MIDI Implementation

Model VE-GS Pro   Version 1.00 '99.3

The VE-GS Pro implements additional functionality and parameters over and above the SC-88, which itself was an expansion of the GS sound source format. These functions and parameters are marked by a [Pro] symbol. If MIDI messages marked by a [Pro] symbol are transmitted to another GS format sound source or to the SC-88, those messages may not be recognized. Also, functions and parameters which were added to the SC-88 over and above previous GS format sound sources are marked by an [88] symbol.

Section 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 byte	3rd byte
9nH	kkH	vvH

n = MIDI channel number : 0H-FH (ch.1-ch.16)
kk = note number : 00H-7FH (0-127)
vv = note on velocity : 01H-7FH (1-127)

* 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 byte	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) [88]

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

n = MIDI channel number : 0H-FH (ch.1-ch.16)
mm = Bank number MSB : 00H-7FH (GS Variation number 0 - 127), Initial Value = 00H
ll = Bank number LSB : 00H - 03H (MAP), Initial Value = 00H

* Not received when Rx.BANK SELECT = OFF. "Rx.BANK SELECT" is set to OFF by "Turn General MIDI System On," and set to ON by "GS RESET." (Power-on default value is ON.)
* When Rx.BANK SELECT LSB = OFF, Bank number LSB 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.
* The VE-GS Pro recognizes the Bank Select LSB (Controller number 32) as a flag for switching between the Native MAP,SC-88MAP and the SC-55MAP. With a Bank Select LSB of 00H, the map selected by the front panel MAP button will be selected. With a LSB of 01H, the SC-55MAP will be selected. With a LSB of 02H, the SC-88MAP will be selected. With a LSB of 03H, the Native MAP will be selected.
* The lower byte of the Bank Select message (controller number 32) may not be recognized by some models of GS instrument.

❍ Modulation (Controller number 1)

Status	2nd byte	3rd byte
BnH	01H	vvH

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

* 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 byte	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 byte	3rd byte
BnH	06H	mmH
BnH	26H	llH

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

❍ Volume (Controller number 7)

Status	2nd byte	3rd byte
BnH	07H	vvH

n = MIDI channel number : 0H-FH (ch.1-ch.16)
vv = Volume : 00H-7FH (0-127), 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 byte	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.
* Not received when Rx.PANPOT = OFF. (Initial value is ON)

❍ Expression (Controller number 11)

Status	2nd byte	3rd byte
BnH	0BH	vvH

n = MIDI channel number : 0H-FH (ch.1-ch.16)
vv = Expression : 00H-7FH (0-127), 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 byte	3rd byte
BnH	40H	vvH

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

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

❍ Portamento (Controller number 65)

Status	2nd byte	3rd byte
BnH	41H	vvH

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

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

❍ **Sostenuto (Controller number 66)**

Status	2nd byte	3rd byte
BnH	42H	vvH

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

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

❍ **Soft (Controller number 67)**

Status	2nd byte	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)

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

Status	2nd byte	3rd byte
BnH	54H	kkH

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

* A Note-on received immediately after a Portamento Control message will change continuously in pitch, starting from the pitch of the Source Note Number.
* If a voice is already sounding for a note number identical to the Source Note Number, this voice will continue sounding (i.e., legato) and will, when the next Note-on is received, smoothly change to the pitch of that Note-on.
* The rate of the pitch change caused by Portamento Control is determined by the Portamento Time value.

Example 1.

On MIDI	Description	Result
90 3C 40	Note on C4	C4 on
B0 54 3C	Portamento Control from C4	no change
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 byte	3rd byte
BnH	5BH	vvH

n = MIDI channel number : 0H-FH (ch.1-ch.16)
vv = Reverb Send Level : 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 byte	3rd byte
BnH	5DH	vvH

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

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

❍ **Effect 4 (Delay Send Level) (Controller number 94)** [88]

Status	2nd byte	3rd byte
BnH	5EH	vvH

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

* This message adjusts the Delay Send Level of each Part.
* Some other GS devices may not recognize this message.
* Delay cannot be used in MODE-2 (Double Module Mode).

❍ **NRPN MSB/LSB (Controller number 98, 99)**

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

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

* NRPN can be received when Rx.NRPN = ON. "Rx.NRPN" is set to OFF by power-on reset or by receiving "Turn General MIDI System On," and it is set to ON by "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. On the VE-GS Pro, NRPN messages can be used to modify sound parameters etc.
To use these messages, you must first use NRPN messages (Controller number 98 and 99, their order does not matter) 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 5. Supplementary material "Examples of actual MIDI messages" <Example 4> (page 123). On the VE-GS Pro, Data entry LSB (Controller number 38) of NRPN is ignored, so it is no problem to send Data entry MSB (Controller number 6) only (without Data entry LSB).

On the VE-GS Pro, NRPN can be used to modify the following parameters.

NRPN MSB LSB	Data entry MSB	Function and range
01H 08H	mmH	Vibrato Rate (relative change) mm: 00H - 40H - 7FH (-64 - 0 - +63)
01H 09H	mmH	Vibrato Depth (relative change) mm: 00H - 40H - 7FH (-64 - 0 - +63)
01H 0AH	mmH	Vibrato Delay (relative change) mm: 00H - 40H - 7FH (-64 - 0 - +63)
01H 20H	mmH	TVF Cutoff Frequency (relative change) mm: 00H - 40H - 7FH (-64 - 0 - +63)
01H 21H	mmH	TVF Resonance (relative change) mm: 00H - 40H - 7FH (-64 - 0 - +63)
01H 63H	mmH	TVF&TVA Envelope Attack Time (relative change) mm: 00H - 40H - 7FH (-64 - 0 - +63)
01H 64H	mmH	TVF&TVA Envelope Decay Time (relative change) mm: 00H - 40H - 7FH (-64 - 0 - +63)
01H 66H	mmH	TVF&TVA Envelope Release Time (relative change) mm: 00H - 40H - 7FH (-64 - 0 - +63)
18H rrH	mmH	Drum Instrument Pitch Coarse (relative change) rr: Drum Instrument note number mm: 00H - 40H - 7FH (-64 - 0 - +63 semitone)
1AH rrH	mmH	Drum Instrument TVA Level (absolute change) rr: Drum Instrument note number mm: 00H - 7FH (0 - max)
1CH rrH	mmH	Drum Instrument Panpot (absolute change) rr: Drum Instrument note number mm: 00H, 01H - 40H - 7FH (random, left-center-right)
1DH rrH	mmH	Drum Instrument Reverb Send Level (absolute change) rr: Drum Instrument note number mm: 00H - 7FH (0 - max)
1EH rrH	mmH	Drum Instrument Chorus Send Level (absolute change) rr: Drum Instrument note number mm: 00H - 7FH (0 - max)
1FH rrH	mmH	Drum Instrument Delay Send Level (absolute change) [88] rr: Drum Instrument note number mm: 00H - 7FH (0 - max)

* Parameters marked "relative change" will change relative 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.
* It is not possible to simultaneously use both Chorus Send Level and Delay Send Level on a single Drum Instrument.

❍ **RPN MSB/LSB (Controller number 100, 101)**

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

n = MIDI channel number : 0H-FH (ch.1-ch.16)
mm = upper byte of parameter number specified by RPN
ll = lower byte 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 (Controller number 100 and 101, their order does not matter) to specify the parameter to be controlled, and then use Data Entry messages (Controller number 6, 38) 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 5. "Examples of actual MIDI messages" <Example 4> (page 123).

