv = Release Time value (relative change) : 00H-7FH(-64 - 0 - +63),
Initial value = 40H (no change)

\* Some Tones will not exhibit any change.

❍**Attack time (Controller number 73)**

| Status | 2nd byte | 3rd byte |
|---|---|---|
| BnH | 49H | vvH |

n = MIDI channel number: 0H-FH (ch.1-ch.16)
vv = Attack time value (relative change) : 00H-7FH(-64 - 0 - +63),
Initial value=40H (no change)

\* Some Tones will not exhibit any change.

❍**Cutoff (Controller number 74)**

| Status | 2nd byte | 3rd byte |
|---|---|---|
| BnH | 4AH | vvH |

n = MIDI channel number: 0H-FH (ch.1-ch.16)
vv = Cutoff value (relative change) : 00H-7FH(-64 - 0 - +63),
Initial value = 40H (no change)

\* Some Tones will not exhibit any change.

❍**Decay Time (Controller number 75)**

| Status | 2nd byte | 3rd byte |
|---|---|---|
| BnH | 4BH | vvH |

n = MIDI channel number: 0H-FH (ch.1-ch.16)
vv = Decay Time value (relative change) : 00H-7FH(-64 - 0 - +63),
Initial value = 40H (no change)

\* Some Tones will not exhibit any change.

❍**Vibrato Rate (Controller number 76)**

| Status | 2nd byte | 3rd byte |
|---|---|---|
| BnH | 4CH | vvH |

n = MIDI channel number: 0H-FH (ch.1-ch.16)
vv = Vibrato Rate value (relative change) : 00H-7FH(-64 - 0 - +63),
Initial value = 40H (no change)

\* Some Tones will not exhibit any change.

❍**Vibrato Depth (Controller number 77)**

| Status | 2nd byte | 3rd byte |
|---|---|---|
| BnH | 4DH | vvH |

n = MIDI channel number: 0H-FH (ch.1-ch.16)
vv = Vibrato Depth Value (relative change) : 00H-7FH(-64 - 0 - +63),
Initial Value = 40H (no change)

\* Some Tones will not exhibit any change.

❍**Vibrato Delay (Controller number 78)**

| Status | 2nd byte | 3rd byte |
|---|---|---|
| BnH | 4EH | vvH |

n = MIDI channel number: 0H-FH (ch.1-ch.16)
vv = Vibrato Delay value (relative change) : 00H-7FH(-64 - 0 - +63),
Initial value=40H (no change)

\* Some Tones will not exhibit any change.

❍**Portamento control (Controller number 84)**

| Status | 2nd bytes | 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.

Example 1.

| On MIDI | Description | Result |
|---|---|---|
| 90 3C 40 | Note on C4 | C4 on |
| B0 54 3C | Portamento Control from C4 | no change (C4 voice still sunding) |
| 90 40 40 | Note on E4 | glide from C4 to E4 |
| 80 3C 40 | Note off C4 | no change |
| 80 40 40 | Note off E4 | E4 off |

Example 2.

| On MIDI | Description | Result |
|---|---|---|
| B0 54 3C | Portamento Control from C4 | no change |
| 90 40 40 | Note on E4 | E4 is played with glide from C4 to E4 |
| 80 40 40 | Note off E4 | E4 off |

❍**Effect 1 (Reverb Send Level) (Controller number 91)**

| Status | 2nd bytes | 3rd byte |
|---|---|---|
| BnH | 5BH | vvH |

n = MIDI channel number: 0H-FH (ch.1-ch.16)
vv = Control value: 00H-7FH (0-127), Initial Value = 28H (40)

\* This message adjusts the Reverb Send Level of each Part.

❍**Effect 3 (Chorus Send Level) (Controller number 93)**

| Status | 2nd bytes | 3rd byte |
|---|---|---|
| BnH | 5DH | vvH |

n = MIDI channel number: 0H-FH (ch.1-ch.16)
vv = Control value: 00H-7FH (0-127), Initial Value = 00H (0)

\* This message adjusts the Chorus Send Level of each Part.

## ○ NRPN MSB/LSB (Controller number 98, 99)

| Status | 2nd bytes | 3rd byte |
|---|---|---|
| BnH | 63H | mmH |
| BnH | 62H | llH |

n = MIDI channel number: 0H-FH (ch.1-ch.16)
mm = upper byte (MSB) of the parameter number specified by NRPN
ll = lower byte (LSB) of the parameter number specified by NRPN

* Rx.NRPN is set to OFF by power-on reset or by receiving "GM1 System On" or "GM2 System On," and NRPN message will be ignored. NRPN message will be received when Rx.NRPN = ON, or by receiving "GS RESET."
* The value set by NRPN will not be reset even if Program Change or Reset All Controllers is received.

**NRPN**

The NRPN (Non Registered Parameter Number) message allows an extended range of control changes to be used.

To use these messages, you must first use NRPN MSB and NRPN LSB messages to specify the parameter to be controlled, and then use Data Entry messages to specify the value of the specified parameter. Once an NRPN parameter has been specified, all Data Entry messages received on that channel will modify the value of that parameter. To prevent accidents, it is recommended that you set RPN Null (RPN Number = 7FH/7FH) when you have finished setting the value of the desired parameter. Refer to Section 4. Supplementary material "Examples of actual MIDI messages" <Example 4> (p. 14). On the GS devices, Data entry LSB (llH) of NRPN is ignored, so it is no problem to send Data entry MSB (mmH) only (without Data entry LSB).

On this instrument, NRPN can be used to modify the following parameters.

NRPN Data entry

| MSB LSB | MSB | Description |
|---|---|---|
| 01H 08H | mmH | Vibrato Rate (relative change) |
| | | mm: 0EH-40H-72H (-50 - 0 - +50) |
| 01H 09H | mmH | Vibrato Depth (relative change) |
| | | mm: 0EH-40H-72H (-50 - 0 - +50) |
| 01H 0AH | mmH | Vibrato Delay (relative change) |
| | | mm: 0EH-40H-72H (-50 - 0 - +50) |
| 01H 20H | mmH | TVF Cutoff Frequency (relative change) |
| | | mm: 0EH-40H-72H (-50 - 0 - +50) |
| 01H 21H | mmH | TVF Resonance (relative change) |
| | | mm: 0EH-40H-72H (-50 - 0 - +50) |
| 01H 63H | mmH | TVF&TVA Envelope Attack Time (relative change) |
| | | mm: 0EH-40H-72H (-50 - 0 - +50) |
| 01H 64H | mmH | TVF&TVA Envelope Decay Time (relative change) |
| | | mm: 0EH-40H-72H (-50 - 0 - +50) |
| 01H 66H | mmH | TVF&TVA Envelope Release Time (relative change) |
| | | mm: 0EH-40H-72H (-50 - 0 - +50) |
| 18H rrH | mmH | Drum Instrument Pitch Coarse (relative change) |
| | | rr : key number of drum instrument |
| | | mm: 00H-40H-7FH (-63 - 0 - +63 semitone) |
| 1AH rrH | mmH | Drum Instrument TVA Level (absolute change) |
| | | rr : key number of drum instrument |
| | | mm: 00H-7FH (zero-maximum) |
| 1CH rrH | mmH | Drum Instrument Panpot (absolute change) |
| | | rr : key number of drum instrument |
| | | mm: 00H, 01H-40H-7FH (Ramdom, Left-Center-Right) |
| 1DH rrH | mmH | Drum Instrument Reverb Send Level (absolute change) |
| | | rr : key number of drum instrument |
| | | mm: 01H-7FH (zero-maximum) |
| 1EH rrH | mmH | Drum Instrument Chorus Send Level (absolute change) |
| | | rr : key number of drum instrument |
| | | mm: 01H-7FH (zero-maximum) |

* Parameters marked "relative change" will change relatively to the preset value(40H). Even among different GS devices, "relative change" parameters may sometimes differ in the way the sound changes or in the range of change.
* Parameters marked "absolute change" will be set to the absolute value of the parameter, regardless of the preset value.
* Data entry LSB (llH) is ignored.

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

| Status | 2nd bytes | 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

* Not received when Rx.RPN = OFF. (Initial value is ON)
* The value specified by RPN will not be reset even by messages such as Program Change or Reset All Controller.

**RPN**

The RPN (Registered Parameter Number) messages are expanded control changes, and each function of an RPN is described by the MIDI Standard.

To use these messages, you must first use RPN MSB and RPN LSB messages to specify the parameter to be controlled, and then use Data Entry messages to specify the value of the specified parameter. Once an RPN parameter has been specified, all Data Entry messages received on that channel will modify the value of that parameter. To prevent accidents, it is recommended that you set RPN Null (RPN Number = 7FH/7FH) when you have finished setting the value of the desired parameter.Refer to Section 4. "Examples of actual MIDI messages" <Example 4> (p. 14).

On this instrument, RPN can be used to modify the following parameters.

| RPN MSB LSB | Data entry MSB LSB | Explanation |
|---|---|---|
| 00H 00H | mmH --- | Pitch Bend Sensitivity |
| | | mm: 00H-18H (0-24 semitones),Initial Value = 02H (2 semitones) |
| | | ll : ignored (processed as 00h) |
| | | specify up to 2 octaves in semitone steps |
| 00H 01H | mmH llH | Master Fine Tuning |
| | | mm, ll : 00 00H - 40 00H - 7F 7FH (-100 - 0 - +99.99 cents), |
| | | Initial Value = 40 00H (0 cent) |
| | | ll : ignored (processed as 00h) |
| | | specify up to 2 octaves in semitone steps |
| | | Refer to 4. Supplementary material, "About tuning" (p. 15) |
| 00H 02H | mmH --- | Master Coarse Tuning |
| | | mm : 28H - 40H - 58H (-24 - 0 - +24 semitones), |
| | | Initial Value = 40H (0 cent) |
| | | ll : ignored (processed as 00h) |
| 00H 05H | mmH llH | Modulation Depth Range |
| | | mm : 00H - 04H (0 - 4 semitones) |
| | | ll : 00H - 7FH (0 - 100 cents)     100/128 Cent/Value |
| 7FH 7FH | --- --- | RPN null |
| | | Set condition where RPN and NRPN are unspecified. The data entry messages after set RPN null will be ignored. (No Data entry messages are required after RPN null). |
| | | Settings already made will not change. |
| | | mm, ll : ignored |

## ● Program Change

| Status | 2nd bytes |
|---|---|
| CnH | ppH |

n = MIDI channel number: 0H-FH (ch.1-ch.16)
pp = Program number: 00H-7FH (prog.1-prog.128)

* Not received when Rx.PROGRAM CHANGE = OFF. (Initial value is ON)
* After a Program Change message is received, the sound will change beginning with the next Note-on. Voices already sounding when the Program Change message was received will not be affected.
* For Drum Parts, Program Change messages will not be received on bank numbers 129-16384 (the value of Control Number 0 is other than 0 (00H)).

## ● Channel Pressure

| Status | 2nd bytes |
|---|---|
| DnH | vvH |

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

* Not received when Rx.CH PRESSURE (CAf) = OFF. (Initial value is ON)
* The resulting effect is determined by System Exclusive messages. With the initial settings there will be no effect.

## ●Pitch Bend Change

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

* Not received when Rx.PITCH BEND = OFF. (Initial value is ON)
* The resulting effect is determined by System Exclusive messages. With the initial settings the effect is Pitch Bend.

# ■Channel Mode Messages
## ●All Sounds Off (Controller number 120)

| Status | 2nd byte | 3rd bytes |
|--------|----------|-----------|
| BnH | 78H | 00H |

n = MIDI channel number: 0H-FH (ch.1-ch.16)

* When this message is received, all currently-sounding notes on the corresponding channel will be turned off immediately.

## ●Reset All Controllers (Controller number 121)

| Status | 2nd byte | 3rd bytes |
|--------|----------|-----------|
| 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) |
| Expression | 127 (max) |
| Hold 1 | 0 (off) |
| Portamento | 0 (off) |
| Sostenuto | 0 (off) |
| Soft | 0 (off) |
| RPN | unset; previously set data will not change |
| NRPN | unset; previously set data will not change |

## ●Loacl Control (Controller number 122)

| Status | 2nd byte | 3rd bytes |
|--------|----------|-----------|
| BnH | 7AH | vvH |

n = MIDI channel number: 0H-FH (ch.1-ch.16)

vv = Control value: 00H, 7FH (0, 127), 00H: Local Off, 7FH: Local On

## ●All Notes Off (Controller number 123)

| Status | 2nd byte | 3rd bytes |
|--------|----------|-----------|
| 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 bytes |
|--------|----------|-----------|
| 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 bytes |
|--------|----------|-----------|
| BnH | 7DH | 00H |

n = MIDI channel number: 0H-FH (ch.1-ch.16)

* OMNI ON is only recognized as "All notes off"; the Mode doesn't change (OMNI OFF remains).

## ●MONO (Controller number 126)

| Status | 2nd byte | 3rd bytes |
|--------|----------|-----------|
| BnH | 7EH | mmH |

n = MIDI channel number: 0H-FH (ch.1-ch.16)

mm = mono number: 00H-10H (0-16)

* The same processing will be carried out as when All Sounds Off and All Notes Off is received, and the corresponding channel will be set to Mode 4 (M = 1) regardless of the value of "mono number."

## ●POLY (Controller number 127)

| Status | 2nd byte | 3rd bytes |
|--------|----------|-----------|
| BnH | 7FH | 00H |

n = MIDI channel number: 0H-FH (ch.1-ch.16)

* The same processing will be carried out as when All Sounds Off and All Notes Off is received, and the corresponding channel will be set to Mode 3.

# ■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 instrument are; messages related to mode settings, Universal Realtime System Exclusive messages and Data Set (DT1).

## ●System exclusive messages related to mode settings

These messages are used to initialize a device to GS or General MIDI mode, or change the operating mode. When creating performance data, a "GM1 System On" message should be inserted at the beginning of a General MIDI 1 score, a "GM2 System On" message at the beginning of a General MIDI 2 score, and a "GS Reset" message at the beginning of a GS music data. Each song should contain only one mode message as appropriate for the type of data. (Do not insert two or more mode setting messages in a single song.)

"GM System On" uses Universal Non-realtime Message format. "GS Reset" uses Roland system Exclusive format "Data Set 1 (DT1)."

### ○GM1 System On

This is a command message that resets the internal settings of the unit to the General MIDI initial state (General MIDI System-Level 1). After receiving this message, this instrument will automatically be set to the proper condition for correctly playing a General MIDI score.

| Status | Data byte | Status |
|--------|-----------|--------|
| F0H | 7EH, 7FH, 09H, 01H | F7H |

| Byte | Explanation |
|------|-------------|
| F0H | Exclusive status |
| 7EH | ID number (Universal Non-realtime Message) |
| 7FH | Device ID (Broadcast) |
| 09H | Sub ID#1 (General MIDI Message) |
| 01H | Sub ID#2 (General MIDI 1 On) |
| F7H | EOX (End Of Exclusive) |

* When this message is received, Rx.BANK SELECT will be OFF and Rx.NRPN will be OFF.
* There must be an interval of at least 50 ms between this message and the next.

## ○GM2 System On

| Status | Data byte | Status |
|---|---|---|
| F0H | 7EH 7FH 09H 03H | F7H |

| Byte | Explanation |
|---|---|
| F0H | Exclusive status |
| 7EH | ID number (Universal Non-realtime Message) |
| 7FH | Device ID (Broadcast) |
| 09H | Sub ID#1 (General MIDI Message) |
| 03H | Sub ID#2 (General MIDI 2 On) |
| F7H | EOX (End Of Exclusive) |

* When this message is received, this instrument will be able to receive the messages specified by General MIDI 2, and use the General MIDI 2 soundmap.
* There must be an interval of at least 50 ms between this message and the next.

## ○GM System Off

"GM System Off" is a command message that resets the internal state of this instrument from the GM state to its native condition. This instrument will reset to the GS default state.

| Status | Data byte | Status |
|---|---|---|
| F0H | 7EH, 7FH, 09H, 02H | F7H |

| Byte | Explanation |
|---|---|
| F0H | Exclusive status |
| 7EH | ID number (Universal Non-realtime Message) |
| 7FH | Device ID (Broadcast) |
| 09H | Sub-ID#1 (General MIDI message) |
| 02H | Sub-ID#2 (General MIDI Off) |
| 40H | EOX (End of exclusive) |

* When this message is received, this instrument will reset to the GS default state.
* There must be an interval of at least 50 ms between this message and the next.

## ○GS reset

GS Reset is a command message that resets the internal settings of a device to the GS initial state. This message will appear at the beginning of GS music data, and a GS device that receives this message will automatically be set to the proper state to correctly playback GS music data.

| Status | Data byte | Status |
|---|---|---|
| F0H | 41H, 10H, 42H, 12H, 40H, 00H, 7FH, 00H, 41H | F7H |

| Byte | Explanation |
|---|---|
| F0H | Exclusive status |
| 41H | ID number (Roland) |
| 10H | Device ID (dev: 00H-1FH (1-32), Initial value is 10H (17)) |
| 42H | Model ID (GS) |
| 12H | Command ID (DT1) |
| 40H | Address MSB |
| 00H | Address |
| 7FH | Address LSB |
| 00H | Data (GS reset) |
| 41H | Checksum |
| F7H | EOX (End Of Exclusive) |

* When this message is received, Rx.NRPN will be ON.
* There must be an interval of at least 50 ms between this message and the next.

## ●Universal Realtime System Exclusive Messages

### ○Master volume

| Status | Data byte | Status |
|---|---|---|
| F0H | 7FH, 7FH, 04H, 01H, llH, mmH | F7H |

| Byte | Explanation |
|---|---|
| F0H | Exclusive status |
| 7FH | ID number (universal realtime message) |
| 7FH | Device ID (Broadcast) |
| 04H | Sub ID#1 (Device Control messages) |
| 01H | Sub ID#2 (Master Volume) |
| llH | Master volume lower byte |
| mmH | Master volume upper byte |
| F7H | EOX (End Of Exclusive) |

* The lower byte (llH) of Master Volume will be handled as 00H.

## ○Master Fine Tuning

| Status | Data byte | Status |
|---|---|---|
| F0H | 7FH, 7FH, 04H, 03H, llH, mmH | F7H |

| Byte | Explanation |
|---|---|
| F0H | Exclusive status |
| 7FH | ID number (universal realtime message) |
| 7FH | Device ID (Broadcast) |
| 04H | Sub ID#1 (Device Control) |
| 03H | Sub ID#2 (Master Fine Tuning) |
| llH | Master Fine Tuning LSB |
| mmH | Master Fine Tuning MSB |
| F7H | EOX (End Of Exclusive) |

mm, ll : 00 00H - 40 00H - 7F 7FH(-100 - 0 - +99.9 [cents])

## ○Master Coarse Tuning

| Status | Data byte | Status |
|---|---|---|
| F0H | 7FH,7FH,04H,04H,llH,mmH | F7H |

| Byte | Explanation |
|---|---|
| F0H | Exclusive status |
| 7FH | ID number (universal realtime message) |
| 7FH | Device ID (Broadcast) |
| 04H | Sub ID#1 (Device Control) |
| 04H | Sub ID#2 (Master Coarse Tuning) |
| llH | Master Coarse Tuning LSB |
| mmH | Master Coarse Tuning MSB |
| F7H | EOX (End Of Exclusive) |

| | |
|---|---|
| llH : | ignored (processed as 00H) |
| mmH : | 28H - 40H - 58H (-24 - 0 - +24 [semitones]) |

## ●Global Parameter Control

Parameters of the Global Parameter Control are newly provided for the General MIDI 2.

### ○Reverb Parameters

| Status | Data byte | Status |
|---|---|---|
| F0H | 7FH,7FH,04H,05H,01H,01H,01H,01H,01H,ppH,vvH | F7H |

| Byte | Explanation |
|---|---|
| F0H | Exclusive status |
| 7FH | ID number (universal realtime message) |
| 7FH | Device ID (Broadcast) |
| 04H | Sub ID#1 (Device Control) |
| 05H | Sub ID#2 (Global Parameter Control) |
| 01H | Slot path length |
| 01H | Parameter ID width |
| 01H | Value width |
| 01H | Slot path MSB |
| 01H | Slot path LSB (Effect 0101: Reverb) |
| ppH | Parameter to be controlled. |
| vvH | Value for the parameter. |
| F7H | EOX (End Of Exclusive) |

| | | |
|---|---|---|
| pp=0 | Reverb Type | |
| | vv = 00H | Small Room |
| | vv = 01H | Medium Room |
| | vv = 02H | Large Room |
| | vv = 03H | Medium Hall |
| | vv = 04H | Large Hall |
| | vv = 08H | Plate |

| | | |
|---|---|---|
| pp=1 | Reverb Time | |
| | vv = 00H - 7FH | 0 - 127 |

## ❍ Chorus Parameters

| Status | Data byte | Status |
|---|---|---|
| F0H | 7FH,7FH,04H,05H,01H,01H,01H,01H,02H,ppH,vvH | F7H |

| Byte | Explanation |
|---|---|
| F0H | Exclusive status |
| 7FH | ID number (universal realtime message) |
| 7FH | Device ID (Broadcast) |
| 04H | Sub ID#1 (Device Control) |
| 05H | Sub ID#2 (Global Parameter Control) |
| 01H | Slot path length |
| 01H | Parameter ID width |
| 01H | Value width |
| 01H | Slot path MSB |
| 02H | Slot path LSB (Effect 0102: Chorus) |
| ppH | Parameter to be controlled. |
| vvH | Value for the parameter. |
| F7H | EOX (End Of Exclusive) |

| pp=0 | Chorus Type | |
|---|---|---|
| | vv=0 | Chorus1 |
| | vv=1 | Chorus2 |
| | vv=2 | Chorus3 |
| | vv=3 | Chorus4 |
| | vv=4 | FB Chorus |
| | vv=5 | Flanger |

| pp=1 | Mod Rate | |
|---|---|---|
| | vv=00H - 7FH | 0 - 127 |
| pp=2 | Mod Depth | |
| | vv =00H - 7FH | 0 - 127 |
| pp=3 | Feedback | |
| | vv =00H - 7FH | 0 - 127 |
| pp=4 | Send To Reverb | |
| | vv =00H - 7FH | 0 - 127 |

## ❍ Channel Pressure

| Status | Data byte | Status |
|---|---|---|
| F0H | 7FH,7FH,09H,01H,0nH,ppH,rrH | F7H |

| Byte | Explanation |
|---|---|
| F0H | Exclusive status |
| 7FH | ID number (universal realtime message) |
| 7FH | Device ID (Broadcast) |
| 09H | Sub ID#1 (Controller Destination Setting) |
| 01H | Sub ID#2 (Channel Pressure) |
| 0nH | MIDI Channel (00 - 0F) |
| ppH | Controlled parameter |
| rrH | Controlled range |
| F7H | EOX (End Of Exclusive) |

| pp=0 | Pitch Control | |
|---|---|---|
| | rr = 28H - 58H | -24 - +24 [semitones] |
| pp=1 | Filter Cutoff Control | |
| | rr = 00H - 7FH | -9600 - +9450 [cents] |
| pp=2 | Amplitude Control | |
| | rr = 00H - 7FH | 0 - 200 [%] |
| pp=3 | LFO Pitch Depth | |
| | rr = 00H - 7FH | 0 - 600 [cents] |
| pp=4 | LFO Filter Depth | |
| | rr = 00H - 7FH | 0 - 2400 [cents] |
| pp=5 | LFO Amplitude Depth | |
| | rr = 00H - 7FH | 0 - 100 [%] |

## ❍ Controller

| Status | Data byte | Status |
|---|---|---|
| F0H | 7FH,7FH,09H,03H,0nH,ccH,ppH,rrH | F7H |

| Byte | Explanation |
|---|---|
| F0H | Exclusive status |
| 7FH | ID number (universal realtime message) |
| 7FH | Device ID (Broadcast) |
| 09H | Sub ID#1 (Controller Destination Setting) |
| 03H | Sub ID#2 (Control Change) |
| 0nH | MIDI Channel (00 - 0F) |
| ccH | Controller number (01 - 1F, 40 - 5F) |
| ppH | Controlled parameter |
| rrH | Controlled range |
| F7H | EOX (End Of Exclusive) |

| pp=0 | Pitch Control | |
|---|---|---|
| | rr = 28H - 58H | -24 - +24 [semitones] |
| pp=1 | Filter Cutoff Control | |
| | rr = 00H - 7FH | -9600 - +9450 [cents] |
| pp=2 | Amplitude Control | |
| | rr = 00H - 7FH | 0 - 200 [%] |
| pp=3 | LFO Pitch Depth | |
| | rr = 00H - 7FH | 0 - 600 [cents] |
| pp=4 | LFO Filter Depth | |
| | rr = 00H - 7FH | 0 - 2400 [cents] |
| pp=5 | LFO Amplitude Depth | |
| | rr = 00H - 7FH | 0 - 100 [%] |

## ❍ Scale/Octave Tuning Adjust

| Status | Data byte | Status |
|---|---|---|
| F0H | 7EH,7FH,08H,08H,ffH,ggH,hhH,ssH... | F7H |

| Byte | Explanation |
|---|---|
| F0H | Exclusive status |
| 7EH | ID number (Universal Non-realtime Message) |
| 7FH | Device ID (Broadcast) |
| 08H | Sub ID#1 (MIDI Tuning Standard) |
| 08H | Sub ID#2 (scale/octave tuning 1-byte form) |
| ffH | Channel/Option byte1 |
| | bits 0 to 1 = channel 15 to 16 |
| | bit 2 to 6 = Undefined |
| ggH | Channel byte2 |
| | bits 0 to 6 = channel 8 to 14 |
| hhH | Channel byte3 |
| | bits 0 to 6 = channel 1 to 7 |
| ssH | 12 byte tuning offset of 12 semitones from C to B |
| | 00H = -64 [cents] |
| | 40H =  0 [cents] (equal temperament) |
| | 7FH = +63 [cents] |
| F7H | EOX (End Of Exclusive) |

## ❍ Key-Based Instrument Controllers

| Status | Data byte | Status |
|---|---|---|
| F0H | 7FH,7FH,0AH,01H,0nH,kkH,nnH,vvH... | F7H |

| Byte | Explanation |
|---|---|
| F0H | Exclusive status |
| 7FH | ID number (universal realtime message) |
| 7FH | Device ID (Broadcast) |
| 0AH | Sub ID#1 (Key-Based Instrument Control) |
| 01H | Sub ID#2 (Controller) |
| 0nH | MIDI Channel (00 - 0FH) |
| kkH | Key Number |
| nnH | Control Number |
| vvH | Value |
| F7H | EOX (End Of Exclusive) |

| nn=07H | Level | |
|---|---|---|
| | vv = 00H - 7FH | 0 - 200 [%] (Relative) |
| nn=0AH | Pan | |
| | vv = 00H - 7FH | Left - Right (Absolute) |
| nn=5BH | Reverb Send | |
| | vv = 00H - 7FH | 0 - 127 (Absolute) |
| nn=5D | Chorus Send | |
| | vv = 00H - 7FH | 0 - 127 (Absolute) |

\* This parameter effects drum instruments only.

