

Chapter 23

Resetting Your Disklavier

If you want to return your Disklavier to its initial factory settings, follow the Reset function below.

Resetting Your Disklavier

You can reset all settings, the Memory Disk, or both.

- 1

Press the [FUNC.] button.

FUNC.

The FUNC. indicator lights and the Function menu display appears.
- 2

Use the [➡] cursor button to position the cursor next to the Reset option, then press the [ENTER] button.

➡

ENTER

The following display appears.

00

==Reset==

(-, +, ENT)

>Setup
- 3

Use the [-/NO] [+ /YES] buttons to select the item that you want to reset. Then press the [ENTER] button.

-/NO

+ /YES

➡

ENTER

Option	Description
Setup	All settings (See next page.)
Memory Disk + Setup	Memory disk and all settings (SMF format; sample song included) (See also next page.)
Memory Disk	Memory disk only (SMF format; sample song included)

The following display appears.

00

==Reset==

SURE?

MemoryDisk+Setup(YES, NO)
- 4

Press the [+ /YES] button to reset the settings.

If you do not want to reset the settings, press the [-/NO] button.

-/NO

+ /YES

The following table lists the default settings for the items that can be reset.

Parameter	Default Setting	Options
General		
Volume	0	-10 – 0
Tempo	0	-50 – +20
Transpose	0	-24 – +24
Repeat	OFF	ALL, RPT, RND, A-B
Pedal Cancel	PD on	PDoff, PD on
Voice		
Basic Voice	001	001 – 128
Variation Voice	0	0 – 101 (depending on basic voice)
Vol	100	000 – 127
Piano Tone	OFF	OFF, ON
Metronome		
Click	ON	OFF, ON
Tempo	117	30 – 400
Beat	4/4	1/4 – 9/4
Pedal Count	OFF	OFF, ON
Auto Setup		
Auto Start	OFF	OFF, ON
Space Play	OFF	OFF, 1 – 300, STOP
M-Tune		
TG Master Tune	00	-50 – 00 – +50
BALANCE		
TG Master Balance	100	10 – 127
MIDI Setup		
Piano Rcv Ch	01	##, 01 – 16, 1+2, Prg, Prg(all)
Delay In (500 ms)	ON	ON, OFF
Import File L	01	##, 01 – 16, Prg, Prg(all)
Import File R	##	##, 01 – 16, Prg
Piano Part ESBL Out	OFF	OFF, ON
MIDI Out	KBD OUT	ESBL Out, KBD Out, Thru Port2
Out Ch	01	01 – 16
Split	OFF	OFF, A-1 – C-7
Trans L	00	-60 – 00 – +60
Trans R	00	-60 – 00 – +60
Remote Out	OFF	OFF, ON
Remote In	OFF	OFF, ON
Local	ON	OFF, ON

Chapter 24

Troubleshooting

If you are having difficulty operating your Disklavier, see if any of the symptoms listed below apply to your problem, then follow the recommended remedy.

Symptom	Remedy	Reference
Power		
The Disklavier cannot be powered on.	Make sure the power cord is connected to a suitable AC outlet.	See “Power On Procedure” on page 12.
	Switch on the Disklavier’s “MAINS” switch.	
	Switch on the Control Unit’s “STANDBY/ON” switch.	
	If the Disklavier still cannot be powered up, disconnect it from the AC wall outlet, and consult your Disklavier dealer.	
Control Unit		
The Control Unit does not appear to work correctly.	Turn the power off, wait 5 seconds, then turn it back on.	
	If the problem remains, consult your Disklavier dealer.	
Remote Control		
You cannot control the Disklavier using the remote control.	Make sure that you are pointing the remote control at the Control Unit’s remote control sensor.	See “Using the Remote Control” on page 14.
	Make sure that you are within the remote control’s specified operating range.	
	Make sure that the remote control’s batteries have been installed correctly.	See “Installing Batteries in the Remote Control” on page 14.
	Check the condition of the remote control’s batteries.	See “Battery Replacement” on page 14.
Playback		
None of the playback functions can be used.	Insert a Disklavier song disk into the disk drive.	
Songs are played back at the wrong tempo or in the wrong key.	Reset the tempo or transposition functions. Once the tempo or transposition functions have been set, they will affect playback of all songs until another disk is inserted, or they are reset.	
Songs are not played back in the normal song order.	Check that the “RND” and “RPT” repeat functions are off.	See “All Song, Single Song, Random Repeat” on page 28.

You selected a song using the remote control's number pad, but the last song on the disk is found.	If a song number higher than the last song number on the disk is specified, the last song will be found.	
A search time is specified using the remote control, but the end of the song is found.	If a time value higher than the total length of the song is specified, the end of the song will be found.	
During playback, complex note trills and faint pianissimo passages are occasionally missed.	Increase the Disklavier's volume level.	
	The Disklavier lowers the playback volume by reducing the force applied to each hammer. So for notes that are already quiet (pianissimo, etc.), when the playback volume is reduced there may not be enough force applied to a hammer for it to strike the strings.	
When you play the piano, the keys do not respond in the normal manner and the sound is very soft.	The Disklavier may be in "soft mode" (volume set between -7 and -10). Set volume to 0.	See "Adjusting the Volume" on page 24.
The metronome does not sound during song playback.	Check that the song uses a measures and beats time format. If not, the metronome will not sound.	
Pedal		
Your Disklavier is powered off and the soft pedal cannot be used.	Power on the Disklavier, then switch off the Control Unit's STANDBY/ON switch first, then the MAINS switch.	See "Power Off Procedure" on page 13.
	If the Disklavier's volume level is set to Soft Mode (the extended use of the soft pedal mechanism) and the MAINS switch is switched off before the Control Unit's STANDBY/ON switch, the soft pedal mechanism will remain functioned. Always switch off the Control Unit first, then the MAINS switch.	
During playback, the pedals do not operate.	Check that the pedal cancel function is not set to "PDoff."	See "Operating the Pedals Yourself" on page 37.
	The sustain pedal is not made to move. Only the internal mechanism operates.	
Tone Generator (Ensemble Playback)		
During Ensemble song playback, the Ensemble parts cannot be heard.	Make sure that the audio cables between the Disklavier's audio AUX OUT and the amp/speaker inputs are connected properly.	See "Connecting a Speaker System" on page 11.
	Make sure that the amp's volume control is set to an appropriate level.	
	Readjust the volume balance.	See "Balancing the Ensemble Volume (TG Master Balance)" on page 25.
The pitch of the Disklavier and internal XG tone generator do not match.	Use the TG Master Tune function to tune the internal XG tone generator.	See "Tuning the Tone Generator (TG Master Tune)" on page 43.