On the VE-GS Pro, 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) Refer to 5. Supplementary material, "About tuning" (page 124).
00H 02H	mmH ---	Master Coarse Tuning mm: 28H-40H-58H (-24 - 0 - +24 semitones), Initial Value = 40H (±0 semitone) ll: ignored (processed as 00H)
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 byte
CnH	ppH

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

* Not received when 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 message will not be received on lower byte of the bank numbers (the value of Control Number 0) is other than 0 (00H).

● **Channel Pressure**

Status	2nd byte
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 byte
EnH	llH	mmH

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

* 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 byte
BnH	78H	00H

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

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

● **Reset All Controllers (Controller number 121)**

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

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

* When this message is received, the following controllers will be set to their reset values.

Controller	Reset value
Pitch Bend Change	±0 (center)
Polyphonic Key Pressure	0 (off)
Channel Pressure	0 (off)
Modulation	0 (off)
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

● **All Notes Off (Controller number 123)**

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

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

* When All Notes Off is received, all notes on the corresponding channel will be turned off. However if Hold 1 or Sostenuto is ON, the sound will be continued until these are turned off.

● **OMNI OFF (Controller number 124)**

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

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

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

● **OMNI ON (Controller number 125)**

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

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

* The same processing will be carried out as when All Note Off is received. OMNI ON will not be turned on.

● **MONO (Controller number 126)**

Status	2nd byte	3rd byte
BnH	7EH	mmH

n = MIDI channel number : 0H-FH (ch.1-ch.16)
mm = mono number : 00H-10H (0-16)

* The same processing will be carried out as when All 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 byte
BnH	7FH	00H

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

* The same processing will be carried out as when All Sounds Off 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 VE-GS Pro 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 manu-facturer 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 the VE-GS Pro are; messages related to mode settings, Universal Realtime System Exclusive messages, Data Requests (RQ1), 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 "Turn General MIDI System On" message should be inserted at the beginning of a General MIDI score, and a "GS Reset" message at the beginning of music files for GS. In the case of data for the SC-88 and for the VE-GS Pro, we recommend that "System Mode Set" be placed at the beginning of the song 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.)
"Turn General MIDI System On" use Universal Non-realtime Message format. "System Mode Set" and "GS Reset" use Roland system exclusive format "Data Set 1 (DT1)."

❍ Turn General MIDI System On

This is a command message that resets the internal settings of the VE-GS Pro to the General MIDI initial state (General MIDI System-Level 1). After receiving this message the VE-GS Pro, 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 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 message.

❍ GS reset

GS Reset is a command message that resets the internal settings of a device to the GS initial state. This message appears at the beginning of music files for GS, and a GS device that receives this message will automatically be set to the proper state to correctly playback music files for GS. If the VE-GS Pro is in MODE-1 (single module mode) all 32 Parts will be initialized. If in MODE-2 (double module mode), only the corresponding 16 Parts will be initialized. In MODE-2 if the receiving MIDI connector for each Part has been changed, this may affect playback from the other MIDI connector. In this case, first perform initialization (page 73) before using this command.

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
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.

❍ System Mode Set [88]

System Mode Set is a message that sets the VE-GS Pro operating mode to MODE-1 (single module mode) or MODE-2 (double module mode). When this message is received, the operating mode will be set, and at the same time all internal parameters (except for the map settings of each Part) will be reset to the initial state.

Status	Data byte	Status
F0H	41H, 10H, 42H, 12H, 00H, 00H, 7FH, ddH, sumH	F7H

Byte	Explanation	
F0H	Exclusive status	
41H	ID number	(Roland)
10H	Device ID	
42H	Model ID	(GS)
12H	Command ID	(DT1)
00H	Address MSB	
00H	Address	
7FH	Address LSB	
ddH	Data	00H (MODE-1), 01H (MODE-2)
sumH	Checksum	01H (MODE-1), 00H (MODE-2)
F7H	EOX	(End Of Exclusive)

* When this message is received, Rx.NRPN will be set 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.

● Universal Non-realtime System Exclusive Messages

❍ Identity Request Message   [Pro]

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

Byte	Explanation
F0H	Exclusive status
7EH	ID number (Universal Non-realtime Message)
10H	Device ID
06H	Sub ID#1 (General Information)
01H	Sub ID#2 (Identity Request)
F7H	EOX (End Of Exclusive)

● **Data transmission**
The VE-GS Pro can use Exclusive messages to transmit internal settings to other devices.
There are two types of Exclusive data transmission; Individual Parameter Transmission (page 113) in which single parameters are transmitted one by one, and Bulk Dump Transmission (page 121) in which a large amount of data is transmitted at once.
The exclusive message used when transmitting music files for GS format has a model ID of 42H and a device ID of 10H.

❍ **Request data 1**   **RQ1 (11H)**
This message requests the other device to send data. The Address and Size determine the type and amount of data to be sent. There are two types of request; Individual Parameter Request which requests data for an individual parameter, and Bulk Dump Request which requests a large amount of data at once. In either case, the "Data Request 1 (RQ1)" message format is used, and the Address and Size included in the message determine the type and amount of data that is desired.
For Individual Parameter Request, refer to "3. Individual Parameter Transmission" (page 113).
For Bulk Dump Request, refer to "4. Bulk Dump" (page 121).
When a Data Request message is received, if the device is ready to transmit data and if the address and size are appropriate, the requested data will be transmitted as a "Data Set 1 (DT1)" message. If not, nothing will be transmitted.

Status	Data byte	Status
F0H	41H, 10H, 42H, 11H, aaH, bbH, ccH, ssH, ttH, uuH, sum	F7H

Byte	Explanation	
F0H	Exclusive status	
41H	ID number	(Roland)
10H	Device ID	
42H	Model ID	(GS)
11H	Command ID	(RQ1)
aaH	Address MSB	: upper byte of the starting address of the requested data
bbH	Address	: middle byte of the starting address of the requested data
ccH	Address LSB	: lower byte of the starting address of the requested data
ssH	Size MSB	
ttH	Size	
uuH	Size LSB	
sum	Checksum	
F7H	EOX	(End Of Exclusive)

* The amount of data that can be transmitted at once time will depend on the type of data, and data must be requested using a specific starting address and size. Refer to the Address and Size listed in Section 3 (page 113).
* Regarding the checksum please refer to Section 5 (page 124).

❍ **Data set 1**   **DT1(12H)**
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 (page 113).
* 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 5 (page 124).

Section 2. Transmit data

■ **System Realtime Message**

● **Active sensing**
Status
FEH

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

■ **System exclusive messages**

"Identity Reply" and "Data Set 1 (DT1)" are the only System Exclusive messages transmitted by the VE-GS Pro.
When an appropriate "Identity Request Message" and "Data Request 1 (RQ1)" message are received, the requested internal data will be transmitted.

❍ **Identity Reply**   **[Pro]**

Status	Data byte	Status
F0H	7EH, 10H, 06H, 02H, 41H, 42H, 00H, 00H, 04H, ssH, ssH, ssH, ssH	F7H

Byte	Explanation
F0H	Exclusive status
7EH	ID number (Universal Non-realtime Message)
10H	Device ID
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)
00H	Device family number code (LSB)
04H	Device family number code (MSB)
ssH	Software revision level
ssH	Software revision level
ssH	Software revision level
ssH	Software revision level
F7H	EOX (End of Exclusive)

* Reply the message by the unique device ID (10H) when the device has received the "Identity Request Message" in the Broadcast.