● **Universal Non-realtime System Exclusive Messages**

○ **Identity Request Message**

| Status | Data byte | Status |
|---|---|---|
| F0H | 7FH, 10H, 06H, 01H | F7H |

| Byte | Explanation |
|---|---|
| F0H | Exclusive status |
| 7FH | ID number (universal realtime message) |
| 10H | Device ID |
| 06H | Sub ID#1 (General Information) |
| 01H | Sub ID#2 (Identity Request) |
| F7H | EOX (End Of Exclusive) |

● **Data transmission**

This instrument can receive the various parameters using System Exclusive messages.
The exclusive message of GS format data has a model ID of 42H and a device ID of 10H (17), and it is common to all the GS devices.

○ **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, 10H, 42H, 12H, aaH, bbH, ccH, ddH, ... eeH, sum | F7H |

| Byte | Explanation |
|---|---|
| F0H | Exclusive status |
| 41H | ID number (Roland) |
| 10H | Device ID |
| 42H | Model ID (GS) |
| 12H | Command ID (DT1) |
| aaH | Address MSB: upper byte of the starting address of the transmitted data |
| bbH | Address: middle byte of the starting address of the transmitted data |
| ccH | Address LSB: lower byte of the starting address of the transmitted data |
| ddH | Data: the actual data to be transmitted. Multiple bytes of data are transmitted starting from the address. |
| : | |
| : | |
| eeH | 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 can be received only from the specified starting address and size. Refer to the Address and Size given in Section 3 (p. 9).
* Data larger than 128 bytes must be divided into packets of 128 bytes or less. If "Data Set 1" is transmitted successively, there must be an interval of at least 40 ms between packets.
* Regarding the checksum please refer to section 4 (p. 14).

# 2. Transmit data

Arranger data can not be transmitted.

## ■ 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 off message is sent out with the velocity of 40H.

### ● Note on

| Status | 2nd bytes | 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

○ **Bank Select (Controller number 0, 32)**

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

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

○ **Volume (Controller number 7)**

| Status | 2nd bytes | 3rd byte |
|---|---|---|
| BnH | 07H | vvH |

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

○ **Hold 1 (Controller number 64)**

| Status | 2nd bytes | 3rd byte |
|---|---|---|
| BnH | 40H | vvH |

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

○ **Sostenuto (Controller number 66)**

| Status | 2nd bytes | 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

○ **Soft (Controller number 67)**

| Status | 2nd bytes | 3rd byte |
|---|---|---|
| BnH | 43H | vvH |

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

○**Effect 1 (Reverb Send Level) (Controller number 91)**

| Status | 2nd bytes | 3rd byte |
|---|---|---|
| BnH | 5BH | vvH |

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

○**Effect 3 (Chorus Send Level) (Controller number 93)**

| Status | 2nd bytes | 3rd byte |
|---|---|---|
| BnH | 5DH | vvH |

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

●**Program Change**

| Status | 2nd bytes |
|---|---|
| CnH | ppH |

n = MIDI channel number: 0H-FH (ch.1-ch.16)
pp = Program number: 00H-7FH (prog.1-prog.128)

●**Pitch Bend Change**

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

●**Realtime Clock**

| Status |
|---|
| F8H |

●**Start**

| Status |
|---|
| FAH |

●**Continue**

| Status |
|---|
| FBH |

●**Stop**

| Status |
|---|
| FCH |

●**Active sensing**

| Status |
|---|
| FEH |

\*   This will be transmitted constantly at intervals of approximately 250 ms.

■**System exclusive messages**

○**Identity Reply**

| Status | Data byte | Status |
|---|---|---|
| F0H | 7EH, 10H, 06H, 02H, 41H, 42H, 00H, 02H, 09H, 01H, 01H, 00H, 00H | F7H |

| Byte | Explanation |
|---|---|
| F0H | Exclusive status |
| 7EH | ID number (universal non-realtime message) |
| 10H | Device ID (use the same as the device ID of Roland) |
| 06H | Sub ID#1 (General Information) |
| 02H | Sub ID#2 (Identity Reply) |
| 41H | ID number (Roland) |
| 42H | Device family code (LSB) |
| 00H | Device family code (MSB) |
| 02H | Device family number code (LSB) |
| 09H | Device family number code (MSB) |
| 01H | Software revision level |
| 01H | Software revision level |
| 00H | Software revision level |
| 00H | Software revision level |
| F7H | EOX (End of Exclusive) |

# 3. Parameter Address Map  (Model ID = 42H)

This map indicates address, size, Data (range), Parameter, Description, and Default Value of parameters which can be transferred using and "Data set 1 (DT1)."
All the numbers of address, size, Data, and Default Value are indicated in 7-bit Hexadecimal-form.

## ■Address Block map

An outlined address map of the Exclusive Communication is as follows;

```
Address (H)       Block

40 00 00    +─────────────────────────────+
            │  SYSTEM PARAMETERS           │Individual
40 01 3F    +─────────────────────────────+
40 1x 00    +─────────────────────────────+
            │  PART PARAMETERS             │Individual
            │     (x = 0-F)                │
40 2x 5A    +─────────────────────────────+
41 m0 00    +─────────────────────────────+
            │  SRUM SETUP PARAMETERS       │Individual
            │     (m = 0-1)                │
41 m8 7F    +─────────────────────────────+
48 00 00    +─────────────────────────────+
            │  SYSTEM PARAMETERS           │Bulk
48 01 10    +─────────────────────────────+
            │  PART PARAMETERS             │Bulk
48 1D 0F    +─────────────────────────────+
49 m0 00    +─────────────────────────────+
            │  DRUM SETUP PARAMETER        │Bulk
            │     (m = 0-1)                │
49 mE 17    +─────────────────────────────+
```

There are two ways in which GS data is transmitted: Individual Parameter Transmission in which individual parameters are transmitted one by one, and Bulk Dump Transmission in which a large amount of data is transmitted at once.

## ■Individual Parameters

Individual Parameter Transmission transmits data (or requests data) for one parameter as one exclusive message (one packet of "F0 ..... F7").
In Individual Parameter Transmission, you must use the Address and Size listed in the following "Parameter Address Map." Addresses marked at "#" cannot be used as starting addresses.

### ●System Parameters

Parameters related to the system of the device are called System Parameters.

| Address (H) | Size (H) | Data (H) | Parameter | Description | Default Value (H) | Description |
|---|---|---|---|---|---|---|
| 40 00 00 | 00 00 04 | 0018-07E8 | MASTER TUNE | -100.0 - +100.0 [cent] | 00 04 00 00 | 0 [cent] |
| 40 00 01# | | | | Use nibblized data. | | |
| 40 00 02# | | | | | | |
| 40 00 03# | | | | | | |

\*   Refer to section 4. Supplementary material, "About tuning" (p. 15).

| Address (H) | Size (H) | Data (H) | Parameter | Description | Default Value (H) | Description |
|---|---|---|---|---|---|---|
| 40 00 04 | 00 00 01 | 00-7F | MASTER VOLUME | 0-127 | 7F | 127 |
| | | | | (= F0 7F 7F 04 01 00 vv F7) | | |
| 40 00 05 | 00 00 01 | 28-58 | MASTER KEY-SHIFT | -24 - +24 [semitones] | 40 | 0 [semitones] |
| 40 00 06 | 00 00 01 | 01-7F | MASTER PAN | -63 (LEFT) - +63 (RIGHT) | 40 | 0 (CENTER) |
| 40 00 7F | 00 00 01 | 00 | MODE SET | 00 = GS Reset, 127 = Exit GS | | |
| | | | | (Rx. only) | | |

\*   Refer to "System exclusive messages related to mode settings" (p. 4).

| Address (H) | Size (H) | Data (H) | Parameter | Description | Default Value (H) | Description |
|---|---|---|---|---|---|---|
| 40 01 10 | 00 00 10 | 00-40 | VOICE RESERVE | Part 10 (Drum Part) | 02 | 2 |
| 40 01 11# | | | | Part 1 | 06 | 6 |
| 40 01 12# | | | | Part 2 | 02 | 2 |
| 40 01 13# | | | | Part 3 | 02 | 2 |
| 40 01 14# | | | | Part 4 | 02 | 2 |
| 40 01 15# | | | | Part 5 | 02 | 2 |
| 40 01 16# | | | | Part 6 | 02 | 2 |
| 40 01 17# | | | | Part 7 | 02 | 2 |
| 40 01 18# | | | | Part 8 | 02 | 2 |
| 40 01 19# | | | | Part 9 | 02 | 2 |
| 40 01 1A# | | | | Part 11 | 00 | 0 |
| 40 01 :# | | | | : | | |
| 40 01 1F# | | | | Part 16 | 00 | 0 |

\*   The sum total of voices in the voice reserve function must be equal to or less than the number of the maximum polyphony. The maximum polyphony of this instrument is 128. For compatibility with other GS models, it is recommended that the maximum polyphony be equal or less than 24.

| Address (H) | Size (H) | Data (H) | Parameter | Description | Default Value (H) | Description |
|---|---|---|---|---|---|---|
| 40 01 30 | 00 00 01 | 00-07 | REVERB MACRO | 00: Room 1 | 04 | Hall 2 |
| | | | | 01: Room 2 | | |
| | | | | 02: Room 3 | | |
| | | | | 03: Hall 1 | | |
| | | | | 04: Hall 2 | | |
| | | | | 05: Plate | | |
| | | | | 06: Delay | | |
| | | | | 07: Panning Delay | | |
| 40 01 31 | 00 00 01 | 00-07 | REVERB CHARACTER | 0-7 | 04 | 4 |
| 40 01 32 | 00 00 01 | 00-07 | REVERB PRE-LPF | 0-7 | 00 | 0 |
| 40 01 33 | 00 00 01 | 00-7F | REVERB LEVEL | 0-127 | 40 | 64 |
| 40 01 34 | 00 00 01 | 00-7F | REVERB TIME | 0-127 | 40 | 64 |
| 40 01 35 | 00 00 01 | 00-7F | REVERB DELAY FEEDBACK | 0-127 | 00 | 0 |

\*   REVERB MACRO is a macro parameter that allows global setting of reverb parameters. When you select the reverb type with REVERB MACRO, each reverb parameter will be set to the most suitable value.
\*   REVERB CHARACTER is a parameter that changes the reverb algorithm. The value of REVERB CHARACTER corresponds to the REVERB MACRO of the same number.

| | | | | | | |
|---|---|---|---|---|---|---|
| 40 01 38 | 00 00 01 | 00-07 | CHORUS MACRO | 00: Chorus 1 | 02 | Chorus 3 |
| | | | | 01: Chorus 2 | | |
| | | | | 02: Chorus 3 | | |
| | | | | 03: Chorus 4 | | |
| | | | | 04: Feedback Chorus | | |
| | | | | 05: Flanger | | |
| | | | | 06: Short Delay | | |
| | | | | 07: Short Delay (FB) | | |
| 40 01 39 | 00 00 01 | 00-07 | CHORUS PRE-LPF | 0-7 | 00 | 0 |
| 40 01 3A | 00 00 01 | 00-7F | CHORUS LEVEL | 0-127 | 40 | 64 |
| 40 01 3B | 00 00 01 | 00-7F | CHORUS FEEDBACK | 0-127 | 08 | 8 |
| 40 01 3C | 00 00 01 | 00-7F | CHORUS DELAY | 0-127 | 50 | 80 |
| 40 01 3D | 00 00 01 | 00-7F | CHORUS RATE | 0-127 | 03 | 3 |
| 40 01 3E | 00 00 01 | 00-7F | CHORUS DEPTH | 0-127 | 13 | 19 |
| 40 01 3F | 00 00 01 | 00-7F | CHORUS SEND LEVEL TO REVERB | 0-127 | 00 | 0 |

* CHORUS MACRO is a macro parameter that allows global setting of chorus parameters. When you use CHORUS MACRO to select the chorus type, each chorus parameter will be set to the most suitable value.

| | | | | | | |
|---|---|---|---|---|---|---|
| 40 03 00 | 00 00 02 | 00 - 7F | EFX TYPE (MSB, LSB) | 00 00 - 7F 7F | 00 00 | Thru |

* Refer to "EFX Type Table" (p. 16).
* This EFX Type is current EFX type of this system. When part EFX type is same to this EFX type, that part connect to EFX.

| | | | |
|---|---|---|---|
| 40 03 03 | 00 00 01 | 00 - 7F | EFX Parameter 1 |
| 40 03 04 | 00 00 01 | 00 - 7F | EFX Parameter 2 |
| 40 03 05 | 00 00 01 | 00 - 7F | EFX Parameter 3 |
| 40 03 06 | 00 00 01 | 00 - 7F | EFX Parameter 4 |
| 40 03 07 | 00 00 01 | 00 - 7F | EFX Parameter 5 |
| 40 03 08 | 00 00 01 | 00 - 7F | EFX Parameter 6 |
| 40 03 09 | 00 00 01 | 00 - 7F | EFX Parameter 7 |
| 40 03 0A | 00 00 01 | 00 - 7F | EFX Parameter 8 |
| 40 03 0B | 00 00 01 | 00 - 7F | EFX Parameter 9 |
| 40 03 0C | 00 00 01 | 00 - 7F | EFX Parameter 10 |
| 40 03 0D | 00 00 01 | 00 - 7F | EFX Parameter 11 |
| 40 03 0E | 00 00 01 | 00 - 7F | EFX Parameter 12 |
| 40 03 0F | 00 00 01 | 00 - 7F | EFX Parameter 13 |
| 40 03 10 | 00 00 01 | 00 - 7F | EFX Parameter 14 |
| 40 03 11 | 00 00 01 | 00 - 7F | EFX Parameter 15 |
| 40 03 12 | 00 00 01 | 00 - 7F | EFX Parameter 16 |
| 40 03 13 | 00 00 01 | 00 - 7F | EFX Parameter 17 |
| 40 03 14 | 00 00 01 | 00 - 7F | EFX Parameter 18 |
| 40 03 15 | 00 00 01 | 00 - 7F | EFX Parameter 19 |
| 40 03 16 | 00 00 01 | 00 - 7F | EFX Parameter 20 |

* Each parameter will be changed by EFX type. Refer to "EFX Parameter Map" (p. 16).

| | | | |
|---|---|---|---|
| 40 03 17 | 00 00 01 | 00 - 7F | EFX Send Level to Reverb |

* Set to 0 when EFX type is changed.

| | | | |
|---|---|---|---|
| 40 03 18 | 00 00 01 | 00 - 7F | EFX Send Level to Chorus |

* Set to 0 when EFX type is changed.

| | | | | | | |
|---|---|---|---|---|---|---|
| 40 03 1A | 00 00 01 | 00 - 7F | EFX Depth | Dry 100% - EFX 100% | 7F | |
| 40 03 1B | 00 00 01 | 00 - 7F | EFX Control Source 1 | 00: OFF | 00 | |
| | | | | 01 - 5F: Control Change No. | | |
| | | | | 71: CAf | | |
| | | | | 72: Bender | | |
| 40 03 1C | 00 00 01 | 00 - 7F | EFX Control Depth 1 | | 7F | -100% - +100% |
| 40 03 1D | 00 00 01 | 00 - 7F | EFX Control Source 2 | *Refer to EFX Control Source 1 | 00 | |
| 40 03 1E | 00 00 01 | 00 - 7F | EFX Control Depth 2 | | 7F | -100% - +100% |

* Marked #1 or #2 can be controlled by EFX CONTROL SOURCE 1 or 2.

## ●Part Parameters

This instrument has 16 parts. Parameters that can be set individually for each Part are called Part parameters.

If you use exclusive messages to set Part parameters, specify the address by Block number rather than Part Number (normally the same number as the MIDI channel). The Block number can be specified as one of 16 blocks, from 0 (H) to F (H).

The relation between Part number and Block number is as follows.

```
x...BLOCK NUMBER (0-F),        Part 1 (MIDI ch = 1)  x = 1
                               Part 2 (MIDI ch = 2)  x = 2
                                  :        :      :
                               Part 9 (MIDI ch = 9)  x = 9
                               Part10 (MIDI ch = 10)  x = 0
                               Part11 (MIDI ch = 11)  x = A
                               Part12 (MIDI ch = 12)  x = B
                                  :        :      :
                               Part16 (MIDI ch = 16)  x = F
```

| Address (H) | Size (H) | Data (H) | Parameter | Description | Default Value (H) | Description |
|---|---|---|---|---|---|---|
| 40 1x 00 | 00 00 02 | 00-7F | TONE NUMBER | CC#00 VALUE 0-127 | 00 | 0 |
| 40 1x 01# | | 00-7F | | P.C. VALUE 1-128 | 00 | 1 |
| 40 1x 02 | 00 00 01 | 00-10 | Rx. CHANNEL | 1-16, OFF | Same as the Part Number | |
| 40 1x 03 | 00 00 01 | 00-01 | Rx. PITCH BEND | OFF/ON | 01 | ON |
| 40 1x 04 | 00 00 01 | 00-01 | Rx. CH PRESSURE (CAf) | OFF/ON | 01 | ON |
| 40 1x 05 | 00 00 01 | 00-01 | Rx. PROGRAM CHANGE | OFF/ON | 01 | ON |
| 40 1x 06 | 00 00 01 | 00-01 | Rx. CONTROL CHANGE | OFF/ON | 01 | ON |
| 40 1x 07 | 00 00 01 | 00-01 | Rx. POLY PRESSURE (PAf) | OFF/ON | 01 | ON |
| 40 1x 08 | 00 00 01 | 00-01 | Rx. NOTE MESSAGE | OFF/ON | 01 | ON |
| 40 1x 09 | 00 00 01 | 00-01 | Rx. RPN | OFF/ON | 01 | ON |
| 40 1x 0A | 00 00 01 | 00-01 | Rx. NRPN | OFF/ON | 00 (01*) | OFF (ON*) |

* When "GM1 System On" and "GM2 System On" are received, Rx. NRPN will be set OFF. When "GS Reset" is received, it will be set ON.

| Address (H) | Size (H) | Data (H) | Parameter | Description | Default Value (H) | Description |
|---|---|---|---|---|---|---|
| 40 1x 0B | 00 00 01 | 00-01 | Rx. MODULATION | OFF/ON | 01 | ON |
| 40 1x 0C | 00 00 01 | 00-01 | Rx. VOLUME | OFF/ON | 01 | ON |
| 40 1x 0D | 00 00 01 | 00-01 | Rx. PANPOT | OFF/ON | 01 | ON |
| 40 1x 0E | 00 00 01 | 00-01 | Rx. EXPRESSION | OFF/ON | 01 | ON |
| 40 1x 0F | 00 00 01 | 00-01 | Rx. HOLD1 | OFF/ON | 01 | ON |
| 40 1x 10 | 00 00 01 | 00-01 | Rx. PORTAMENTO | OFF/ON | 01 | ON |
| 40 1x 11 | 00 00 01 | 00-01 | Rx. SOSTENUTO | OFF/ON | 01 | ON |
| 40 1x 12 | 00 00 01 | 00-01 | Rx. SOFT | OFF/ON | 01 | ON |
| 40 1x 13 | 00 00 01 | 00-01 | MONO/POLY MODE (= CC# 126 01 / CC# 127 00) | Mono/Poly | 01 | Poly |
| 40 1x 14 | 00 00 01 | 00-02 | ASSIGN MODE | 0 = SINGLE | 00 at x = 0 | SINGLE at x = 0 |
| | | | | 1 = LIMITED-MULTI | 01 at x ≠ 0 | LIMITED-MULTI at x ≠0 |
| | | | | 2 = FULL-MULTI | | |

* ASSIGN MODE is the parameter that determines how voice assignment will be handled when sounds overlap on identical note numbers in the same channel (i.e., repeatedly struck notes). This is initialized to a mode suitable for each Part, so for general purposes there is no need to change this.

| Address (H) | Size (H) | Data (H) | Parameter | Description | Default Value (H) | Description |
|---|---|---|---|---|---|---|
| 40 1x 15 | 00 00 01 | 00-02 | USE FOR RHYTHM PART | 0 = OFF | 00 at x ≠0 | OFF at x ≠0 |
| | | | | 1 = MAP1 | 01 at x = 0 | MAP1 at x ≠0 |
| | | | | 2 = MAP2 | | |

* This parameter sets the Drum Map of the Part used as the Drum Part. This instrument can simultaneously (in different Parts) use up to two Drum Maps (MAP1, MAP2). With the initial settings, Part10 (MIDI CH = 10, x = 0) is set to MAP1 (1), and other Parts are set to normal instrumental Parts (OFF (0)).

| Address (H) | Size (H) | Data (H) | Parameter | Description | Default Value (H) | Description |
|---|---|---|---|---|---|---|
| 40 1x 16 | 00 00 01 | 28-58 | PITCH KEY SHIFT | -24 - +24 [semitones] | 40 | 0 [semitones] |
| 40 1x 17 | 00 00 02 | 08-F8 | PITCH OFFSET FINE | -12.0 - +12.0 [Hz] | 08 00 | 0 [Hz] |
| 40 1x 18# | | | | Use nibblized data. | | |

* PITCH OFFSET FINE allows you to alter, by a specified frequency amount, the pitch at which notes will sound. This parameter differs from the conventional Fine Tuning (RPN #1) parameter in that the amount of frequency alteration (in Hertz) will be identical no matter which note is played. When a multiple number of Parts, each of which has been given a different setting for PITCH OFFSET FINE, are sounded by means of an identical note number, you can obtain a Celeste effect.

