Roland Virtual Sound Canvas VSC-55 Trial Version

This software is for your experience use only and duration of play is limited in 50 seconds.

Contents

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Features

You can perform music data using just a computer and the sound functions it provides, without having to use an external MIDI sound module or MIDI sound board.

Because it stays resident as a MIDI device while the computer is running, you can use the VSC-55 from all music applications that output MIDI information.

The VSC-55 is a sound generator compatible with the General MIDI System. This allows you to play music data bearing the General MIDI logo (i.e., General MIDI scores). Additionally, the VSC-55 is a GS format (developed by Roland) sound generator, which allows you to perform music data bearing the GS logo.

The VSC-55 is a 16-part multi-timbral sound generator capable of playing up to 128 voices. Grand ensemble performances are possible with only one VSC-55 setup.

For effects, the VSC-55 comes with eight types of reverb and chorus. Each effect is adjustable for a variety of parameters, giving you precise control of the sound being created, so you can get just the sound you want.

With the VSC-55 Panel, the level of each part can be displayed.

You can freely set the amount of computer CPU power assigned to the VSC-55. You can customize the VSC-55 to match your own computer environment.

You can play back audio while playing back Standard MIDI Files by VSC-55.

Using the VSC-55 Panel

VSC-55 Panel (vsc55.exe), a simple utility software, is attached to VSC-55.   It's main functions are as follows;

You can change the various settings of VSC-55.
You can set the maximum polyphony, CPU load limit and so on.
You can also reset all the values to their defaults easily.

VSC-55 Panel is equipped with a simple SMF (Standard MIDI File) Player.
You can play the SMFs in three ways;
Browse and select the SMFs from the SMF Player panel, or Drag-and-Drop the SMF icons onto the VSC-55 Panel, or Double-click the SMF icons when SMFs are associated to vsc55.exe.

While playing back a file, the level of each part or CPU load can be monitored graphically.

The followings are the detailed explanation about the VSC-55 Panel's functions.

[DEFAULT SETUP] Button

Used for returning the VSC-55's various settings to their defaults.

*   All the settings are returned to their default (initial) values, which are the same as those obtained when you click the [Default] button in the Settings dialog box.

[CUSTOM SETUP] Button

Clicking on this button opens the Settings dialog box.
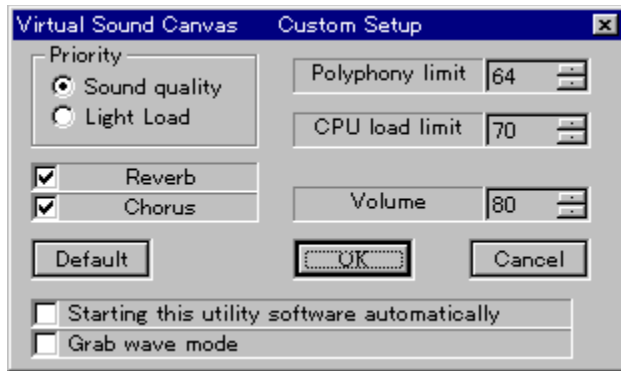
* The default values are shown in the Settings dialog box above.

[Priority] - [Sound Quality] Option Button
Puts the VSC-55 in Sound Quality Priority mode. Sets sampling rate to 22.05 kHz.
* Although this option does improve sound quality, it uses more of the CPU's power.

[Priority] - [Light Load] Option Button
Puts the VSC-55 in Polyphony Priority mode. Sets sampling rate to 11.025 kHz.
* While this option requires less CPU power, sound quality does suffer.

[Reverb] Check Box
Turns the reverb effect on or off. Reverb will be applied when the box is checked.
* Using reverb takes up more CPU power.

[Chorus] Check Box
Turns the chorus effect on or off. Chorus will be applied when the box is checked.
* Using chorus takes up more CPU power.

[Polyphony limit]
This sets the maximum number of voices that can be expressed at any one time. The number of voices to be sounded can be set within the range of 8 to

128 voices.

[CPU load limit]
This sets the percentage of the CPU's power to be dedicated to the VSC-55. You can set it to any value from 20% to 90%.
* Once the number of voices being sounded reaches the "Polyphony limit," or the CPU power that has been assigned by means of "CPU load limit" is being completely used, the VSC-55 will not be able to sound any more voices.

[Volume]
Sets the volume level. You can set it to any value from 0 to 100.

[Default] Button
Found in the Settings dialog box; returns settings to their default (initial) values.
* Values will be the same as when the [DEFAULT SETUP] button on the VSC-55 Panel is clicked.

[OK] Button
Clicking on this button saves changes made to settings in the Settings dialog box, then closes the dialog box.

[Cancel] Button
Clicking on this button cancels changes made to settings in the Settings dialog box, then closes the dialog box.

[Starting this utility software automatically] Check Box
Use this check box to establish whether or not the VSC-55 Panel starts up automatically when the VSC-55 is used to perform music data. When the check box is set to "ON," the VSC-55 Panel starts up automatically.
* This setting is not affected by the [Default] button or the [DEFAULT SETUP] button. It always retains the value set by the user.

[Grab wave mode] Check Box
When there is a check in this checkbox, the wave device being used can be

monopolized.   If an application (such as a game) which performs audio playback and play MIDI data at the same time doesn't run well, the problem can sometimes be cleared up by placing a check in this box.

For details, see "Troubleshooting Q&A"

* This setting is not affected by the [Default] button or the [DEFAULT SETUP] button. It always retains the value set by the user.

[PLAYER] Button

Clicking on this button launches the Standard MIDI File Player below the VSC-55 Panel.

[SONGS] Button

Clicking on this button opens the song selection dialog box.

[CLOSE] Button

Clicking on this button closes the Standard MIDI File Player display.

[REPEAT] Button

This button is turned on and off by clicking it. When on, the Player will repeat the performance from the top of the song when it finishes a song.

[HELP] Button

Calls up Help.

[LEVEL] Button

This puts the VSC-55 Panel central display in Level Indicator mode, wherein the volume level of each part is displayed graphically.

* When there is no sound being played, the Roland logo is displayed here.

[GRAPH] Button

This puts the VSC-55 Panel central display in a mode showing current and maximum values for CPU use and voice number settings.
The red-line graph indicates the current load on the CPU.

When you click on the [LEVEL] or [GRAPH] buttons, the maximum CPU use ratings and maximum number of voices sounded is reset to zero.

[ABOUT] Button

Information regarding the driver or the VSC-55 Panel is displayed when you click on this button.

Instrument List

piano

Program #	Bank LSB	Instrument
1 (00H)	0 (00H)	Piano 1
	8 (08H)	Piano 1w
	16 (10H)	Piano 1d
2 (01H)	0 (00H)	Piano 2
	8 (08H)	Piano 2w
3 (02H)	0 (00H)	Piano 3
	8 (08H)	Piano 3w
4 (03H)	0 (00H)	Honky-tonk
	8 (08H)	Honky-tonk w
5 (04H)	0 (00H)	E.Piano 1
	8 (08H)	Detuned EP 1
	16 (10H)	E.Piano 1v
	24 (18H)	60's E.Piano
6 (05H)	0 (00H)	E.Piano 2

Program #	Bank LSB	Instrument
	8 (08H)	Detuned EP 2
	16 (10H)	E.Piano 2v
7 (06H)	0 (00H)	Harpsichord
	8 (08H)	Coupled hps.
	16 (10H)	Harpsi.w
	24 (18H)	Harpsi.o
8 (07H)	0 (00H)	Clav.