❍ **Data set 1**   **DT1 (12H)**

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 data to be sent	
bbH	Address : middle byte of the starting address of the data to be sent	
ccH	Address LSB : lower byte of the starting address of the data to be sent.	
ddH	Data : the actual data to be sent. Multiple bytes of data are transmitted in order 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 will be transmitted from the specified starting address and size. Refer to the Address and Size given in Section 3 (page 113).
* Data larger than 128 bytes will be divided into packets of 128 bytes or less, and each packet will be sent at an interval of about 40 ms.
* Regarding the checksum please refer to section 5 (page 124).

There are two ways in which GS data is transmitted: Individual Parameter Transmission (Section 3 page 113) in which individual parameters are transmitted one by one, and Bulk Dump Transmission (Section 4 page 121) in which a large amount of data is transmitted at once.

Section 3. Individual Parameter Transmission (Model ID=42H)

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.

■ Address Block map

The Address map for Individual Parameter Transmission is as follows.

<Model ID = 42H>
● Port-A

Address(H)	Block		Address(H)	Block	
00 00 00	SYSTEM				
20 00 00	USER TONE BANK				
21 00 00	USER DRUM SET				
22 00 00	USER EFX				
40 00 00	PATCH COMMON	#A	50 00 00	PATCH COMMON	B
40 10 00	PATCH PART (BLOCK 00-0F)	A	50 10 00	PATCH PART (BLOCK 10-1F)	B
41 00 00	DRUM SETUP	A	51 00 00	DRUM SETUP	B

* The blocks displayed in gray cannot be accessed in Mode-1 (Single Module Mode).
* Blocks listed as "#A" are parameter blocks which are common to the entire device in Mode-1, and valid only for Parts A01 - A16 in Mode-2 (Double Module Mode).

● Port-B

Address(H)	Block		Address(H)	Block	
00 00 00	SYSTEM				
20 00 00	USER TONE BANK				
21 00 00	USER DRUM SET				
22 00 00	USER EFX				
50 00 00	PATCH COMMON	A	40 00 00	PATCH COMMON	#B
50 10 00	PATCH PART (BLOCK 00-0F)	A	40 10 00	PATCH PART (BLOCK 10-1F)	B
51 00 00	DRUM SETUP	A	41 00 00	DRUM SETUP	B

* The blocks displayed in gray cannot be accessed in Mode-1 (Single Module Mode).
* Blocks listed as "#B" are parameter blocks which are common to the entire device in Mode-1, and valid only for Parts B01 - B16 in Mode-2 (Double Module Mode).

■ **Parameter address map**

This map indicates address, size, Data (range), Parameter, Description, and Default Value of parameters which can be transferred using "Request data 1 (RQ1)" and "Data set 1 (DT1)". All the numbers of address, size, Data, and Default Value are indicated in 7-bit Hexadecimal-form. Numbers in the explanatory column are given in decimal notation.
The parameters at address 5* ** ** are not given in this map. The parameters for address 5* ** ** are the same format as those at at address 4* ** **.

● **System Parameters [88]**

Parameters affecting the entire unit, such as how the two MIDI IN connectors will function, are called System Parameters. System parameters will not be reset even when "GS Reset" or "GM System On" messages are received.

<MODEL ID = 42H>

Address(H)	Size(H)	Data(H)	Parameter		Description	Default(H)	Description
00 00 7F	00 00 01	00 - 01	SYSTEM MODE SET	**[88]**		00	MODE1
					00: MODE-1 (Single module mode)		
					01: MODE-2 (Double module mode)		
					(Rx. only)		

* Refer to "System exclusive messages related to Mode settings" (page 111).

			CHANNEL MSG RX PORT	**[88]**			
00 01 00	00 00 01	00 - 01	BLOCK00		PORT A - B	00	PORT A
:	:	:	:		:	:	
00 01 0F	00 00 01	00 - 01	BLOCK0F		PORT A - B	00	PORT A
00 01 10	00 00 01	00 - 01	BLOCK10		PORT A - B	01	PORT B
:	:	:	:		:	:	
00 01 1F	00 00 01	00 - 01	BLOCK1F		PORT A - B	01	PORT B

* You can modify the receiving MIDI port at which channel messages will be received for each BLOCK. We suggest that normally you use PORT A for BLOCK01-0F, and PORT B for BLOCK10-1F. (In this case there is no need to change the setting.)
* Refer to page 116 for details of each BLOCK.

● **Patch parameters**
❍ **Patch Common parameters**

In MODE-1 (Single module mode) the VE-GS Pro functions as a single sound source module with 32 Parts. In MODE-2 (Double module mode) it functions as two sound source modules with 16 Parts each. The parameters common to all Parts in each module are called Patch Common 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 5. Supplementary material, "About tuning" (page 124).

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		
					(Rx. only)		

* Refer to "System exclusive messages related to Mode settings" (page 111).

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
40 01 37	00 00 01	00 - 7F	REVERB PREDELAY TIME	**[88]**	0 - 127[ms]	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.
* In MODE-2 (Double module mode), REVERB PREDELAY TIME cannot be used.

Address(H)	Size(H)	Data(H)	Parameter	Description	Default Value (H)	Description
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
40 01 40	00 00 01	00 - 7F	CHORUS SEND LEVEL TO DELAY **[88]**	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.
* In MODE-2 (Double module mode), CHORUS SEND LEVEL TO DELAY cannot be used.

Address(H)	Size(H)	Data(H)	Parameter		Description	Default Value (H)	Description
40 01 50	00 00 01	00 - 09	DELAY MACRO	**[88]**	00: Delay 1	00	Delay1
					01: Delay 2		
					02: Delay 3		
					03: Delay 4		
					04: Pan Delay 1		
					05: Pan Delay 2		
					06: Pan Delay 3		
					07: Pan Delay 4		
					08: Delay to Reverb		
					09: Pan Repeat		
40 01 51	00 00 01	00 - 07	DELAY PRE-LPF	**[88]**	0 - 7	00	0
40 01 52	00 00 01	01 - 73	DELAY TIME CENTER	**[88]**	0.1ms - 1sec	61	340
40 01 53	00 00 01	01 - 78	DELAY TIME RATIO LEFT	**[88]**	4 - 500%	01	4
40 01 54	00 00 01	01 - 78	DELAY TIME RATIO RIGHT	**[88]**	4 - 500%	01	4
40 01 55	00 00 01	00 - 7F	DELAY LEVEL CENTER	**[88]**	0 - 127	7F	127
40 01 56	00 00 01	00 - 7F	DELAY LEVEL LEFT	**[88]**	0 - 127	00	0
40 01 57	00 00 01	00 - 7F	DELAY LEVEL RIGHT	**[88]**	0 - 127	00	0
40 01 58	00 00 01	00 - 7F	DELAY LEVEL	**[88]**	0 - 127	40	64
40 01 59	00 00 01	00 - 7F	DELAY FEEDBACK	**[88]**	-64 - +63	50	+16
40 01 5A	00 00 01	00 - 7F	DELAY SENDLEVEL TO REVERB	**[88]**	0 - 127	00	0

* DELAY MACRO is a macro parameter that allows global setting of delay parameters. When you use DELAY MACRO to select the delay type, each delay parameter will be set to the most suitable value.
* The relation between the DELAY TIME CENTER value and the actual delay time is as follows.