| Address (H) | Size (H) | Data (H) | Parameter | Description | Default Value (H) | Description |
|---|---|---|---|---|---|---|
| 40 1x 19 | 00 00 01 | 00-7F | PART LEVEL (= CC# 7) | 0-127 | 64 | 100 |
| 40 1x 1A | 00 00 01 | 00-7F | VELOCITY SENSE DEPTH | 0-127 | 40 | 64 |
| 40 1x 1B | 00 00 01 | 00-7F | VELOCITY SENSE OFFSET | 0-127 | 40 | 64 |
| 40 1x 1C | 00 00 01 | 00-7F | PART PANPOT (= CC# 10, except RANDOM) | -64 (RANDOM), -63 (LEFT) - +63 (RIGHT) | 40 | 0 (CENTER) |
| 40 1x 1D | 00 00 01 | 00-7F | KEY RANGE LOW | (C-1)-(G9) | 00 | C-1 |
| 40 1x 1E | 00 00 01 | 00-7F | KEY RANGE HIGH | (C-1)-(G9) | 7F | G 9 |
| 40 1x 1F | 00 00 01 | 00-5F | CC1 CONTROLLER NUMBER | 0-95 | 10 | 16 |
| 40 1x 20 | 00 00 01 | 00-5F | CC2 CONTROLLER NUMBER | 0-95 | 11 | 17 |
| 40 1x 21 | 00 00 01 | 00-7F | CHORUS SEND LEVEL (= CC# 93) | 0-127 | 00 | 0 |
| 40 1x 22 | 00 00 01 | 00-7F | REVERB SEND LEVEL (= CC# 91) | 0-127 | 28 | 40 |
| 40 1x 23 | 00 00 01 | 00-01 | Rx. BANK SELECT | OFF/ON | 01 (00*) | ON (OFF*) |

* "Rx.BANK SELECT" is set to OFF by "GM1 System On," and Bank Select message will be ignored.
* "Rx.BANK SELECT" is set to ON by "GM2 System On."
* "Rx.BANK SELECT" is set to ON by power-on Reset or by receiving "GS RESET."

| Address (H) | Size (H) | Data (H) | Parameter | Description | Default Value (H) | Description |
|---|---|---|---|---|---|---|
| 40 1x 24 | 00 00 01 | 00-01 | Rx.BANK SELECT LSB | OFF/ON | 00 | OFF |

* This instrument can be recognise Bank Select LSB (40H-43H) even if this message is OFF.

| Address (H) | Size (H) | Data (H) | Parameter | Description | Default Value (H) | Description |
|---|---|---|---|---|---|---|
| 40 1x 25 | 00 00 01 | 00-01 | TONE REMAIN | OFF/ON | 01 | ON |
| 40 1x 28 | 00 00 03 | 00-7F | Bank Select LSB Range | LSB (from) | 40 | 40H |
| 40 1x 29# | | | | LSB (to) | 43 | 43H |
| 40 1x 30 | 00 00 01 | 0E-72 | TONE MODIFY 1 Vibrato rate (= NRPN# 8) | -50 - +50 | 40 | 0 |
| 40 1x 31 | 00 00 01 | 0E-72 | TONE MODIFY 2 Vibrato depth (= NRPN# 9) | -50 - +50 | 40 | 0 |
| 40 1x 32 | 00 00 01 | 0E-72 | TONE MODIFY 3 TVF cutoff frequency (= NRPN# 32) | -50 - +50 | 40 | 0 |
| 40 1x 33 | 00 00 01 | 0E-72 | TONE MODIFY 4 TVF resonance (= NRPN# 33) | -50 - +50 | 40 | 0 |
| 40 1x 34 | 00 00 01 | 0E-72 | TONE MODIFY 5 TVF&TVA Env.attack (= NRPN# 99) | -50 - +50 | 40 | 0 |
| 40 1x 35 | 00 00 01 | 0E-72 | TONE MODIFY 6 TVF&TVA Env.decay (= NRPN# 100) | -50 - +50 | 40 | 0 |

| | | | | | | |
|---|---|---|---|---|---|---|
| 40 1x 36 | 00 00 01 | 0E-72 | TONE MODIFY 7 | -50 - +50 | 40 | 0 |
| | | | TVF&TVA Env.release (= NRPN# 102) | | | |
| 40 1x 37 | 00 00 01 | 0E-72 | TONE MODIFY 8 | -50 - +50 | 40 | 0 |
| | | | Vibrato delay (= NRPN# 10) | | | |
| | | | | | | |
| 40 1x 40 | 00 00 0C | 00-7F | SCALE TUNING C | -64 - +63 [cent] | 40 | 0 [cent] |
| 40 1x 41# | | 00-7F | SCALE TUNING C# | -64 - +63 [cent] | 40 | 0 [cent] |
| 40 1x 42# | | 00-7F | SCALE TUNING D | -64 - +63 [cent] | 40 | 0 [cent] |
| 40 1x 43# | | 00-7F | SCALE TUNING D# | -64 - +63 [cent] | 40 | 0 [cent] |
| 40 1x 44# | | 00-7F | SCALE TUNING E | -64 - +63 [cent] | 40 | 0 [cent] |
| 40 1x 45# | | 00-7F | SCALE TUNING F | -64 - +63 [cent] | 40 | 0 [cent] |
| 40 1x 46# | | 00-7F | SCALE TUNING F# | -64 - +63 [cent] | 40 | 0 [cent] |
| 40 1x 47# | | 00-7F | SCALE TUNING G | -64 - +63 [cent] | 40 | 0 [cent] |
| 40 1x 48# | | 00-7F | SCALE TUNING G# | -64 - +63 [cent] | 40 | 0 [cent] |
| 40 1x 49# | | 00-7F | SCALE TUNING A | -64 - +63 [cent] | 40 | 0 [cent] |
| 40 1x 4A# | | 00-7F | SCALE TUNING A# | -64 - +63 [cent] | 40 | 0 [cent] |
| 40 1x 4B# | | 00-7F | SCALE TUNING B | -64 - +63 [cent] | 40 | 0 [cent] |

* SCALE TUNING is a function that allows fine adjustment to the pitch of each note in the octave. The pitch of each identically-named note in all octaves will change simultaneously. A setting of +/- 0 cent (40H) is equal temperament. Refer to section 4. Supplementary material, "The Scale Tune Feature"(p. 15).

| | | | | | | |
|---|---|---|---|---|---|---|
| 40 2x 00 | 00 00 01 | 28-58 | MOD PITCH CONTROL | -24 - +24 [semitone] | 40 | 0 [semitones] |
| 40 2x 01 | 00 00 01 | 00-7F | MOD TVF CUTOFF CONTROL | -9600 - +9600 [cent] | 40 | 0 [cent] |
| 40 2x 02 | 00 00 01 | 00-7F | MOD AMPLITUDE CONTROL | -100.0 - +100.0 [%] | 40 | 0 [%] |
| 40 2x 03 | 00 00 01 | 00-7F | MOD LFO1 RATE CONTROL- | 10.0 - +10.0 [Hz] | 40 | 0 [Hz] |
| 40 2x 04 | 00 00 01 | 00-7F | MOD LFO1 PITCH DEPTH | 0-600 [cent] | 0A | 47 [cent] |
| 40 2x 05 | 00 00 01 | 00-7F | MOD LFO1 TVF DEPTH0 | -2400 [cent] | 00 | 0 [cent] |
| 40 2x 06 | 00 00 01 | 00-7F | MOD LFO1 TVA DEPTH0 | -100.0 [%] | 00 | 0 [%] |
| 40 2x 07 | 00 00 01 | 00-7F | MOD LFO2 RATE CONTROL | -10.0 - +10.0 [Hz] | 40 | 0 [Hz] |
| 40 2x 08 | 00 00 01 | 00-7F | MOD LFO2 PITCH DEPTH0 | -600 [cent] | 00 | 0 [cent] |
| 40 2x 09 | 00 00 01 | 00-7F | MOD LFO2 TVF DEPTH0 | -2400 [cent] | 00 | 0 [cent] |
| 40 2x 0A | 00 00 01 | 00-7F | MOD LFO2 TVA DEPTH0 | -100.0 [%] | 00 | 0 [%] |
| | | | | | | |
| 40 2x 10 | 00 00 01 | 40-58 | BEND PITCH CONTROL | 0-24 [semitone] | 42 | 2 [semitones] |
| 40 2x 11 | 00 00 01 | 00-7F | BEND TVF CUTOFF CONTROL- | 9600 - +9600 [cent] | 40 | 0 [cent] |
| 40 2x 12 | 00 00 01 | 00-7F | BEND AMPLITUDE CONTROL | -100.0 - +100.0 [%] | 40 | 0 [%] |
| 40 2x 13 | 00 00 01 | 00-7F | BEND LFO1 RATE CONTROL | -10.0 - +10.0 [Hz] | 40 | 0 [Hz] |
| 40 2x 14 | 00 00 01 | 00-7F | BEND LFO1 PITCH DEPTH0 | -600 [cent] | 00 | 0 [cent] |
| 40 2x 15 | 00 00 01 | 00-7F | BEND LFO1 TVF DEPTH0 | -2400 [cent] | 00 | 0 [cent] |
| 40 2x 16 | 00 00 01 | 00-7F | BEND LFO1 TVA DEPTH0 | -100.0 [%] | 00 | 0 [%] |
| 40 2x 17 | 00 00 01 | 00-7F | BEND LFO2 RATE CONTROL | -10.0 - +10.0 [Hz] | 40 | 0 [Hz] |
| 40 2x 18 | 00 00 01 | 00-7F | BEND LFO2 PITCH DEPTH0 | -600 [cent] | 00 | 0 [cent] |
| 40 2x 19 | 00 00 01 | 00-7F | BEND LFO2 TVF DEPTH0 | -2400 [cent] | 00 | 0 [cent] |
| 40 2x 1A | 00 00 01 | 00-7F | BEND LFO2 TVA DEPTH0 | -100.0 [%] | 00 | 0 [%] |
| | | | | | | |
| 40 2x 20 | 00 00 01 | 28-58 | CAf PITCH CONTROL | -24 - +24 [semitone] | 40 | 0 [semitones] |
| 40 2x 21 | 00 00 01 | 00-7F | CAf TVF CUTOFF CONTROL | -9600 - +9600 [cent] | 40 | 0 [cent] |
| 40 2x 22 | 00 00 01 | 00-7F | CAf AMPLITUDE CONTROL | -100.0 - +100.0 [%] | 40 | 0 [%] |
| 40 2x 23 | 00 00 01 | 00-7F | CAf LFO1 RATE CONTROL | -10.0 - +10.0 [Hz] | 40 | 0 [Hz] |
| 40 2x 24 | 00 00 01 | 00-7F | CAf LFO1 PITCH DEPTH | 0-600 [cent] | 00 | 0 [cent] |
| 40 2x 25 | 00 00 01 | 00-7F | CAf LFO1 TVF DEPTH | 0-2400 [cent] | 00 | 0 [cent] |
| 40 2x 26 | 00 00 01 | 00-7F | CAf LFO1 TVA DEPTH | 0-100.0 [%] | 00 | 0 [%] |
| 40 2x 27 | 00 00 01 | 00-7F | CAf LFO2 RATE CONTROL | -10.0 - +10.0 [Hz] | 40 | 0 [Hz] |
| 40 2x 28 | 00 00 01 | 00-7F | CAf LFO2 PITCH DEPTH | 0-600 [cent] | 00 | 0 [cent] |
| 40 2x 29 | 00 00 01 | 00-7F | CAf LFO2 TVF DEPTH | 0-2400 [cent] | 00 | 0 [cent] |
| 40 2x 2A | 00 00 01 | 00-7F | CAf LFO2 TVA DEPTH | 0-100.0 [%] | 00 | 0 [%] |
| | | | | | | |
| 40 2x 30 | 00 00 01 | 28-58 | PAf PITCH CONTROL | -24 - +24 [semitone] | 40 | 0 [semitones] |
| 40 2x 31 | 00 00 01 | 00-7F | PAf TVF CUTOFF CONTROL | -9600 - +9600 [cent] | 40 | 0 [cent] |
| 40 2x 32 | 00 00 01 | 00-7F | PAf AMPLITUDE CONTROL | -100.0 - +100.0 [%] | 40 | 0 [%] |
| 40 2x 33 | 00 00 01 | 00-7F | PAf LFO1 RATE CONTROL | -10.0 - +10.0 [Hz] | 40 | 0 [Hz] |
| 40 2x 34 | 00 00 01 | 00-7F | PAf LFO1 PITCH DEPTH | 0-600 [cent] | 00 | 0 [cent] |
| 40 2x 35 | 00 00 01 | 00-7F | PAf LFO1 TVF DEPTH | 0-2400 [cent] | 00 | 0 [cent] |
| 40 2x 36 | 00 00 01 | 00-7F | PAf LFO1 TVA DEPTH | 0-100.0 [%] | 00 | 0 [%] |
| 40 2x 37 | 00 00 01 | 00-7F | PAf LFO2 RATE CONTROL | -10.0 - +10.0 [Hz] | 40 | 0 [Hz] |
| 40 2x 38 | 00 00 01 | 00-7F | PAf LFO2 PITCH DEPTH | 0-600 [cent] | 00 | 0 [cent] |
| 40 2x 39 | 00 00 01 | 00-7F | PAf LFO2 TVF DEPTH | 0-2400 [cent] | 00 | 0 [cent] |
| 40 2x 3A | 00 00 01 | 00-7F | PAf LFO2 TVA DEPTH | 0-100.0 [%] | 00 | 0 [%] |
| | | | | | | |
| 40 2x 40 | 00 00 01 | 28-58 | CC1 PITCH CONTROL | -24 - +24 [semitone] | 40 | 0 [semitones] |
| 40 2x 41 | 00 00 01 | 00-7F | CC1 TVF CUTOFF CONTROL | -9600 - +9600 [cent] | 40 | 0 [cent] |
| 40 2x 42 | 00 00 01 | 00-7F | CC1 AMPLITUDE CONTROL | -100.0 - +100.0 [%] | 40 | 0 [%] |
| 40 2x 43 | 00 00 01 | 00-7F | CC1 LFO1 RATE CONTROL | -10.0 - +10.0 [Hz] | 40 | 0 [Hz] |
| 40 2x 44 | 00 00 01 | 00-7F | CC1 LFO1 PITCH DEPTH | 0-600 [cent] | 00 | 0 [cent] |
| 40 2x 45 | 00 00 01 | 00-7F | CC1 LFO1 TVF DEPTH | 0-2400 [cent] | 00 | 0 [cent] |
| 40 2x 46 | 00 00 01 | 00-7F | CC1 LFO1 TVA DEPTH | 0-100.0 [%] | 00 | 0 [%] |
| 40 2x 47 | 00 00 01 | 00-7F | CC1 LFO2 RATE CONTROL | -10.0 - +10.0 [Hz] | 40 | 0 [Hz] |
| 40 2x 48 | 00 00 01 | 00-7F | CC1 LFO2 PITCH DEPTH | 0-600 [cent] | 00 | 0 [cent] |
| 40 2x 49 | 00 00 01 | 00-7F | CC1 LFO2 TVF DEPTH | 0-2400 [cent] | 00 | 0 [cent] |
| 40 2x 4A | 00 00 01 | 00-7F | CC1 LFO2 TVA DEPTH | 0-100.0 [%] | 00 | 0 [%] |
| | | | | | | |
| 40 2x 50 | 00 00 01 | 28-58 | CC2 PITCH CONTROL- | 24 - +24 [semitone] | 40 | 0 [semitones] |
| 40 2x 51 | 00 00 01 | 00-7F | CC2 TVF CUTOFF CONTROL | -9600 - +9600 [cent] | 40 | 0 [cent] |
| 40 2x 52 | 00 00 01 | 00-7F | CC2 AMPLITUDE CONTROL | -100.0 - +100.0 [%] | 40 | 0 [%] |
| 40 2x 53 | 00 00 01 | 00-7F | CC2 LFO1 RATE CONTROL | -10.0 - +10.0 [Hz] | 40 | 0 [Hz] |
| 40 2x 54 | 00 00 01 | 00-7F | CC2 LFO1 PITCH DEPTH | 0-600 [cent] | 00 | 0 [cent] |
| 40 2x 55 | 00 00 01 | 00-7F | CC2 LFO1 TVF DEPTH | 0-2400 [cent] | 00 | 0 [cent] |
| 40 2x 56 | 00 00 01 | 00-7F | CC2 LFO1 TVA DEPTH | 0-100.0 [%] | 00 | 0 [%] |

| 40 2x 57 | 00 00 01 | 00-7F | CC2 LFO2 RATE CONTROL | -10.0 - +10.0 [Hz] | 40 | 0 [Hz] |
| 40 2x 58 | 00 00 01 | 00-7F | CC2 LFO2 PITCH DEPTH | 0-600 [cent] | 00 | 0 [cent] |
| 40 2x 59 | 00 00 01 | 00-7F | CC2 LFO2 TVF DEPTH | 0-2400 [cent] | 00 | 0 [cent] |
| 40 2x 5A | 00 00 01 | 00-7F | CC2 LFO2 TVA DEPTH | 0-100.0 [%] | 00 | 0 [%] |
| | | | | | | |
| 40 4x 23 | 00 00 02 | 00 - 7F | PART EFX TYPE (MSB, LSB) | 00 00 - 7F 7F | 00 00 | 0 |

\* This EFX type is same to EFX type of System Parameter. When this EFX type is same to EFX type of System parameter (p. 10), the part connect to EFX.

| 40 4x 25# | 00 00 01 | 00 - 7F | PART EFX MACRO | 00 - 7F | 00 00 | 0 |
| 40 4x 26# | 00 00 01 | 00 - 7F | PART EFX DEPTH | 00 - 7F | 00 00 | 0 |

## ●Drum Setup Parameters

\*   m: Map number (0 = MAP1, 1 = MAP2)
\*   rr: drum part note number (00H-7FH)

| Address (H) | Size (H) | Data (H) | Parameter | Description |
|---|---|---|---|---|
| 41 m1 rr | 00 00 01 | 00-7F | PLAY NOTE NUMBER | Pitch coarse |
| 41 m2 rr | 00 00 01 | 00-7F | LEVEL | TVA level |
| | | | (= NRPN# 26) | |
| 41 m3 rr | 00 00 01 | 00-7F | ASSIGN GROUP NUMBER | Non, 1-127 |
| 41 m4 rr | 00 00 01 | 00-7F | PANPOT | -64 (RANDOM), -63 (LEFT) - +63 (RIGHT) |
| | | | (= NRPN# 28, except RANDOM) | |
| 41 m5 rr | 00 00 01 | 00-7F | REVERB SEND LEVEL | 0.0-1.0 |
| | | | (= NRPN# 29) | Multiplicand of the part reverb depth |
| 41 m6 rr | 00 00 01 | 00-7F | CHORUS SEND LEVEL | 0.0-1.0 |
| | | | (= NRPN# 30) | Multiplicand of the part chorus depth |
| 41 m7 rr | 00 00 01 | 00-01 | Rx. NOTE OFF | OFF/ON |
| 41 m8 rr | 00 00 01 | 00-01 | Rx. NOTE ON | OFF/ON |

\*   When the Drum Set is changed, DRUM SETUP PARAMETER values will all be initialized.

# 4. Supplementary material

## ●Decimal and Hexadecimal table

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.

| Dec. | Hex. | Dec . | Hex. | Dec. | Hex. | Dec. | Hex. |
|------|------|-------|------|------|------|------|------|
| 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 |

* Decimal values such as MIDI channel, bank select, and program change are listed as one (1) 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 "nibbled" 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.

<Example 1> What is the decimal expression of 5AH ?
From the preceding table, 5AH = 90

<Example 2> What is the decimal expression of the value 12 34H given as hexadecimal for each 7 bits?
From the preceding table, since 12H = 18 and 34H = 52
18 x 128 + 52 = 2356

<Example 3> 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

<Example 4> 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 answer is 00 04 0E 0AH.

## ●Examples of actual MIDI messages

<Example 1> 92 3E 5F
9n is the Note-on status, and n is the MIDI channel number. Since 2H = 2, 3EH = 62, and 5FH = 95, this is a Note-on message with MIDI CH = 3, note number 62 (note name is D4), and velocity 95.

<Example 2> 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 (Flute in GS).

<Example 3> 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.

<Example 4> 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 sources 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, all 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 fast-forwarded, the sequencer may not be able to transmit the correct status, and the sound source 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 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.

uHow 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 aa bb ccH and the data or size is dd ee ffH.

aa + bb + cc + dd + ee + ff = sum
sum ∕ 128 = quotient ... remainder
128 - remainder = checksum

<Example> Setting REVERB MACRO to ROOM 3

According to the "Parameter Address Map," the REVERB MACRO Address is 40 01 30H, and ROOM 3 is a value of 02H. Thus,

| F0 | 41 | 10 | 42 | 12 | 40 01 30 | 02 | ?? | F7 |
|----|----|----|----|----|----------|----|-----------|----|
| (1) | (2) | (3) | (4) | (5) | Address | data | Checksum | (6) |

(1) Exclusive Status, (2) ID (Roland), (3) Device ID (17),
(4) Model ID (GS), (5) Command ID (DT1), (6) End of Exclusive

Next we calculate the checksum.

40H + 01H + 30H + 02H = 64 + 1 + 48 + 2 = 115 (sum)
115 (sum) ∕ 128 = 0 (quotient) ... 115 (remainder)
checksum = 128 - 115 (remainder) = 13 = 0DH

This means that F0 41 10 42 12 40 01 30 02 0D F7 is the message we transmit.

## ●About tuning

In MIDI, individual Parts are tuned by sending RPN #1 (Master Fine Tuning) to the appropriate MIDI channel.

In MIDI, an entire device is tuned by either sending RPN #1 to all MIDI channels being used, or by sending a System Exclusive MASTER TUNE (address 40 00 00H).

RPN #1 allows tuning to be specified in steps of approximately 0.012 cents (to be precise, 100∕8192 cent), and System Exclusive MASTER TUNE allows tuning in steps of 0.1 cent. One cent is 1∕100th of a semitone.

The values of RPN #1 (Master Fine Tuning) and System Exclusive MASTER TUNE are added together to determine the actual pitch sounded by each Part.

Frequently used tuning values are given in the following table for your reference. Values are in hexadecimal (decimal in parentheses).

```
+------+---------+------------------+----------------------+
|Hz in A4|  cent  |      RPN #1      |   Sys.Ex. 40 00 00   |
+------+---------+------------------+----------------------+
|  445.0 | +19.56 | 4C 43 (+1603)    | 00 04 0C 04 (+196)   |
|  444.0 | +15.67 | 4A 03 (+1283)    | 00 04 09 0D (+157)   |
|  443.0 | +11.76 | 47 44 (+ 964)    | 00 04 07 06 (+118)   |
|  442.0 | + 7.85 | 45 03 (+ 643)    | 00 04 04 0F (+ 79)   |
|  441.0 | + 3.93 | 42 42 (+ 322)    | 00 04 02 07 (+ 39)   |
|  440.0 |   0.00 | 40 00 (   0)     | 00 04 00 00 (   0)   |
|  439.0 | - 3.94 | 3D 3D (- 323)    | 00 03 0D 09 (- 39)   |
|  438.0 | - 7.89 | 3A 7A (- 646)    | 00 03 0B 01 (- 79)   |
+------+---------+------------------+----------------------+
```

<Example> Set the tuning of MIDI channel 3 to A4 = 442.0 Hz

Send RPN#1 to MIDI channel 3. From the above table, the value is 45 03H.

| B2 | 64 00 | MIDI ch.3, lower byte of RPN parameter number: 00H |
| (B2) | 65 01 | (MIDI ch.3) upper byte of RPN parameter number: 01H |
| (B2) | 06 45 | (MIDI ch.3) upper byte of parameter value: 45H |
| (B2) | 26 03 | (MIDI ch.3) lower byte of parameter value: 03H |
| (B2) | 64 7F | (MIDI ch.3) lower byte of RPN parameter number: 7FH |
| (B2) | 65 7F | (MIDI ch.3) upper byte of RPN parameter number: 7FH |

## ●The Scale Tune Feature (address: 40 1x 40)

The scale Tune feature allows you to finely adjust the individual pitch of the notes from C through B. Though the settings are made while working with one octave, the fine adjustments will affect all octaves. By making the appropriate Scale Tune settings, you can obtain a complete variety of tuning methods other than equal temperament. As examples, three possible types of scale setting are explained below.

### ❍Equal Temperament

This method of tuning divides the octave into 12 equal parts. It is currently the most widely used form of tuning,

especially in occidental music. On this instrument, the default settings for the Scale Tune feature produce equal temperament.

### ❍Just Temperament (Keytone C)

The three main chords resound much more beautifully than with equal temperament, but this benefit can only be obtained in one key. If transposed, the chords tend to become ambiguous. The example given involves settings for a key in which C is the keynote.

### ❍Arabian Scale

By altering the setting for Scale Tune, you can obtain a variety of other tunings suited for ethnic music. For example, the settings introduced below will set the unit to use the Arabian Scale.