Chapter 25

Display Error Messages

While operating your Disklavier an error message may appear in the display. If an error message does appear, look in the table below for an explanation of the message.

Note: This table does not explain every error message.

CANNOT RE-RECORD PROTECTED FILE	PianoSoft songs cannot be re-recorded, as they are write-protected.
CANNOT EXECUTE. PROTECTED FILES EXIST	The current function cannot be executed because protected files exist on the floppy disk.
DISK FULL! INSERT ANOTHER DISK	No more song data can be recorded onto the floppy disk because the disk is full. Use another floppy disk.
DISK WRITE PROTECTED!	The current function cannot be performed because the floppy disk's erasure protection tab is set to "protected." Set the disk's erasure protection tab to "unprotected." See "Accidental Erasure Protection" on page 52.
NOT ENOUGH DISK SPACE	No more song data can be recorded onto the disk because the disk is nearly full.
CANNOT RECORD MORE THAN 60 SONGS	No more than 60 songs can be recorded onto an E-SEQ type disk.
CANNOT RECORD MORE THAN 99 SONGS	No more than 99 songs can be recorded onto an SMF type disk.
SONG FILE NOT FOUND	The current function cannot be performed because this disk contains no songs or only one song.
WRONG DESTINATION DISK	A wrong floppy disk has been inserted as the destination disk. Insert the correct floppy disk.
UNFORMATTED DISK	The floppy disk is either new and has not yet been formatted for use with the Disklavier or it uses a format not recognized by the Disklavier. Format the floppy disk. See "Formatting Disks" on page 52.
UNSUITABLE DISK FORMAT	The destination disk must be the same format as the floppy disk to be copied.


The TG Master Balance function does not adjust the volume of the internal XG tone generator.	Make sure that the BALANCE parameter is set to OFF.	See "Balancing the Ensemble Volume (TG Master Balance)" on page 25.
Recording		
You cannot record songs onto the internal Memory Disk.	Check that a floppy disk is not inserted in the disk drive when recording. If a floppy disk is inserted in the disk drive when recording, the Disklavier automatically records onto the floppy disk and not the internal Memory Disk.	
When recording the second part of an L/R song, the first part will not play back for monitoring.	Set the Monitor Piano option to ON.	See "Re-Recording One Part" on page 70.
When recording a new part to an existing track, the new part replaces the existing parts.	Set the Record Tr option to OVERDUB.	See "Overdubbing a Track" on page 78.
You cannot re-record.	Re-recording is not possible on protected disks such as PianoSoft and PianoSoft-Plus disks.	
Connection with External Devices		
The Disklavier cannot send and receive MIDI data with other MIDI instruments.	Make sure the MIDI cables are connected properly.	
A MIDI loop was accidentally created when you connected a computer to the MIDI OUT connector on your Disklavier, so that song data is sent back and forth between the computer and and piano.	Set MIDI Out to KBD Out.	See Chapter 22, "The Disklavier & Computers".
Disk Utilities		
You cannot copy a song in the Memory Disk onto a floppy disk.	Copy-protected songs in the Memory Disk cannot be copied onto a floppy disk. They can only be copied onto the Memory Disk.	
	Make sure that the floppy disk's erasure tab is set to "unprotected."	See "Accidental Erasure Protection" on page 52.

SELECT REC TRACK!	You must select the track you want to record before starting recording.
ONLY E-SEQ FILES CAN BE COPIED	Only E-SEQ files can be recorded onto an E-SEQ type disk.
ERROR HAS OCCURRED! (PRESS STOP KEY!)	The floppy disk may be damaged. Press the Stop key to clear the message. If this message appears frequently with other disks as well, contact your nearest Yamaha service representative.

Chapter 26

Glossary

This glossary provides basic definitions of terms used frequently in the Disklavier manuals.

Auto Start	: A Disklavier function that automatically starts song playback when the power is switched on.
bpm	: An abbreviation for beats per minute
Clavinova™	: A series of Yamaha digital pianos.
Continuous Pedal	: Same as “Incremental Pedal”.
Cursor	: The “  ” symbol that is used on the LCD to show the currently selected function or option. When entering song or disk titles, the cursor will be the “_” symbol. Do not confuse this with the [◀] [▶] cursor buttons.
Disk	: Storage media for data. For clarity in the Disklavier manuals, “disk” is used as a generic term to refer to both the floppy disk and internal Memory Disk. All Disklavier playback, recording, and disk utility functions can be used for both the internal Memory Disk and floppy disks.
Ensemble Song	: A song which contains piano parts and accompanying instrumental voices. An Ensemble song contains the same left and right-hand parts as an L/R song, and in addition, up to 13 accompanying instrument tracks. These extra tracks are played by the internal XG tone generator. The accompanying tracks may be used for acoustic bass, drums, strings, vibes, etc.
E-SEQ Song Format	: A song file format developed by Yamaha for saving songs onto floppy disk.
E-SEQ Type Disk	: One of two disk types that the Disklavier uses to format disks. E-SEQ type disks are compatible with earlier Disklavier models.
Fast Forward & Reverse	: Two Disklavier functions that allow you to quickly locate a position within a song. This is faster than preview and review, but the Disklavier does not play.
Fast Preview & Review	: Two Disklavier functions that allow you to search quickly through a song with the Disklavier playing.
Floppy Disk	: The magnetic storage medium that the Disklavier uses to save songs. The Disklavier uses the 3.5 inch 2DD and 2HD floppy disks commonly used for computers.