DELAY TIME	Time Range[ms]	Resolution[ms]	DELAY TIME	Time Range[ms]	Resolution[ms]
01 - 14	0.1 - 2.0	0.1	46 - 50	50.0 - 100.0	5.0
14 - 23	2.0 - 5.0	0.2	50 - 5A	100.0 - 200.0	10.0
23 - 2D	5.0 - 10.0	0.5	5A - 69	200.0 - 500.0	20.0
2D - 37	10.0 - 20.0	1.0	69 - 73	500.0 - 1000.0	50.0
37 - 46	20.0 - 50.0	2.0			

* DELAY TIME RATIO LEFT and DELAY TIME RATIO RIGHT specify the ratio in relation to DELAY TIME CENTER. The resolution is 100/24(%).
* In MODE-2 (Double module mode), Delay cannot be used.

Address(H)	Size(H)	Data(H)	Parameter		Description	Default Value (H)	Description
40 02 00	00 00 01	00 - 01	EQ LOW FREQ.	**[88]**	200Hz, 400Hz	00	200Hz
40 02 01	00 00 01	34 - 4C	EQ LOW GAIN	**[88]**	-12 - +12dB	40	0
40 02 02	00 00 01	00 - 01	EQ HIGH FREQ.	**[88]**	3kHz, 6kHz	00	3kHz
40 02 03	00 00 01	34 - 4C	EQ HIGH GAIN	**[88]**	-12 - +12dB	40	0

* In MODE-2 (Double module mode), EQ (Equalizer) cannot be used.

Address(H)	Size(H)	Data(H)	Parameter		Default Value (H)	Description
40 03 00	00 00 02	00 - 7F	EFX TYPE	[Pro]	00 00	00: Thru
40 03 01#						
40 03 03	00 00 01	00 - 7F	EFX PARAMETER 1	[Pro]		
40 03 04	00 00 01	00 - 7F	EFX PARAMETER 2	[Pro]		
40 03 05	00 00 01	00 - 7F	EFX PARAMETER 3	[Pro]		
40 03 06	00 00 01	00 - 7F	EFX PARAMETER 4	[Pro]		
40 03 07	00 00 01	00 - 7F	EFX PARAMETER 5	[Pro]		
40 03 08	00 00 01	00 - 7F	EFX PARAMETER 6	[Pro]		
40 03 09	00 00 01	00 - 7F	EFX PARAMETER 7	[Pro]		
40 03 0A	00 00 01	00 - 7F	EFX PARAMETER 8	[Pro]		
40 03 0B	00 00 01	00 - 7F	EFX PARAMETER 9	[Pro]		
40 03 0C	00 00 01	00 - 7F	EFX PARAMETER 10	[Pro]		
40 03 0D	00 00 01	00 - 7F	EFX PARAMETER 11	[Pro]		
40 03 0E	00 00 01	00 - 7F	EFX PARAMETER 12	[Pro]		
40 03 0F	00 00 01	00 - 7F	EFX PARAMETER 13	[Pro]		
40 03 10	00 00 01	00 - 7F	EFX PARAMETER 14	[Pro]		
40 03 11	00 00 01	00 - 7F	EFX PARAMETER 15	[Pro]		
40 03 12	00 00 01	00 - 7F	EFX PARAMETER 16	[Pro]		
40 03 13	00 00 01	00 - 7F	EFX PARAMETER 17	[Pro]		
40 03 14	00 00 01	00 - 7F	EFX PARAMETER 18	[Pro]		
40 03 15	00 00 01	00 - 7F	EFX PARAMETER 19	[Pro]		
40 03 16	00 00 01	00 - 7F	EFX PARAMETER 20	[Pro]		

* Reading EFX TYPE and EFX PARAMETER please refer to page 35, 98

Address(H)	Size(H)	Data(H)	Parameter	Description		Default Value (H)	Description
40 03 17	00 00 01	00 - 7F	EFX SEND LEVEL TO REVERB	[Pro]	0-127	28	40
40 03 18	00 00 01	00 - 7F	EFX SEND LEVEL TO CHORUS	[Pro]	0-127	00	0
40 03 19	00 00 01	00 - 7F	EFX SEND LEVEL TO DELAY	[Pro]	0-127	00	0
40 03 1B	00 00 01	00 - 7F	EFX CONTROL SOURCE1	[Pro]	Off, CC1-95, CAf, Bend	00	Off
40 03 1C	00 00 01	00 - 7F	EFX CONTROL DEPTH1	[Pro]	-100 - 0 - +100 [%]	40	0 (%)
40 03 1D	00 00 01	00 - 7F	EFX CONTROL SOURCE2	[Pro]	Off, CC1 - 95, CAf, Bend	00	Off
40 03 1E	00 00 01	00 - 7F	EFX CONTROL DEPTH2	[Pro]	-100 - 0 - +100 [%]	40	0 (%)
40 03 1F	00 00 01	00 - 7F	EFX SEND EQ SWITCH	[Pro]	OFF/ON	01	ON

* EFX TYPE is a macro parameter which sets various Insertion Effect parameters as a group. When you use EFX TYPE to select an Insertion Effect type, the various effect parameters will be set to appropriate values.
* In MODE-2 (Double module mode), EFX SEND TO DELAY and EFX SEND EQ SWITCH cannot be used.
* In the case of Mode 2 (Double Module Mode), the Insertion effect cannot be used for Parts with a CHANNEL MSG RX PORT (page 114) setting of PORT B.

❍ **Patch Part parameters**
The VE-GS Pro has 16 Parts in Group A and 16 Parts in Group B. Parameters that can be set individually for each Part are called Patch Part parameters.
If you use exclusive messages to set Patch 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).
To specify a Part of group A, use the Block number corresponding to the Part and specify an address of 40 ** ** via PORT A (normally MIDI IN A).
To specify a Part of group B, use the Block number corresponding to the Part and specify an address of 40 ** ** via PORT B (normally MIDI IN B).
To specify a Part of either group A or B from a single PORT, specify an address of 40 ** ** for group A Parts or an address of 50 ** ** for group B Parts when using PORT A.
Conversely, to specify a Part of either group A or B from PORT B, specify an address of 50 ** ** for group A Parts or an address of 40 ** ** for group B Parts. In other words, when specifying Parts of the opposite side as the PORT being used, use addresses 50 ** **.

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

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

In the following map, the control numbers of the control changes are indicated as CC#.

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*)

* Rx.NRPN is set to OFF by power-on or by receiving "Turn General MIDI System On", and it will be set ON when "GS RESET" is received.

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	Mono / Poly (=CC# 126 01 / CC# 127 00)	01	Poly
40 1x 14	00 00 01	00 - 02	ASSIGN MODE	0 = SINGLE 1 = LIMITED-MULTI 2 = FULL-MULTI	SC-88/Native MAP 01 SC-55 MAP 00 at x=0 01 at x≠0	LIMITED-MULTI SINGLE (Drum Part) LIMITED-MULTI (Normal Part)

* 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.

| 40 1x 15 | 00 00 01 | 00 - 02 | USE FOR RHYTHM PART | 0 = OFF 1 = MAP1 2 = MAP2 | 00 at x≠0 01 at x=0 | OFF (Normal Part) MAP1 (Drum Part) |

* This parameter sets the Drum Map of the Part used as the Drum Part. The VE-GS Pro 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.

40 1x 19	00 00 01	00 - 7F	PART LEVEL	0 - 127 (=CC# 7)	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	-64(RANDOM), -63(LEFT) - +63(RIGHT) (=CC# 10, except RANDOM)	40	0 (CENTER)
40 1x 1D	00 00 01	00 - 7F	KEYBOARD RANGE LOW	(C-1) - (G9)	00	C-1
40 1x 1E	00 00 01	00 - 7F	KEYBOARD 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	0 - 127 (=CC# 93)	00	0
40 1x 22	00 00 01	00 - 7F	REVERB SEND LEVEL	0 - 127 (=CC# 91)	28	40
40 1x 23	00 00 01	00 - 01	Rx.BANK SELECT	OFF / ON	01(00*)	ON(OFF*)

* Rx.NRPN is set to OFF by power-on or by receiving "Turn General MIDI System On", and it will be set ON when "GS RESET" is received.

| 40 1x 24 | 00 00 01 | 00 - 01 | Rx.BANK SELECT LSB **[88]** | OFF / ON | 01 | ON |

* When Rx.BANK SELECT LSB = OFF, Bank Select LSB (Bn 20 ll) will be treated as 00H regardless of its value.