Example Settings

| Note name | Equal Temperament | Just Temperament (Keytone C) | Arabian Scale |
|-----------|-------------------|------------------------------|---------------|
| C | 0 | 0 | -6 |
| C# | 0 | -8 | +45 |
| D | 0 | +4 | -2 |
| D# | 0 | +16 | -12 |
| E | 0 | -14 | -51 |
| F | 0 | -2 | -8 |
| F# | 0 | -10 | +43 |
| G | 0 | +2 | -4 |
| G# | 0 | +14 | +47 |
| A | 0 | -16 | 0 |
| A# | 0 | +14 | -10 |
| B | 0 | -12 | -49 |

The values in the table are given in cents. Refer to the explanation of Scale Tuning (p. 12) to convert these values to hexadecimal, and transmit them as exclusive data.

For example, to set the tune (C-B) of the Part1 Arabian Scale, send the data as follows:

F0 41 10 42 12 40 11 40 3A 6D 3E 34 0D 38 6B 3C 6F 40 36 0F 50 F7

## ■EFX Type Table

| MSB | LSB | Type |
|-----|-----|------|
| 01H | 00H | Equalizer |
| 01H | 01H | Spectrum |
| 01H | 02H | Enhancer |
| 01H | 03H | Humanizer |
| 01H | 10H | Overdrive |
| 01H | 11H | Distortion |
| 01H | 20H | Phaser |
| 01H | 21H | Auto Wah |
| 01H | 22H | Rotary |
| 01H | 23H | Stereo Flanger |
| 01H | 24H | Step Flanger |
| 01H | 25H | Tremolo |
| 01H | 26H | Auto Pan |
| 01H | 30H | Compressor |
| 01H | 31H | Limiter |
| 01H | 40H | Hexa Chorus |
| 01H | 41H | Tremolo Chorus |
| 01H | 42H | Stereo Chorus |
| 01H | 43H | Space D |
| 01H | 45H | 2Band Chorus |
| 01H | 46H | Space Chorus |
| 01H | 47H | Wave Chorus |
| 01H | 50H | Stereo Delay |
| 01H | 51H | Modulation Delay |
| 01H | 52H | Triple Tap Delay |
| 01H | 53H | Quadruple Tap Delay |
| 01H | 54H | Time Controllable Delay |
| 01H | 55H | Reverb |
| 01H | 56H | Gate Reverb |
| 01H | 60H | 2 Voice Pitch Shifter |
| 01H | 61H | Feedback Pitch Shifter |
| 01H | 72H | Lo-Fi1 |
| 01H | 73H | Lo-Fi2 |
| 02H | 00H | Overdrive -> Chorus |
| 02H | 01H | Overdrive -> Flanger |
| 02H | 02H | Overdrive -> Delay |
| 02H | 03H | Distortion -> Chorus |
| 02H | 04H | Distortion -> Flanger |
| 02H | 05H | Distortion -> Delay |
| 02H | 06H | Enhancer -> Chorus |
| 02H | 07H | Enhancer -> Flanger |
| 02H | 08H | Enhancer -> Delay |
| 02H | 09H | Chorus -> Delay |
| 02H | 0AH | Flanger -> Delay |
| 02H | 0BH | Chorus -> Flanger |
| 02H | 0CH | Band Pass Delay |
| 03H | 00H | Rotary Multi |
| 04H | 03H | Clean Guitar Multi1 |
| 04H | 04H | Clean Guitar Multi2 |
| 04H | 06H | Rhodes Multi |
| 05H | 00H | Keyboard Multi |
| 11H | 00H | Chorus / Delay |
| 11H | 01H | Flanger / Delay |
| 11H | 02H | Chorus / Flanger |

## ■EFX Parameter Map

*   Marked #1 or #2 can be controlled by EFX CONTROL SOURCE1 or 2.

### ●01H, 00H: Equalizer

| No. | Parameter | Value | Default | Description |
|-----|-----------|-------|---------|-------------|
| 1 | Low Frequency | 00 - 01 | 01 | 00: 200Hz, 01: 400Hz |
| 2 | Low Gain | 31 - 4F | 45 | -15dB - +15dB (00: 0dB) |
| 3 | High Frequency | 00 - 01 | 01 | 00: 4000Hz, 01: 8000Hz |
| 4 | High Gain | 31 - 4F | 40 | -15dB - +15dB (00: 0dB) |
| 5 | Mid 1 Frequency | 00 - 7F | 4C | 00: 200Hz - 7F: 6300Hz |
| 6 | Mid 1 Q | 00 - 04 | 00 | 00: 0.5, 01: 1.0, 02: 2.0, 03: 4.0, 04:9.0 |
| 7 | Mid 1 Gain | 41 - 4F | 48 | -15dB - +15dB |
| 8 | Mid 2 Frequency | 00 - 7F | 38 | 00: 200Hz - 7F: 6300Hz |
| 9 | Mid 2 Q | 00 - 04 | 00 | 00: 0.5, 01: 1.0, 02: 2.0, 03: 4.0, 04:9.0 |
| 10 | Mid 2 Gain | 41 - 4F | 39 | -15dB - +15dB |
| 20 | Level (#1) | 00 - 7F | 70 | |

### ●01H, 01H: Spectrum

| No | Parameter | Value | Default | Description |
|----|-----------|-------|---------|-------------|
| 1 | Band 1 Gain (200H) | 31 - 4F | 3C | -15dB - +15dB (40 0dB), 1dB/1 Step |
| 2 | Band 2 Gain (500Hz) | 31 - 4F | 41 | -15dB - +15dB (40 0dB), 1dB/1 Step |
| 3 | Band 3 Gain (1000Hz) | 31 - 4F | 43 | -15dB - +15dB (40 0dB), 1dB/1 Step |
| 4 | Band 4 Gain (1250Hz) | 31 - 4F | 46 | -15dB - +15dB (40: 0dB), 1dB/1 Step |
| 5 | Band 5 Gain (200Hz) | 31 - 4F | 42 | -15dB - +15dB (40: 0dB), 1dB/1 Step |
| 6 | Band 6 Gain (3150Hz) | 31 - 4F | 3F | -15dB - +15dB (40: 0dB), 1dB/1 Step |
| 7 | Band 7 Gain (4000Hz) | 31 - 4F | 3C | -15dB - +15dB (40: 0dB), 1dB/1 Step |
| 8 | Band 8 Gain (5000Hz) | 31 - 4F | 3B | -15dB - +15dB (40: 0dB), 1dB/1 Step |
| 9 | Width | 00 - 04 | 02 | 00: 0.5, 01: 1.0, 02: 2.0, 03: 4.0, 04:9.0 |
| 19 | Pan (#1) | 00 - 7F | 40 | 40:Center, 00:far Left, 7F:far Right |
| 20 | Level (#2) | 00 - 7F | 7F | |

### ●01H, 02H: Enhancer

| No | Parameter | Value | Default | Description |
|----|-----------|-------|---------|-------------|
| 1 | Sense (#1) | 00 - 7F | 70 | |
| 2 | Mix (#2) | 00 - 7F | 40 | |
| 17 | EQ Low Gain (200Hz) | 31 - 4F | 40 | -15dB - +15dB (40: 0dB), 1dB/1 Step |
| 18 | EQ High Gain (4000Hz) | 31 - 4F | 40 | -15dB - +15dB (40: 0dB), 1dB/1 Step |
| 20 | Level | 00 - 7F | 7F | |

### ●01H,03H: Humanizer

| No | Parameter | Value | Default | Description |
|----|-----------|-------|---------|-------------|
| 1 | Drive Depth | 00 - 7F | 30 | |
| 2 | Drive Switch | 00 - 02 | 01 | 00: OFF, 01: Overdrive, 02: Distortion |
| 3 | Vowel(#1) | 00 - 04 | 00 | 00:a, 01: i, 02: u, 03: e, 04: o |
| 4 | Acceleration | 00 - 7F | 7F | |
| 17 | EQ Low Gain (400Hz) | 31 - 4F | 40 | -15dB - +15dB (40: 0dB), 1dB/1 Step |
| 18 | EQ High Gain (4000Hz) | 31 - 4F | 40 | -15dB - +15dB (40: 0dB), 1dB/1 Step |
| 19 | Pan | 00 - 7F | 40 | |
| 20 | Level(#2) | 00 - 7F | 7F | |

### ●01H, 10H: Overdrive

| No | Parameter | Value | Default | Description |
|----|-----------|-------|---------|-------------|
| 1 | Drive (#1) | 00 - 7F | 30 | |
| 2 | Amp Type | 00 - 03 | 01 | 0:Small, 1:Built-in, 2:2-Stack, 3:3-Stack |
| 3 | Amp SW | 00 - 7F | 01 | |
| 17 | EQ Low Gain (200Hz) | 31 - 4F | 40 | -15dB - +15dB (40: 0dB), 1dB/1 Step |
| 18 | EQ High Gain (4000Hz) | 31 - 4F | 40 | -15dB - +15dB (40: 0dB), 1dB/1 Step |
| 19 | Pan (#2) | 00 - 7F | 40 | 40:Center, 00:far Left, 7F:far Right |
| 20 | Level | 00 - 7F | 7F | |

### ●01H, 11H: Distortion

| No | Parameter | Value | Default | Description |
|----|-----------|-------|---------|-------------|
| 1 | Drive (#1) | 00 - 7F | 30 | |
| 2 | Amp Type | 00 - 03 | 03 | 0:Small, 1:Built-in, 2:2-Stack, 3:3-Stack |
| 3 | Amp Sw | 00 - 7F | 01 | |
| 17 | EQ Low Gain (200Hz) | 31 - 4F | 40 | -15dB - +15dB (40: 0dB), 1dB/1 Step |
| 18 | EQ High Gain (4000Hz) | 31 - 4F | 40 | -15dB - +15dB (40: 0dB), 1dB/1 Step |
| 19 | Pan (#2) | 00 - 7F | 40 | 40:Center, 00:far Left, 7F:far Right |
| 20 | Level | 00 - 7F | 7F | |

## ●01H, 20H: Phaser

| No | Parameter | Value | Default | Description |
|----|-----------|-------|---------|-------------|
| 1 | Manual (#1) | 00 - 7F | 28 | |
| 2 | Rate (#2) | 00 - 7D | 10 | |
| 3 | Depth | 00 - 7F | 48 | |
| 4 | Resonance | 00 - 7F | 50 | |
| 5 | Mix | 00 - 7F | 60 | |
| 17 | EQ Low Gain (200Hz) | 31 - 4F | 40 | -15dB - +15dB (40: 0dB), 1dB/1 Step |
| 18 | EQ High Gain (4000Hz) | 31 - 4F | 40 | -15dB - +15dB (40: 0dB), 1dB/1 Step |
| 19 | Pan (#2) | 00 - 7F | 40 | 40:Center, 00:far Left, 7F:far Right |
| 20 | Level | 00 - 7F | 70 | |

## ●01H, 21H: Auto Wah

| No | Parameter | Value | Default | Description |
|----|-----------|-------|---------|-------------|
| 1 | Filter Type | 00 - 01 | 01 | 0: LPF, 1: BPF |
| 2 | Sense | 00 - 7F | 00 | |
| 3 | Manual (#1) | 00 - 7F | 44 | |
| 4 | Peak | 00 - 7F | 3E | |
| 5 | Rate (#2) | 00 - 7F | 28 | |
| 6 | Depth | 00 - 7F | 48 | |
| 7 | Polarity | 00 - 7F | 00 | |
| 17 | EQ Low Gain (200Hz) | 31 - 4F | 40 | -15dB - +15dB (40: 0dB), 1dB/1 Step |
| 18 | EQ High Gain (4000Hz) | 31 - 4F | 40 | -15dB - +15dB (40: 0dB), 1dB/1 Step |
| 19 | Pan | 00 - 7F | 40 | |
| 20 | Level | 00 - 7F | 60 | |

## ●01H, 22H: Rotary

| No | Parameter | Value | Default | Description |
|----|-----------|-------|---------|-------------|
| 1 | Low Rate-Slow | 00 - 7F | 06 | 0.01Hz - 10Hz |
| 2 | Low Rate-Fast | 00 - 7F | 71 | 0.01Hz - 10Hz |
| 3 | Low Accel | 00 - 7F | 18 | |
| 4 | Low Level | 00 - 7F | 7F | |
| 5 | High Rate-Slow | 00 - 7F | 11 | 0.01Hz - 10Hz |
| 6 | High Rate-Fast | 00 - 7F | 78 | 0.01Hz - 10Hz |
| 7 | High Accel | 00 - 7F | 58 | |
| 8 | High Level | 00 - 7F | 40 | |
| 9 | Separation | 00 - 7F | 60 | |
| 10 | Color | 00 - 7F | 00 | |
| 11 | Speed (#1) | 00 - 7F | 00 | 00-3F: Slow, 40-7F: Fast |
| 17 | EQ Low Gain (200Hz) | 31 - 4F | 40 | -15dB - +15dB (40: 0dB), 1dB/1 Step |
| 18 | EQ High Gain (4000Hz) | 31 - 4F | 40 | -15dB - +15dB (40: 0dB), 1dB/1 Step |
| 20 | Level (#2) | 00 - 7F | 7F | |

## ●01H, 23H: Stereo Flanger

| No | Parameter | Value | Default | Description |
|----|-----------|-------|---------|-------------|
| 1 | Pre Filter | 00 - 02 | 00 | 0: OFF, 1: LPF, 2: HPF |
| 2 | Cutoff Frequency | 00 - 7F | 00 | |
| 3 | Pre Delay | 00 - 7F | 0B | |
| 4 | Rate (#1) | 00 - 7F | 0B | |
| 5 | Depth | 00 - 7F | 18 | |
| 6 | Feedback (#2) | 00 - 7F | 68 | 40: 0%, 2%/ 1 Step |
| 7 | Phase | 00 - 7F | 5A | 5A: 180 degree |
| 16 | Balance | 00 - 7F | 40 | |
| 17 | EQ Low Gain (200Hz) | 31 - 4F | 40 | -15dB - +15dB (40: 0dB), 1dB/1 Step |
| 18 | EQ High Gain (4000Hz) | 31 - 4F | 40 | -15dB - +15dB (40: 0dB), 1dB/1 Step |
| 20 | Level (#2) | 00 - 7F | 68 | |

## ●01H, 24H: Step Flanger

| No | Parameter | Value | Default | Description |
|----|-----------|-------|---------|-------------|
| 1 | Pre Delay | 00 - 7F | 0B | |
| 2 | Rate | 00 - 7F | 0B | |
| 3 | Depth | 00 - 7F | 10 | |
| 4 | Feedback (#1) | 00 - 7F | 60 | 40: 0%, 2%/ 1 Step |
| 5 | Phase | 00 - 7F | 5A | 5A: 180 degree |
| 6 | Step Rate (#2) | 00 - 7F | 50 | |
| 16 | Balance | 00 - 7F | 40 | |
| 17 | EQ Low Gain (200Hz) | 31 - 4F | 40 | -15dB - +15dB (40: 0dB), 1dB/1 Step |
| 18 | EQ High Gain (4000Hz) | 31 - 4F | 40 | -15dB - +15dB (40: 0dB), 1dB/1 Step |
| 20 | Level (#2) | 00 - 7F | 70 | |

## ●01H,25H: Tremolo

| No | Parameter | Value | Default | Description |
|----|-----------|-------|---------|-------------|
| 1 | Wave | 00 - 7F | 02 | 00:Triangle, 01:Square, 02:Sin, 03:Saw(Up), 04:Saw(Down) |
| 2 | Rate(#1) | 00 - 7F | 3C | |
| 3 | Depth(#2) | 00 - 7F | 30 | |
| 17 | EQ Low Gain (400Hz) | 31 - 4F | 40 | -15dB - +15dB (40: 0dB), 1dB/1 Step |
| 18 | EQ High Gain (4000Hz) | 31 - 4F | 40 | -15dB - +15dB (40: 0dB), 1dB/1 Step |
| 20 | Level | 00 - 7F | 7F | |

## ●01H,26H: Auto Pan

| No | Parameter | Value | Default | Description |
|----|-----------|-------|---------|-------------|
| 1 | Wave | 00 - 04 | 02 | 00:Triangle, 01:Square, 02:Sin, 03:Saw(Up), 04:Saw(Down) |
| 2 | Rate(#1) | 00 - 7F | 3C | |
| 3 | Depth(#2) | 00 - 7F | 30 | |
| 17 | EQ Low Gain (200Hz) | 31 - 4F | 40 | -15dB - +15dB (40: 0dB), 1dB/1 Step |
| 18 | EQ High Gain (4000Hz) | 31 - 4F | 40 | -15dB - +15dB (40: 0dB), 1dB/1 Step |
| 20 | Level | 00 - 7F | 7F | |

## ●01H, 30H: Compressor

| No | Parameter | Value | Default | Description |
|----|-----------|-------|---------|-------------|
| 1 | Attack | 00 - 7F | 48 | |
| 2 | Sustain | 00 - 7F | 58 | |
| 3 | Post Gain | 00 - 7F | 02 | |
| 17 | EQ Low Gain (200Hz) | 31 - 4F | 40 | -15dB - +15dB (40: 0dB), 1dB/1 Step |
| 18 | EQ High Gain (4000Hz) | 31 - 4F | 40 | -15dB - +15dB (40: 0dB), 1dB/1 Step |
| 19 | Pan (#1) | 31 - 4F | 40 | 40:Center, 00:far Left, 7F:far Right |
| 20 | Level (#2) | 00 - 7F | 60 | |

## ●01H, 31H: Limiter

| No | Parameter | Value | Default | Description |
|----|-----------|-------|---------|-------------|
| 1 | Threshold | 00 - 7F | 5A | |
| 2 | Ratio | 00 - 7F | 03 | |
| 3 | Release | 00 - 7F | 50 | |
| 4 | Post Gain | 00 - 7F | 01 | |
| 17 | EQ Low Gain (200Hz) | 31 - 4F | 40 | -15dB - +15dB (40: 0dB), 1dB/1 Step |
| 18 | EQ High Gain (4000Hz) | 31 - 4F | 40 | -15dB - +15dB (40: 0dB), 1dB/1 Step |
| 19 | Pan (#1) | 31 - 4F | 40 | 40:Center, 00:far Left, 7F:far Right |
| 20 | Level (#2) | 00 - 7F | 7F | |

## ●01H, 40H: Hexa Chorus

| No | Parameter | Value | Default | Description |
|----|-----------|-------|---------|-------------|
| 1 | Pre Delay | 00 - 7F | 0A | |
| 2 | Rate (#1) | 00 - 7D | 08 | |
| 3 | Depth | 00 - 7F | 48 | |
| 4 | Pre Delay Dev. | 00 - 20 | 02 | |
| 5 | Depth Dev. | 2C - 54 | 38 | |
| 6 | Pan Dev. | 00 - 20 | 18 | |
| 16 | Balance (#2) | 00 - 7F | 40 | |
| 17 | EQ Low Gain (200Hz) | 31 - 4F | 40 | -15dB - +15dB (40: 0dB), 1dB/1 Step |
| 18 | EQ High Gain (4000Hz) | 31 - 4F | 40 | -15dB - +15dB (40: 0dB), 1dB/1 Step |
| 20 | Level | 00 - 7F | 68 | |

## ●01H, 41H: Tremolo Chorus

| No | Parameter | Value | Default | Description |
|----|-----------|-------|---------|-------------|
| 1 | Pre Delay | 00 - 7F | 0A | |
| 2 | Rate | 00 - 7D | 08 | |
| 3 | Depth | 00 - 7F | 28 | |
| 4 | Trem. Phase | 00 - 5A | 28 | |
| 5 | Trem. Rate (#1) | 00 - 7F | 3C | |
| 6 | Trem. Sep. | 00 - 7F | 60 | |
| 16 | Balance (#2) | 00 - 7F | 7F | |
| 17 | EQ Low Gain (200Hz) | 31 - 4F | 40 | -15dB - +15dB (40: 0dB), 1dB/1 Step |
| 18 | EQ High Gain (4000Hz) | 31 - 4F | 40 | -15dB - +15dB (40: 0dB), 1dB/1 Step |
| 20 | Level | 00 - 7F | 7F | |

## ●01H, 42H: Stereo Chorus

| No | Parameter | Value | Default | Description |
|----|-----------|-------|---------|-------------|
| 1 | Pre Filter | 00 - 02 | 00 | |
| 2 | Cutoff Frequency | 00 - 7F | 00 | |
| 3 | Pre Delay | 00 - 7F | 0A | |
| 4 | Rate (#1) | 00 - 7D | 08 | |
| 5 | Depth | 00 - 7F | 48 | |
| 7 | Phase | 00 - 5A | 5A | |
| 16 | Balance (#2) | 00 - 7F | 40 | |
| 17 | EQ Low Gain (200Hz) | 31 - 4F | 40 | -15dB - +15dB (40: 0dB), 1dB/1 Step |
| 18 | EQ High Gain (4000Hz) | 31 - 4F | 40 | -15dB - +15dB (40: 0dB), 1dB/1 Step |
| 20 | Level | 00 - 7F | 68 | |

## ●01H, 43H: Space D

| No | Parameter | Value | Default | Description |
|----|-----------|-------|---------|-------------|
| 1 | Pre Delay | 00 - 7F | 0A | |
| 2 | Rate (#1) | 00 - 7D | 10 | |
| 3 | Depth | 00 - 7F | 48 | |
| 4 | Phase | 00 - 5A | 5A | |
| 16 | Balance (#2) | 00 - 7F | 40 | |
| 17 | EQ Low Gain (200Hz) | 31 - 4F | 40 | -15dB - +15dB (40: 0dB), 1dB/1 Step |
| 18 | EQ High Gain (4000Hz) | 31 - 4F | 40 | -15dB - +15dB (40: 0dB), 1dB/1 Step |
| 20 | Level | 00 - 7F | 60 | |

## ●01H,45H: 2Band Chorus

| No | Parameter | Value | Default | Description |
|----|-----------|-------|---------|-------------|
| 1 | Crossover Freq | 00 - 7F | 30 | |
| 2 | Low Pre-Delay | 00 - 7F | 10 | |
| 3 | Low Rate | 00 - 7F | 04 | |
| 4 | Low Depth | 00 - 7F | 20 | |
| 5 | Low Phase | 00 - 7F | 5A | |
| 6 | High Pre-Delay | 00 - 7F | 10 | |
| 7 | High Rate | 00 - 7F | 18 | |
| 8 | High Depth | 00 - 7F | 40 | |
| 9 | High Phase | 00 - 7F | 5A | |
| 10 | Chorus Balance(#1) | 00 - 7F | 40 | |
| 16 | Balance(#2) | 00 - 7F | 40 | |
| 17 | EQ Low Gain (200Hz) | 31 - 4F | 40 | -15dB - +15dB (40: 0dB), 1dB/1 Step |
| 18 | EQ High Gain (4000Hz) | 31 - 4F | 40 | -15dB - +15dB (40: 0dB), 1dB/1 Step |
| 20 | Level | 00 - 7F | 7F | |

## ●01H,46H: Space Chorus

| No | Parameter | Value | Default | Description |
|----|-----------|-------|---------|-------------|
| 1 | Mode | 00 - 7F | 03 | |
| 16 | Balance | 00 - 7F | 40 | |
| 17 | EQ Low Gain (400Hz) | 31 - 4F | 40 | -15dB - +15dB (40: 0dB), 1dB/1 Step |
| 18 | EQ High Gain (4000Hz) | 31 - 4F | 40 | -15dB - +15dB (40: 0dB), 1dB/1 Step |
| 20 | Level | 00 - 7F | 7F | |

## ●01H,47H: Wave Chorus

| No | Parameter | Value | Default | Description |
|----|-----------|-------|---------|-------------|
| 1 | Pre-Filter | 00 - 7F | 00 | |
| 2 | Cutoff Freq | 00 - 7F | 00 | |
| 3 | Pre-Delay | 00 - 7F | 0A | |
| 4 | Tri Rate | 00 - 7F | 08 | |
| 5 | Tri Depth | 00 - 7F | 20 | |
| 6 | Sin Rate | 00 - 7F | 08 | |
| 7 | Sin Depth | 00 - 7F | 50 | |
| 8 | Exp Rate | 00 - 7F | 0C | |
| 9 | Exp Depth | 00 - 7F | 30 | |
| 10 | Feedback | 00 - 7F | 40 | |
| 16 | Balance | 00 - 7F | 40 | |
| 17 | EQ Low Gain (400Hz) | 31 - 4F | 40 | -15dB - +15dB (40: 0dB), 1dB/1 Step |
| 18 | EQ High Gain (4000Hz) | 31 - 4F | 40 | -15dB - +15dB (40: 0dB), 1dB/1 Step |
| 20 | Level | 00 - 7F | 7F | |