chromatic percussion

Program #	Bank LSB	Instrument
9 (08H)	0 (00H)	Celesta
10 (09H)	0 (00H)	Glockenspiel
11 (0AH)	0 (00H)	Music Box
12 (0BH)	0 (00H)	Vibraphone
	8 (08H)	Vib.w
13 (0CH)	0 (00H)	Marimba
	8 (08H)	Marimba w
14 (0DH)	0 (00H)	Xylophone
15 (0EH)	0 (00H)	Tubular-bell
	8 (08H)	Church Bell
	9 (09H)	Carillon
16 (0FH)	0 (00H)	Santur

organ

Program #	Bank LSB	Instrument
17 (10H)	0 (00H)	Organ 1
	8 (08H)	Detuned Or.1
	16 (10H)	60's Organ 1
	32 (20H)	Organ 4
18 (11H)	0 (00H)	Organ 2
	8 (08H)	Detuned Or.2
	32 (20H)	Organ 5
19 (12H)	0 (00H)	Organ 3
20 (13H)	0 (00H)	Church Org.1
	8 (08H)	Church Org.2
	16 (10H)	Church Org.3

Program #	Bank LSB	Instrument
21 (14H)	0 (00H)	Reed Organ
22 (15H)	0 (00H)	Accordion Fr
	8 (08H)	Accordion It
23 (16H)	0 (00H)	Harmonica
24 (17H)	0 (00H)	Bandoneon

guitar

Program #	Bank LSB	Instrument
25 (18H)	0 (00H)	Nylon-str.Gt
	8 (08H)	Ukulele
	16 (10H)	Nylon Gt.o
	32 (20H)	Nylon Gt.2
26 (19H)	0 (00H)	Steel-str.Gt
	8 (08H)	12-str.Gt
	16 (10H)	Mandolin
27 (1AH)	0 (00H)	Jazz Gt.
	8 (08H)	Hawaiian Gt.
28 (1BH)	0 (00H)	Clean Gt.
	8 (08H)	Chorus Gt.
29 (1CH)	0 (00H)	Muted Gt.
	8 (08H)	Funk Gt.
	16 (10H)	Funk Gt.2
30 (1DH)	0 (00H)	Overdrive Gt
31 (1EH)	0 (00H)	DistortionGt
	8 (08H)	Feedback Gt.
32 (1FH)	0 (00H)	Gt.harmonics
	8 (08H)	Gt. Feedback

bass

Program #	Bank LSB	Instrument
33 (20H)	0 (00H)	Acoustic Bs.
34 (21H)	0 (00H)	Fingered Bs.
35 (22H)	0 (00H)	Picked Bs.
36 (23H)	0 (00H)	Fretless Bs.
37 (24H)	0 (00H)	Slap Bass 1
38 (25H)	0 (00H)	Slap Bass 2

Program #	Bank LSB	Instrument
39 (26H)	0 (00H)	Synth Bass 1
	1 (01H)	SynthBass101
	8 (08H)	Synth Bass 3
40 (27H)	0 (00H)	Synth Bass 2
	8 (08H)	Synth Bass 4
	16 (10H)	Rubber Bass

strings & orchestral instruments

Program #	Bank LSB	Instrument
41 (28H)	0 (00H)	Violin
	8 (08H)	Slow Violin
42 (29H)	0 (00H)	Viola
43 (2AH)	0 (00H)	Cello
44 (2BH)	0 (00H)	Contrabass
45 (2CH)	0 (00H)	Tremolo Str
46 (2DH)	0 (00H)	PizzicatoStr
47 (2EH)	0 (00H)	Harp
48 (2FH)	0 (00H)	Timpani

ensemble

Program #	Bank LSB	Instrument
49 (30H)	0 (00H)	Strings
	8 (08H)	Orchestra
50 (31H)	0 (00H)	Slow Strings
51 (32H)	0 (00H)	Syn.Strings1
	8 (08H)	Syn.Strings3
52 (33H)	0 (00H)	Syn.Strings2
53 (34H)	0 (00H)	Choir Aahs
	32 (20H)	Choir Aahs 2
54 (35H)	0 (00H)	Voice Oohs
55 (36H)	0 (00H)	SynVox
56 (37H)	0 (00H)	Orchestrahit

brass

Program #	Bank LSB	Instrument
57 (38H)	0 (00H)	Trumpet

58 (39H)	0 (00H)	Trombone
	1 (01H)	Trombone 2
59 (3AH)	0 (00H)	Tuba
60 (3BH)	0 (00H)	MutedTrumpet
61 (3CH)	0 (00H)	French horns
	1 (01H)	French horn2
62 (3DH)	0 (00H)	Brass 1
	8 (08H)	Brass 2
63 (3EH)	0 (00H)	Synth Brass1
	8 (08H)	Synth Brass3
	16 (10H)	AnalogBrass1
64 (3FH)	0 (00H)	Synth Brass2
	8 (08H)	Synth Brass4
	16 (10H)	AnalogBrass2

reed

Program #	Bank LSB	Instrument
65 (40H)	0 (00H)	Soprano Sax
66 (41H)	0 (00H)	Alto Sax
67 (42H)	0 (00H)	Tenor Sax
68 (43H)	0 (00H)	Baritone Sax
69 (44H)	0 (00H)	Oboe
70 (45H)	0 (00H)	English horn
71 (46H)	0 (00H)	Bassoon
72 (47H)	0 (00H)	Clarinet

pipe

Program #	Bank LSB	Instrument
73 (48H)	0 (00H)	Piccolo
74 (49H)	0 (00H)	Flute
75 (4AH)	0 (00H)	Recorder
76 (4BH)	0 (00H)	Pan Flute
77 (4CH)	0 (00H)	Bottle Blow
78 (4DH)	0 (00H)	Shakuhachi
79 (4EH)	0 (00H)	Whistle
80 (4FH)	0 (00H)	Ocarina

synth lead

Program #	Bank LSB	Instrument
81 (50H)	0 (00H)	Square Wave
	1 (01H)	Square
	8 (08H)	Sine Wave
82 (51H)	0 (00H)	Saw Wave
	1 (01H)	Saw
	8 (08H)	Doctor Solo
83 (52H)	0 (00H)	Syn.Calliope
84 (53H)	0 (00H)	Chiffer Lead
85 (54H)	0 (00H)	Charang
86 (55H)	0 (00H)	Solo Vox
87 (56H)	0 (00H)	5th Saw Wave
88 (57H)	0 (00H)	Bass & Lead

synth pad

Program #	Bank LSB	Instrument
89 (58H)	0 (00H)	Fantasia
90 (59H)	0 (00H)	Warm Pad
91 (5AH)	0 (00H)	Polysynth
92 (5BH)	0 (00H)	Space Voice
93 (5CH)	0 (00H)	Bowed Glass
94 (5DH)	0 (00H)	Metal Pad
95 (5EH)	0 (00H)	Halo Pad
96 (5FH)	0 (00H)	Sweep Pad

synth sfx

Program #	Bank LSB	Instrument
97 (60H)	0 (00H)	Ice Rain
98 (61H)	0 (00H)	Soundtrack
99 (62H)	0 (00H)	Crystal
	1 (01H)	Syn Mallet
100 (63H)	0 (00H)	Atmosphere
101 (64H)	0 (00H)	Brightness
102 (65H)	0 (00H)	Goblin

Program #	Bank LSB	Instrument
103 (66H)	0 (00H)	Echo Drops
	1 (01H)	Echo Bell
	2 (02H)	Echo Pan
104 (67H)	0 (00H)	Star Theme

ethnic misc.