40 1x 2A	00 00 02	00 00 - 40 00 - 7F 7F	PITCH FINE TUNE **[88]**	-100 - 0 - +100 [cent] (= RPN#1)	40 00	0
40 1x 2B#						
40 1x 2C	00 00 01	00 - 7F	DELAY SEND LEVEL **[88]**	0-127 (=CC# 94)	00	0

* In MODE-2 (Double module mode), DELAY SEND LEVEL cannot be used.

10

Address(H)	Size(H)	Data(H)	Parameter		Description	Default Value (H)	Description
40 1x 30	00 00 01	00 - 7F	TONE MODIFY1	**[88]**	-64 - +63	40	0
			Vibrato Rate		(=NRPN# 8)		
40 1x 31	00 00 01	00 - 7F	TONE MODIFY2	**[88]**	-64 - +63	40	0
			Vibrato Depth		(=NRPN# 9)		
40 1x 32	00 00 01	00 - 7F	TONE MODIFY3	**[88]**	-64 - +63	40	0
			TVF Cutoff Freq.		(=NRPN# 32)		
40 1x 33	00 00 01	00 - 7F	TONE MODIFY4	**[88]**	-64 - +63	40	0
			TVF Resonance		(=NRPN# 33)		
40 1x 34	00 00 01	00 - 7F	TONE MODIFY5	**[88]**	-64 - +63	40	0
			TVF&TVA Env.attack		(=NRPN# 99)		
40 1x 35	00 00 01	00 - 7F	TONE MODIFY6	**[88]**	-64 - +63	40	0
			TVF&TVA Env.decay		(=NRPN# 100)		
40 1x 36	00 00 01	00 - 7F	TONE MODIFY7	**[88]**	-64 - +63	40	0
			TVF&TVA Env.release		(=NRPN# 102)		
40 1x 37	00 00 01	00 - 7F	TONE MODIFY8	**[88]**	-64 - +63	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 (page 124).

Address(H)	Size(H)	Data(H)	Parameter	Description	Default Value (H)	Description
40 2x 00	00 00 01	28 - 58	MOD PITCH CONTROL	-24 - +24 [semitones]	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	10 [cent]
40 2x 05	00 00 01	00 - 7F	MOD LFO1 TVF DEPTH	0 - 2400 [cent]	00	0 [cent]
40 2x 06	00 00 01	00 - 7F	MOD LFO1 TVA DEPTH	0 - 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 DEPTH	0 - 600 [cent]	00	0 [cent]
40 2x 09	00 00 01	00 - 7F	MOD LFO2 TVF DEPTH	0 - 2400 [cent]	00	0 [cent]
40 2x 0A	00 00 01	00 - 7F	MOD LFO2 TVA DEPTH	0 - 100.0 [%]	00	0 [%]
40 2x 10	00 00 01	40 - 58	BEND PITCH CONTROL	0 - 24 [semitones]	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 DEPTH	0 - 600 [cent]	00	0 [cent]
40 2x 15	00 00 01	00 - 7F	BEND LFO1 TVF DEPTH	0 - 2400 [cent]	00	0 [cent]
40 2x 16	00 00 01	00 - 7F	BEND LFO1 TVA DEPTH	0 - 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 DEPTH	0 - 600 [cent]	00	0 [cent]
40 2x 19	00 00 01	00 - 7F	BEND LFO2 TVF DEPTH	0 - 2400 [cent]	00	0 [cent]
40 2x 1A	00 00 01	00 - 7F	BEND LFO2 TVA DEPTH	0 - 100.0 [%]	00	0 [%]
40 2x 20	00 00 01	28 - 58	CAf PITCH CONTROL	-24 - +24 [semitones]	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 [semitones]	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 [%]

Address(H)	Size(H)	Data(H)	Parameter	Description	Default Value (H)	Description
40 2x 40	00 00 01	28 - 58	CC1 PITCH CONTROL	-24 - +24 [semitones]	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 [semitones]	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 [%]

* You may not always be able to obtain the desired effect by modifying the LFO 1 and LFO 2 parameters.

Address(H)	Size(H)	Data(H)	Parameter		Description	Default Value (H)	Description
40 4x 00	00 00 01	00 - 03	TONE MAP NUMBER (= CC#32 : Bank number LSB)	[Pro]	MAP 0 - 3 00 : SELECTED 01 : SC-55 MAP 02 : SC-88 MAP 03 : Native MAP	00	

*When "GS Reset" is received, this will be 00: SELECTED.

Address(H)	Size(H)	Data(H)	Parameter		Description	Default Value (H)
40 4x 01	00 00 01	01 - 03	TONE MAP-0 NUMBER	[Pro]	01 : SC-55 MAP 02 : SC-88 MAP 03 : Native MAP	(03)

* When TONE MAP NUMBER is 00, this specifies the MAP. This setting will not be reset when "GS Reset" or "General MIDI System On" is received.

Address(H)	Size(H)	Data(H)	Parameter		Description	Default Value (H)	Description
40 4x 20	00 00 01	00 - 01	EQ ON/OFF	**[88]**	OFF / ON	01	ON

* This turns the EQ (Equalizer) on/off. In MODE-2 (Double module mode) it cannot be used.

Address(H)	Size(H)	Data(H)	Parameter		Description	Default Value (H)	Description
40 4x 21	00 00 01	00 - 03	OUTPUT ASSIGN	[Pro]	00:OUTPUT-1 01:OUTPUT-2 02:OUTPUT-2L 03:OUTPUT-2R	00	OUTPUT-1
40 4x 22	00 00 01	00 - 01	PART EFX ASSIGN	[Pro]	00:BYPASS 01:EFX	00	BYPASS

● **Drum setup parameters**
m: Drum Map number (0 = MAP1, 1 = MAP2)
rr: drum part note number (00H - 7FH: 0 - 127)

Address(H)	Size(H)	Data(H)	Parameter		Description
41 m0 00 | # 41 m0 0B#	00 00 0C	20 - 7F	DRUM MAP NAME		ASCII Character
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 Multiplicand of the part reverb level (=NRPN# 29)
41 m6 rr	00 00 01	00 - 7F	CHORUS SEND LEVEL		0.0 - 1.0 Multiplicand of the part chorus level (=NRPN# 30)
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
41 m9 rr	00 00 01	00 - 7F	DELAY SEND LEVEL	**[88]**	0.0 - 1.0 Multiplicand of the part delay level (=NRPN# 31)

* When the Drum Set is changed, DRUM SETUP PARAMETER values will all be initialized.
* It is not possible to simultaneously use both Chorus Send Level and Delay Send Level for a single Drum Instrument.