## ●01H, 50H: Stereo Delay

| No | Parameter | Value | Default | Description |
|----|-----------|-------|---------|-------------|
| 1 | Delay Left | 00 - 7E | 70 | |
| 2 | Delay Right | 00 - 7E | 70 | |
| 3 | Feedback (#1) | 0F - 71 | 48 | |
| 4 | Feedback Mode | 00 - 01 | 01 | 0: Normal, 1: Cross |
| 5 | Phase Left | 00 - 01 | 00 | 0: Normal, 1: Invert |
| 6 | Phase Right | 00 - 01 | 00 | 0: Normal, 1: Invert |
| 8 | HF Damp | 00 - 7F | 58 | 7F: Bypass |
| 16 | Balance (#2) | 00 - 7F | 10 | |
| 17 | EQ Low Gain (200Hz) | 31 - 4F | 40 | -15dB - +15dB (40: 0dB), 1dB/1 Step |
| 18 | EQ High Gain (4000Hz) | 31 - 4F | 40 | -15dB - +15dB (40: 0dB), 1dB/1 Step |
| 20 | Level | 00 - 7F | 7F | |

## ●01H, 51H: Modulation Delay

| No | Parameter | Value | Default | Description |
|----|-----------|-------|---------|-------------|
| 1 | Delay Left | 00 - 7E | 5A | |
| 2 | Delay Right | 00 - 7E | 6C | |
| 3 | Feedback | 0F - 71 | 54 | 40: 0%, 2% / 1 Step |
| 4 | Feedback Mode | 00 - 01 | 01 | 0: Normal, 1: Cross |
| 5 | Mod: Rate (#1) | 00 - 7D | 0C | |
| 6 | Mod: Depth | 00 - 7F | 15 | |
| 7 | Mod: Phase | 00 - 5A | 5A | 5A: 180 degree |
| 8 | HF Damp | 00 - 7F | 58 | 7F: Bypass |
| 16 | Balance (#2) | 00 - 7F | 10 | |
| 17 | EQ Low Gain (200Hz) | 31 - 4F | 40 | -15dB - +15dB (40: 0dB), 1dB/1 Step |
| 18 | EQ High Gain (4000Hz) | 31 - 4F | 40 | -15dB - +15dB (40: 0dB), 1dB/1 Step |
| 20 | Level | 00 - 7F | 7F | |

## ●01H, 52H: Triple Tap Delay

| No | Parameter | Value | Default | Description |
|----|-----------|-------|---------|-------------|
| 1 | Delay Center | 00 - 73 | 1E | |
| 2 | Delay Left | 00 - 73 | 00 | |
| 3 | Delay Right | 00 - 73 | 0F | |
| 4 | Feedback (#1) | 0F - 71 | 48 | 40: 0%, 2% / 1 Step |
| 5 | Center Level | 00 - 7F | 20 | |
| 6 | Left Level | 00 - 7F | 20 | |
| 7 | Right Level | 00 - 7F | 20 | |
| 8 | HF Damp | 00 - 7F | 58 | 7F: Bypass |
| 16 | Balance (#2) | 00 - 7F | 30 | |
| 17 | EQ Low Gain (200Hz) | 31 - 4F | 40 | -15dB - +15dB (40: 0dB), 1dB/1 Step |
| 18 | EQ High Gain (4000Hz) | 31 - 4F | 40 | -15dB - +15dB (40: 0dB), 1dB/1 Step |
| 20 | Level | 00 - 7F | 7F | |

## ●01H, 53H: Quadruple Tap Delay

| No | Parameter | Value | Default | Description |
|----|-----------|-------|---------|-------------|
| 1 | Delay 1 | 00 - 73 | 2D | |
| 2 | Delay 2 | 00 - 73 | 1E | |
| 3 | Delay 3 | 00 - 73 | 0F | |
| 4 | Delay 4 | 00 - 73 | 00 | |
| 5 | Level 1 | 00 - 7F | 20 | |
| 6 | Level 2 | 00 - 7F | 20 | |
| 7 | Level 3 | 00 - 7F | 20 | |
| 8 | Level 4 | 00 - 7F | 20 | |
| 9 | Feedback (#1) | 0F - 71 | 48 | 40: 0%, 2% / 1 Step |
| 10 | HF Damp | 00 - 7F | 58 | 7F: Bypass |
| 16 | Balance (#2) | 00 - 7F | 30 | |
| 17 | EQ Low Gain (200Hz) | 31 - 4F | 40 | -15dB - +15dB (40: 0dB), 1dB/1 Step |
| 18 | EQ High Gain (4000Hz) | 31 - 4F | 40 | -15dB - +15dB (40: 0dB), 1dB/1 Step |
| 20 | Level | 00 - 7F | 7F | |

## ●01H, 54H: Time Controllable Delay

| No | Parameter | Value | Default | Description |
|----|-----------|-------|---------|-------------|
| 1 | Delay (#1) | 00 - 73 | 12 | |
| 2 | Acceleration | 00 - 7F | 60 | |
| 3 | Feedback (#2) | 0F - 71 | 48 | 40: 0%, 2% / 1 Step |
| 4 | HF Damp | 00 - 7F | 58 | 7F: Bypass |
| 5 | Effect Pan | 00 - 7F | 40 | |
| 16 | Balance | 00 - 7F | 10 | |
| 17 | EQ Low Gain (200Hz) | 31 - 4F | 40 | -15dB - +15dB (40: 0dB), 1dB/1 Step |
| 18 | EQ High Gain (4000Hz) | 31 - 4F | 40 | -15dB - +15dB (40: 0dB), 1dB/1 Step |
| 20 | Level | 00 - 7F | 7F | |

## ●01H, 55H: Reverb

| No | Parameter | Value | Default | Description |
|----|-----------|-------|---------|-------------|
| 1 | Type | 00 - 05 | 04 | |
| 2 | Pre Delay | 00 - 7F | 30 | |
| 3 | Time (#1) | 00 - 7F | 70 | |
| 4 | HF Damp | 00 - 7F | 68 | 7F: Bypass |
| 16 | Balance (#2) | 00 - 7F | 30 | |
| 17 | EQ Low Gain (200Hz) | 31 - 4F | 40 | -15dB - +15dB (40: 0dB), 1dB/1 Step |
| 18 | EQ High Gain (4000Hz) | 31 - 4F | 40 | -15dB - +15dB (40: 0dB), 1dB/1 Step |
| 20 | Level | 00 - 7F | 7F | |

\* Type:0: Room1, 1: Room2, 2: Stage1, 3: Stage 2, 4: Hall1, 5:Hall2

## ●01H, 56H: Gate Reverb

| No | Parameter | Value | Default | Description |
|----|-----------|-------|---------|-------------|
| 1 | Type | 00 - 03 | 00 | |
| 2 | Pre Delay | 00 - 7F | 10 | |
| 3 | Gate Time | 00 - 7F | 28 | |
| 16 | Balance (#1) | 00 - 7F | 40 | |
| 17 | EQ Low Gain (200Hz) | 31 - 4F | 40 | -15dB - +15dB (40: 0dB), 1dB/1 Step |
| 18 | EQ High Gain (4000Hz) | 31 - 4F | 40 | -15dB - +15dB (40: 0dB), 1dB/1 Step |
| 20 | Level (#2) | 00 - 7F | 60 | |

\* Type:0: Normal, 1: Reverse, 2: Sweep1, 3: Sweep2

## ●01H, 60H: 2 Voice Pitch Shifter

| No | Parameter | Value | Default | Description |
|----|-----------|-------|---------|-------------|
| 1 | Pitch Control (#1) | 28 - 4C | 47 | |
| 2 | Pitch Fine 1 | 00 - 7F | 3E | |
| 3 | Pre Delay 1 | 00 - 7F | 00 | |
| 4 | Effect Pan 1 | 00 - 7F | 7F | |
| 5 | Pitch Control 2 (#2) | 28 - 4C | 3B | |
| 6 | Pitch Fine 2 | 00 - 7F | 42 | |
| 7 | Pre Delay 2 | 00 - 7F | 00 | |
| 8 | Effect Pan 2 | 00 - 7F | 00 | |
| 9 | Mode | 00 - 7F | 02 | |
| 10 | Level Balance | 00 - 7F | 40 | |
| 16 | Balance | 00 - 7F | 20 | |
| 17 | EQ Low Gain (200Hz) | 31 - 4F | 40 | -15dB - +15dB (40: 0dB), 1dB/1 Step |
| 18 | EQ High Gain (4000Hz) | 31 - 4F | 40 | -15dB - +15dB (40: 0dB), 1dB/1 Step |
| 20 | Level | 00 - 7F | 60 | |

## ●01H, 61H: Feedback Pitch Shifter

| No | Parameter | Value | Default | Description |
|----|-----------|-------|---------|-------------|
| 1 | Pitch Coarse (#1) | 28 - 4C | 47 | |
| 2 | Pitch Fine | 00 - 7F | 40 | |
| 3 | Feedback (#2) | 0F - 71 | 4C | 40: 0%, 2% / 1 Step |
| 4 | Pre Delay | 00 - 7F | 5C | |
| 5 | Mode | 00 - 04 | 02 | |
| 6 | Effect Pan | 00 - 7F | 40 | |
| 16 | Balance | 00 - 7F | 40 | |
| 17 | EQ Low Gain (200Hz) | 31 - 4F | 40 | -15dB - +15dB (40: 0dB), 1dB/1 Step |
| 18 | EQ High Gain (4000Hz) | 31 - 4F | 40 | -15dB - +15dB (40: 0dB), 1dB/1 Step |
| 20 | Level | 00 - 7F | 7F | |

## ●01H,72H: Lo-Fi1

| No | Parameter | Value | Default | Description |
|----|-----------|-------|---------|-------------|
| 1 | Pre-Filter | 00 - 7F | 01 | |
| 2 | Lo-fi Type | 00 - 7F | 03 | |
| 3 | Post-Filter | 00 - 7F | 02 | |
| 16 | Balance (#1) | 00 - 7F | 7F | |
| 17 | EQ Low Gain (400Hz) | 31 - 4F | 40 | -15dB - +15dB (40: 0dB), 1dB/1 Step |
| 18 | EQ High Gain (4000Hz) | 31 - 4F | 40 | -15dB - +15dB (40: 0dB), 1dB/1 Step |
| 19 | Pan(#2) | 00 - 7F | 40 | |
| 20 | Level | 00 - 7F | 7F | |

## ●01H,73H: Lo-Fi2

| No | Parameter | Value | Default | Description |
|----|-----------|-------|---------|-------------|
| 1 | Lofi Type | 00 - 7F | 03 | |
| 2 | Filter Type | 00 - 7F | 01 | 00: Thru, 01: LPF, 02: HPF |
| 3 | Filter Cutoff | 00 - 7F | 24 | |
| 4 | Radio Detune(#1) | 00 - 7F | 00 | |
| 5 | Radio Noise Level | 00 - 7F | 40 | |
| 6 | White/Pink Select | 00 - 7F | 01 | |
| 7 | White/Pink Filter | 00 - 7F | 28 | |
| 8 | White/Pink Level | 00 - 7F | 0D | |
| 9 | Disc Noise Type | 00 - 7F | 03 | 00: LP, 01: EP, 02: SP, 03: Random |
| 10 | Disc Noise Filter | 00 - 7F | 30 | |
| 11 | Disc Noise Level | 00 - 7F | 20 | |
| 12 | Hum Noise Type | 00 - 7F | 00 | |
| 13 | Hum Noise Filter | 00 - 7F | 20 | |
| 14 | Hum Noise Level | 00 - 7F | 08 | |
| 15 | Mono/Stereo Sw | 00 - 7F | 00 | 00:Mono, 01:Stereo |
| 16 | Balance(#2) | 00 - 7F | 7F | |
| 17 | EQ Low Gain (400Hz) | 31 - 4F | 43 | -15dB - +15dB (40: 0dB), 1dB/1 Step |
| 18 | EQ High Gain (4000Hz) | 31 - 4F | 34 | -15dB - +15dB (40: 0dB), 1dB/1 Step |
| 19 | Pan | 00 - 7F | 40 | |
| 20 | level | 00 - 7F | 7F | |

## ●02H, 00H: Overdrive -> Chorus

| No | Parameter | Value | Default | Description |
|----|-----------|-------|---------|-------------|
| 1 | OD: Drive | 00 - 7F | 20 | |
| 2 | OD: Pan (#1) | 00 - 7F | 40 | |
| 3 | OD: Amp Type | 00 - 03 | 03 | 0:Small, 1:Built-in, 2:2-Stack, 3:3-Stack |
| 4 | OD: Amp Sw | 00 - 7F | 01 | |
| 6 | Cho: Delay | 00 - 7F | 0A | |
| 7 | Cho: Rate | 00 - 7D | 08 | |
| 8 | Cho: Depth | 00 - 7F | 48 | |
| 10 | Cho: Balance (#2) | 00 - 7F | 40 | |
| 17 | EQ Low Gain (200Hz) | 31 - 4F | 40 | -15dB - +15dB (40: 0dB), 1dB/1 Step |
| 18 | EQ High Gain (4000Hz) | 31 - 4F | 40 | -15dB - +15dB (40: 0dB), 1dB/1 Step |
| 20 | Level | 00 - 7F | 7F | |

## ●02H, 01H: Overdrive -> Flanger

| No | Parameter | Value | Default | Description |
|----|-----------|-------|---------|-------------|
| 1 | OD: Drive | 00 - 7F | 20 | |
| 2 | OD: Pan (#1) | 00 - 7F | 40 | |
| 3 | OD: Amp Type | 00 - 03 | 03 | 0:Small, 1:Built-in, 2:2-Stack, 3:3-Stack |
| 4 | OD: Amp Sw | 00 - 7F | 01 | |
| 6 | Flg: Delay | 00 - 7F | 0B | |
| 7 | Flg: Rate | 00 - 7F | 0B | |
| 8 | Flg: Depth | 00 - 7F | 18 | |
| 9 | Flg: Feedback | 0F - 71 | 68 | |
| 10 | Flg: Balance (#2) | 00 - 7F | 20 | |
| 17 | EQ Low Gain (200Hz) | 31 - 4F | 40 | -15dB - +15dB (40: 0dB), 1dB/1 Step |
| 18 | EQ High Gain (4000Hz) | 31 - 4F | 40 | -15dB - +15dB (40: 0dB), 1dB/1 Step |
| 20 | Level | 00 - 7F | 7F | |

## ●02H, 02H: Overdrive -> Delay

| No | Parameter | Value | Default | Description |
|----|-----------|-------|---------|-------------|
| 1 | OD: Drive | 00 - 7F | 20 | |
| 2 | OD: Pan (#1) | 00 - 7F | 40 | |
| 3 | OD: Amp Type | 00 - 03 | 03 | 0:Small, 1:Built-in, 2:2-Stack, 3:3-Stack |
| 4 | OD: Amp Sw | 00 - 7F | 01 | |
| 6 | Dly: Delay | 00 - 7F | 6F | |
| 7 | Dly: Feedback | 0F - 71 | 48 | |
| 8 | Dly: HP Damp | 00 - 7F | 58 | |
| 10 | Dly: Balance (#2) | 00 - 7F | 10 | |
| 17 | EQ Low Gain (200Hz) | 31 - 4F | 40 | -15dB - +15dB (40: 0dB), 1dB/1 Step |
| 18 | EQ High Gain (4000Hz) | 31 - 4F | 40 | -15dB - +15dB (40: 0dB), 1dB/1 Step |
| 20 | Level | 00 - 7F | 7F | |

## ●02H, 03H: Distortion -> Chorus

| No | Parameter | Value | Default | Description |
|---|---|---|---|---|
| 1 | DS: Drive | 00 - 7F | 30 | |
| 2 | DS: Pan (#1) | 00 - 7F | 40 | |
| 3 | DS: Amp Type | 00 - 03 | 03 | 0:Small, 1:Built-in, 2:2-Stack, 3:3-Stack |
| 4 | DS: Amp Sw | 00 - 7F | 01 | |
| 6 | Cho: Delay | 00 - 7F | 0A | |
| 7 | Cho: Rate | 00 - 7D | 08 | |
| 8 | Cho: Depth | 00 - 7F | 48 | |
| 10 | Cho: Balance (#2) | 00 - 7F | 40 | |
| 17 | EQ Low Gain (200Hz) | 31 - 4F | 40 | -15dB - +15dB (40: 0dB), 1dB/1 Step |
| 18 | EQ High Gain (4000Hz) | 31 - 4F | 40 | -15dB - +15dB (40: 0dB), 1dB/1 Step |
| 20 | Level | 00 - 7F | 7F | |

## ●02H, 04H: Distortion -> Flanger

| No | Parameter | Value | Default | Description |
|---|---|---|---|---|
| 1 | DS: Drive | 00 - 7F | 30 | |
| 2 | DS: Pan (#1) | 00 - 7F | 40 | |
| 3 | DS: Amp Type | 00 - 03 | 03 | 0:Small, 1:Built-in, 2:2-Stack, 3:3-Stack |
| 4 | DS: Amp Sw | 00 - 7F | 01 | |
| 6 | Flg: Delay | 00 - 7F | 0B | |
| 7 | Flg: Rate | 00 - 7F | 0B | |
| 8 | Flg: Depth | 00 - 7F | 18 | |
| 9 | Flg: Feedback | 0F - 71 | 68 | 40: 0%, 2% / 1 Step |
| 10 | Flg: Balance (#2) | 00 - 7F | 20 | |
| 17 | EQ Low Gain (200Hz) | 31 - 4F | 40 | -15dB - +15dB (40: 0dB), 1dB/1 Step |
| 18 | EQ High Gain (4000Hz) | 31 - 4F | 40 | -15dB - +15dB (40: 0dB), 1dB/1 Step |
| 20 | Level | 00 - 7F | 7F | |

## ●02H, 05H: Distortion -> Delay

| No | Parameter | Value | Default | Description |
|---|---|---|---|---|
| 1 | DS: Drive | 00 - 7F | 30 | |
| 2 | DS: Pan (#1) | 00 - 7F | 40 | |
| 3 | DS: Amp Type | 00 - 03 | 03 | 0:Small, 1:Built-in, 2:2-Stack, 3:3-Stack |
| 4 | DS: Amp Sw | 00 - 7F | 01 | |
| 6 | Dly: Delay | 00 - 7F | 6F | |
| 7 | Dly: Feedback | 0F - 71 | 48 | 40: 0%, 2% / 1 Step |
| 8 | Dly: HP Damp | 00 - 7F | 58 | |
| 10 | Dly: Balance (#2) | 00 - 7F | 10 | |
| 17 | EQ Low Gain (200Hz) | 31 - 4F | 40 | -15dB - +15dB (40: 0dB), 1dB/1 Step |
| 18 | EQ High Gain (4000Hz) | 31 - 4F | 40 | -15dB - +15dB (40: 0dB), 1dB/1 Step |
| 20 | Level | 00 - 7F | 7F | |

## ●02H, 06H: Enhancer -> Chorus

| No | Parameter | Value | Default | Description |
|---|---|---|---|---|
| 1 | Enh: Sense (#1) | 00 - 7F | 70 | |
| 2 | Enh: Mix | 00 - 7F | 40 | |
| 6 | Cho: Delay | 00 - 7F | 0A | |
| 7 | Cho: Rate | 00 - 7D | 08 | |
| 8 | Cho: Depth | 00 - 7F | 48 | |
| 10 | Cho: Balance (#2) | 00 - 7F | 40 | |
| 17 | EQ Low Gain (200Hz) | 31 - 4F | 40 | -15dB - +15dB (40: 0dB), 1dB/1 Step |
| 18 | EQ High Gain (4000Hz) | 31 - 4F | 40 | -15dB - +15dB (40: 0dB), 1dB/1 Step |
| 20 | Level | 00 - 7F | 50 | |

## ●02H, 07H: Enhancer -> Flanger

| No | Parameter | Value | Default | Description |
|---|---|---|---|---|
| 1 | Enh: Sense (#1) | 00 - 7F | 70 | |
| 2 | Enh: Mix | 00 - 7F | 40 | |
| 6 | Flg: Delay | 00 - 7F | 0B | |
| 7 | Flg: Rate | 00 - 7D | 0B | |
| 8 | Flg: Depth | 00 - 7F | 18 | |
| 9 | Flg: Feedback | 0F - 71 | 68 | 40: 0%, 2% / 1 Step |
| 10 | Flg: Balance (#2) | 00 - 7F | 40 | |
| 17 | EQ Low Gain (200Hz) | 31 - 4F | 40 | -15dB - +15dB (40: 0dB), 1dB/1 Step |
| 18 | EQ High Gain (4000Hz) | 31 - 4F | 40 | -15dB - +15dB (40: 0dB), 1dB/1 Step |
| 20 | Level | 00 - 7F | 60 | |

## ●02H, 08H: Enhancer -> Delay

| No | Parameter | Value | Default | Description |
|---|---|---|---|---|
| 1 | Enh: Sense (#1) | 00 - 7F | 70 | |
| 2 | Enh: Mix | 00 - 7F | 40 | |
| 6 | Dly: Delay | 00 - 7F | 6F | |
| 7 | Dly: Feedback | 0F - 71 | 48 | 40: 0%, 2% / 1 Step |
| 8 | Dly: HP Damp | 00 - 7F | 58 | |
| 10 | Dly: Balance (#2) | 00 - 7F | 10 | |
| 17 | EQ Low Gain (200Hz) | 31 - 4F | 40 | -15dB - +15dB (40: 0dB), 1dB/1 Step |
| 18 | EQ High Gain (4000Hz) | 31 - 4F | 40 | -15dB - +15dB (40: 0dB), 1dB/1 Step |
| 20 | Level | 00 - 7F | 60 | |

## ●02H, 09H: Chorus -> Delay

| No | Parameter | Value | Default | Description |
|---|---|---|---|---|
| 1 | Cho: Delay | 00 - 7F | 0A | |
| 2 | Cho: Rate | 00 - 7D | 08 | |
| 3 | Cho: Depth | 00 - 7F | 48 | |
| 5 | Cho: Balance (#1) | 00 - 7F | 40 | |
| 6 | Dly: Delay | 00 - 7F | 6F | |
| 7 | Dly: Feedback | 0F - 71 | 48 | 40: 0%, 2% / 1 Step |
| 8 | Dly: HP Damp | 00 - 7F | 58 | |
| 10 | Dly: Balance (#2) | 00 - 7F | 10 | |
| 17 | EQ Low Gain (200Hz) | 31 - 4F | 40 | -15dB - +15dB (40: 0dB), 1dB/1 Step |
| 18 | EQ High Gain (4000Hz) | 31 - 4F | 40 | -15dB - +15dB (40: 0dB), 1dB/1 Step |
| 20 | Level | 00 - 7F | 7F | |

## ●02H, 0AH: Flanger -> Delay

| No | Parameter | Value | Default | Description |
|---|---|---|---|---|
| 1 | Flg: Delay | 00 - 7F | 0B | |
| 2 | Flg: Rate | 00 - 7D | 0B | |
| 3 | Flg: Depth | 00 - 7F | 18 | |
| 4 | Flg: Feedback (#1) | 0F - 71 | 68 | 40: 0%, 2% / 1 Step |
| 5 | Flg: Balance | 00 - 7F | 40 | |
| 6 | Dly: Delay | 00 - 7F | 6F | |
| 7 | Dly: Feedback | 0F - 71 | 48 | 40: 0%, 2% / 1 Step |
| 8 | Dly: HP Damp | 00 - 7F | 58 | |
| 10 | Dly: Balance (#2) | 00 - 7F | 10 | |
| 17 | EQ Low Gain (200Hz) | 31 - 4F | 40 | -15dB - +15dB (40: 0dB), 1dB/1 Step |
| 18 | EQ High Gain (4000Hz) | 31 - 4F | 40 | -15dB - +15dB (40: 0dB), 1dB/1 Step |
| 20 | Level | 00 - 7F | 7F | |

## ●02H, 0BH: Chorus -> Flanger

| No | Parameter | Value | Default | Description |
|---|---|---|---|---|
| 1 | Cho: Delay | 00 - 7F | 0A | |
| 2 | Cho: Rate | 00 - 7D | 08 | |
| 3 | Cho: Depth | 00 - 7F | 48 | |
| 5 | Cho: Balance (#1) | 00 - 7F | 40 | |
| 6 | Flg: Delay | 00 - 7F | 0B | |
| 7 | Flg: Rate | 00 - 7D | 0B | |
| 8 | Flg: Depth | 00 - 7F | 18 | |
| 9 | Flg: Feedback | 3F - 71 | 68 | 40: 0%, 2% / 1 Step |
| 10 | Flg: Balance (#2) | 00 - 7F | 40 | |
| 17 | EQ Low Gain (200Hz) | 31 - 4F | 40 | -15dB - +15dB (40: 0dB), 1dB/1 Step |
| 18 | EQ High Gain (4000Hz) | 31 - 4F | 40 | -15dB - +15dB (40: 0dB), 1dB/1 Step |
| 20 | Level | 00 - 7F | 68 | |