Program #	Bank LSB	Instrument
105 (68H)	0 (00H)	Sitar
	1 (01H)	Sitar 2
106 (69H)	0 (00H)	Banjo
107 (6AH)	0 (00H)	Shamisen
108 (6BH)	0 (00H)	Koto
	8 (08H)	Taisho Koto
109 (6CH)	0 (00H)	Kalimba
110 (6DH)	0 (00H)	Bagpipe
111 (6EH)	0 (00H)	Fiddle
112 (6FH)	0 (00H)	Shanai

percussive

Program #	Bank LSB	Instrument
113 (70H)	0 (00H)	Tinkle Bell
114 (71H)	0 (00H)	Agogo
115 (72H)	0 (00H)	Steel Drums
116 (73H)	0 (00H)	Woodblock
	8 (08H)	Castanets
117 (74H)	0 (00H)	Taiko
	8 (08H)	Concert BD
118 (75H)	0 (00H)	Melo. Tom 1
	8 (08H)	Melo. Tom 2
119 (76H)	0 (00H)	Synth Drum
	8 (08H)	808 Tom
	9 (09H)	Elec Perc
120 (77H)	0 (00H)	Reverse Cym.

sfx

Program #	Bank LSB	Instrument

121 (78H)	0 (00H)	Gt.FretNoise
	1 (01H)	Gt.Cut Noise
	2 (02H)	String Slap
122 (79H)	0 (00H)	Breath Noise
	1 (01H)	Fl.Key Click
123 (7AH)	0 (00H)	Seashore
	1 (01H)	Rain
	2 (02H)	Thunder
	3 (03H)	Wind
	4 (04H)	Stream
	5 (05H)	Bubble
124 (7BH)	0 (00H)	Bird
	1 (01H)	Dog
	2 (02H)	Horse-Gallop
	3 (03H)	Bird 2
125 (7CH)	0 (00H)	Telephone 1
	1 (01H)	Telephone 2
	2 (02H)	DoorCreaking
	3 (03H)	Door
	4 (04H)	Scratch
	5 (05H)	Windchime
126 (7DH)	0 (00H)	Helicopter
	1 (01H)	Car-Engine
	2 (02H)	Car-Stop
	3 (03H)	Car-Pass
	4 (04H)	Car-Crash
	5 (05H)	Siren
	6 (06H)	Train
	7 (07H)	Jetplane
	8 (08H)	Starship
	9 (09H)	Burst Noise
127 (7EH)	0 (00H)	Applause
	1 (01H)	Laughing
	2 (02H)	Screaming
	3 (03H)	Punch
	4 (04H)	Heart Beat

	5 (05H)	Footsteps
128 (7FH)	0 (00H)	Gun Shot
	1 (01H)	Machine Gun
	2 (02H)	Lasergun
	3 (03H)	Explosion

Drum Set List

Prog#	Drum Set Name
1 (00H)	Standard Set
9 (08H)	Room Set
17 (10H)	Power Set
25 (18H)	Electronic Set
26 (19H)	TR-808 Set
33 (20H)	Jazz Set
41 (28H)	Brush Set
49 (30H)	Orchestra Set
57 (38H)	SFX Set

STANDARD Set

Note Number	Instrument	
D#1 (27)	High Q	
E 1 (28)	Slap	
F 1 (29)	Scratch Push	
F#1 (30)	Scratch Pull	
G 1 (31)	Sticks	
G#1 (32)	Square Click	
A 1 (33)	Metronome Click	
A#1 (34)	Metronome Bell	
B 1 (35)	Kick Drum2	
C 2 (36)	Kick Drum1	
C#2 (37)	Side Stick	
D 2 (38)	Snare Drum1	
D#2 (39)	Hand Clap	
E 2 (40)	Snare Drum2	
F 2 (41)	Low Tom2	
F#2 (42)	Closed Hi-hat	[EXC1]
G 2 (43)	Low Tom1	
G#2 (44)	Pedal Hi-hat	[EXC1]
A 2 (45)	Mid Tom2	
A#2 (46)	Open Hi-hat	[EXC1]
B 2 (47)	Mid Tom1	

C 3 (48)	High Tom2	
C#3 (49)	Crash Cymbal1	
D 3 (50)	High Tom1	
D#3 (51)	Ride Cymbal1	
E 3 (52)	Chinese Cymbal	
F 3 (53)	Ride Bell	
F#3 (54)	Tambourine	
G 3 (55)	Splash Cymbal	
G#3 (56)	Cowbell	
A 3 (57)	Crash Cymbal2	
A#3 (58)	Vibra-slap	
B 3 (59)	Ride Cymbal2	
C 4 (60)	High Bongo	
C#4 (61)	Low Bongo	
D 4 (62)	Mute High Conga	
D#4 (63)	Open High Conga	
E 4 (64)	Low Conga	
F 4 (65)	High Timbale	
F#4 (66)	Low Timbale	
G 4 (67)	High Agogo	
G#4 (68)	Low Agogo	
A 4 (69)	Cabasa	
A#4 (70)	Maracas	
B 4 (71)	Short Hi Whistle	
C 5 (72)	Long Low Whistle	
C#5 (73)	Short Guiro	
D 5 (74)	Long Guiro	
D#5 (75)	Claves	
E 5 (76)	High Wood Block	
F 5 (77)	Low Wood Block	
F#5 (78)	Mute Cuica	[EXC4]
G 5 (79)	Open Cuica	[EXC4]
G#5 (80)	Mute Triangle	[EXC5]
A 5 (81)	Open Triangle	[EXC5]
A#5 (82)	Shaker	
B 5 (83)	Jingle Bell	

Note Number	Instrument	
C 6 (84)	Bell Tree	
C#6 (85)	Castanets	
D 6 (86)	Mute Surdo	[EXC6]
D#6 (87)	Open Surdo	[EXC6]

ROOM Set

Note Number	Instrument	
D#1 (27)	High Q	
E 1 (28)	Slap	
F 1 (29)	Scratch Push	
F#1 (30)	Scratch Pull	
G 1 (31)	Sticks	
G#1 (32)	Square Click	
A 1 (33)	Metronome Click	
A#1 (34)	Metronome Bell	
B 1 (35)	Kick Drum2	
C 2 (36)	Kick Drum1	
C#2 (37)	Side Stick	
D 2 (38)	Snare Drum1	
D#2 (39)	Hand Clap	
E 2 (40)	Snare Drum2	
F 2 (41)	Room Low Tom2	
F#2 (42)	Closed Hi-hat	[EXC1]
G 2 (43)	Room Low Tom1	
G#2 (44)	Pedal Hi-hat	[EXC1]
A 2 (45)	Room Mid Tom2	
A#2 (46)	Open Hi-hat	[EXC1]
B 2 (47)	Room Mid Tom1	
C 3 (48)	Room Hi Tom2	
C#3 (49)	Crash Cymbal1	
D 3 (50)	Room Hi Tom1	
D#3 (51)	Ride Cymbal1	
E 3 (52)	Chinese Cymbal	
F 3 (53)	Ride Bell	
F#3 (54)	Tambourine	
G 3 (55)	Splash Cymbal	

Note	Instrument	
G#3 (56)	Cowbell	
A 3 (57)	Crash Cymbal2	
A#3 (58)	Vibra-slap	
B 3 (59)	Ride Cymbal2	
C 4 (60)	High Bongo	
C#4 (61)	Low Bongo	
D 4 (62)	Mute High Conga	
D#4 (63)	Open High Conga	
E 4 (64)	Low Conga	
F 4 (65)	High Timbale	
F#4 (66)	Low Timbale	
G 4 (67)	High Agogo	
G#4 (68)	Low Agogo	
A 4 (69)	Cabasa	
A#4 (70)	Maracas	
B 4 (71)	Short Hi Whistle	
C 5 (72)	Long Low Whistle	
C#5 (73)	Short Guiro	
D 5 (74)	Long Guiro	
D#5 (75)	Claves	
E 5 (76)	High Wood Block	
F 5 (77)	Low Wood Block	
F#5 (78)	Mute Cuica	[EXC4]
G 5 (79)	Open Cuica	[EXC4]
G#5 (80)	Mute Triangle	[EXC5]
A 5 (81)	Open Triangle	[EXC5]
A#5 (82)	Shaker	
B 5 (83)	Jingle Bell	
C 6 (84)	Bell Tree	
C#6 (85)	Castanets	
D 6 (86)	Mute Surdo	[EXC6]
D#6 (87)	Open Surdo	[EXC6]