● **User instrument**

You can modify the parameters of the VE-GS Pro sound to your taste, and save your new settings temporarily in Variation numbers 64 or 65 of the Native map / SC-88 map (p.20). A sound saved in this way is called a User Instrument, and this procedure is called User Editing. You can save 256 different sounds in this way. When the VE-GS Pro is turned off, the values set for User Instrument will revert to their defaults.
The parameters you can set are Vibrato, Filter and Envelope.
The other sound parameters will use the values specified for the Part (Part parameters, p.24). Each Part has Part parameters which are named identically to the User parameters listed above which can be set for each sound. This means that the parameter value that actually applies to the sound will be a combination of these two settings. For example, if the Vibrato Rate has been set to +20 as a Part parameter, and to -5 as a User sound parameter, the Vibrato Rate of the resulting sound will be 20-5=+15.

b: bank number (0H = GS Variation number 64, 1H = GS Variation number 65)
pp: program number (00 - 7F: 1 - 128)

Address(H)	Size(H)	Data(H)	Parameter		Description	Default Value (H)	Description
20 b0 pp	00 00 01	01 - 03	SOURCE TONE# (MAP)	[88]	--		
20 b1 pp	00 00 01	00 - 7F	(CC#00 : Bank number MSB)	[88]	--		
20 b2 pp	00 00 01	00 - 7F	(PG# : Program number)	[88]	--		
20 b3 pp	00 00 01	00 - 7F	USER INST MODIFY1-2 Vibrato Rate	[88]	-64 - +63	40	0
20 b4 pp	00 00 01	00 - 7F	USER INST MODIFY2-2 Vibrato Depth	[88]	-64 - +63	40	0
20 b5 pp	00 00 01	00 - 7F	USER INST MODIFY3-2 TVF Cutoff Freq	[88]	-64 - +63	40	0
20 b6 pp	00 00 01	00 - 7F	USER INST MODIFY4-2 TVF Resonance	[88]	-64 - +63	40	0
20 b7 pp	00 00 01	00 - 7F	USER INST MODIFY5-2 TVF&TVA Env.attack	[88]	-64 - +63	40	0
20 b8 pp	00 00 01	00 - 7F	USER INST MODIFY6-2 TVF&TVA Env.decay	[88]	-64 - +63	40	0
20 b9 pp	00 00 01	00 - 7F	USER INST MODIFY7-2 TVF&TVA Env.release	[88]	-64 - +63	40	0
20 bA pp	00 00 01	00 - 7F	USER INST MODIFY8-2 Vibrato Delay	[88]	-64 - +63	40	0

* On the VE-GS Pro, these settings will be lost when the power is turned off.

● **User Drum Set**

You can modify drum instrument parameters to your liking, and save this data as a Drum Set. A Drum Set saved in this way is called a User Drum Set. You can save up to two Drum Sets, and since each set contains 128 instrumental sounds, this provides a total of 256 instrumental sounds (Drum Instruments). User Drum Sets are stored in Drum Set numbers 65 and 66 of the Native map / SC-88 map.

d: drum set number (0H = User drum set number 65, 1H = User Drum Set number 66)
rr: drum part note number (00 - 7F)

Address(H)	Size(H)	Data(H)	Parameter		Description
21 d1 rr	00 00 01	00 - 7F	PLAY NOTE	[88]	0 - 127
21 d2 rr	00 00 01	00 - 7F	LEVEL	[88]	0 - 127
21 d3 rr	00 00 01	00 - 7F	ASSIGN GROUP	[88]	0 - 127
21 d4 rr	00 00 01	00 - 7F	PAN	[88]	0 - 127
21 d5 rr	00 00 01	00 - 7F	REVERB SEND LEVEL	[88]	0 - 127
21 d6 rr	00 00 01	00 - 7F	CHORUS SEND LEVEL	[88]	0 - 127
21 d7 rr	00 00 01	00 - 01	RX NOTE OFF	[88]	OFF / ON
21 d8 rr	00 00 01	00 - 01	RX NOTE ON	[88]	OFF / ON
21 d9 rr	00 00 01	00 - 7F	DELAY SEND LEVEL	[88]	0 - 127
21 dA rr	00 00 01	01 - 03	SOURCE DRUM SET# (MAP)	[88]	1 - 3
21 dB rr	00 00 01	00 - 7F	(PG#: Program number)	[88]	0 - 127
21 dC rr	00 00 01	00 - 7F	SOURCE NOTE NUMBER	[88]	0 - 127

* On the VE-GS Pro, these settings will be lost when the power is turned off.

● **User Effect**

You can modify the Insertion Effect parameters as desired and store them as an Effect Type. Effect Types that are stored in this way are referred to as User Effects. 64 different Effect Types can be stored. These are stored in Effect Type numbers 40 00H through 40 3FH.

pp: LSB number of EFX TYPE (00 - 3F : 1 - 64)

Address(H)	Size(H)	Data(H)	Parameter	
22 00 pp	00 00 02	--	SOURCE EFX TYPE	[Pro]
22 01 pp#				
22 03 pp	00 00 01	00 - 7F	EFX PARAMETER 1	[Pro]
22 04 pp	00 00 01	00 - 7F	EFX PARAMETER 2	[Pro]
22 05 pp	00 00 01	00 - 7F	EFX PARAMETER 3	[Pro]
22 06 pp	00 00 01	00 - 7F	EFX PARAMETER 4	[Pro]
22 07 pp	00 00 01	00 - 7F	EFX PARAMETER 5	[Pro]
22 08 pp	00 00 01	00 - 7F	EFX PARAMETER 6	[Pro]
22 09 pp	00 00 01	00 - 7F	EFX PARAMETER 7	[Pro]
22 0A pp	00 00 01	00 - 7F	EFX PARAMETER 8	[Pro]
22 0B pp	00 00 01	00 - 7F	EFX PARAMETER 9	[Pro]
22 0C pp	00 00 01	00 - 7F	EFX PARAMETER 10	[Pro]
22 0D pp	00 00 01	00 - 7F	EFX PARAMETER 11	[Pro]
22 0E pp	00 00 01	00 - 7F	EFX PARAMETER 12	[Pro]
22 0F pp	00 00 01	00 - 7F	EFX PARAMETER 13	[Pro]
22 10 pp	00 00 01	00 - 7F	EFX PARAMETER 14	[Pro]
22 11 pp	00 00 01	00 - 7F	EFX PARAMETER 15	[Pro]
22 12 pp	00 00 01	00 - 7F	EFX PARAMETER 16	[Pro]
22 13 pp	00 00 01	00 - 7F	EFX PARAMETER 17	[Pro]
22 14 pp	00 00 01	00 - 7F	EFX PARAMETER 18	[Pro]
22 15 pp	00 00 01	00 - 7F	EFX PARAMETER 19	[Pro]
22 16 pp	00 00 01	00 - 7F	EFX PARAMETER 20	[Pro]

* On the VE-GS Pro, these settings will be lost when the power is turned off.

Section 4. Bulk Dump

Bulk Dump allows you to transmit a large amount of data at once, and is convenient for storing settings for the entire unit on a computer or sequencer.
To make the VE-GS Pro perform a Bulk Dump transmission, send it a "Bulk Dump Request" message. Bulk Dump Request uses the Data Request 1 (RQ1) format, but unlike when transmitting individual parameters, the "Size" specified by the request message refers not to size of the data but rather specifies the contents of the data. For the data contents corresponding to each Size, refer to "Parameter Dump."
When the VE-GS Pro receives a Bulk Dump Request, it will transmit a Bulk Dump in the format given below.
The VE-GS Pro is also able to transmit a list of its internal sounds. This function can be used to display a list of sounds on a computer.

■ Parameter dump

❍ Parameter dump request   (receive only) [Pro]
This is a command that requests a set of parameter data, and uses "Data Request 1 (RQ1)" format. The Size specifies the requested data contents.