Formatting	: New floppy disks must be formatted before they can be used with the Disklavier. Formatting prepares the disk so that it is ready to store Disklavier song data.
General MIDI (GM)	: An addition to the MIDI standard that simplifies the transfer of MIDI song files between different manufacturers' instruments. A MIDI song recorded using a GM compatible tone generator should play back correctly when used with any GM compatible tone generator. The standard specifies that a GM compatible tone generator must support 24-note polyphony, 16 parts, and 128 standard voices.
Half Pedal	: Same as "Incremental Pedal".
Import File	: Songs recorded onto floppy disks using MIDI equipment other than the Disklavier and played back by the Disklavier.
Incremental Pedal	: Piano pedals are not always fully up or down; they may be held somewhere in-between. The Disklavier can record and play back pedal movements of the left and right pedals, and this is called incremental or continuous pedal data (half data).
LCD	: Liquid Crystal Display. The Control Unit has an LCD that shows 2 large characters and 2 lines of 24 small characters. For clarity in the Disklavier manuals, the LCD is referred to as the "display".
LED	: Light Emitting Diode. The Control Unit's front panel indicators are LEDs.
L/R Song	: In a L/R song, the left-hand piano part is stored on track 1 (L) and the right-hand piano part is stored on track 2 (R). During playback you can cancel either part, and then play that part yourself. When recording an L/R song, you can record the two parts simultaneously or separately.
Memory Disk	: The Disklavier has an internal Memory Disk that allows you to store song data without a floppy disk. It has a memory capacity of 1MB.
Metronome	: A built-in device designed to mark exact time by a regularly repeated click and flashing of LED, and used for both recording and playback.
MIDI	: An acronym for Musical Instrument Digital Interface. MIDI allows electronic musical instruments to communicate with each other.
Overdub	: To add to an existing recording. For example, the Disklavier's rhythm track can be overdubbed. First record a bass drum, then a snare, then some hi-hats, etc.
Piano Parts	: Refers to the left- and right-hand piano parts of a song. The left-hand piano part is recorded onto track 1 and the right-hand piano part is recorded onto track 2 (default). This track assignment can be changed.
PianoSoft™	: The PianoSoft Disk Collection is a library of prerecorded song disks made by Yamaha, specifically for use with the Disklavier.
PianoSoft-Plus™	: PianoSoft-Plus disks contain Ensemble songs that can be played on the Disklavier.
Polyphony	: The maximum number of voices (different sounds) that can be produced at a time from the MIDI instruments.
Program Change Message	: A type of MIDI message that is used for selecting programs or voices. When an Ensemble song starts playing, Program Change messages are sent to the tone generator to select the correct instrument voices for each ensemble track.
Quantize	: A Disklavier function that can be used when recording. With the quantize function on, the timing of notes played using the Disklavier keyboard will automatically be corrected to the specified quantize value.
Rhythm Track	: Tracks of an ensemble song designated for the accompanying rhythm. The rhythm track is unaffected by the playback transposition function.
Search	: A Disklavier function that allows you to start playback from a specific point within a song. This function is set using the remote control.
Sequencer	: A sequencer can be used with the Disklavier to play back and record MIDI data.
SMF	: Abbreviation for Standard MIDI File.
SMF Song Format	: A song file format supported by MIDI sequencers and music software.
SMF Type Disk	: One of two disk types that the Disklavier uses to format disks. SMF type disks automatically record songs using SMF format 0.
Soft Mode	: A volume setting for the Disklavier upright, in the range -7 to -10. In this mode, the volume is reduced and the soft pedal mechanism is activated.
Song	: Normally, a short piece of music with lyrics. However, for clarity in the Disklavier manuals, the term is used to refer to any piece of music, be it jazz, classical, or popular.
Song Format	: The method used to store song data in a file. PianoSoft and PianoSoft-Plus songs use the E-SEQ format. The Disklavier also supports songs in the Standard MIDI File (SMF) format.
Song Number	: All songs on a Disklavier disk are numbered sequentially. The currently selected song number is shown in the LCD. Songs can be selected directly by entering the song number using the remote control's number pad.
Song Sort	: A Disklavier function that allows you to rearrange the order of songs on a disk.
Space Playback	: A Disklavier function that allows you to specify a pause time between songs during playback.

- Split Point** : When a keyboard split point is set before recording, notes played on the left-hand side of the split point are saved as the left-hand part and notes played on the right-hand side of the split point are saved as the right-hand part. This allows you to play the left- and right-hand parts simultaneously, but on different tracks.
- Standard MIDI File (SMF)** : A file of MIDI data that can be read and used by a number of different MIDI devices and computers. The Disklavier supports all SMF playback functions.
- System Exclusive Messages** : A type MIDI messages that is used for sending system data to a connected MIDI device. For example, when tuning the internal XG tone generator or an external tone generator, System Exclusive Messages are sent via MIDI.
- TG Master Balance** : A function that allows you to balance the volume levels of the Disklavier and the internal XG tone generator.
- TG Master Tune** : The function that allows you to tune the internal XG tone generator, and if connected, an external tone generator simultaneously so that their tunings match that of the Disklavier.
- Tone Generator** : An electronic device that can generate tones or instrument voices.
- Track** : Disklavier ensemble song data is organized as tracks. One song can be composed of up to 16 tracks.
- Transpose** : Changing the key of a song. For example, a song in the key of C can be transposed to the key of D by transposing it up two semitones.
- Velocity** : Because the loudness of a piano note is determined by the speed (velocity) with which a string is struck by a hammer, note loudness is referred to as velocity.
- Voice** : The sounds produced by a tone generator expressing various instruments. See the “Internal XG Tone Generator Voice & Drum Kit List” on pages 48 and 49 for a listing of basic voices, and the Appendix “MIDI Data Format” at the very end of this manual for a full listing of available voices.
- XG** : Yamaha XG is an extension of the GM (General MIDI) format. It has greater polyphony, more voices, and incorporates effects, enhancing the compatibility between MIDI devices. When a song in the Yamaha XG format is played on another XG-compatible tone generator or synthesizer, it plays and sounds as the original composer/creator intended.