POWER Set

Note Number	Instrument
D#1 (27)	High Q

E 1 (28)	Slap	
F 1 (29)	Scratch Push	
F#1 (30)	Scratch Pull	
G 1 (31)	Sticks	
G#1 (32)	Square Click	
A 1 (33)	Metronome Click	
A#1 (34)	Metronome Bell	
B 1 (35)	Kick Drum2	
C 2 (36)	MONDO Kick	
C#2 (37)	Side Stick	
D 2 (38)	Gated SD	
D#2 (39)	Hand Clap	
E 2 (40)	Snare Drum2	
F 2 (41)	Room Low Tom2	
F#2 (42)	Closed Hi-hat	[EXC1]
G 2 (43)	Room Low Tom1	
G#2 (44)	Pedal Hi-hat	[EXC1]
A 2 (45)	Room Mid Tom2	
A#2 (46)	Open Hi-hat	[EXC1]
B 2 (47)	Room Mid Tom1	
C 3 (48)	Room Hi Tom2	
C#3 (49)	Crash Cymbal1	
D 3 (50)	Room Hi Tom1	
D#3 (51)	Ride Cymbal1	
E 3 (52)	Chinese Cymbal	
F 3 (53)	Ride Bell	
F#3 (54)	Tambourine	
G 3 (55)	Splash Cymbal	
G#3 (56)	Cowbell	
A 3 (57)	Crash Cymbal2	
A#3 (58)	Vibra-slap	
B 3 (59)	Ride Cymbal2	
C 4 (60)	High Bongo	
C#4 (61)	Low Bongo	
D 4 (62)	Mute High Conga	
D#4 (63)	Open High Conga	

E 4 (64)	Low Conga	
F 4 (65)	High Timbale	
F#4 (66)	Low Timbale	
G 4 (67)	High Agogo	
G#4 (68)	Low Agogo	
A 4 (69)	Cabasa	
A#4 (70)	Maracas	
B 4 (71)	Short Hi Whistle	
C 5 (72)	Long Low Whistle	
C#5 (73)	Short Guiro	
D 5 (74)	Long Guiro	
D#5 (75)	Claves	
E 5 (76)	High Wood Block	
F 5 (77)	Low Wood Block	
F#5 (78)	Mute Cuica	[EXC4]
G 5 (79)	Open Cuica	[EXC4]
G#5 (80)	Mute Triangle	[EXC5]
A 5 (81)	Open Triangle	[EXC5]
A#5 (82)	Shaker	
B 5 (83)	Jingle Bell	
C 6 (84)	Bell Tree	
C#6 (85)	Castanets	
D 6 (86)	Mute Surdo	[EXC6]
D#6 (87)	Open Surdo	[EXC6]

ELECTRONIC Set

Note Number	Instrument
D#1 (27)	High Q
E 1 (28)	Slap
F 1 (29)	Scratch Push
F#1 (30)	Scratch Pull
G 1 (31)	Sticks
G#1 (32)	Square Click
A 1 (33)	Metronome Click
A#1 (34)	Metronome Bell
B 1 (35)	Kick Drum2

C 2 (36)	Elec BD	
C#2 (37)	Side Stick	
D 2 (38)	Elec SD	
D#2 (39)	Hand Clap	
E 2 (40)	Gated SD	
F 2 (41)	Elec Low Tom2	
F#2 (42)	Closed Hi-hat	[EXC1]
G 2 (43)	Elec Low Tom1	
G#2 (44)	Pedal Hi-hat	[EXC1]
A 2 (45)	Elec Mid Tom2	
A#2 (46)	Open Hi-hat	[EXC1]
B 2 (47)	Elec Mid Tom1	
C 3 (48)	Elec Hi Tom2	
C#3 (49)	Crash Cymbal1	
D 3 (50)	Elec Hi Tom1	
D#3 (51)	Ride Cymbal1	
E 3 (52)	Reverse Cymbal	
F 3 (53)	Ride Bell	
F#3 (54)	Tambourine	
G 3 (55)	Splash Cymbal	
G#3 (56)	Cowbell	
A 3 (57)	Crash Cymbal2	
A#3 (58)	Vibra-slap	
B 3 (59)	Ride Cymbal2	
C 4 (60)	High Bongo	
C#4 (61)	Low Bongo	
D 4 (62)	Mute High Conga	
D#4 (63)	Open High Conga	
E 4 (64)	Low Conga	
F 4 (65)	High Timbale	
F#4 (66)	Low Timbale	
G 4 (67)	High Agogo	
G#4 (68)	Low Agogo	
A 4 (69)	Cabasa	
A#4 (70)	Maracas	
B 4 (71)	Short Hi Whistle	

Note Number	Instrument	
C 5 (72)	Long Low Whistle	
C#5 (73)	Short Guiro	
D 5 (74)	Long Guiro	
D#5 (75)	Claves	
E 5 (76)	High Wood Block	
F 5 (77)	Low Wood Block	
F#5 (78)	Mute Cuica	[EXC4]
G 5 (79)	Open Cuica	[EXC4]
G#5 (80)	Mute Triangle	[EXC5]
A 5 (81)	Open Triangle	[EXC5]
A#5 (82)	Shaker	
B 5 (83)	Jingle Bell	
C 6 (84)	Bell Tree	
C#6 (85)	Castanets	
D 6 (86)	Mute Surdo	[EXC6]
D#6 (87)	Open Surdo	[EXC6]

TR-808 Set

Note Number	Instrument	
D#1 (27)	High Q	
E 1 (28)	Slap	
F 1 (29)	Scratch Push	
F#1 (30)	Scratch Pull	
G 1 (31)	Sticks	
G#1 (32)	Square Click	
A 1 (33)	Metronome Click	
A#1 (34)	Metronome Bell	
B 1 (35)	Kick Drum2	
C 2 (36)	808 Bass Drum	
C#2 (37)	808 Rim Shot	
D 2 (38)	808 Snare Drum	
D#2 (39)	Hand Clap	
E 2 (40)	Snare Drum2	
F 2 (41)	808 Low Tom2	
F#2 (42)	808 CHH	[EXC1]
G 2 (43)	808 Low Tom1	

G#2 (44)	808 CHH	[EXC1]
A 2 (45)	808 Mid Tom2	
A#2 (46)	808 OHH	[EXC1]
B 2 (47)	808 Mid Tom1	
C 3 (48)	808 Hi Tom2	
C#3 (49)	808 Cymbal	
D 3 (50)	808 Hi Tom1	
D#3 (51)	Ride Cymbal1	
E 3 (52)	Chinese Cymbal	
F 3 (53)	Ride Bell	
F#3 (54)	Tambourine	
G 3 (55)	Splash Cymbal	
G#3 (56)	808 Cowbell	
A 3 (57)	Crash Cymbal2	
A#3 (58)	Vibra-slap	
B 3 (59)	Ride Cymbal2	
C 4 (60)	High Bongo	
C#4 (61)	Low Bongo	
D 4 (62)	808 High Conga	
D#4 (63)	808 Mid Conga	
E 4 (64)	808 Low Conga	
F 4 (65)	High Timbale	
F#4 (66)	Low Timbale	
G 4 (67)	High Agogo	
G#4 (68)	Low Agogo	
A 4 (69)	Cabasa	
A#4 (70)	808 Maracas	
B 4 (71)	Short Hi Whistle	
C 5 (72)	Long Low Whistle	
C#5 (73)	Short Guiro	
D 5 (74)	Long Guiro	
D#5 (75)	808 Claves	
E 5 (76)	High Wood Block	
F 5 (77)	Low Wood Block	
F#5 (78)	Mute Cuica	[EXC4]
G 5 (79)	Open Cuica	[EXC4]