Address: 0C 00 00

Size:		
00 00 00 : ALL	request a dump of all parameters	
00 00 01 : ALL 1	use this when not using USER TONE BANK or USER DRUM SET	
00 00 02 : ALL 2	use this when USER TONE BANK, USER DRUM SET and DRUM SETUP settings have not been modified	
00 00 10 : 16-part GS 1	use this when using only 16 Parts	
00 00 11 : 16-part GS 2	use this when using only 16 Parts, and DRUM SETUP settings have not been modified	
00 01 00 : USER TONE BANK (ALL)	request a dump of all USER TONE BANK data	
00 01 40 : USER TONE BANK #64	request a dump of USER TONE BANK #64 data (128 sounds)	
00 01 41 : USER TONE BANK #65	request a dump of USER TONE BANK #65 data (128 sounds)	
00 02 00 : USER DRUM SET (ALL)	request a dump of all USER DRUM SET data	
00 02 40 : USER DRUM SET #65	request a dump of USER DRUM SET #65 data	
00 02 41 : USER DRUM SET #66	request a dump of USER DRUM SET #66 data	
00 03 00 : USER EFX	request a dump of USER EFX data	

Example) Dump request for all parameters: F0 41 10 42 11 0C 00 00 00 00 00 00 74 F7

Normally, using ALL (00 00 00) provides the greatest predictability, but the amount of data is very large, and transmission requires approximately 25 seconds. In order to reduce transmission time and data volume, we suggest that you request a dump only of the necessary data.

❍ Parameter dump [Pro]
When a Parameter Dump Request is received, the following data will be transmitted in "Data Set 1 (DT1)" format.

Address	Description	Number of packets	ALL	ALL1	ALL2	GS1 (16-part)	GS2	ALL (USER TONE BANK)	#64	#65	ALL (USER DRUM SET)	#65	#66	EFX (--USER EFFECT--)
2A 00 00 – 2A 0F 7F	USER EFX #1-64	16	○											○
08 00 00 – 08 00 7F	SETUP	1	○	○	○	○	○							
28 00 00 – 28 0A 7F	USER TONE BANK #64	11	○					○	○					
28 10 00 – 28 1A 7F	USER TONE BANK #65	11	○					○		○				
29 00 00 – 29 0B 0F	USER DRUM SET #65	12	○								○	○		
29 10 00 – 29 1B 0F	USER DRUM SET #66	12	○								○		○	
48 1D 10 – 48 26 0F	PATCH EXTENSION A	9	○	○	○	○	○							
48 00 00 – 48 1D 0F	SYSTEM/PATCH A	30	○	○	○	○	○							
49 00 00 – 49 1F 7F	DRUM SETUP A	32	○	○		○								
58 1D 10 – 58 26 0F	PATCH EXTENSION B	9	○	○	○									
58 00 00 – 58 1D 0F	SYSTEM/PATCH B	30	○	○	○									
59 00 00 – 59 1F 7F	DRUM SETUP B	32	○	○										

This table lists the data contents that will be transmitted when a Parameter Dump Request is received at MIDI IN A. When a Parameter Dump Request is received at MIDI IN B, A and B will be reversed for PATCH EXTENSION, SYSTEM/PATCH and DRUM SETUP.

* When data dumped by the VE-GS Pro is reloaded into the VE-GS Pro, be aware that the data may not be set correctly if the transmission order of the packets is changed, if the time interval between packets is changed, or if other messages are inserted between packets.
* The Parameter Dump data of the VE-GS Pro includes data for GS format compatible devices, and this data is compatible in both directions. However, depending on the settings of parameters which are newly extended on the VE-GS Pro, the musical result may differ.
* If the VE-GS Pro does not operate correctly with Bulk Dump data from another GS format compatible device, first initialize the VE-GS Pro before retransmitting the data.
* When another GS format compatible device receives Parameter Dump data that was transmitted by the VE-GS Pro, it may display a message such as "Address Error", but this is because the parameter addresses newly extended on the VE-GS Pro were not recognized by the other device. Parameters which could be recognized by that device have been correctly set.

■ **Dumping a list of internal sounds**

● **Instrument list dump**

❍ **Instrument list dump request (request only) [Pro]**
This command requests a bulk dump of a list of the preset sounds (Instruments) in internal memory, and uses "Data Request 1 (RQ1)" format. The Size specifies the contents of the requested data.

```
Address:  0C 00 01
Size:     00 00 00 : ALL
          00 00 01 : SC-55 MAP
          00 00 02 : SC-88 MAP
          00 00 03 : Native MAP
          00 mm bb   mm = MAP# 01 - 03 ( 01 = SC-55 MAP, 02 = SC-88 MAP, 03 =
                     Native MAP)
                     bb = BANK# 00 - 7F
```

❍ **Instrument list dump (transmit only) [Pro]**
When Instrument List Dump Request is received, the sound names of the specified map will be transmitted continuously in the format given below, where 16 bytes are used for each sound name. The Address of the transmitted data is 0C 00 01 for all packets. User bank sound names are not transmitted.

DUMP FORMAT:

0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
CC0	MAP	PC	00				TONE NAME(ASCII 12 Characters)								

CC0 : Variation number
MAP : MAP number   01 = SC-55 MAP, 02 = SC-88 MAP, 03 = Native MAP
PC : Program number

● **Drum set list dump**

❍ **Drum set list dump request (receive only) [Pro]**
This command requests a bulk dump transmission of a list of Preset Drum Sets in internal memory, and uses "Data Request 1 (RQ1)" format. The Size specifies the desired data contents.

```
Address:  0C 00 02
Size:     00 00 00 : ALL
          00 00 01 : SC-55 MAP
          00 00 02 : SC-88 MAP
          00 00 03 : Native MAP
```

❍ **Drum set list dump (transmit only) [Pro]**
When a Drum Set List Dump Request is received, the Drum Set names of the specified MAP will be transmitted successively in the format given below, where 16 bytes are used for each sound. The Address of the transmitted data will be 0C 00 02 for each packet.

DUMP FORMAT:

0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
00	MAP	PC	00				DRUM TONE NAME(ASCII 12 Characters)								

MAP : MAP number   01 = SC-55 MAP, 02 = SC-88 MAP, 03 = Native MAP
PC : Program number

● **Drum instrument list dump**

❍ **Drum instrument list dump request (receive only) [Pro]**
This command requests a bulk dump transmission of the Instrument list of an internal Preset Drum Sets, and uses "Data Request 1 (RQ1)" format. The Size specifies the desired data contents.

```
Address:  0C 00 03
Size:     00 mm pp   mm = MAP# 01 - 03 ( 01 = SC-55 MAP, 02 = SC-88 MAP, 03 =
                     Native MAP)
                     pp = Drum set# 00 - 7F (same as PC#)
```

❍ **Drum instrument list dump (transmit only) [Pro]**
When a Drum Instrument List Dump Request is received, the Drum Instrument names of the specified Drum Set will be transmitted in the following format where 16 bytes are used for each Drum Instrument name. The address of the transmitted data will be 0C 00 03 for each packet.

DUMP FORMAT:

0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
00	MAP	PC	KEY				DRUM TONE NAME(ASCII 12 Characters)								

MAP : MAP number   01 = SC-55 MAP, 02 = SC-88 MAP, 03 = Native MAP
PC : Program number
KEY : Note number

● **Insertion effect list dump**

❍ **Insertion effect list dump request (receive only) [Pro]**
This command requests a bulk dump transmission of the Insertion effect list of an internal memory, and uses "Data Request 1 (RQ1)" format. The Size specifies the desired data contents.

```
Address:  0C 00 04
Size:     00 00 00 : ALL
```

❍ **Insertion effect list dump (transmit only) [Pro]**
When a Insertion Effect List Dump Request is received, the specified Insertion Effect names will be transmitted in the following format where 20 bytes are used for each Effect name. The address of the transmitted data will be 0C 00 04 for each packet.