Chapter 27

Specifications

Sensor System	Keys	88-key continuous-position optical sensors 16-note polyphonic	
	Pedals	Sustain	On/Off
		Soft	On/Off
Drive System	Keys	Self-calibrating solenoids 16-note polyphonic	
	Sustain Pedal	On/off solenoid (internal drive)	
Data Storage	Media	3.5" 2DD (720KB) or 2HD (1.44MB) floppy disk	
	Memory Disk	Flash memory (1MB)	
	File Format	Standard MIDI File (format 0, format 1), E-SEQ	
Control Unit	Display	Song number plus 24-character × 2-line LCD	
	Switches	Power, Host Select (MIDI/PC1/PC2/Mac)	
	Dimensions (W × H × D)	227 × 64 × 180 mm	
Connectors		MIDI (In/Out), To Host (serial port), AUX (Out)	
Ensemble Tone	Type	Advanced Wave Memory 2 (AWM2)	
	Polyphony	32-note max.	
	Ensemble Parts	16	
	Voice Module Modes	XG, GM	
	Normal Voices	676 total (480 selectable)	
	Drum Voices	21 kits total (11 selectable)	
	Pitch	Set at A=440, tunable ±50 cents in 1-cent steps	
Power Source		Local AC current	
Supplied Accessories		Wireless remote control unit w/batteries, PianoSoft™ sample disk, blank 3.5" 2DD floppy disk, owner's manuals	
Playback Functions	Song Select	Rev/fwd, song by song; numerical selection	
	Music Search	Rev/fwd, w/ or w/o sound; direct by time or measure	
	Repeat (<i>remote only</i>)	Disk, song, random, segment A-B, segment A-	
	Others	L/R part select, auto start, space playback	
Playback Controls	Volume	11 levels (0 ~ -10)	
	Tempo	-50% ~ +20% in 1% steps	
	Transposition	±24 semitones (2 octaves) in 1-semitone steps	
	Balance	Balancing volume of Ensemble voices and piano	
	Others	Keyboard cancel, pedal cancel, pedal count-in	
Recording Functions	Tracks	16 (including 2 for piano)	
	L/R Dual Recording	Separate L/R or assignable split point	
	Others	Quantize, re-record	
Metronome	Range	30 – 400 bpm, 1/4 – 9/4 time	
	Function	Audible (tick, on/off), visual (LEDs)	
Editing Functions	Tracks	Mix, move, copy, delete, transpose	

Utility Functions	Song	Copy, sort, delete, title, type convert (SMF, E-SEQ, earlier Disklavier), time format convert
	Disk	Format, copy, title, type convert

Specifications are subject to change without prior notice.

Appendix MIDI Data Format

If you are familiar with MIDI, or are using a computer to control your music software with computer-generated MIDI messages, the data provided in this section can help you to control your Disklavier.

Messages include those that can be received by an ESB part. Messages that can be transmitted as well as received are shown as “transmitted”.

1. CHANNEL MESSAGES

- 1.1 Key On / Key Off**
(Piano Part, ESDL Part) (transmitted)

Piano Part reception note range = A-1 ~ C7 : C3=60
ESBL part reception note range = C-2 ~ G8
Velocity range = 1 ~ 127 (Only the Key On velocity is received)

1.2 Control Change

1.2.1 Bank Select
(ESBL Part) (transmitted)

Cntrl#	Parameter	Data Range
0	Bank Select MSB	0: Normal, 63: User voice, 64: SFX, 126: SFX kit, 127: Drum
32	Bank Select LSB	0...127

You can select the Voice banks with MSB and LSB numbers.
MSB and LSB functions differently depending on the play mode.
In XG mode, MSB numbers select Voice type (Normal Voice or Drum Voice), and LSB number select Voice banks.
In TG300B mode, LSB is fixed, and MSB numbers select Voice banks.
(See Normal Voice List Drum Voice List.)
A new bank selection will not become effective until the next Program Change message is received.

1.2.2 Modulation
(ESBL Part)

Cntrl#	Parameter	Data Range
1	Modulation	0...127

1.2.3 Portamento Time
(ESBL Part)

Cntrl#	Parameter	Data Range
5	Portamento Time	0...127

When the parameter 1.2.9 Portamento = ON, values will adjust the speed of pitch change.
A setting of 0 - minimum portamento time, and 127 - maximum portamento time.

1.2.4 Data Entry
(ESBL Part)

Messages which set the value for the parameter specified by RPN/NRPN.

Cntrl#	Parameter	Data Range
6	Data Entry MSB	0...127
38	Data Entry LSB	0...127

Parameter value is determined by combining MSB and LSB.