Note Number	Instrument	
G#5 (80)	Mute Triangle	[EXC5]
A 5 (81)	Open Triangle	[EXC5]
A#5 (82)	Shaker	
B 5 (83)	Jingle Bell	
C 6 (84)	Bell Tree	
C#6 (85)	Castanets	
D 6 (86)	Mute Surdo	[EXC6]
D#6 (87)	Open Surdo	[EXC6]

JAZZ Set

Note Number	Instrument	
D#1 (27)	High Q	
E 1 (28)	Slap	
F 1 (29)	Scratch Push	
F#1 (30)	Scratch Pull	
G 1 (31)	Sticks	
G#1 (32)	Square Click	
A 1 (33)	Metronome Click	
A#1 (34)	Metronome Bell	
B 1 (35)	Jazz BD2	
C 2 (36)	Jazz BD1	
C#2 (37)	Side Stick	
D 2 (38)	Snare Drum1	
D#2 (39)	Hand Clap	
E 2 (40)	Snare Drum2	
F 2 (41)	Low Tom2	
F#2 (42)	Closed Hi-hat	[EXC1]
G 2 (43)	Low Tom1	
G#2 (44)	Pedal Hi-hat	[EXC1]
A 2 (45)	Mid Tom2	
A#2 (46)	Open Hi-hat	[EXC1]
B 2 (47)	Mid Tom1	
C 3 (48)	High Tom2	
C#3 (49)	Crash Cymbal1	
D 3 (50)	High Tom1	
D#3 (51)	Ride Cymbal1	

E 3 (52)	Chinese Cymbal	
F 3 (53)	Ride Bell	
F#3 (54)	Tambourine	
G 3 (55)	Splash Cymbal	
G#3 (56)	Cowbell	
A 3 (57)	Crash Cymbal2	
A#3 (58)	Vibra-slap	
B 3 (59)	Ride Cymbal2	
C 4 (60)	High Bongo	
C#4 (61)	Low Bongo	
D 4 (62)	Mute High Conga	
D#4 (63)	Open High Conga	
E 4 (64)	Low Conga	
F 4 (65)	High Timbale	
F#4 (66)	Low Timbale	
G 4 (67)	High Agogo	
G#4 (68)	Low Agogo	
A 4 (69)	Cabasa	
A#4 (70)	Maracas	
B 4 (71)	Short Hi Whistle	
C 5 (72)	Long Low Whistle	
C#5 (73)	Short Guiro	
D 5 (74)	Long Guiro	
D#5 (75)	Claves	
E 5 (76)	High Wood Block	
F 5 (77)	Low Wood Block	
F#5 (78)	Mute Cuica	[EXC4]
G 5 (79)	Open Cuica	[EXC4]
G#5 (80)	Mute Triangle	[EXC5]
A 5 (81)	Open Triangle	[EXC5]
A#5 (82)	Shaker	
B 5 (83)	Jingle Bell	
C 6 (84)	Bell Tree	
C#6 (85)	Castanets	
D 6 (86)	Mute Surdo	[EXC6]
D#6 (87)	Open Surdo	[EXC6]

BRUSH Set

Note Number	Instrument	
D#1 (27)	High Q	
E 1 (28)	Slap	
F 1 (29)	Scratch Push	
F#1 (30)	Scratch Pull	
G 1 (31)	Sticks	
G#1 (32)	Square Click	
A 1 (33)	Metronome Click	
A#1 (34)	Metronome Bell	
B 1 (35)	Jazz BD2	
C 2 (36)	Jazz BD1	
C#2 (37)	Side Stick	
D 2 (38)	Brush Tap	
D#2 (39)	Brush Slap	
E 2 (40)	Brash Swirl	
F 2 (41)	Low Tom2	
F#2 (42)	Closed Hi-hat	[EXC1]
G 2 (43)	Low Tom1	
G#2 (44)	Pedal Hi-hat	[EXC1]
A 2 (45)	Mid Tom2	
A#2 (46)	Open Hi-hat	[EXC1]
B 2 (47)	Mid Tom1	
C 3 (48)	High Tom2	
C#3 (49)	Crash Cymbal1	
D 3 (50)	High Tom1	
D#3 (51)	Ride Cymbal1	
E 3 (52)	Chinese Cymbal	
F 3 (53)	Ride Bell	
F#3 (54)	Tambourine	
G 3 (55)	Splash Cymbal	
G#3 (56)	Cowbell	
A 3 (57)	Crash Cymbal2	
A#3 (58)	Vibra-slap	
B 3 (59)	Ride Cymbal2	

C 4 (60)	High Bongo	
C#4 (61)	Low Bongo	
D 4 (62)	Mute High Conga	
D#4 (63)	Open High Conga	
E 4 (64)	Low Conga	
F 4 (65)	High Timbale	
F#4 (66)	Low Timbale	
G 4 (67)	High Agogo	
G#4 (68)	Low Agogo	
A 4 (69)	Cabasa	
A#4 (70)	Maracas	
B 4 (71)	Short Hi Whistle	
C 5 (72)	Long Low Whistle	
C#5 (73)	Short Guiro	
D 5 (74)	Long Guiro	
D#5 (75)	Claves	
E 5 (76)	High Wood Block	
F 5 (77)	Low Wood Block	
F#5 (78)	Mute Cuica	[EXC4]
G 5 (79)	Open Cuica	[EXC4]
G#5 (80)	Mute Triangle	[EXC5]
A 5 (81)	Open Triangle	[EXC5]
A#5 (82)	Shaker	
B 5 (83)	Jingle Bell	
C 6 (84)	Bell Tree	
C#6 (85)	Castanets	
D 6 (86)	Mute Surdo	[EXC6]
D#6 (87)	Open Surdo	[EXC6]

ORCHESTRA Set

Note Number	Instrument
D#1 (27)	Closed Hi-hat
E 1 (28)	Pedal Hi-hat
F 1 (29)	Open Hi-hat
F#1 (30)	Ride Cymbal1
G 1 (31)	Sticks

G#1 (32)	Square Click	
A 1 (33)	Metronome Click	
A#1 (34)	Metronome Bell	
B 1 (35)	Concert BD2	
C 2 (36)	Concert BD1	
C#2 (37)	Side Stick	
D 2 (38)	Concert SD	
D#2 (39)	Castanets	
E 2 (40)	Concert SD	
F 2 (41)	Timpani F	
F#2 (42)	Timpani F#	[EXC1]
G 2 (43)	Timpani G	
G#2 (44)	Timpani G#	[EXC1]
A 2 (45)	Timpani A	
A#2 (46)	Timpani A#	[EXC1]
B 2 (47)	Timpani B	
C 3 (48)	Timpani c	
C#3 (49)	Timpani c#	
D 3 (50)	Timpani d	
D#3 (51)	Timpani d#	
E 3 (52)	Timpani e	
F 3 (53)	Timpani f	
F#3 (54)	Tambourine	
G 3 (55)	Splash Cymbal	
G#3 (56)	Cowbell	
A 3 (57)	Concert Cymbal2	
A#3 (58)	Vibra-slap	
B 3 (59)	Concert Cymbal1	
C 4 (60)	High Bongo	
C#4 (61)	Low Bongo	
D 4 (62)	Mute High Conga	
D#4 (63)	Open High Conga	
E 4 (64)	Low Conga	
F 4 (65)	High Timbale	
F#4 (66)	Low Timbale	
G 4 (67)	High Agogo	

G#4 (68)	Low Agogo	
A 4 (69)	Cabasa	
A#4 (70)	Maracas	
B 4 (71)	Short Hi Whistle	[EXC2]
C 5 (72)	Long Low Whistle	[EXC2]
C#5 (73)	Short Guiro	
D 5 (74)	Long Guiro	
D#5 (75)	Claves	
E 5 (76)	High Wood Block	
F 5 (77)	Low Wood Block	
F#5 (78)	Mute Cuica	[EXC4]
G 5 (79)	Open Cuica	[EXC4]
G#5 (80)	Mute Triangle	[EXC5]
A 5 (81)	Open Triangle	[EXC5]
A#5 (82)	Shaker	
B 5 (83)	Jingle Bell	
C 6 (84)	Bell Tree	
C#6 (85)	Castanets	
D 6 (86)	Mute Surdo	[EXC6]
D#6 (87)	Open Surdo	[EXC6]
E 6 (88)	Applause	