DUMP FORMAT :

0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F	10	11	12	13
MSB	LSB	00	00					EFFECT NAME(ASCII 16 Characters)											

MSB : Category
LSB : Type

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Section 5. Supplementary material

● **Decimal and Hexadecimal table**
(An 'H' is appended to the end of numbers in hexadecimal notation.)
In MIDI documentation, data values and addresses/sizes of exclusive messages etc. are expressed as hexadecimal values for each 7 bits.
The following table shows how these correspond to decimal numbers.

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 number, and program number are listed as one greater than the values given in the above table.
* A 7-bit byte can express data in the range of 128 steps. For data where greater precision is required, we must use two or more bytes. For example, two hexadecimal numbers aa bbH expressing two 7-bit bytes would indicate a value of aa x 128+bb.
* In the case of values which have a ± sign, 00H = -64, 40H = ±0, and 7FH = +63, so that the decimal expression would be 64 less than the value given in the above chart. In the case of two types, 00 00H = -8192, 40 00H = ±0, and 7F 7FH = +8191. For example if aa bbH were expressed as decimal, this would be aa bbH - 40 00H = aa x 128+bb - 64 x 128.
* Data marked "Use nibbled data" is expressed in hexadecimal in 4-bit units. A value expressed as a 2-byte nibble 0a 0bH has the value of a x 16+b.

<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 65 00 64 00 06 0C 26 00 65 7F 64 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	65 00	MIDI ch.4, upper byte of RPN parameter number	: 00H
(B3)	64 00	(MIDI ch.4) lower 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)	65 7F	(MIDI ch.4) upper byte of RPN parameter number	: 7FH
(B3)	64 7F	(MIDI ch.4) lower 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 (RQ1, DT1) are transmitted with a checksum at the end (before F7) to make sure that the message was correctly received. The value of the checksum is determined by the address and data (or size) of the transmitted exclusive message.

❍ **How to calculate the checksum (hexadecimal numbers are indicated by 'H')**

The checksum is a value derived by adding the address, size and checksum itself and inverting the lower 7 bits.

Here's an example of how the checksum is calculated. We will assume that in the exclusive message we are transmitting, the address is 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
(However, the checksum will be 0 if the remainder is 0.)

<Example 1> 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.

<Example 2> Requesting transmission of the LEVEL for DRUM MAP 1 NOTE NUMBER 75 (D#5; Claves)

NOTE NUMBER 75 (D#5) is 4BH in hexadecimal.
According to the "Parameter Address Map," LEVEL of NOTE NUMBER 75 (D#5; Claves) in DRUM MAP 1 has an Address of 41 02 4BH and a Size of 00 00 01H. Thus,

F0	41	10	42	11	41 02 4B	00 00 01	??	F7
(1)	(2)	(3)	(4)	(5)	address	size	checksum	(6)

(1) Exclusive Status, (2) ID (Roland), (3) Device ID (17),
(4) Model ID (GS), (5) Command ID(RQ1), (6) End of Exclusive

Next we calculate the checksum.

41H+02H+4BH+00H+00H+01H = 65+2+75+0+0+1 = 143 (sum)
143 (sum) ÷ 128 = 1 (quotient) ... 15 (remainder)
checksum = 128 - 15 (remainder) = 113 = 71H

This means that F0 41 10 42 11 41 02 4B 00 00 01 71 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 are added together to determine the actual pitch sounded by each part.
The pitch that actually sounds is determined for each part by the sum of RPN#1 (master fine tuning) and the system exclusive MASTER TUNE value.

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

Hz at 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	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	65 00	MIDI ch.3, upper byte of RPN parameter number	: 00H
(B2)	64 01	(MIDI ch.3) lower 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)	65 7F	(MIDI ch.3) upper byte of RPN parameter number	: 7FH
(B2)	64 7F	(MIDI ch.3) lower 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 the VE-GS Pro, 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 VE-GS Pro 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 on page 118 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 76 F7

Voice Expansion Board

Model VE-GS Pro

MIDI Implementation Chart

Date : '99.3.

Version : 1.00

Function...		Transmitted	Recognized	Remarks
Basic Channel	Default Changed	✕ ✕	1-16 1-16	
Mode	Default Message Altered	✕ ✕ * * * * * * * * * * * * *	Mode 3 Mode 3, 4(M=1)	* 2
Note Number	: True Voice	✕ * * * * * * * * * * * * *	0-127 0-127	
Velocity	Note ON Note OFF	✕ ✕	❍ ✕	
After Touch	Key's Ch's	✕ ✕	❍ * 1 ❍ * 1	
Pitch Bend		✕	❍ * 1	
Control Change	0, 32 1 5 6, 38 7 10 11 64 65 66 67 84 91 93 94 98, 99 100, 101	✕ ✕ ✕ ✕ ✕ ✕ ✕ ✕ ✕ ✕ ✕ ✕ ✕ ✕ ✕ ✕ ✕	❍ * 1 ❍ * 1 ❍ * 1 ❍ * 1 ❍ * 1 ❍ * 1 ❍ * 1 ❍ * 1 ❍ * 1 ❍ * 1 ❍ * 1 ❍ * 1 ❍ * 1 ❍ * 1 ❍ * 1 ✕ * 1 ❍ * 1	Bank select Modulation Portamento time Data entr Volume Pan Expression Hold 1 Portamento Sostenuto Soft Portamento control Effect 1 (Reverb Send Level) Effect 3 (Chorus Send Level) Effect 4 (Delay Send Level) NRPN LSB,MSB RPN LSB,MSB
Program Change	: True #	✕ * * * * * * * * * * * * *	❍ * 1 0-127	Program Number: 1-128
System Exclusive		❍	❍	
System Common	: Song Pos : Song Sel : Tune	✕ ✕ ✕	✕ ✕ ✕	
System Real Time	: Clock : Commands	✕ ✕	✕ ✕	
Aux Messages	: All Sounds OFF : Reset All Controllers : Local ON/OFF : All Notes OFF : Active Sensing : Reset	✕ ✕ ✕ ✕ ❍ ✕	❍ (120,126,127) ❍ ✕ ❍ (123-125) ❍ ✕	
Notes		* 1 ❍ ✕ is selectable. * 2 Recognize as M=1 even if M ≠1		

Mode 1 : OMNI ON, POLY   Mode 2 : OMNI ON, MONO   ❍ : Yes
Mode 3 : OMNI OFF, POLY   Mode 4 : OMNI OFF, MONO   ✕ : No

Specifications

MODEL VE-GS Pro

(General MIDI System **GENERAL MIDI** / GS format **GS**)

Number of part

32 (MC-80)

16 (A-90/A-70)

Maximum Polyphony

64

Internal Memory

Tone Maps: 3 (SC-88Pro, SC-88, SC-55)

Tones: 1117

Drum Sets: 42 (Includes 3 SFX set)

Effects

Reverb (8 types)

Chorus (8 types)

Delay (10 types)

2band Equalizer

Insertion Effects (64 types)

Accessories

Stecker

Screw Driver

VE-GS Pro Owner's Manual

VE-GS Pro Multi-Effects Parameter Chart

** In the interest of product improvement, the specifica-
tions and/or appearance of the VE-GS Pro are sub-
ject to change without prior notice.*