## ●11H, 00H: Chorus / Delay

| No | Parameter | Value | Default | Description |
|---|---|---|---|---|
| 1 | Cho: Delay | 00 - 7F | 0A | |
| 2 | Cho: Rate | 00 - 7D | 08 | |
| 3 | Cho: Depth | 00 - 7F | 48 | |
| 5 | Cho: Balance (#1) | 00 - 7F | 40 | |
| 6 | Dly: Delay | 00 - 7F | 6F | |
| 7 | Dly: Feedback | 0F - 71 | 48 | 40: 0%, 2% / 1 Step |
| 8 | Dly: HP Damp | 00 - 7F | 58 | |
| 10 | Dly: Balance (#2) | 00 - 7F | 10 | |
| 16 | Cho: Pan | 00 - 7F | 00 | |
| 17 | Cho: Level | 00 - 7F | 7F | |
| 18 | Dly: Pan | 00 - 7F | 7F | |
| 19 | Dly: Level | 00 - 7F | 7F | |
| 20 | Level | 00 - 7F | 7F | |

## ●11H, 01H: Flanger / Delay

| No | Parameter | Value | Default | Description |
|----|-----------|-------|---------|-------------|
| 1 | Flg: Delay | 00 - 7F | 0B | |
| 2 | Flg: Rate | 00 - 7D | 0B | |
| 3 | Flg: Depth | 00 - 7F | 18 | |
| 4 | Flg: Feedback | 0F - 71 | 68 | 40: 0%, 2% / 1 Step |
| 5 | Flg: Balance (#1) | 00 - 7F | 40 | |
| 6 | Dly: Delay | 00 - 7F | 6F | |
| 7 | Dly: Feedback | 0F - 71 | 48 | 40: 0%, 2% / 1 Step |
| 8 | Dly: HP Damp | 00 - 7F | 58 | |
| 10 | Dly: Balance (#2) | 00 - 7F | 10 | |
| 16 | Flg: Pan | 00 - 7F | 00 | |
| 17 | Flg: Level | 00 - 7F | 7F | |
| 18 | Dly: Pan | 00 - 7F | 7F | |
| 19 | Dly: Level | 00 - 7F | 7F | |
| 20 | Level | 00 - 7F | 7F | |

## ●11H, 02H: Chorus / Flanger

| No | Parameter | Value | Default | Description |
|----|-----------|-------|---------|-------------|
| 1 | Cho: Delay | 00 - 7F | 0A | |
| 2 | Cho: Rate | 00 - 7D | 08 | |
| 3 | Cho: Depth | 00 - 7F | 48 | |
| 5 | Cho: Balance (#1) | 00 - 7F | 40 | |
| 6 | Flg: Delay | 00 - 7F | 0B | |
| 7 | Flg: Rate | 00 - 7D | 0B | |
| 8 | Flg: Depth | 00 - 7F | 18 | |
| 9 | Flg: Feedback | 0F - 71 | 68 | 40: 0%, 2% / 1 Step |
| 10 | Flg: Balance (#2) | 00 - 7F | 40 | |
| 16 | Flg: Pan | 00 - 7F | 00 | |
| 17 | Flg: Level | 00 - 7F | 7F | |
| 18 | Dly: Pan | 00 - 7F | 7F | |
| 19 | Dly: Level | 00 - 7F | 7F | |
| 20 | Level | 00 - 7F | 7F | |

## ●02H, 0CH: Band Pass Delay

| No | Parameter | Value | Default | Description |
|----|-----------|-------|---------|-------------|
| 1 | Ph: Manual Freq | 00 - 7F | 28 | |
| 2 | Ph: Rate | 00 - 7F | 20 | |
| 3 | Ph: Depth | 00 - 7F | 50 | |
| 4 | Ph: Resonance | 00 - 7F | 30 | |
| 5 | Ph: Mix | 00 - 7F | 7F | |
| 6 | Dly: Delay | 00 - 7F | 00 | |
| 7 | Dly: Delay Deviation | 00 - 7F | 2B | |
| 8 | Dly: Level | 00 - 7F | 7F | |
| 9 | Dly: Feedback(#1) | 00 - 7F | 50 | |
| 10 | Dly: PanType | 00 - 7F | 03 | |
| 11 | Dly: Freq1 | 00 - 7F | 08 | |
| 12 | Dly: Freq2 | 00 - 7F | 10 | |
| 13 | Dly: Freq3 | 00 - 7F | 18 | |
| 14 | Dly: Freq4 | 00 - 7F | 20 | |
| 15 | Dly: Freq5 | 00 - 7F | 28 | |
| 16 | Dly: Q12 | 00 - 7F | 50 | |
| 17 | Dly: Q345 | 00 - 7F | 60 | |
| 18 | Dly: Balance(#2) | 00 - 7F | 7F | |
| 20 | Level | 00 - 7F | 7F | |

## ●03H, 00H: Rotary Multi

| No | Parameter | Value | Default | Description |
|----|-----------|-------|---------|-------------|
| 1 | OD: Drive Depth(#1) | 00 - 7F | 0d | |
| 2 | OD: Drive Switch | 00 - 7F | 01 | 00: OFF, 01: Overdrive, 02: Distortion |
| 3 | EQ: Low Gain | 31 - 4F | 46 | -15dB - +15dB (40: 0dB) |
| 4 | EQ: Mid Frequency | 00 - 7F | 28 | 00: 200Hz - 7F: 6300Hz |
| 9 | EQ: Mid Q | 00 - 7F | 00 | |
| 10 | EQ: Mid Gain | 31 - 4F | 44 | -15dB - +15dB (40: 0dB) |
| 11 | EQ: High Gain | 31 - 4F | 40 | -15dB - +15dB (40: 0dB) |
| 8 | RT: Lo Rate Slow | 00 - 7F | 06 | |
| 9 | RT: Lo Rate Fast | 00 - 7F | 71 | |
| 10 | RT: Lo Acceleration | 00 - 7F | 18 | |
| 11 | RT: Lo Level | 00 - 7F | 7F | |
| 12 | RT: Hi Rate Slow | 00 - 7F | 11 | |
| 13 | RT: Hi Rate Fast | 00 - 7F | 78 | |
| 14 | RT: Hi Acceleration | 00 - 7F | 58 | |
| 15 | RT: Hi Level | 00 - 7F | 40 | |
| 16 | RT: Separation | 00 - 7F | 60 | |
| 17 | RT: Speed(#2) | 00 - 7F | 00 | |
| 20 | Level | 00 - 7F | 7F | |

## ●04H, 03H: Clean Guitar Multi1

| No | Parameter | Value | Default | Description |
|----|-----------|-------|---------|-------------|
| 1 | Cmp: Attack | 00 - 7F | 70 | |
| 2 | Cmp: Sustain | 00 - 7F | 60 | |
| 3 | Cmp: Level | 00 - 7F | 7F | |
| 4 | Cmp: Sw | 00 - 01 | 01 | 00: OFF, 01: ON |
| 5 | EQ: Low Gain | 31 - 4F | 3E | -15dB - +15dB (40: 0dB) |
| 6 | EQ: Mid Frequency | 00 - 7F | 40 | 00: 200Hz - 7F: 6300Hz |
| 7 | EQ: Mid Q | 00 - 7F | 02 | |
| 8 | EQ: Mid Gain | 31 - 4F | 46 | -15dB - +15dB (40: 0dB) |
| 9 | EQ: High Gain | 31 - 4F | 46 | -15dB - +15dB (40: 0dB) |
| 10 | ChoFlg: Sw | 00 - 01 | 00 | 00:Chorus, 01:Flanger |
| 11 | ChoFlg: Rate | 00 - 7F | 08 | |
| 12 | ChoFlg: Depth | 00 - 7F | 48 | |
| 13 | ChoFlg: Feedback | 00 - 7F | 40 | |
| 14 | ChoFlg: Level(#1) | 00 - 7F | 40 | |
| 15 | Dly: Delay | 00 - 7F | 20 | |
| 16 | Dly: Feedback | 00 - 7F | 18 | |
| 17 | Dly: HFDamp | 00 - 7F | 58 | |
| 18 | Dly: Level(#2) | 00 - 7F | 20 | |
| 20 | level | 00 - 7F | 7F | |

## ●04H, 04H: Clean Guitar Multi2

| No | Parameter | Value | Default | Description |
|----|-----------|-------|---------|-------------|
| 1 | AW: Filter | 00 - 7F | 01 | 00:LPF, 01:BPF |
| 2 | AW: Manual(#1) | 00 - 7F | 37 | |
| 3 | AW: Peak | 00 - 7F | 28 | |
| 4 | AW: Rate | 00 - 7F | 28 | |
| 5 | AW: Depth | 00 - 7F | 50 | |
| 6 | AW: Switch | 00 - 7F | 01 | 00:OFF, 01:ON |
| 7 | EQ: Low Gain | 31 - 4F | 40 | -15dB - +15dB (40: 0dB) |
| 8 | EQ: Mid Frequency | 00 - 7F | 18 | 00: 200Hz - 7F: 6300Hz |
| 9 | EQ: Mid Q | 00 - 7F | 00 | |
| 10 | EQ: Mid Gain | 31 - 4F | 43 | -15dB - +15dB (40: 0dB) |
| 11 | EQ: High Gain | 31 - 4F | 40 | -15dB - +15dB (40: 0dB) |
| 12 | ChoFlg: Switch | 00 - 7F | 00 | |
| 13 | ChoFlg: Rate | 00 - 7F | 08 | |
| 14 | ChoFlg: Depth | 00 - 7F | 28 | |
| 15 | ChoFlg: Feedback | 00 - 7F | 66 | |
| 16 | ChoFlg: Level | 00 - 7F | 30 | |
| 17 | Dly: Delay | 00 - 7F | 1B | |
| 18 | Dly: Feedback | 00 - 7F | 06 | |
| 19 | Dly: Level(#2) | 00 - 7F | 20 | |
| 20 | level | 00 - 7F | 7F | |

## ●04H, 06H: Rhodes Multi

| No | Parameter | Value | Default | Description |
|----|-----------|-------|---------|-------------|
| 1 | EH: Sense | 00 - 7F | 40 | |
| 2 | EH: Mix | 00 - 7F | 40 | |
| 3 | Ph: Manual | 00 - 7F | 24 | |
| 4 | Ph: Rate | 00 - 7F | 10 | |
| 5 | Ph: Depth | 00 - 7F | 20 | |
| 6 | Ph: Resonance | 00 - 7F | 10 | |
| 7 | Ph: Mix | 00 - 7F | 30 | |
| 8 | ChoFlg: ChoFlgSw | 00 - 7F | 00 | |
| 9 | ChoFlg: Lpf | 00 - 7F | 7F | |
| 10 | ChoFlg: PreDly | 00 - 7F | 0A | |
| 11 | ChoFlg: Rate | 00 - 7F | 08 | |
| 12 | ChoFlg: Depth | 00 - 7F | 40 | |
| 13 | ChoFlg: Feedback | 00 - 7F | 68 | |
| 14 | ChoFlg: Level(#1) | 00 - 7F | 40 | |
| 15 | TP: Tremolo Pan SW | 00 - 01 | 01 | 00:Tremolo, 01:Auto Pan |
| 16 | TP: Wave | 00 - 04 | 02 | 00:Triangle, 01:Square, 02:Sin, 03:Saw(Up), 04:Saw(Down) |
| 17 | TP: Rate | 00 - 7F | 3c | |
| 18 | TP: Depth(#2) | 00 - 7F | 30 | |
| 19 | TP: SW | 00 - 01 | 01 | 00:OFF, 01:ON |
| 20 | Level | 00 - 7F | 7F | |

## ●05H,00H: Keyboard Multi

| No | Parameter | Value | Default | Description |
|----|-----------|-------|---------|-------------|
| 1 | RM: Freq(#1) | 00 - 7F | 28 | |
| 2 | RM: Balance(#2) | 00 - 7F | 10 | |
| 3 | EQ: Low Gain | 31 - 4F | 43 | -15dB - +15dB (40: 0dB) |
| 4 | EQ: Mid Frequency | 00 - 7F | 43 | 00: 200Hz - 7F: 6300Hz |
| 9 | EQ: Mid Q | 00 - 7F | 00 | |
| 10 | EQ: Mid Gain | 31 - 4F | 43 | -15dB - +15dB (40: 0dB) |
| 11 | EQ: High Gain | 31 - 4F | 3E | -15dB - +15dB (40: 0dB) |
| 8 | PS: Coarse | 00 - 7F | 47 | |
| 9 | PS: Fine | 00 - 7F | 40 | |
| 10 | PS: Mode | 00 - 7F | 00 | |
| 11 | PS: Balance | 00 - 7F | 18 | |
| 12 | Ph: Manual | 00 - 7F | 24 | |
| 13 | Ph: Rate | 00 - 7F | 08 | |
| 14 | Ph: Depth | 00 - 7F | 5A | |
| 15 | Ph: Resonance | 00 - 7F | 50 | |
| 16 | Ph: Mix | 00 - 7F | 4b | |
| 17 | Dly: Delay | 00 - 7F | 20 | |
| 18 | Dly: Feedback | 00 - 7F | 30 | |
| 19 | Dly: Level | 00 - 7F | 18 | |
| 20 | Level | 00 - 7F | 60 | |

### Pre Delay Table

| Value | (msec) | Value | (msec) | Value | (msec) | Value | (msec) |
|-------|--------|-------|--------|-------|--------|-------|--------|
| 00H | 0.0 | 20H | 3.2 | 40H | 14 | 60H | 46 |
| 01H | 0.1 | 21H | 3.3 | 41H | 15 | 61H | 47 |
| 02H | 0.2 | 22H | 3.4 | 42H | 16 | 62H | 48 |
| 03H | 0.3 | 23H | 3.5 | 43H | 17 | 63H | 49 |
| 04H | 0.4 | 24H | 3.6 | 44H | 18 | 64H | 50 |
| 05H | 0.5 | 25H | 3.7 | 45H | 19 | 65H | 52 |
| 06H | 0.6 | 26H | 3.8 | 46H | 20 | 66H | 54 |
| 07H | 0.7 | 27H | 3.9 | 47H | 21 | 67H | 56 |
| 08H | 0.8 | 28H | 4.0 | 48H | 22 | 68H | 58 |
| 09H | 0.9 | 29H | 4.1 | 49H | 23 | 69H | 60 |
| 0AH | 1.0 | 2AH | 4.2 | 4AH | 24 | 6AH | 62 |
| 0BH | 1.1 | 2BH | 4.3 | 4BH | 25 | 6BH | 64 |
| 0CH | 1.2 | 2CH | 4.4 | 4CH | 26 | 6CH | 66 |
| 0DH | 1.3 | 2DH | 4.5 | 4DH | 27 | 6DH | 68 |
| 0EH | 1.4 | 2EH | 4.6 | 4EH | 28 | 6EH | 70 |
| 0FH | 1.5 | 2FH | 4.7 | 4FH | 29 | 6FH | 72 |
| 10H | 1.6 | 30H | 4.8 | 50H | 30 | 70H | 74 |
| 11H | 1.7 | 31H | 4.9 | 51H | 31 | 71H | 76 |
| 12H | 1.8 | 32H | 5.0 | 52H | 32 | 72H | 78 |
| 13H | 1.9 | 33H | 5.5 | 53H | 33 | 73H | 80 |
| 14H | 2.0 | 34H | 6.0 | 54H | 34 | 74H | 82 |
| 15H | 2.1 | 35H | 6.5 | 55H | 35 | 75H | 84 |
| 16H | 2.2 | 36H | 7.0 | 56H | 36 | 76H | 86 |
| 17H | 2.3 | 37H | 7.5 | 57H | 37 | 77H | 88 |
| 18H | 2.4 | 38H | 8.0 | 58H | 38 | 78H | 90 |
| 19H | 2.5 | 39H | 8.5 | 59H | 39 | 79H | 92 |
| 1AH | 2.6 | 3AH | 9.0 | 5AH | 40 | 7AH | 94 |
| 1BH | 2.7 | 3BH | 9.5 | 5BH | 41 | 7BH | 96 |
| 1CH | 2.8 | 3CH | 10 | 5CH | 42 | 7CH | 98 |
| 1DH | 2.9 | 3DH | 11 | 5DH | 43 | 7DH | 100 |
| 1EH | 3.0 | 3EH | 12 | 5EH | 44 | 7EH | 100 |
| 1FH | 3.1 | 3FH | 13 | 5FH | 45 | 7FH | 100 |

### Long Delay Table(Triple Tap Delay, Quadruple Delay)

| Value | (msec) | Value | (msec) | Value | (msec) | Value | (msec) |
|-------|--------|-------|--------|-------|--------|-------|--------|
| 00H | 200 | 20H | 360 | 40H | 520 | 60H | 810 |
| 01H | 205 | 21H | 365 | 41H | 525 | 61H | 820 |
| 02H | 210 | 22H | 370 | 42H | 530 | 62H | 830 |
| 03H | 215 | 23H | 375 | 43H | 535 | 63H | 840 |
| 04H | 220 | 24H | 380 | 44H | 540 | 64H | 850 |
| 05H | 225 | 25H | 385 | 45H | 545 | 65H | 860 |
| 06H | 230 | 26H | 390 | 46H | 550 | 66H | 870 |
| 07H | 235 | 27H | 395 | 47H | 560 | 67H | 880 |
| 08H | 240 | 28H | 400 | 48H | 570 | 68H | 890 |
| 09H | 245 | 29H | 405 | 49H | 580 | 69H | 900 |
| 0AH | 250 | 2AH | 410 | 4AH | 590 | 6AH | 910 |
| 0BH | 255 | 2BH | 415 | 4BH | 600 | 6BH | 920 |
| 0CH | 260 | 2CH | 420 | 4CH | 610 | 6CH | 930 |
| 0DH | 265 | 2DH | 425 | 4DH | 620 | 6DH | 940 |
| 0EH | 270 | 2EH | 430 | 4EH | 630 | 6EH | 950 |
| 0FH | 275 | 2FH | 435 | 4FH | 640 | 6FH | 960 |
| 10H | 280 | 30H | 440 | 50H | 650 | 70H | 970 |
| 11H | 285 | 31H | 445 | 51H | 660 | 71H | 980 |
| 12H | 290 | 32H | 450 | 52H | 670 | 72H | 990 |
| 13H | 295 | 33H | 455 | 53H | 680 | 73H | 1000 |
| 14H | 300 | 34H | 460 | 54H | 690 | 74H | -- |
| 15H | 305 | 35H | 465 | 55H | 700 | 75H | -- |
| 16H | 310 | 36H | 470 | 56H | 710 | 76H | -- |
| 17H | 315 | 37H | 475 | 57H | 720 | 77H | -- |
| 18H | 320 | 38H | 480 | 58H | 730 | 78H | -- |
| 19H | 325 | 39H | 485 | 59H | 740 | 79H | -- |
| 1AH | 330 | 3AH | 490 | 5AH | 750 | 7AH | -- |
| 1BH | 335 | 3BH | 495 | 5BH | 760 | 7BH | -- |
| 1CH | 340 | 3CH | 500 | 5CH | 770 | 7CH | -- |
| 1DH | 345 | 3DH | 505 | 5DH | 780 | 7DH | -- |
| 1EH | 350 | 3EH | 510 | 5EH | 790 | 7EH | -- |
| 1FH | 355 | 3FH | 515 | 5FH | 800 | 7FH | -- |

### Stereo Delay Table(Stereo Delay, Modulation Delay)

| Value | (msec) | Value | (msec) | Value | (msec) | Value | (msec) |
|-------|--------|-------|--------|-------|--------|-------|--------|
| 00H | 0.0 | 20H | 3.2 | 40H | 14 | 60H | 110 |
| 01H | 0.1 | 21H | 3.3 | 41H | 15 | 61H | 120 |
| 02H | 0.2 | 22H | 3.4 | 42H | 16 | 62H | 130 |
| 03H | 0.3 | 23H | 3.5 | 43H | 17 | 63H | 140 |
| 04H | 0.4 | 24H | 3.6 | 44H | 18 | 64H | 150 |
| 05H | 0.5 | 25H | 3.7 | 45H | 19 | 65H | 160 |
| 06H | 0.6 | 26H | 3.8 | 46H | 20 | 66H | 170 |
| 07H | 0.7 | 27H | 3.9 | 47H | 21 | 67H | 180 |
| 08H | 0.8 | 28H | 4.0 | 48H | 22 | 68H | 190 |
| 09H | 0.9 | 29H | 4.1 | 49H | 23 | 69H | 200 |
| 0AH | 1.0 | 2AH | 4.2 | 4AH | 24 | 6AH | 210 |
| 0BH | 1.1 | 2BH | 4.3 | 4BH | 25 | 6BH | 220 |
| 0CH | 1.2 | 2CH | 4.4 | 4CH | 26 | 6CH | 230 |
| 0DH | 1.3 | 2DH | 4.5 | 4DH | 27 | 6DH | 240 |
| 0EH | 1.4 | 2EH | 4.6 | 4EH | 28 | 6EH | 250 |
| 0FH | 1.5 | 2FH | 4.7 | 4FH | 29 | 6FH | 260 |
| 10H | 1.6 | 30H | 4.8 | 50H | 30 | 70H | 270 |
| 11H | 1.7 | 31H | 4.9 | 51H | 31 | 71H | 280 |
| 12H | 1.8 | 32H | 5.0 | 52H | 32 | 72H | 290 |
| 13H | 1.9 | 33H | 5.5 | 53H | 33 | 73H | 300 |
| 14H | 2.0 | 34H | 6.0 | 54H | 34 | 74H | 320 |
| 15H | 2.1 | 35H | 6.5 | 55H | 35 | 75H | 340 |
| 16H | 2.2 | 36H | 7.0 | 56H | 36 | 76H | 360 |
| 17H | 2.3 | 37H | 7.5 | 57H | 37 | 77H | 380 |
| 18H | 2.4 | 38H | 8.0 | 58H | 38 | 78H | 400 |
| 19H | 2.5 | 39H | 8.5 | 59H | 39 | 79H | 420 |
| 1AH | 2.6 | 3AH | 9.0 | 5AH | 40 | 7AH | 440 |
| 1BH | 2.7 | 3BH | 9.5 | 5BH | 50 | 7BH | 460 |
| 1CH | 2.8 | 3CH | 10 | 5CH | 70 | 7CH | 480 |
| 1DH | 2.9 | 3DH | 11 | 5DH | 80 | 7DH | 500 |
| 1EH | 3.0 | 3EH | 12 | 5EH | 90 | 7EH | 500 |
| 1FH | 3.1 | 3FH | 13 | 5FH | 100 | 7FH | 500 |