SFX Set

Note Number	Instrument	
D#2 (39)	High Q	
E 2 (40)	Slap	
F 2 (41)	Scratch Push	[EXC7]
F#2 (42)	Scratch Pull	[EXC7]
G 2 (43)	Sticks	
G#2 (44)	Square Click	
A 2 (45)	Metronome Click	
A#2 (46)	Metronome Bell	
B 2 (47)	Guitar Fret Noise	
C 3 (48)	Guitar cuttingnoise/up	
C#3 (49)	Guitar cutting noise/down	
D 3 (50)	String slap of double bass	

D#3 (51)	Fl.Key Click
E 3 (52)	Laughing
F 3 (53)	Scream
F#3 (54)	Punch
G 3 (55)	Heart Beat
G#3 (56)	Footsteps1
A 3 (57)	Footsteps2
A#3 (58)	Applause
B 3 (59)	Door Creaking
C 4 (60)	Door
C#4 (61)	Scratch
D 4 (62)	Wind Chimes
D#4 (63)	Car-Engine
E 4 (64)	Car-Stop
F 4 (65)	Car-Pass
F#4 (66)	Car-Crash
G 4 (67)	Siren
G#4 (68)	Train
A 4 (69)	Jetplane
A#4 (70)	Helicopter
B 4 (71)	Starship
C 5 (72)	Gun Shot
C#5 (73)	Machine Gun
D 5 (74)	Lasergun
D#5 (75)	Explosion
E 5 (76)	Dog
F 5 (77)	Horse-Gallop
F#5 (78)	Birds
G 5 (79)	Rain
G#5 (80)	Thunder
A 5 (81)	Wind
A#5 (82)	Seashore
B 5 (83)	Stream
C 6 (84)	Bubble

[EXC]: Percussion sound of the same number will not be heard at the same time.

MIDI Implementation

Function ...	Transmitted	Recognized	Remarks
[Basic Channel]			
Default	x	1-16	
Changed	x	1-16	
[Mode]			
Default	x	Mode 3	
Messages	x	Mode 3,4(M = 1)*2	
Altered	*******		
Note	x	0-127	
	*******	0-127	
[Velocity]			
Note ON	x	o	
Note OFF	x	x	
[After Touch]			
Key's	x	x	
Ch's	x	o *1	
Pitch Bend	x	o *1	
[Control Change]			
0, 32	x	o *1	Bank select
1	x	o *1	Modulation
5	x	o *1	Portamento time
6, 38	x	o *1	Data entry-
7	x	o *1	Volume
10	x	o *1	Panpot
11	x	o *1	Expression
64	x	o *1	Hold1
65	x	o *1	Portamento
66	x	o *1	Sostenuto
84	x	o *1	Portamento control
91	x	o (Reverb) *1	Effect1 depth
93	x	o (Chorus) *1	Effect3 depth
98, 99	x	x *1	NRPN LSB, MSB
100, 101	x	o *1	RPN LSB, MSB

[Prog Change]			
	x	o *1	
True #	*******	0-127	Prog.1-128
System Exclusive	x	o	
[System Common]			
Song Pos	x	x	
Song Sel	x	x	
Tune	x	x	
[System Real Times]			
Clock	x	x	
Commands	x	x	
[Aux Messages]			
All Sounds OFF	x	o (120, 126, 127)	
Reset All Controllers	x	o	
Local ON/OFF	x	x	
All Notes OFF	x	o (123-127)	
Active Sensing	x	o	
System Reset	x	x	

Notes *1 o x is selectable

*2 Recognize as M = 1 even if M not EQ 1

Mode 1 : OMNI ON, POLY   Mode 2 : OMNI ON, MONO   o : Yes

Mode 3 : OMNI OFF, POLY   Mode 4 : OMNI OFF, MONO   x : No

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.

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 byte	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 "Turn General MIDI System On," and set to ON by "GS RESET." (Power-on
  default value is ON.)
* 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.

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

Volume (Controller number 7)

Status	2nd byte	3rd byte

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)

* 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)

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 (C4 voice still sounding)
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 = 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 byte	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 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.

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 Supplementary material "Examples of actual MIDI messages" <Example 4>. 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 the VSC-55, NRPN can be used to modify the following parameters.

NRPN Data entry

MSB LSB	MSB	Description
01H 08H	mmH	Vibrato rate (relative change on specified channel) mm: 0EH-40H-72H (-50 - 0 - +50)
01H 09H	mmH	Vibrato depth (relative change on specified channel) mm: 0EH-40H-72H (-50 - 0 - +50)

01H 0AH	mmH	Vibrato delay (relative change on specified channel)
		mm: 0EH-40H-72H (-50 - 0 - +50)

01H 63H	mmH	TVA Env. Attack time (relative change on specified channel)
		mm: 0EH-40H-72H (-50 - 0 - +50)

01H 64H	mmH	TVA Env. Decay time (relative change on specified channel)
		mm: 0EH-40H-72H (-50 - 0 - +50)

01H 66H	mmH	TVA Env. Release time (relative change on specified channel)
		mm: 0EH-40H-72H (-50 - 0 - +50)

18H rrH	mmH	Pitch coarse of drum instrument (relative change on specified drum instrument)
		rr: key number of drum instrument
		mm: 00H-40H-7FH (-64 - 0 - +63 semitone)

1AH rrH	mmH	TVA level of drum instrument (absolute change on specified drum instrument)
		rr: key number of drum instrument
		mm: 00H-7FH (zero-maximum)

1CH rrH	mmH	Panpot of drum instrument (absolute change on specified drum instrument)
		rr: key number of drum instrument
		mm: 01H-40H-7FH (Left-Center-Right)

1DH rrH	mmH	Reverb send level of drum instrument (absolute change on specified drum instrument)
		rr: key number of drum instrument
		mm: 00H-7FH (zero-maximum)

1EH rrH	mmH	Chorus send level of drum instrument (absolute change on specified drum instrument)
		rr: key number of drum instrument

mm: 00H-7FH (zero-maximum)

* Parameters marked "relative change" will change relative to the preset value.
* Parameters marked "absolute change" will be set to the absolute value of the
  parameter, regardless of the preset value.

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 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 "Examples of actual MIDI messages" <Example 4>

On the VSC-55, RPN can be used to modify the following parameters.

RPN		Data entry		
MSB	LSB	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 Supplementary material, "About tuning".

| 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 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 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)

* 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 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 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 the VSC-55 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 "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 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.)

"Turn General MIDI System On" and "Turn General MIDI System Off" use Universal Non-realtime Message format. "GS Reset" and "Exit GS mode" 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 unit to the General MIDI initial state (General MIDI System-Level 1). After receiving this message VSC-55, 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.

General MIDI System Off

This message resets the unit from General MIDI mode to GS mode.

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)
F7H	EOX (End of exclusive)

* This message will not be received if "Mode Change Receive SW = OFF," or "Rx.Sys.Ex.SW = OFF."

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, dev, 42H, 12H, 40H, 00H, 7FH, 00H, 41H	F7H

Byte	Explanation
F0H	Exclusive status

41H	ID number (Roland)
dev	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.

Exit GS mode

This is a command message that resets the internal settings of the unit from GS mode to GM mode.

Status	Data byte	Status
F0H	41H, dev, 42H, 12H, 40H, 00H, 7FH, 7FH, 42H	F7H

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

* This message will not be received if "Mode Change Receive SW = OFF," or
  "Rx.Sys.Ex.SW = OFF" won't recognize this message.

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.