1.2.5 Main Volume
(Piano Part, ESDL Part) (transmitted)

Cntrl#	Parameter	Data Range
7	Main Volume	0...127

1.2.6 Pan
(ESBL Part)

- | | | | |
|---------------|--|-------------------------------|--|
| | Cntrl#
10 | Parameter
Pan | Data Range
0...127 |
| 1.2.7 | Expression
(Piano Part, ESB L Part) | | |
| | Cntrl#
11 | Parameter
Expression | Data Range
0...127 |
| 1.2.8 | Hold1
(Piano Part, ESB L Part) (transmitted) | | |
| | Cntrl#
64 | Parameter
Hold1 | Data Range
0...127
(0-63:off, 64-127:on) |
| 1.2.9 | Portamento
(ESB L Part) | | |
| | Cntrl#
65 | Parameter
Portamento | Data Range
0...127
(0-63:off, 64-127:on) |
| 1.2.10 | Sostenuto
(Piano Part, ESB L Part) (transmitted) | | |
| | Cntrl#
66 | Parameter
Sostenuto | Data Range
0...127
(0-63:off, 64-127:on) |
| 1.2.11 | Soft Pedal
(Piano Part, ESB L Part) (transmitted) | | |
| | Cntrl#
67 | Parameter
Soft Pedal | Data Range
0...127
(0-63:off, 64-127:on) |
| 1.2.12 | Harmonic Content
(ESB L Part) | | |
| | Messages which adjust the resonance set for each Voice. | | |
| | Cntrl#
71 | Parameter
Harmonic Content | Data Range
0...127
(0:-64, 64:+0, 127:+63) |
| | Higher values will result in a more characteristic, resonant sound. | | |
| | Depending on the Voice, the effective range may be narrower than the range available for adjustment. | | |
| 1.2.13 | Release Time
(ESB L Part) | | |
| | Messages which adjust the envelope release time set for each Voice. | | |
| | Cntrl#
72 | Parameter
Release Time | Data Range
0...127
(0:-64, 64:+0, 127:+63) |
| 1.2.14 | Attack Time
(ESB L Part) | | |
| | Messages which adjust the envelope attack time set for each Voice. | | |
| | Cntrl#
73 | Parameter
Attack Time | Data Range
0...127
(0:-64, 64:+0, 127:+63) |

1.2.15 Brightness
(ESBL Part)

Messages which adjust the filter cutoff frequency set for each Voice.

Cntrl#	Parameter	Data Range
74	Brightness	0...127 (0:-64, 64:+0, 127:+63)

1.2.16 Portamento Control
(ESBL Part)

Messages which apply a portamento between the currently-sounding note and the subsequent note.

Cntrl#	Parameter	Data Range
84	Portamento Control	0...127

1.2.17 Effect1 Depth (Reverb Send Level)
(ESBL Part)

Cntrl#	Parameter	Data Range
91	Effect1 Depth	0...127

1.2.18 Effect3 Depth (Chorus Send Level)
(ESBL Part)

Cntrl#	parameter	Data Range
93	Effect3 Depth	0...127

1.2.19 Effect4 Depth (Variation Effect Send Level)
(ESBL Part)

Cntrl#	Parameter	Data Range
94	Effect4 Depth	0...127

1.2.20 Data Increment / Decrement (for RPN)
(ESBL Part)

Cntrl#	Parameter	Data Range
96	RPN Increment	0...127
97	RPN Decrement	0...127

1.2.21 NRPN (Non-Registered Parameter Number)
(ESBL Part)

Cntrl#	Parameter	Data Range
98	NRPN LSB	0...127
99	NRPN MSB	0...127

First send the NRPN MSB and NRPN LSB to specify the parameter which is to be controlled. Then use Data Entry to set the value of the specified parameter.

* Note that once the NRPN has been set for a channel subsequent data entry will be recognized as the same NRPN's value change. Therefore, after you use the NRPN, you should set a Null (7FH, 7FH) value to avoid an unexpected result.

The following NRPN number can be received.

NRPN		Data entry	
MSB	LSB	MSB	PARAMETER NAME and VALUE RANGE
\$01	\$08	\$mm	Vibrato Rate mm : \$00 - \$40 - \$7F (-64 - 0 - +63)
\$01	\$09	\$mm	Vibrato Depth mm : \$00 - \$40 - \$7F (-64 - 0 - +63)
\$01	\$0A	\$mm	Vibrato Delay mm : \$00 - \$40 - \$7F (-64 - 0 - +63)
\$01	\$20	\$mm	Filter Cutoff Frequency mm : \$00 - \$40 - \$7F (-64 - 0 - +63)
\$01	\$21	\$mm	Filter Resonance mm : \$00 - \$40 - \$7F (-64 - 0 - +63)
\$01	\$63	\$mm	EG Attack Time mm : \$00 - \$40 - \$7F (-64 - 0 - +63)
\$01	\$64	\$mm	EG Decay Time mm : \$00 - \$40 - \$7F (-64 - 0 - +63)
\$01	\$66	\$mm	EG Release Time mm : \$00 - \$40 - \$7F (-64 - 0 - +63)
\$14	\$rr	\$mm	Drum Filter Cutoff Frequency mm : \$00 - \$40 - \$7F (-64 - 0 - +63) rr : drum instrument note number
\$15	\$rr	\$mm	Drum Filter Resonance mm : \$00 - \$40 - \$7F (-64 - 0 - +63) rr : drum instrument note number

\$16	\$rr	\$mm	Drum EG Attack mm : \$00 - \$40 - \$7F (-64 - 0 - +63) rr : drum instrument note number
\$17	\$rr	\$mm	Drum EG Decay Rate mm : \$00 - \$40 - \$7F (-64 - 0 - +63) rr : drum instrument note number Applies to both Decay1 and 2.
\$18	\$rr	\$mm	Drum Instrument Pitch Coarse mm : \$00 - \$40 - \$7F (-64 - 0 - +63) rr : drum instrument note number
\$19	\$rr	\$mm	Drum Instrument Pitch Fine mm : \$00 - \$40 - \$7F (-64 - 0 - +63) rr : drum instrument note number
\$1A	\$rr	\$mm	Drum Instrument Level mm : \$00 - \$7F (0 - max) rr : drum instrument note number
\$1C	\$rr	\$mm	Drum Instrument Pan mm : \$00 - \$40 - \$7F (random, left - center - right) rr : drum instrument note number
\$1D	\$rr	\$mm	Drum Instrument Reverb Send Level mm : \$00 - \$7F (0 - max) rr : drum instrument note number
\$1E	\$rr	\$mm	Drum Instrument Chorus Send Level mm : \$00 - \$7F (0 - max) rr : drum instrument note number
\$1F	\$rr	\$mm	Drum Instrument Variation Send Level mm : \$00 - \$7F (0 - max) rr : drum instrument note number

MSB 14H- 1FH (for Drum) is valid only if the Multi Part parameter PART MODE = DRUMS 1 or DRUMS2 for that channel. (If PART MODE = DRUM, no values will be changed.)