### Rate Table(Chorus, Flanger, etc)

| Value | (sec) | Value | (sec) | Value | (sec) | Value | (sec) |
|-------|-------|-------|-------|-------|-------|-------|-------|
| 00H | 0.05 | 20H | 1.65 | 40H | 3.25 | 60H | 4.85 |
| 01H | 0.10 | 21H | 1.70 | 41H | 3.30 | 61H | 4.90 |
| 02H | 0.15 | 22H | 1.75 | 42H | 3.35 | 62H | 4.95 |
| 03H | 0.20 | 23H | 1.80 | 43H | 3.40 | 63H | 5.00 |
| 04H | 0.25 | 24H | 1.85 | 44H | 3.45 | 64H | 5.10 |
| 05H | 0.30 | 25H | 1.90 | 45H | 3.50 | 65H | 5.20 |
| 06H | 0.35 | 26H | 1.95 | 46H | 3.55 | 66H | 5.30 |
| 07H | 0.40 | 27H | 2.00 | 47H | 3.60 | 67H | 5.40 |
| 08H | 0.45 | 28H | 2.05 | 48H | 3.65 | 68H | 5.50 |
| 09H | 0.50 | 29H | 2.10 | 49H | 3.70 | 69H | 5.60 |
| 0AH | 0.55 | 2AH | 2.15 | 4AH | 3.75 | 6AH | 5.70 |
| 0BH | 0.60 | 2BH | 2.20 | 4BH | 3.80 | 6BH | 5.80 |
| 0CH | 0.65 | 2CH | 2.25 | 4CH | 3.85 | 6CH | 5.90 |
| 0DH | 0.70 | 2DH | 2.30 | 4DH | 3.90 | 6DH | 6.00 |
| 0EH | 0.75 | 2EH | 2.35 | 4EH | 3.95 | 6EH | 6.10 |
| 0FH | 0.80 | 2FH | 2.40 | 4FH | 4.00 | 6FH | 6.20 |
| 10H | 0.85 | 30H | 2.45 | 50H | 4.05 | 70H | 6.30 |
| 11H | 0.90 | 31H | 2.50 | 51H | 4.10 | 71H | 6.40 |
| 12H | 0.95 | 32H | 2.55 | 52H | 4.15 | 72H | 6.50 |
| 13H | 1.00 | 33H | 2.60 | 53H | 4.20 | 73H | 6.60 |
| 14H | 1.05 | 34H | 2.65 | 54H | 4.25 | 74H | 6.70 |
| 15H | 1.10 | 35H | 2.70 | 55H | 4.30 | 75H | 6.80 |
| 16H | 1.15 | 36H | 2.75 | 56H | 4.35 | 76H | 6.90 |
| 17H | 1.20 | 37H | 2.80 | 57H | 4.40 | 77H | 7.00 |
| 18H | 1.25 | 38H | 2.85 | 58H | 4.45 | 78H | 7.50 |
| 19H | 1.30 | 39H | 2.90 | 59H | 4.50 | 79H | 8.00 |
| 1AH | 1.35 | 3AH | 2.95 | 5AH | 4.55 | 7AH | 8.50 |
| 1BH | 1.40 | 3BH | 3.00 | 5BH | 4.60 | 7BH | 9.00 |
| 1CH | 1.45 | 3CH | 3.05 | 5CH | 4.65 | 7CH | 9.50 |
| 1DH | 1.50 | 3DH | 3.10 | 5DH | 4.70 | 7DH | 10.00 |
| 1EH | 1.55 | 3EH | 3.15 | 5EH | 4.75 | 7EH | 10.00 |
| 1FH | 1.60 | 3FH | 3.20 | 5FH | 4.80 | 7FH | 10.00 |

### HF Damp

| Value | (Hz) |
|-------|------|
| 00H-07H | 315 |
| 08H-0FH | 400 |
| 10H-17H | 500 |
| 18H-1FH | 630 |
| 20H-27H | 800 |
| 28H-2FH | 1000 |
| 30H-37H | 1250 |
| 38H-3FH | 1600 |
| 40H-47H | 2000 |
| 48H-4FH | 2500 |
| 50H-57H | 3150 |
| 58H-5FH | 4000 |
| 60H-67H | 5000 |
| 68H-6FH | 6300 |
| 70H-77H | 8000 |
| 78H-7FH | Bypass |

## ●Tone List

### ○KF-90 Tone Mapping

| CC0 /CC32 / PC# | Tone Name | Voices |
|---|---|---|
| 00h / 00h / 00h | Grand Piano1 | 2 |
| 00h / 01h / 00h | Piano 1 | 1 |
| 00h / 41h / 00h | MIDI Piano1 | 2 |
| 00h / 47h / 00h | Piano Choir | 2 |
| 00h / 48h / 00h | Piano 1* | 1 |
| 08h / 00h / 00h | Piano 1w | 2 |
| 08h / 40h / 00h | Grand Piano1 | 2 |
| 10h / 00h / 00h | Piano 1d | 1 |
| 10h / 40h / 00h | UprightPiano | 2 |
| 10h / 41h / 00h | Ballad Piano | 2 |
| 00h / 00h / 01h | Piano 2 | 1 |
| 00h / 40h / 01h | Piano | 2 |
| 00h / 41h / 01h | MIDI Piano2 | 2 |
| 00h / 48h / 01h | Piano 2* | 1 |
| 08h / 00h / 01h | Piano 2w | 2 |
| 08h / 41h / 01h | Grand Piano2 | 1 |
| 00h / 00h / 02h | Piano 3 | 1 |
| 00h / 41h / 02h | EG+Rhodes 1 | 2 |
| 00h / 42h / 02h | EG+Rhodes 2 | 2 |
| 00h / 43h / 02h | Bell Piano | 3 |
| 00h / 44h / 02h | Piano Oohs | 3 |
| 00h / 48h / 02h | Piano 3* | 1 |
| 08h / 00h / 02h | Piano 3w | 2 |
| 08h / 40h / 02h | Rock Piano | 2 |
| 08h / 41h / 02h | Air Grand | 3 |
| 08h / 42h / 02h | PianoStrings | 4 |
| 08h / 43h / 02h | Bright Piano | 2 |
| 00h / 00h / 03h | GS Honkytonk | 2 |
| 00h / 48h / 03h | Honky-tonk* | 2 |
| 08h / 00h / 03h | Honky-tonk 2 | 2 |
| 08h / 40h / 03h | Honky-tonk | 2 |
| 00h / 00h / 04h | GS E.Piano1 | 1 |
| 00h / 41h / 04h | Hard Rhodes | 2 |
| 00h / 42h / 04h | Stage Rhodes | 2 |
| 00h / 48h / 04h | E.Piano 1* | 1 |
| 08h / 00h / 04h | Detuned EP 1 | 2 |
| 08h / 40h / 04h | Soft E.Piano | 2 |
| 08h / 41h / 04h | Detuned EP 1 | 2 |
| 08h / 42h / 04h | Chord EP1 | 1 |
| 10h / 00h / 04h | E.Piano 1v | 2 |
| 10h / 40h / 04h | E.Piano 1 | 2 |
| 10h / 41h / 04h | Dyno Rhodes* | 1 |
| 10h / 42h / 04h | Suitcase | 1 |
| 10h / 43h / 04h | Dyno Rhodes | 1 |
| 18h / 00h / 04h | 60's E.Piano | 1 |
| 18h / 40h / 04h | Sine Rhodes | 1 |
| 18h / 41h / 04h | Wurly | 2 |
| 18h / 42h / 04h | Dist E.Piano | 2 |
| 18h / 48h / 04h | 60'sE.Piano* | 1 |
| 00h / 00h / 05h | GS E.Piano2 | 1 |
| 00h / 40h / 05h | Hard E.Piano | 2 |
| 00h / 41h / 05h | E.Piano 3 | 1 |
| 00h / 42h / 05h | E.Piano 2 | 2 |
| 00h / 43h / 05h | EP Phase | 2 |
| 00h / 48h / 05h | E.Piano 2* | 1 |
| 08h / 00h / 05h | Detuned EP 2 | 2 |
| 08h / 40h / 05h | St.FM EP | 2 |
| 08h / 41h / 05h | FM+SA EP | 2 |
| 08h / 42h / 05h | Hard FM EP | 2 |
| 08h / 43h / 05h | MellowRhodes | 2 |
| 10h / 00h / 05h | E.Piano 2v | 2 |
| 10h / 42h / 05h | EP Legend | 2 |
| 00h / 00h / 06h | GS Harpsi. | 1 |
| 00h / 40h / 06h | Harpsi.Singl | 1 |
| 00h / 41h / 06h | Harpsichord | 2 |
| 00h / 48h / 06h | Harpsichord* | 1 |
| 08h / 00h / 06h | Coupled Hps. | 2 |
| 08h / 40h / 06h | Harpsi.Doubl | 2 |
| 08h / 41h / 06h | Synth Harpsi | 2 |
| 10h / 00h / 06h | Harpsi.w | 2 |
| 18h / 00h / 06h | Harpsi.o | 2 |

| CC0 /CC32 / PC# | Tone Name | Voices |
|---|---|---|
| 00h / 00h / 07h | Soft Clav. | 1 |
| 00h / 40h / 07h | Analog Clav. | 2 |
| 00h / 41h / 07h | 5th Ana.Clav | 2 |
| 00h / 42h / 07h | Hard Clav. | 1 |
| 00h / 43h / 07h | Clav. | 1 |
| 00h / 44h / 07h | SynRingClav. | 2 |
| 00h / 45h / 07h | Reso Clav. | 1 |
| 00h / 46h / 07h | Phase Clav. | 1 |
| 00h / 48h / 07h | Clav.* | 1 |
| 00h / 00h / 08h | Celesta | 1 |
| 00h / 40h / 08h | Pop Celesta | 2 |
| 00h / 48h / 08h | Celesta* | 1 |
| 00h / 00h / 09h | GS Glocken | 1 |
| 00h / 40h / 09h | Glockenspiel | 1 |
| 00h / 48h / 09h | Glocken* | 1 |
| 00h / 00h / 0Ah | GS Music Box | 1 |
| 00h / 41h / 0Ah | Music Box | 1 |
| 00h / 48h / 0Ah | Music Box* | 1 |
| 00h / 00h / 0Bh | GS Vibe | 1 |
| 00h / 40h / 0Bh | Vibraphone | 1 |
| 00h / 41h / 0Bh | Pop Vibe. | 2 |
| 00h / 48h / 0Bh | Vibraphone* | 1 |
| 08h / 00h / 0Bh | Vibe.w | 2 |
| 00h / 00h / 0Ch | GS Marimba | 1 |
| 00h / 40h / 0Ch | Soft Marimba | 1 |
| 00h / 48h / 0Ch | Marimba* | 1 |
| 08h / 00h / 0Ch | Marimba | 1 |
| 08h / 40h / 0Ch | Balafon | 1 |
| 00h / 00h / 0Dh | Xylophone | 1 |
| 00h / 48h / 0Dh | Xylophone* | 1 |
| 00h / 00h / 0Eh | Tubular-bell | 1 |
| 00h / 48h / 0Eh | Tubularbell* | 1 |
| 08h / 00h / 0Eh | Church Bell | 1 |
| 09h / 00h / 0Eh | Carillon | 1 |
| 09h / 48h / 0Eh | Carillon* | 1 |
| 00h / 00h / 0Fh | GS Santur | 1 |
| 00h / 40h / 0Fh | Santur | 2 |
| 00h / 48h / 0Fh | Santur* | 1 |
| 00h / 00h / 10h | Organ 1 | 1 |
| 00h / 41h / 10h | Full Organ 1 | 1 |
| 00h / 42h / 10h | Lower Organ1 | 1 |
| 00h / 43h / 10h | Full Organ 5 | 2 |
| 00h / 44h / 10h | Trem. Organ | 2 |
| 00h / 48h / 10h | Organ 1* | 1 |
| 08h / 00h / 10h | Detuned Or.1 | 2 |
| 08h / 41h / 10h | Full Organ 2 | 1 |
| 08h / 42h / 10h | Lower Organ2 | 1 |
| 08h / 43h / 10h | Full Organ 6 | 2 |
| 10h / 00h / 10h | Pop Organ 1 | 1 |
| 10h / 41h / 10h | Full Organ 3 | 1 |
| 10h / 42h / 10h | Lower Organ3 | 1 |
| 10h / 43h / 10h | Full Organ 7 | 2 |
| 10h / 48h / 10h | Pop Organ 1* | 1 |
| 11h / 00h / 10h | Pop Organ 2 | 1 |
| 12h / 00h / 10h | Pop Organ | 1 |
| 20h / 00h / 10h | Full Organ 4 | 1 |
| 20h / 40h / 10h | VS Organ | 2 |
| 20h / 42h / 10h | Metalic Org. | 2 |
| 20h / 43h / 10h | Full Organ 8 | 1 |
| 20h / 44h / 10h | Organ 4 | 2 |
| 00h / 00h / 11h | Organ 2 | 1 |
| 00h / 40h / 11h | Jazz Organ1 | 2 |
| 00h / 41h / 11h | Jazz Organ4 | 2 |
| 00h / 42h / 11h | Jazz Organ 5 | 2 |
| 00h / 48h / 11h | Organ 2* | 1 |
| 08h / 00h / 11h | Detuned Or.2 | 2 |
| 08h / 40h / 11h | Jazz Organ3 | 2 |
| 08h / 41h / 11h | Organ Bass | 2 |
| 08h / 42h / 11h | Jazz Organ 6 | 2 |
| 20h / 00h / 11h | Jazz Organ1 | 2 |
| 20h / 40h / 11h | Jazz Organ2 | 2 |
| 20h / 41h / 11h | Pipe Org. Bs | 2 |
| 20h / 42h / 11h | Jazz Organ 7 | 2 |
| 20h / 43h / 11h | Organ 5 | 2 |

| CC0 / CC32 / PC# | Tone Name | Voices |
|---|---|---|
| 00h / 00h / 12h | Rock Organ2 | 2 |
| 00h / 40h / 12h | Rock Organ1 | 2 |
| 00h / 41h / 12h | Rotary Org.S | 1 |
| 00h / 42h / 12h | Rotary Org.F | 1 |
| 00h / 43h / 12h | L-Organ | 1 |
| 00h / 48h / 12h | Rock Organ2* | 2 |
| 00h / 00h / 13h | Church Org.1 | 1 |
| 00h / 40h / 13h | Organ Flute | 1 |
| 00h / 43h / 13h | Diapason 8' | 1 |
| 00h / 48h / 13h | ChurchOrg.1* | 1 |
| 08h / 00h / 13h | Church Org.2 | 2 |
| 08h / 40h / 13h | Trem.Flute | 2 |
| 08h / 41h / 13h | Church Organ | 2 |
| 08h / 43h / 13h | Puff Organ | 2 |
| 10h / 00h / 13h | Church Org.3 | 2 |
| 10h / 40h / 13h | Theater Org. | 2 |
| 10h / 42h / 13h | Nason flt 8' | 1 |
| 00h / 00h / 14h | Reed Organ | 1 |
| 00h / 40h / 14h | Digi Church | 2 |
| 00h / 41h / 14h | CheeseOrgan | 1 |
| 00h / 48h / 14h | Reed Organ* | 1 |
| 00h / 00h / 15h | Accordion Fr | 2 |
| 00h / 40h / 15h | Accordion | 1 |
| 00h / 41h / 15h | Hard Accord | 2 |
| 00h / 48h / 15h | AccordionFr* | 2 |
| 08h / 00h / 15h | Accordion It | 2 |
| 00h / 00h / 16h | GS Harmonica | 1 |
| 00h / 40h / 16h | Harmonica | 1 |
| 00h / 48h / 16h | Harmonica* | 1 |
| 00h / 00h / 17h | Bandoneon | 2 |
| 00h / 48h / 17h | Bandoneon* | 2 |
| 00h / 00h / 18h | GS Nylon Gt. | 1 |
| 00h / 40h / 18h | Nylon Guitar | 2 |
| 00h / 41h / 18h | Gut Guitar | 1 |
| 00h / 42h / 18h | Chord Gt1 | 1 |
| 00h / 48h / 18h | Nylon-strGt* | 1 |
| 08h / 00h / 18h | Ukulele | 1 |
| 08h / 40h / 18h | Gut Guitar | 1 |
| 10h / 00h / 18h | Nylon Gt.o | 2 |
| 20h / 00h / 18h | Nylon Guitar | 2 |
| 20h / 40h / 18h | Nylon Gt.2 | 1 |
| 00h / 00h / 19h | Steel-str.Gt | 1 |
| 00h / 40h / 19h | Steel Guitar | 2 |
| 00h / 41h / 19h | EX A.Guitar* | 1 |
| 00h / 42h / 19h | EX Ac.Guitar | 1 |
| 00h / 43h / 19h | EX A.Guitar2 | 1 |
| 00h / 44h / 19h | Steel+Body | 2 |
| 00h / 45h / 19h | Steel Vox | 2 |
| 00h / 46h / 19h | V Ac.Guitar3 | 2 |
| 00h / 48h / 19h | Steel-strGt* | 1 |
| 08h / 00h / 19h | 12-str.Gt | 2 |
| 08h / 40h / 19h | 12str Guitar | 2 |
| 08h / 41h / 19h | Nylon+Steel | 2 |
| 10h / 00h / 19h | GS Mandolin | 1 |
| 10h / 40h / 19h | Mandolin | 1 |
| 10h / 41h / 19h | Steel Gt.2 | 1 |
| 00h / 00h / 1Ah | Jazz Guitar | 1 |
| 00h / 48h / 1Ah | Jazz Guitar* | 1 |
| 01h / 04h / 1Ah | Mellow Gt. | 2 |
| 08h / 00h / 1Ah | GS Hawaiian | 1 |
| 08h / 40h / 1Ah | Hawaiian Gt. | 1 |
| 00h / 00h / 1Bh | Clean Gt. | 1 |
| 00h / 40h / 1Bh | JC E.Guitar | 2 |
| 00h / 41h / 1Bh | Open Hard | 2 |
| 00h / 42h / 1Bh | Mid Tone GTR | 2 |
| 00h / 48h / 1Bh | Clean Gt.* | 1 |
| 08h / 00h / 1Bh | Chorus Gt. | 2 |
| 08h / 40h / 1Bh | Clean Half | 1 |
| 00h / 00h / 1Ch | Muted Gt. | 1 |
| 00h / 40h / 1Ch | Muted Dis.Gt | 1 |
| 00h / 41h / 1Ch | Muted Gt.2 | 2 |
| 00h / 48h / 1Ch | Muted Gt.* | 1 |
| 08h / 00h / 1Ch | Funk Gt. | 1 |
| 08h / 40h / 1Ch | Jazz Man | 2 |

| CC0 / CC32 / PC# | Tone Name | Voices |
|---|---|---|
| 08h / 48h / 1Ch | Funk Gt.* | 1 |
| 10h / 00h / 1Ch | Funk Gt.2 | 2 |
| 00h / 00h / 1Dh | Overdrive Gt | 1 |
| 00h / 41h / 1Dh | Guitar Pinch | 2 |
| 00h / 48h / 1Dh | OverdriveGt* | 1 |
| 00h / 00h / 1Eh | GS Dist.Gt | 1 |
| 00h / 40h / 1Eh | DistortionGt | 2 |
| 00h / 41h / 1Eh | Dazed Guitar | 2 |
| 00h / 42h / 1Eh | Rock Rhythm2 | 2 |
| 00h / 48h / 1Eh | Dist.Guitar* | 1 |
| 08h / 00h / 1Eh | Feedback Gt. | 2 |
| 08h / 40h / 1Eh | Power Gt.2 | 2 |
| 08h / 41h / 1Eh | Power Guitar | 2 |
| 08h / 42h / 1Eh | Rock Rhythm | 2 |
| 08h / 43h / 1Eh | Dist Rtm GTR | 1 |
| 08h / 44h / 1Eh | Feedback Gt2 | 2 |
| 08h / 45h / 1Eh | 5th Dist. | 2 |
| 00h / 00h / 1Fh | Gt.Harmonics | 1 |
| 00h / 40h / 1Fh | Ac.Gt.Harmnx | 1 |
| 00h / 48h / 1Fh | Gt.Harmo* | 1 |
| 08h / 00h / 1Fh | Gt. Feedback | 1 |
| 00h / 00h / 20h | GS Ac.Bass | 1 |
| 00h / 40h / 20h | Acoustic Bs. | 2 |
| 00h / 41h / 20h | A.Bass+Cymbl | 2 |
| 00h / 48h / 20h | Acoustic Bs* | 1 |
| 00h / 00h / 21h | GS Fing.Bass | 1 |
| 00h / 40h / 21h | Fingered Bs. | 1 |
| 00h / 41h / 21h | Finger Slap | 2 |
| 00h / 48h / 21h | Fingered Bs* | 1 |
| 00h / 00h / 22h | GS Picked Bs | 1 |
| 00h / 40h / 22h | Picked Bs. | 1 |
| 00h / 41h / 22h | Mute PickBs. | 1 |
| 00h / 48h / 22h | Picked Bs.* | 1 |
| 00h / 00h / 23h | Fretless Bs. | 1 |
| 00h / 40h / 23h | Mr.Smooth | 2 |
| 00h / 48h / 23h | Fretless Bs* | 1 |
| 00h / 00h / 24h | Slap Bass | 1 |
| 00h / 48h / 24h | Slap Bass 1* | 1 |
| 00h / 00h / 25h | Slap Bass 2 | 1 |
| 00h / 48h / 25h | Slap Bass 2* | 1 |
| 00h / 00h / 26h | Synth Bass 1 | 1 |
| 00h / 40h / 26h | Jungle Bass | 1 |
| 00h / 41h / 26h | Hammer | 2 |
| 00h / 48h / 26h | Synth Bass1* | 1 |
| 01h / 00h / 26h | SynthBass101 | 1 |
| 01h / 40h / 26h | ResoSH Bass | 1 |
| 08h / 00h / 26h | Synth Bass 3 | 1 |
| 08h / 40h / 26h | Clavi Bass | 2 |
| 00h / 00h / 27h | Synth Bass 2 | 2 |
| 00h / 40h / 27h | Synth Bass | 2 |
| 00h / 48h / 27h | Synth Bass2* | 2 |
| 08h / 00h / 27h | Synth Bass 4 | 2 |
| 08h / 41h / 27h | Modular Bass | 2 |
| 08h / 42h / 27h | Attack Pulse | 2 |
| 10h / 00h / 27h | Rubber Bass | 2 |
| 10h / 40h / 27h | SH101 Bass | 1 |
| 10h / 41h / 27h | WireStr Bass | 2 |
| 10h / 42h / 27h | Sync Bass | 2 |
| 10h / 48h / 27h | Rubber Bass* | 2 |
| 00h / 00h / 28h | GS Violin | 1 |
| 00h / 40h / 28h | Violin | 1 |
| 00h / 48h / 28h | Violin* | 1 |
| 08h / 00h / 28h | Slow Violin | 1 |
| 00h / 00h / 29h | Viola | 1 |
| 00h / 48h / 29h | Viola* | 1 |
| 00h / 00h / 2Ah | GS Cello | 1 |
| 00h / 40h / 2Ah | Cello | 1 |
| 00h / 48h / 2Ah | Cello* | 1 |
| 00h / 00h / 2Bh | Contrabass | 1 |
| 00h / 48h / 2Bh | Contrabass* | 1 |
| 00h / 00h / 2Ch | GS Trem.Str | 1 |
| 00h / 40h / 2Ch | Tremolo Str | 1 |
| 00h / 41h / 2Ch | Suspense Str | 2 |

| CC0 /CC32 / PC# | Tone Name | Voices |
|---|---|---|
| 00h / 48h / 2Ch | Tremolo Str* | 1 |
| 00h / 00h / 2Dh | PizzicatoStr | 1 |
| 00h / 40h / 2Dh | Mellow Pizz. | 1 |
| 00h / 48h / 2Dh | Pizzicato* | 1 |
| 00h / 00h / 2Eh | GS Harp | 1 |
| 00h / 40h / 2Eh | Harp | 1 |
| 00h / 41h / 2Eh | Yang Qin | 2 |
| 00h / 42h / 2Eh | Harp Strings | 3 |
| 00h / 48h / 2Eh | Harp* | 1 |
| 00h / 00h / 2Fh | Timpani | 1 |
| 00h / 48h / 2Fh | Timpani* | 1 |
| 00h / 00h / 30h | GS Strings | 1 |
| 00h / 40h / 30h | Strings | 2 |
| 00h / 41h / 30h | Velo Strings | 2 |
| 00h / 42h / 30h | Oct Strings | 2 |
| 00h / 43h / 30h | 60's Srrings | 2 |
| 00h / 44h / 30h | Strings 2 | 2 |
| 00h / 48h / 30h | Strings* | 1 |
| 08h / 00h / 30h | Orchestra | 2 |
| 08h / 40h / 30h | OrchestraBrs | 2 |
| 08h / 41h / 30h | Choir Str | 2 |
| 00h / 00h / 31h | GS Sl.Str | 1 |
| 00h / 40h / 31h | Slow Strings | 2 |
| 00h / 41h / 31h | SlowStrings2 | 2 |
| 00h / 42h / 31h | Legato Str | 2 |
| 00h / 48h / 31h | SlowStrings* | 1 |
| 09h / 04h / 31h | Warm Strings | 2 |
| 00h / 00h / 32h | Syn.Strings1 | 1 |
| 00h / 40h / 32h | Syn.Slow Str | 2 |
| 00h / 41h / 32h | OB Strings | 2 |
| 00h / 48h / 32h | Syn.Str 1* | 1 |
| 08h / 00h / 32h | Syn.Strings3 | 2 |
| 00h / 00h / 33h | Syn.Strings2 | 2 |
| 00h / 40h / 33h | JP Saw Str | 2 |
| 00h / 48h / 33h | Syn.Str 2* | 2 |
| 00h / 00h / 34h | Choir Aahs | 1 |
| 00h / 40h / 34h | Rich Choir | 2 |
| 00h / 42h / 34h | Dreamy Choir | 2 |
| 00h / 48h / 34h | Choir Aahs* | 1 |
| 20h / 00h / 34h | Choir | 1 |
| 20h / 40h / 34h | Choir Str | 2 |
| 00h / 00h / 35h | Pop Voice | 1 |
| 00h / 40h / 35h | Jazz Voices | 1 |
| 00h / 41h / 35h | Doos Voice | 1 |
| 00h / 42h / 35h | Thum Voice | 1 |
| 00h / 43h / 35h | Doot Accent | 1 |
| 00h / 44h / 35h | Dat Accent | 1 |
| 00h / 45h / 35h | Bop Accent | 1 |
| 00h / 46h / 35h | Doos & Doot | 2 |
| 00h / 47h / 35h | Dat & Bop | 2 |
| 00h / 48h / 35h | Pop Voice* | 1 |
| 00h / 00h / 36h | SynVox | 1 |
| 00h / 40h / 36h | Choir Oohs | 2 |
| 00h / 41h / 36h | Jazz Scat | 1 |
| 00h / 43h / 36h | Humming | 2 |
| 00h / 44h / 36h | Tenor | 1 |
| 00h / 45h / 36h | Analog Voice | 2 |
| 00h / 47h / 36h | Dow Fall | 1 |
| 00h / 48h / 36h | SynVox* | 1 |
| 00h / 00h / 37h | OrchestraHit | 2 |
| 00h / 40h / 37h | Philly Hit | 2 |
| 00h / 41h / 37h | 6th Hit | 1 |
| 00h / 42h / 37h | Euro Hit | 1 |
| 00h / 43h / 37h | Bass Hit | 1 |
| 00h / 44h / 37h | Rave Hit | 2 |
| 00h / 45h / 37h | Stack Hit | 2 |
| 00h / 48h / 37h | Orche.Hit* | 2 |
| 00h / 00h / 38h | GS Trumpet | 1 |
| 00h / 40h / 38h | Trumpet | 1 |
| 00h / 41h / 38h | EX Trumpet | 1 |
| 00h / 42h / 38h | V Trumpet | 2 |
| 00h / 43h / 38h | Tp Shake | 1 |
| 00h / 48h / 38h | Trumpet* | 1 |
| 01h / 40h / 38h | EX Tp&Shake* | 2 |