* This message will not be received if "Mode Change Receive SW = OFF," or "Rx.Sys.Ex.SW = OFF."

Data transmission

Data set 1 DT1

This is the message that actually performs data transmission, and is used when you wish to transmit the data.

Status	Data byte	Status
F0H	41H, dev, 42H, 12H, aaH, bbH, ccH, ddH, ... eeH, sum	F7H

Byte	Explanation
F0H	Exclusive status
41H	ID number (Roland)
dev	Device ID (dev: 00H-1FH, Initial value is 10H))
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.
* 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.

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    +- - - - - - - - - - - - - - - - - - - - - - - - +
            |    DRUM SETUP PARAMETERS      |    Individual
            |    (m = 0-1)                  |
41 m8 7F    +- - - - - - - - - - - - - - - - - - - - - - - - +
```

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) Value (H)	Size (H) Description	Data (H)	Parameter	Description	Default
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 Supplementary material, "About tuning".

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

* Refer to "System exclusive messages related to Mode settings".

Address (H) Value (H)	Size (H) Description	Data (H)	Parameter	Description	Default	
40 01 10	00 00 10	00-0F	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

Address		Range	Parameter	Value		
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
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.

Address		Range	Parameter	Value		
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.

Part Parameters

VSC-55 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) Description	Data (H)	Parameter	Description	Default Value (H)	
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.

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 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 SINGLE at x = 0 LIMITED-MULTI at x = 1-F	00-02	ASSIGN MODE	0 = SINGLE 1 = LIMITED-MULTI 2 = FULL-MULTI	00 at x = 0 01 at x = 1-F	

* 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	00 at x = 1-F	OFF at x =1-F
				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. VSC-55 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)).

40 1x 16	00 00 01	28-58	PITCH KEY SHIFT	-24 - +24 [semitones]	40
	0 [semitones]				
40 1x 18#			Use nibblized data.		
40 1x 19	00 00 01	00-7F	PART LEVEL	0-127	64
	100		(= CC# 7)		
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	-63 (LEFT) - +63 (RIGHT)	40
	0 (CENTER)		(= CC# 10)		
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	0-127	00

0

(= CC# 93)

40 1x 22	00 00 01 40	00-7F	REVERB SEND LEVEL	0-127	28
			(= CC# 91)		
40 1x 23	00 00 01 ON (OFF*)	00-01	Rx. BANK SELECT	OFF/ON	01 (00*)

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

40 1x 30	00 00 01 0	0E-72	TONE MODIFY 1	-50 - +50	40
			Vibrato rate (= NRPN# 8)		
40 1x 31	00 00 01 0	0E-72	TONE MODIFY 2	-50 - +50	40
			Vibrato depth (= NRPN# 9)		
40 1x 34	00 00 01 0	0E-72	TONE MODIFY 5	-50 - +50	40
			TVA Env.attack (= NRPN# 99)		
40 1x 35	00 00 01 0	0E-72	TONE MODIFY 6	-50 - +50	40
			TVA Env.decay (= NRPN# 100)		
40 1x 36	00 00 01 0	0E-72	TONE MODIFY 7	-50 - +50	40
			TVA Env.release (= NRPN# 102)		
40 1x 37	00 00 01 0	0E-72	TONE MODIFY 8	-50 - +50	40
			Vibrato delay (= NRPN# 10)		
40 1x 40	00 00 0C 0 [cent]	00-7F	SCALE TUNING C	-64 - +63 [cent]	40
40 1x 41#	0 [cent]	00-7F	SCALE TUNING C#	-64 - +63 [cent]	40
40 1x 42#	0 [cent]	00-7F	SCALE TUNING D	-64 - +63 [cent]	40

Address		Data	Description	Range	Default
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 Supplementary material, "The Scale Tune Feature".

Address		Data	Description	Range	Default
40 2x 00	00 00 01	28-58	MOD PITCH CONTROL	-24 - +24 [semitone]	40
	0 [semitones]				
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 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 10	00 00 01 2 [semitones]	40-58	BEND PITCH CONTROL	0-24 [semitone]	42
40 2x 12	00 00 01 0 [%]	00-7F	BEND AMPLITUDE CONTROL	-100.0 - +100.0 [%]	40
40 2x 13	00 00 01 0 [Hz]	00-7F	BEND LFO1 RATE CONTROL	-10.0 - +10.0 [Hz]	40
40 2x 14	00 00 01 0 [cent]	00-7F	BEND LFO1 PITCH DEPTH	0-600 [cent]	00
40 2x 15	00 00 01 0 [cent]	00-7F	BEND LFO1 TVF DEPTH	0-2400 [cent]	00
40 2x 16	00 00 01 0 [%]	00-7F	BEND LFO1 TVA DEPTH	0-100.0 [%]	00
40 2x 20	00 00 01 0 [semitones]	28-58	CAf PITCH CONTROL	-24 - +24 [semitone]	40
40 2x 22	00 00 01 0 [%]	00-7F	CAf AMPLITUDE CONTROL	-100.0 - +100.0 [%]	40
40 2x 23	00 00 01 0 [Hz]	00-7F	CAf LFO1 RATE CONTROL	-10.0 - +10.0 [Hz]	40
40 2x 24	00 00 01 0 [cent]	00-7F	CAf LFO1 PITCH DEPTH	0-600 [cent]	00
40 2x 25	00 00 01 0 [cent]	00-7F	CAf LFO1 TVF DEPTH	0-2400 [cent]	00
40 2x 26	00 00 01 0 [%]	00-7F	CAf LFO1 TVA DEPTH	0-100.0 [%]	00
40 2x 40	00 00 01 0 [semitones]	28-58	CC1 PITCH CONTROL	-24 - +24 [semitone]	40
40 2x 42	00 00 01 0 [%]	00-7F	CC1 AMPLITUDE CONTROL	-100.0 - +100.0 [%]	40
40 2x 43	00 00 01 0 [Hz]	00-7F	CC1 LFO1 RATE CONTROL	-10.0 - +10.0 [Hz]	40
40 2x 44	00 00 01 0 [cent]	00-7F	CC1 LFO1 PITCH DEPTH	0-600 [cent]	00
40 2x 45	00 00 01 0 [cent]	00-7F	CC1 LFO1 TVF DEPTH	0-2400 [cent]	00

Address (H)	Size (H)	Data (H)	Parameter	Description	
40 2x 46	00 00 01	00-7F	CC1 LFO1 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 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 [%]				

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 (RIGHT)	00 00 01	00-7F	PANPOT	-63 (LEFT) - +63
			(= NRPN# 28)	
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.

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.	Dec.	Dec.	Dec.	Dec.	Dec.
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	69	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

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 VSC-55, 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 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

Troubleshooting Q&A

Q: The number of voices expressed seems low -- why is this?
A: Several potential causes need to be considered.

Is the CPU in your PC a Pentium processor?
The VSC-55 will exhibit decreased performance unless it runs on PCs with a Pentium processor running at a speed of 60 MHz or higher.

Could the CPU load limit be set too low?
Please check the [CUSTOM SETUP] of the VSC-55 Panel.

Depending on your PC's configuration (including the types of drivers and applications you use), the VSC-55 may not be able to deliver satisfactory performance.

Q: Sometimes the sound is cut off -- why?
A: Several potential causes need to be considered.

With some personal computers, such as notebook computers, there may be interruptions in the sound if a power-management function is employed. If this happens, please turn off the power-management function.

Some resident applications (such as drivers) may cause the sound to be interrupted.

The sound may also be interrupted when you simultaneously run separate applications, each of which demands a lot of memory, and then open yet another application.

On some PCs, the accesses to the floppy disk drive or the CD-ROM drive may interrupt the sound.

There also are some other cases where the sound could be interrupted, depending on your PC's configuration (due to other drivers or application software).

Q: When playing back Standard MIDI Files, other sound generators besides the VSC-55 sound -- why is   this?

A: Make sure your computer is set so MIDI output is properly routed to the VSC-55. Open [Control Panel] - [Multimedia] - [MIDI], and set the MIDI output properly.

Some application software does not utilize the Control Panel's MIDI Output Device settings. In such cases, the application itself may direct the MIDI output. Please refer to the manual for the application software.

* The VSC-55 Standard MIDI File Player utilizes the Control Panel's settings.

Q: Performance tempos waver -- what should I do?

A: Click on the [Custom Setup] button in the VSC-55 Panel, open the Settings dialog box, and lower the value setting in [Polyphony limit] or [CPU load limit].

There are also other cases where the tempo could waver, depending on your PC' configuration (usage of drivers or application software).

Q: Why does the computer slow to a crawl when playing MIDI data with the VSC-55?

A: The VSC-55 uses the computer's CPU capacity to perform processing, so a certain slowdown in computer operations is unavoidable.   However, it is possible to perform a degree of customization such as by changing the amount of computer CPU power assigned to the VSC-55.   Click [CUSTOM SETUP] on the VSC-55 panel and lower the value for [Polyphony limit] or [CPU load limit] in the dialog box.