1.2.22 RPN (Registered Parameter Number)
(ESBL Part)

Cntrl#	Parameter	Data Range
100	RPN LSB	0...127
101	RPN MSB	0...127

The following RPN numbers can be received.

RPN		Data entry		PARAMETER NAME and VALUE RANGE
MSB	LSB	MSB	LSB	
00H	00H	mmH	--	Pitch Bend Sensitivity mm:00-18H (0-24 chromatic steps) Assignable in chromatic steps up to 2 octaves Default : 02H LSB value is ignored.
00H	01H	mmH	11H	Fine Tuning mm: 00H-40H-7FH (-64-0-+63)
00H	02H	mmH	--	Coarse Tuning mm: 28H - 40H - 58H (-24 - +24 chromatic steps) LSB value is ignored.
7FH	7FH	--	--	RPN null Cancels RPN and NRPN numbers

1.2.23 Channel Mode Messages

The following Channel Mode Messages can be received.

2nd byte	3rd byte	
120	0	All Sound Off
121	0	Reset All Controllers
123	0	All Note Off
124	0	Omni Off
125	0	Omni On
126	0 ~ 16	Mono
127	0	Poly

1.2.23.1 All Sound Off
(Piano Part, ESBL Part) (transmitted)

ESBL part;
Terminates all sounds currently sounding on the specified channel. However, the status of channel messages such as Note On and Hold On is maintained.
Piano Part;
The status of channel messages is not maintained.

1.2.23.2 Reset All Controllers
(ESBL Part)

The values of the following controllers will be reset to the defaults.

CONTROLLER	VALUE
Pitch Bend Change	±0 (center)
Channel Aftertouch	0 (off)
Polyphonic Aftertouch	0 (off)
Modulation	0 (off)
Expression	127 (max)
Hold 1	0 (off)
Portamento	0 (off)
Sostenuto	0 (off)
Soft Pedal	0 (off)
Portamento Control	cancels the Portamento Source Key Number that was received number not specified; internal data will not change
RPN	number not specified; internal data will not change
NRPN	number not specified; internal data will not change

1.2.23.3 All Note Off

(Piano Part, ESBL Part) (transmitted)

Terminates all notes currently on for the specified channel. However, if Hold 1 or Sostenuto is on, notes will continue sounding until these are turned off.

1.2.23.4 Omni Off

(Piano Part, ESBL Part)

Performs the same function as when an All Notes Off message is received.

1.2.23.5 Omni On

(Piano Part, ESBL Part)

Performs the same function as when an All Notes Off message is received.

1.2.23.6 Mono

(Piano Part, ESBL Part)

Performs the same function as when an All Sounds on message is received, and if the 3rd byte (mono number) is in the range of 0 - 16, sets the corresponding channel to Mono Mode (Mode 4 : m = 1).

1.2.23.7 Poly

(Piano Part, ESBL Part)

Performs the same function as when an All Sounds Off message is received, and sets the corresponding channel to Poly Mode (Mode 3).

1.2.24 Local Control

(Piano Part, ESBL Part)

0:Off Disklavier keyboard does not play the internal voices.
127:On

1.3 Program Change

(ESBL Part) (transmitted)

Messages for Voice selection.
With a combination of Bank Select, you can select not only basic Voice numbers, but also variation Voice bank numbers.

1.4 Pitch Bend
(ESBL Part)

When Multi Part Parameter Rcv PITCH BEND CHANGE=OFF, pitch bend for that part is not received.

1.5 Channel Aftertouch
(ESBL Part)

1.6 Polyphonic Aftertouch
(ESBL Part)

2. SYSTEM EXCLUSIVE MESSAGES

2.1 Parameter Change

The Disklavier receives the following parameter change messages.

[UNIVERSAL REALTIME MESSAGE]
1) Master Volume

[UNIVERSAL NON REALTIME MESSAGE]
1) General MIDI Mode On

[XG NATIVE]

- 1) XG System on
- 2) XG System Data parameter change
- 3) Multi Effect1 Data parameter change
- 4) Multi Part Data parameter change
- 5) Drums Setup Data parameter change

[OTHER]

- 1) Master tuning
- 2) TG300 System Data Parameter change
- 3) TG300 Multi Effect Data parameter change
- 4) TG300 Multi Part Data parameter change

2.1.2 Universal Realtime Messages

2.1.2.1 Master Volume
(Piano Part, ESBL Part)

11110000	F0	= Exclusive status
01111111	7F	= Universal Real Time
01111111	7F	= ID of target device
00001000	04	= Sub-ID #1=Device Control Message
00000001	01	= Sub-ID #2=Master Volume
0sssssss	*SS	= Volume LSB
0tttttt	TT	= Volume MSB
11110111	F7	= End of Exclusive
or		
11110000	F0	= Exclusive status
01111111	7F	= Universal Real Time
0xxxxnnn	XN	= Device Number, xxx = don't care
00001000	04	= Sub-ID #1=Device Control Message
00000001	01	= Sub-ID #2=Master Volume
0sssssss	SS	= Volume LSB
0tttttt	TT	= Volume MSB
11110111	F7	= End of Exclusive

When received, the Volume MSB will be effective for the System Parameter MASTER VOLUME.

* "SS" is the hexadecimal expression of 0sssssss; same as for "tt", "aa", etc.

2.1.3 Universal Non-Realtime Messages

2.1.3.1 General MIDI Mode On
(ESBL Part)

11110000	F0	= Exclusive status
01111110	7E	= Universal Non-Real Time
01111111	7F	= ID of target device
00001001	09	= Sub-ID #1=General MIDI Message
00000001	01	= Sub-ID #2=General MIDI On
11110111	F7	= End of Exclusive
or		
11110000	F0	= Exclusive status
01111110	7E	= Universal Non-Real Time
0xxxxnnn	XN	= Device Number, xxx = don't care
00001001	09	= Sub-ID #1=General MIDI Message
00000001	01	= Sub-ID #2=General MIDI On
11110111	F7	= End of Exclusive

When General MIDI Mode On is received, the play mode will be changed to XG mode.
When this happens, the ESBL part will receive the MIDI messages which compatible with GM System Level 1, and consequently will not receive NRPN and Bank Select messages.
Since approximately 50ms is required to execute this message, be sure to leave an appropriate interval before the subsequent message.