| CC0 /CC32 / PC# | Tone Name | Voices |
|---|---|---|
| 01h / 41h / 38h | EX Tp&Shake | 2 |
| 01h / 42h / 38h | Dark Trumpet | 1 |
| 01h / 43h / 38h | Romantic | 1 |
| 00h / 00h / 39h | GS Trombone | 1 |
| 00h / 40h / 39h | TromboneSoft | 1 |
| 00h / 41h / 39h | Bright Tb | 1 |
| 00h / 48h / 39h | Trombone* | 1 |
| 01h / 00h / 39h | Trombone | 1 |
| 01h / 40h / 39h | Trombone | 1 |
| 01h / 41h / 39h | Trombone 2 | 2 |
| 00h / 00h / 3Ah | GS Tuba | 1 |
| 00h / 40h / 3Ah | Tuba | 1 |
| 00h / 48h / 3Ah | Tuba* | 1 |
| 00h / 00h / 3Bh | MutedTrumpet | 1 |
| 00h / 40h / 3Bh | MuteTrumpet2 | 1 |
| 00h / 48h / 3Bh | M.Trumpet* | 1 |
| 00h / 00h / 3Ch | French Horn | 2 |
| 00h / 40h / 3Ch | Fr.Horn Solo | 1 |
| 00h / 41h / 3Ch | Flugel Horn | 1 |
| 00h / 48h / 3Ch | FrenchHorns* | 2 |
| 01h / 00h / 3Ch | Fr.Horn 2 | 2 |
| 01h / 40h / 3Ch | SuperF.Horns | 2 |
| 01h / 41h / 3Ch | OrchestraBrs | 2 |
| 00h / 00h / 3Dh | Brass 1 | 1 |
| 00h / 40h / 3Dh | Brass 1 | 1 |
| 00h / 41h / 3Dh | Bright Brass | 2 |
| 00h / 42h / 3Dh | Brass ff | 1 |
| 00h / 43h / 3Dh | Brass sfz | 2 |
| 00h / 48h / 3Dh | Brass 1* | 1 |
| 08h / 00h / 3Dh | Brass 2 | 2 |
| 08h / 40h / 3Dh | Power Brass | 2 |
| 08h / 41h / 3Dh | BrassSection | 1 |
| 08h / 42h / 3Dh | St. Brass ff | 2 |
| 00h / 00h / 3Eh | Synth Brass1 | 2 |
| 00h / 40h / 3Eh | Jump Brass | 1 |
| 00h / 48h / 3Eh | SynthBrass1* | 2 |
| 08h / 00h / 3Eh | Synth Brass3 | 2 |
| 08h / 40h / 3Eh | DeepSynBrass | 2 |
| 08h / 41h / 3Eh | Oct SynBrass | 2 |
| 10h / 00h / 3Eh | AnalogBrass1 | 2 |
| 10h / 48h / 3Eh | A.Brass 1* | 2 |
| 00h / 00h / 3Fh | Synth Brass2 | 2 |
| 00h / 40h / 3Fh | EX Orchestra | 4 |
| 00h / 41h / 3Fh | Soft Brass | 2 |
| 00h / 48h / 3Fh | SynthBrass2* | 2 |
| 08h / 00h / 3Fh | Synth Brass4 | 1 |
| 10h / 00h / 3Fh | AnalogBrass2 | 2 |
| 00h / 00h / 40h | GS Sop.Sax | 1 |
| 00h / 40h / 40h | Soprano Sax | 1 |
| 00h / 48h / 40h | Soprano Sax* | 1 |
| 00h / 00h / 41h | Alto Sax | 1 |
| 00h / 40h / 41h | AltoSax Soft | 1 |
| 00h / 41h / 41h | EX Alto Sax | 2 |
| 00h / 42h / 41h | Sax Section | 4 |
| 00h / 48h / 41h | Alto Sax* | 1 |
| 08h / 40h / 41h | Grow Sax | 1 |
| 08h / 42h / 41h | AltoSax + Tp | 2 |
| 00h / 00h / 42h | Tenor Sax | 1 |
| 00h / 40h / 42h | Blow Sax | 1 |
| 00h / 41h / 42h | Super Tenor | 2 |
| 00h / 48h / 42h | Tenor Sax* | 1 |
| 08h / 40h / 42h | Tenor Sax f | 1 |
| 00h / 00h / 43h | GS Bari Sax | 1 |
| 00h / 40h / 43h | Baritone Sax | 1 |
| 00h / 41h / 43h | Bari & Tenor | 2 |
| 00h / 48h / 43h | BaritoneSax* | 1 |
| 00h / 00h / 44h | GS Oboe | 1 |
| 00h / 40h / 44h | Oboe | 1 |
| 00h / 48h / 44h | Oboe* | 1 |
| 01h / 40h / 44h | Tune Oboe | 1 |
| 00h / 00h / 45h | GS Eng.Horn | 1 |
| 00h / 40h / 45h | English Horn | 1 |
| 00h / 48h / 45h | EnglishHorn* | 1 |

| CC0 /CC32 / PC# | Tone Name | Voices |
|---|---|---|
| 00h / 00h / 46h | Bassoon | 1 |
| 00h / 48h / 46h | Bassoon* | 1 |
| 00h / 00h / 47h | Clarinet | 1 |
| 00h / 40h / 47h | Bs Clarinet | 1 |
| 00h / 48h / 47h | Clarinet* | 1 |
| 00h / 00h / 48h | Piccolo | 1 |
| 00h / 48h / 48h | Piccolo* | 1 |
| 00h / 00h / 49h | GS Flute | 1 |
| 00h / 40h / 49h | Flute | 1 |
| 00h / 48h / 49h | Flute* | 1 |
| 00h / 00h / 4Ah | Recorder | 1 |
| 00h / 48h / 4Ah | Recorder* | 1 |
| 00h / 00h / 4Bh | GS Pan Flute | 1 |
| 00h / 40h / 4Bh | Blow Pipe | 1 |
| 00h / 41h / 4Bh | Pan Flute | 2 |
| 00h / 48h / 4Bh | Pan Flute* | 1 |
| 00h / 00h / 4Ch | Bottle Blow | 2 |
| 00h / 41h / 4Ch | BottleBlow2 | 3 |
| 00h / 48h / 4Ch | Bottle Blow* | 2 |
| 00h / 00h / 4Dh | Shakuhachi | 2 |
| 00h / 48h / 4Dh | Shakuhachi* | 2 |
| 00h / 00h / 4Eh | Whistle | 1 |
| 00h / 48h / 4Eh | Whistle* | 1 |
| 00h / 00h / 4Fh | Ocarina | 1 |
| 00h / 48h / 4Fh | Ocarina* | 1 |
| 00h / 00h / 50h | Square Wave | 2 |
| 00h / 40h / 50h | Syn.Square | 2 |
| 00h / 41h / 50h | CC Solo | 2 |
| 00h / 42h / 50h | Dual Sqr&Saw | 4 |
| 00h / 43h / 50h | SquareWave2 | 2 |
| 00h / 48h / 50h | Square Wave* | 2 |
| 01h / 00h / 50h | Square | 1 |
| 01h / 40h / 50h | FM Lead 1 | 2 |
| 01h / 41h / 50h | FM Lead 1 | 2 |
| 01h / 42h / 50h | LM Square | 2 |
| 08h / 00h / 50h | Sine Wave | 1 |
| 08h / 40h / 50h | JP8 Square | 1 |
| 00h / 00h / 51h | Saw Wave | 2 |
| 00h / 40h / 51h | Mg Lead | 1 |
| 00h / 41h / 51h | JP SuperSaw | 4 |
| 00h / 43h / 51h | Waspy Synth | 2 |
| 00h / 48h / 51h | Saw Wave* | 2 |
| 01h / 00h / 51h | Saw | 1 |
| 01h / 40h / 51h | P5 Saw Lead | 1 |
| 01h / 41h / 51h | Natural Lead | 2 |
| 08h / 00h / 51h | Doctor Solo | 2 |
| 08h / 40h / 51h | Rhythmic Saw | 2 |
| 08h / 41h / 51h | SequencedSaw | 2 |
| 08h / 48h / 51h | Doctor Solo* | 2 |
| 00h / 00h / 52h | Syn.Calliope | 2 |
| 00h / 40h / 52h | JP8 Pulse | 2 |
| 00h / 41h / 52h | LM PureLead | 4 |
| 00h / 48h / 52h | SynCalliope* | 2 |
| 00h / 00h / 53h | Chiffer Lead | 2 |
| 00h / 40h / 53h | Cheese Saw | 1 |
| 00h / 48h / 53h | ChifferLead* | 2 |
| 00h / 00h / 54h | Charang | 2 |
| 00h / 40h / 54h | Reso Saw | 1 |
| 00h / 41h / 54h | 2600 SubOsc | 1 |
| 00h / 42h / 54h | Acid Guitar | 2 |
| 00h / 48h / 54h | Charang* | 2 |
| 08h / 40h / 54h | Wire Lead | 2 |
| 00h / 00h / 55h | Solo Vox | 1 |
| 00h / 40h / 55h | RAVE Vox | 2 |
| 00h / 48h / 55h | Solo Vox* | 2 |
| 00h / 00h / 56h | 5th Saw Wave | 2 |
| 00h / 40h / 56h | 5th Lead | 2 |
| 00h / 48h / 56h | 5th SawWave* | 2 |
| 00h / 00h / 57h | Bass & Lead | 2 |
| 00h / 40h / 57h | FM Lead 2 | 1 |
| 00h / 41h / 57h | Delayed Lead | 2 |
| 00h / 48h / 57h | Bass & Lead* | 2 |

| CC0 /CC32 / PC# | Tone Name | Voices |
|---|---|---|
| 02h / 04h / 57h | Fat & Perky | 2 |
| 00h / 00h / 58h | Fantasia | 2 |
| 00h / 40h / 58h | Fantasia 2 | 2 |
| 00h / 41h / 58h | New Age Pad | 2 |
| 00h / 42h / 58h | Chord Syn1 | 2 |
| 00h / 43h / 58h | Sugar Key | 2 |
| 00h / 44h / 58h | BriteSawKey | 2 |
| 00h / 48h / 58h | Fantasia* | 2 |
| 00h / 00h / 59h | Warm Pad | 1 |
| 00h / 40h / 59h | Soft Pad | 2 |
| 00h / 41h / 59h | Warm JP Str | 2 |
| 00h / 42h / 59h | Sine Pad | 2 |
| 00h / 48h / 59h | Warm Pad* | 1 |
| 00h / 00h / 5Ah | Polysynth | 1 |
| 00h / 40h / 5Ah | P5 Poly | 2 |
| 00h / 41h / 5Ah | Poly King | 2 |
| 00h / 42h / 5Ah | Octave Stack | 2 |
| 00h / 43h / 5Ah | Happy Synth | 2 |
| 00h / 48h / 5Ah | Polysynth* | 2 |
| 00h / 00h / 5Bh | Space Voice | 1 |
| 00h / 40h / 5Bh | Heaven II | 2 |
| 00h / 41h / 5Bh | Holy Voices | 4 |
| 00h / 42h / 5Bh | Warm SquPad | 3 |
| 00h / 43h / 5Bh | Itopia | 2 |
| 00h / 48h / 5Bh | Space Voice* | 1 |
| 00h / 00h / 5Ch | Bowed Glass | 2 |
| 00h / 48h / 5Ch | Bowed Glass* | 2 |
| 00h / 00h / 5Dh | Metal Pad | 2 |
| 00h / 40h / 5Dh | Tine Pad | 2 |
| 00h / 41h / 5Dh | Panner Pad | 2 |
| 00h / 48h / 5Dh | Metal Pad* | 2 |
| 00h / 00h / 5Eh | Halo Pad | 2 |
| 00h / 40h / 5Eh | JP8 Sqr Pad | 2 |
| 00h / 41h / 5Eh | Vox Sweep | 2 |
| 00h / 42h / 5Eh | JP8 Sqr Pad | 2 |
| 00h / 48h / 5Eh | Halo Pad* | 2 |
| 00h / 00h / 5Fh | Sweep Pad | 1 |
| 00h / 40h / 5Fh | Sweep Pad 2 | 2 |
| 00h / 41h / 5Fh | Polar Pad | 1 |
| 00h / 42h / 5Fh | Converge | 1 |
| 00h / 48h / 5Fh | Sweep Pad* | 1 |
| 00h / 00h / 60h | Ice Rain | 2 |
| 00h / 40h / 60h | LFO RAVE | 2 |
| 00h / 43h / 60h | Ice Rain | 2 |
| 00h / 48h / 60h | Ice Rain* | 2 |
| 00h / 00h / 61h | Soundtrack | 2 |
| 00h / 40h / 61h | Ancestral | 2 |
| 00h / 41h / 61h | Prologue | 2 |
| 00h / 48h / 61h | Soundtrack* | 2 |
| 00h / 00h / 62h | Crystal | 2 |
| 00h / 40h / 62h | Vibra Bells | 2 |
| 00h / 41h / 62h | Clear Bells | 2 |
| 00h / 42h / 62h | ChristmasBel | 2 |
| 00h / 43h / 62h | Bell Strings | 3 |
| 00h / 48h / 62h | Crystal* | 2 |
| 01h / 00h / 62h | Syn Mallet | 1 |
| 01h / 48h / 62h | Syn Mallet* | 1 |
| 02h / 04h / 62h | Soft Crystal | 2 |
| 09h / 04h / 62h | Digi Bells | 2 |
| 00h / 00h / 63h | Atmosphere | 2 |
| 00h / 40h / 63h | Harpvox | 2 |
| 00h / 41h / 63h | Nylon Harp | 2 |
| 00h / 42h / 63h | Nylon+Rhodes | 2 |
| 00h / 43h / 63h | HollowReleas | 2 |
| 00h / 48h / 63h | Atmosphere* | 2 |
| 00h / 00h / 64h | Brightness | 2 |
| 00h / 40h / 64h | Org Bells | 2 |
| 00h / 48h / 64h | Brightness* | 2 |
| 00h / 00h / 65h | Goblin | 2 |
| 00h / 40h / 65h | Calculating | 2 |
| 00h / 41h / 65h | Goblinson | 2 |
| 00h / 42h / 65h | 50's Sci-Fi | 2 |
| 00h / 48h / 65h | Goblin* | 2 |

| CC0 /CC32 / PC# | Tone Name | Voices |
| --- | --- | --- |
| 00h / 00h / 66h | Echo Drops | 1 |
| 00h / 40h / 66h | Big Panner | 2 |
| 00h / 48h / 66h | Echo Drops* | 1 |
| 01h / 00h / 66h | Echo Bell | 2 |
| 01h / 40h / 66h | Ai-yai-a | 2 |
| 02h / 00h / 66h | Echo Pan | 2 |
| 02h / 40h / 66h | Echo Pan 2 | 2 |
| 02h / 41h / 66h | Water Piano | 2 |
| 00h / 00h / 67h | Star Theme | 2 |
| 00h / 40h / 67h | Rising Osc | 2 |
| 00h / 48h / 67h | Star Theme* | 2 |
| 00h / 00h / 68h | Sitar | 1 |
| 00h / 48h / 68h | Sitar* | 1 |
| 01h / 00h / 68h | Sitar 2 | 2 |
| 00h / 00h / 69h | Banjo | 1 |
| 00h / 48h / 69h | Banjo* | 1 |
| 00h / 00h / 6Ah | GS Shamisen | 1 |
| 00h / 40h / 6Ah | Shamisen | 2 |
| 00h / 48h / 6Ah | Shamisen* | 1 |
| 00h / 00h / 6Bh | Koto | 1 |
| 00h / 48h / 6Bh | Koto* | 1 |
| 08h / 00h / 6Bh | Taisho Koto | 2 |
| 08h / 48h / 6Bh | Taisho Koto* | 2 |
| 00h / 00h / 6Ch | Kalimba | 1 |
| 00h / 48h / 6Ch | Kalimba* | 1 |
| 00h / 00h / 6Dh | Bagpipe | 1 |
| 00h / 48h / 6Dh | Bagpipe* | 1 |
| 00h / 00h / 6Eh | Fiddle | 1 |
| 00h / 48h / 6Eh | Fiddle* | 1 |
| 00h / 00h / 6Fh | Shanai | 1 |
| 00h / 48h / 6Fh | Shanai* | 1 |
| 00h / 00h / 70h | Tinkle Bell | 1 |
| 00h / 48h / 70h | Tinkle Bell* | 1 |
| 00h / 00h / 71h | Agogo | 1 |
| 00h / 48h / 71h | Agogo* | 1 |
| 00h / 00h / 72h | Steel Drums | 1 |
| 00h / 48h / 72h | Steel Drums* | 1 |
| 00h / 00h / 73h | Woodblock | 1 |
| 00h / 48h / 73h | Woodblock* | 1 |
| 08h / 00h / 73h | Castanets | 1 |
| 00h / 00h / 74h | Taiko | 1 |
| 00h / 48h / 74h | Taiko* | 1 |
| 08h / 00h / 74h | Concert BD | 1 |
| 08h / 48h / 74h | Concert BD* | 1 |
| 00h / 00h / 75h | Melo. Tom 1 | 1 |
| 00h / 40h / 75h | Bodhran | 1 |
| 00h / 48h / 75h | Melo.Tom 1* | 1 |
| 08h / 00h / 75h | Melo. Tom 2 | 1 |
| 00h / 00h / 76h | Synth Drum | 1 |
| 00h / 48h / 76h | Synth Drum* | 1 |
| 08h / 00h / 76h | 808 Tom | 1 |
| 09h / 00h / 76h | Elec Perc. | 1 |
| 00h / 00h / 77h | Reverse Cym. | 1 |
| 00h / 48h / 77h | ReverseCym.* | 1 |
| 00h / 00h / 78h | Gt.FretNoise | 1 |
| 00h / 48h / 78h | Fret Noise* | 1 |
| 01h / 00h / 78h | Gt.Cut Noise | 1 |
| 01h / 40h / 78h | Wah Brush Gt | 1 |
| 02h / 00h / 78h | String Slap | 1 |
| 05h / 40h / 78h | Bass Slide | 1 |
| 06h / 40h / 78h | Pick Scrape | 1 |
| 00h / 00h / 79h | Breath Noise | 1 |
| 00h / 48h / 79h | BreathNoise* | 1 |
| 01h / 00h / 79h | Fl.Key Click | 1 |
| 00h / 00h / 7Ah | Seashore | 1 |
| 00h / 48h / 7Ah | Seashore* | 1 |
| 01h / 00h / 7Ah | Rain | 1 |
| 02h / 00h / 7Ah | Thunder | 1 |
| 02h / 40h / 7Ah | Thunder Bell | 2 |
| 03h / 00h / 7Ah | Wind | 1 |
| 04h / 00h / 7Ah | Stream | 2 |
| 05h / 00h / 7Ah | Bubble | 2 |

| CC0 /CC32 / PC# | Tone Name | Voices |
| --- | --- | --- |
| 00h / 00h / 7Bh | Bird | 2 |
| 00h / 48h / 7Bh | Bird* | 2 |
| 01h / 00h / 7Bh | Dog | 1 |
| 02h / 00h / 7Bh | Horse-Gallop | 1 |
| 03h / 00h / 7Bh | Bird 2 | 1 |
| 04h / 40h / 7Bh | Cat | 1 |
| 00h / 00h / 7Ch | Telephone 1 | 1 |
| 00h / 48h / 7Ch | Telephone 1* | 1 |
| 01h / 00h / 7Ch | Telephone 2 | 1 |
| 02h / 00h / 7Ch | DoorCreaking | 1 |
| 03h / 00h / 7Ch | Door | 1 |
| 04h / 00h / 7Ch | Scratch | 1 |
| 05h / 00h / 7Ch | Windchime | 2 |
| 05h / 40h / 7Ch | Bar Chimes | 1 |
| 00h / 00h / 7Dh | Helicopter | 1 |
| 00h / 48h / 7Dh | Helicopter* | 1 |
| 01h / 00h / 7Dh | Car-Engine | 1 |
| 02h / 00h / 7Dh | Car-Stop | 1 |
| 03h / 00h / 7Dh | Car-Pass | 1 |
| 04h / 00h / 7Dh | Car-Crash | 2 |
| 05h / 00h / 7Dh | Siren | 1 |
| 06h / 00h / 7Dh | Train | 1 |
| 07h / 00h / 7Dh | Jetplane | 2 |
| 07h / 40h / 7Dh | Falling Down | 2 |
| 08h / 00h / 7Dh | Starship | 2 |
| 09h / 00h / 7Dh | Burst Noise | 2 |
| 00h / 00h / 7Eh | Applause | 2 |
| 00h / 48h / 7Eh | Applause* | 2 |
| 01h / 00h / 7Eh | Laughing | 1 |
| 02h / 00h / 7Eh | Screaming | 1 |
| 03h / 00h / 7Eh | Punch | 1 |
| 04h / 00h / 7Eh | Heart Beat | 1 |
| 05h / 00h / 7Eh | Footsteps | 1 |
| 05h / 41h / 7Eh | Finger Snap | 1 |
| 07h / 40h / 7Eh | Finger Snap | 1 |
| 00h / 00h / 7Fh | Gun Shot | 1 |
| 00h / 48h / 7Fh | Gun Shot* | 1 |
| 01h / 00h / 7Fh | Machine Gun | 1 |
| 02h / 00h / 7Fh | Lasergun | 1 |
| 03h / 00h / 7Fh | Explosion | 2 |

## ●Drum Set List

### ○KF-90 Drum MAPPING

| CC0 /CC32 / PC# | Tone Name |
| --- | --- |
| 00h / 41h / 00h | POP |
| 00h / 40h / 10h | ROCK |
| 00h / 41h / 28h | JAZZ BRUSH |
| 00h / 40h / 3Fh | VOX |
| 00h / 40h / 00h | STANDARD |
| 00h / 40h / 08h | ROOM |
| 00h / 00h / 10h | POWER |
| 00h / 00h / 18h | ELECTRONIC |
| 00h / 00h / 19h | TR-808 |
| 00h / 40h / 19h | DANCE |
| 00h / 00h / 20h | JAZZ |
| 00h / 40h / 28h | BRUSH |
| 00h / 00h / 30h | ORCHESTRA |
| 00h / 00h / 00h | GS STANDARD |
| 00h / 00h / 08h | GS ROOM |
| 00h / 00h / 28h | GS BRUSH |
| 00h / 00h / 38h | SOUND EFFECT |