Q: Sometimes the sound is distorted -- what should I do?

A: Click on the [Custom Setup] button in the VSC-55 Panel, open the Settings dialog box, and lower the value setting of [Volume].

Q: When playing a MIDI sequencer equipped with audio functions, the MIDI performance and the audio playback are out of sync.   How can this be corrected?

A: The MIDI performance and audio playback are not synchronized when equipment other than the VSC-55 wave device is used for audio playback.

Under [Control Panel] - [Multimedia] - [Audio], check the setting for [Playback]. Make sure that the Roland VSC-55 is selected for [Priority device].

Q: Why are the pictures and sound out of sync for applications such as games?
A: This is because a slight delay occurs between signal input and output by the VSC-55 wave devices during a MIDI performance.

When no MIDI performance is being played, however, there is no delay.

Q: The VSC-55 Panel's behavior gets erratic when I turn off the computer, then turn it on again while the "resume" function of the computer is on.
A: In certain situations, the VSC-55 Panel will not work correctly when the computer is restarted with a "resume" function active.
Please turn off the resume function or quit the VSC-55 Panel software before you turn off the computer.

Q: The sounds and MIDI performance drop out when applications such as games use MIDI performance and audio playback at the same time.   How can this be corrected?
A: Depending on the application using MIDI performance and audio playback at the same time, there may be no MIDI performance or the audio portion may drop out. This happens because some applications do not follow the [Control Panel] - [Multimedia] - [Audio] setting (wave mapper), and the application's audio playback and the VSC-55's MIDI performance may attempt to use the same wave device.

l   Try putting a check in the [Grab wave mode] checkbox in [CUSTOM SETUP] on the VSC-55 panel. Some applications may independently search for and use free wave devices.
If the application then uses the same wave device that the VSC-55 is using, the VSC-55's MIDI performance cannot be played.   By occupying ahead of time the wave device that the VSC-55 uses, it may be possible to let the application to use the VSC-55 wave device.

l   Place a check next to [USe only priority device] under [Control Panel] - [Multimedia] - [Audio].
There are some applications that may not follow the wave mapper, but will still use the specified wave device as long as there is a check in this box.   If this is the case, this setting may enable simultaneous MIDI

performance and audio playback.

Please note that some applications may not be able to be supported by these changes in settings.

Q: My computer has more than one wave device.   Can I choose which wave device is used?

A: The VSC-55 searches for a free wave device in a certain sequence, and uses the wave device as the wave output destination.   If you wish to use a specific wave device on a fixed basis, use a text editor to call up the VSC.INI file in the WINDOWS directory and edit the "WaveDevice=" line to include the name of the wave device you want to use, then restart Windows.

Be sure to use the name of a wave device listed for [Priority device] under [Control Panel] - [Multimedia] - [Audio].

Specifications

Number of parts:	16
Maximum Polyphony:	128

* This figure may vary according to individual computer specifications (such as clock speed), sound-quality settings, presence or absence of effects, and so on.

Internal Tones:

Preset sounds: 226
Drum sound set: 9

Effects:

Reverb (8 types)
Chorus (8 types)

Audio Output: 16-bit stereo, 22.05 kHz/11.025 kHz sampling rates

System Requirements

VSC-55 runs on computers with the following specifications:

Operating system: Microsoft® Windows® 95 Operating System

CPU/Clock: Pentium/60 MHz or higher

Memory (RAM):   8 MB or more (16 MB or more main memory and 256 KB or more secondary cache are recommended)

Hard Disk: Approx. 3 MB

Sound: 16-bit stereo, 22.05 kHz/11.025 kHz sampling rate

The General MIDI System and GS Format

What is the General MIDI System?

The General MIDI System is a universal set of specifications for sound generating devices.   These specifications seek to allow for the creation of music data which is not limited to equipment by a particular manufacturer or to specific models.

The General MIDI System defines things such as the minimum number of voices that should be supported, the MIDI messages that should be recognized, which sounds correspond to which Program Change numbers, and the layout of rhythm sounds on the keyboard.   Thanks to these specifications, any device that is equipped with sound sources supporting the General MIDI System will be able to accurately reproduce General MIDI Scores (music data created for the General MIDI System), regardless of the manufacturer or model.

What is the GS Format?

The GS Format is Roland's set of specifications for standardizing the performance of sound generating devices.   In addition to including support for everything defined by the General MIDI System, the highly-compatible GS Format additionally offers an expanded number of sounds, provides for the editing of sounds, and spells out many details for a wide range of extra features, including effects such as reverb and chorus.   Designed with the future in mind, the GS Format is readily to be augmented with new sounds and support new hardware features as they become available.   Roland's GS Format is capable of reliably playing back GM Scores equally as well as it performs GS Music Data (music data that has been created with the GS Format specifications in mind).

About the Utility Software

Some applications (such as games) which use MIDI performance and audio playback simultaneously may, when the VSC-55 has been specified for MIDI performance, attempt to use the same wave device of the audio output played by the application and the VSC-55's audio output, resulting in neither being heard.

This can happen when the VSC-55 has been selected for [Playback] under [Control Panel] - [Multimedia] - [Audio] because the application does not agree with the Control Panel setting.   To avoid this, the VSC-55 must be specified as the audio output destination for such applications.

For some applications, this utility can enable simultaneous MIDI performance by the VSC-55 and audio playback by making the changes in settings described below.   It is also possible to return to the state before settings were made with this utility.

l   QTW.INI file
This file contains settings for QuickTime for Windows.   It resides in the Windows directory.   QuickTime has a mode which operates while measuring the wave device's sampling rate, but this measurement may not proceed smoothly when the VSC-55's wave device is used, resulting in altered pitch.   To avoid this, add "DisableAutoRateAdjust=1" to the [Sound] section of QTW.INI, thereby suppressing this function.

QuickTime also records the measured results in QTW.INI.   If this entry is present, however, pitch conversion is carried out using this as a fixed value, and the playback pitch may be incorrect, so the entry should be deleted.

Delete the following:

[Sound]
RequestedRate?=???
ActualRate?=???
RateAlgorithm?=???
?:   Wave device ID

???:   Some value

l   wavemix.ini file
This file contains settings for the wave mixer.   It resides in the Windows directory.   The audio output destination for the wave mixer is specified in this file.   This location is changed to the wave mapper ID, and is changed so as to follow the Control Panel setting.

l   wavemix.inf file
This file contains settings for the wave mixer.   It provides settings for each application that uses the wave mixer.   It may reside in the directory of the application using the wave mixer.   The audio output destination for the wave mixer is specified in this file.   This file is searched and the location of the setting is changed the ID of the VSC-55's wave device.

[Starting the Utility]

After running the utility, the settings may not take effect unless restarted.
Some applications may not be able to be supported solely by modifying these settings.