2.1.4 XG Native Parameter Change
(ESBL Part)

With the Parameter Change messages as listed below, you can change the characteristic of a Voice, such as by Effect Type or effect parameter, transpose, tuning, and others.

11110000	F0	Exclusive status
01000011	43	YAMAHA ID

0001nnnn	1n	Device Number
01001100	4C	XG Model ID
0aaaaaaa	aaaaaaa	Address High
0aaaaaaa	aaaaaaa	Address Mid
0aaaaaaa	aaaaaaa	Address Low
0ddddd	ddddd	Data
1	1	
1110111	F7	End of Exclusive

* Any number is OK since the device number for the Disklavier is fixed to "All".

For parameters with data size of 2 or 4, transmit the appropriate number of data bytes.

When sending the parameter change messages consecutively, be sure to leave an appropriate interval (if the time base is 480, ca 5 unit) between the messages.

2.1.4.1 XG System On (ESBL Part)

11110000	F0	Exclusive status
01000011	43	YAMAHA ID
0001nnnn	1n	Device Number
01001100	4C	XG Model ID
0aaaaaaa	00	Address High
0aaaaaaa	00	Address Mid
0aaaaaaa	7E	Address Low
00000000	00	Data
11110111	F7	End of Exclusive

When this data is received, the Disklavier will switch to XG mode and all the parameters will be initialized accordingly, and XG-compatible messages such as NRPN and Bank Select messages can be received.

Since approximately 50ms is required to execute this message, be sure to leave an appropriate interval before the subsequent message

2.1.4.2 XG System Data parameter change (ESBL Part)

See tables <1-1> and <1-2>.

2.1.4.3 Multi Effect1 Data parameter change (ESBL Part)

See tables <1-1> and <1-3>.

2.1.4.4 Multi Part Data parameter change (ESBL Part)

See tables <1-1> and <1-4>.

2.1.4.5 Drums Setup Data parameter change (ESBL Part)

See tables <1-1> and <1-5>.

If a Drum Setup Reset parameter change message is received, the Drum Setup parameter values will be initialized. Selecting a Drum Set will cause the Drum Setup parameter values to be initialized.

2.1.5 Other parameter changes

2.1.5.1 Master Tuning (ESBL Part)

11110000	F0	Exclusive status
01000011	43	YAMAHA ID
0001nnnn	1n	Device Number
00100111	27	Model ID
00110000	30	Sub ID2
00000000	00	
00000000	00	
0mmmmmmmm	mm	Master Tune MSB
0lllllll	ll	Master Tune LSB
0ccccccc	cc	
11110111	F7	End of Exclusive

This message simultaneously changes the pitch of all channels.

2.2 Bulk Dump (ESBL Part)

The Disklavier receives the following bulk dump data.

[XG NATIVE]
1) XG System Data
2) Multi Effect1 Data

- 3) Multi Part Data
- 4) Drums Setup Data

[QS300 NATIVE]

- 1) QS300 User Normal Voice Data

2.2.1 XG Native Bulk Dump

11110000	F0	Exclusive status
01000011	43	YAMAHA ID
0000nnnn	0n	Device Number
01001100	4C	XG Model ID
0bbbbbbb	bbbbbbb	ByteCount
0bbbbbbb	bbbbbbb	ByteCount
0aaaaaaa	aaaaaaa	Address High
0aaaaaaa	aaaaaaa	Address Mid
0aaaaaaa	aaaaaaa	Address Low
0ddddd	dd	Data
1	1	
1	1	
0ccccccc	ccccccc	Checksum
11110111	F7	End of Exclusive

For the Address and Byte Count, refer to the supplementary tables. The Checksum is the value that results in a value of 0 for the lower 7 bits when the Start Address, Byte Count, plus the Checksum itself are added.

2.2.1.1 XG System Data bulk dump (ESBL Part)

See tables <1-1> and <1-2>.

2.2.1.2 Multi Effect1 Data bulk dump (ESBL Part)

See tables <1-1> and <1-3>.

2.2.1.3 Multi Part Data bulk dump (ESBL Part)

See tables <1-1> and <1-4>.

2.2.1.4 Drums Setup Data bulk dump (ESBL Part)

See tables <1-1> and <1-5>.

2.2.2 QS300 Native Bulk Dump

11110000	F0	Exclusive status
01000011	43	YAMAHA ID
0000nnnn	0n	Device Number
01001101	4B	QS300 Model ID
0bbbbbbb	bbbbbbb	ByteCount
0bbbbbbb	bbbbbbb	ByteCount
0aaaaaaa	aaaaaaa	Address High
0aaaaaaa	aaaaaaa	Address Mid
0aaaaaaa	aaaaaaa	Address Low
0ddddd	dd	Data
1	1	
1	1	
0ccccccc	ccccccc	Checksum
11110111	F7	End of Exclusive

2.2.2.1 QS300 User Normal Voice Data bulk damp (ESBL Part)

See tables <2-1> and <2-2>.

3. SYSTEM COMMON MESSAGES

3.1 Song Position Pointer

a) Transmission
This message is transmitted only when the REMOTE OUT parameter is set to On.

b) Reception
This message is received only when REMOTE IN Parameter is set to On.

3.2 Song Select

a) Transmission
This message is transmitted only when the REMOTE OUT parameter is set to On.

b) Reception
This message is received only when REMOTE IN Parameter is set to On.

This message is transmitted only when the REMOTE OUT parameter is set to On.

b) Reception
Not recognized.

4.3 Start

a) Transmission
This message is transmitted only when the REMOTE OUT parameter is set to On.

b) Reception
This message is received only when REMOTE IN Parameter is Set to On.

4.4 Stop

a) Transmission
This message is transmitted only when the REMOTE OUT parameter is set to On.

b) Reception
This message is received only when REMOTE IN Parameter is Set to On.

4. SYSTEM REALTIME MESSAGES

4.1 Active Sensing

a) Transmission
Transmitted.

b) Reception
Once FE has been received, if no MIDI data is subsequently received for longer than an interval of approximately 300msec, the Disklavier will perform the same function as when ALL SOUNDS OFF, ALL NOTES OFF, and RESET ALL CONTROLLERS messages are received, and will then return to a status in which FE is not monitored.

4.2 Timing Clock

a) Transmission

<Table 1-1>

Parameter Bass Address
Model ID = 4C [XG]

Parameter Change				
	Address			
	(H)	(M)	(L)	Description
XG SYSTEM	00	00	00	System
	00	00	7D	Drum setup Reset
	00	00	7E	XG System On
	00	00	7F	All Parameter Reset
EFFECT 1	02	01	00	Effect1 (Reverb, Chorus, Variation)
MULTI PART	08	00	00	Multi Part 1
	08	0F	00	: Multi Part 16
DRUM	30	18	00	Drum Setup 1
	31	18	00	Drum Setup 2

Address			Parameter
3n	0B	00	note number 13
3n	0C	00	note number 14
3n	:	00	:
3n	5B	00	note number 91

n: Drum setup number (0, 1)

<Table 1-2>

MIDI Parameter Change table (SYSTEM) [XG]

Address (H)	Size (H)	Data (H)	Parameter	Description	Default value (H)
00 00 00	4	0000-07FF	MASTER TUNE	-102.4 - +102.3 [cent] 1st bit3-0→bit15-12 2nd bit3-0→bit11-8 3rd bit3-0→bit7-4 4th bit3-0→bit3-0	00 04 00 00 -400
04 05 06 7D 7E 7F	1 1 1 n 00 00	00 - 7F 00 - 7F 28 - 58 n 00 00	MASTER VOLUME not used TRANPOSE DRUM SETUP RESET XG SYSTEM ON ALL PARAMETER RESET	0 - 127	7F
TOTAL SIZE	07			-24 - +24 [semitones] n=Drum setup number 00=XG system ON (receive only) 00=ON (receive only)	40

<Table 1-3>

MIDI Parameter Change table (EFFECT 1) [XG]

Address (H)	Size (H)	Data (H)	Parameter	Description	Default value (H)
02 03 04 05 06 07 08	01 1 1 1 1 1 1	00 00 00 00 00 00 00	REVERB TYPE MSB REVERB TYPE LSB REVERB PARAMETER 1 REVERB PARAMETER 2 REVERB PARAMETER 3 REVERB PARAMETER 4 REVERB PARAMETER 5 REVERB PARAMETER 6 REVERB PARAMETER 7	see Effect Type List 00 : basic type see Effect Parameter List " " " " " " "	01(=HALL1) 00 Depends on reverb type " " " " " " "

		09	1	00-7F	REVERB PARAMETER 8	..	..
		0A	1	00-7F	REVERB PARAMETER 9	..	..
		0B	1	00-7F	REVERB PARAMETER 10	..	..
		0C	1	00-7F	REVERB RETURN	-∞dB...0dB...+6dB(0...64...127)	40
		0D	1	01-7F	REVERB PAN	L63...C...R63(1...64...127)	40
TOTAL SIZE							
02	01	10	1	00-7F	REVERB PARAMETER 11	see Effect Parameter List	Depends on reverb type
		11	1	00-7F	REVERB PARAMETER 12	..	..
		12	1	00-7F	REVERB PARAMETER 13	..	..
		13	1	00-7F	REVERB PARAMETER 14	..	..
		14	1	00-7F	REVERB PARAMETER 15	..	..
		15	1	00-7F	REVERB PARAMETER 16	..	..
TOTAL SIZE			6				
02	01	20	2	00-7F	CHORUS TYPE MSB	see Effect Type List	41 (=CHORUS1)
				00-7F	CHORUS TYPE LSB	00 : basic type	00
		22	1	00-7F	CHORUS PARAMETER 1	see Effect Parameter List	Depends on chorus Type
		23	1	00-7F	CHORUS PARAMETER 2	..	..
		24	1	00-7F	CHORUS PARAMETER 3	..	..
		25	1	00-7F	CHORUS PARAMETER 4	..	..
		26	1	00-7F	CHORUS PARAMETER 5	..	..
		27	1	00-7F	CHORUS PARAMETER 6	..	..
		28	1	00-7F	CHORUS PARAMETER 7	..	..
		29	1	00-7F	CHORUS PARAMETER 8	..	..
		2A	1	00-7F	CHORUS PARAMETER 9	..	..
		2B	1	00-7F	CHORUS PARAMETER 10	..	..
		2C	1	00-7F	CHORUS RETURN	-∞dB...0dB...+6dB(0...64...127)	40
		2D	1	01-7F	CHORUS PAN	L63...C...R63(1...64...127)	40
		2E	1	00-7F	SEND CHORUS TO REVERB	-∞dB...0dB... +6dB(0...64...127)	00
TOTAL SIZE			0F				
02	01	30	1	00-7F	CHORUS PARAMETER 11	see Effect Parameter List	Depends on chorus Type
		31	1	00-7F	CHORUS PARAMETER 12	..	..
		32	1	00-7F	CHORUS PARAMETER 13	..	..
		33	1	00-7F	CHORUS PARAMETER 14	..	..
		34	1	00-7F	CHORUS PARAMETER 15	..	..
		35	1	00-7F	CHORUS PARAMETER 16	..	..
TOTAL SIZE			6				
02	01	40	2	00-7F	VARIATION TYPE MSB	see Effect Type List	05 (=DELAY L, C, R)
				00-7F	VARIATION TYPE LSB	00 : basic type	00
		42	2	00-7F	VARIATION PARAMETER 1 MSB	see Effect Parameter List	Depends on variation type
				00-7F	VARIATION PARAMETER 1 LSB	..	..
		44	2	00-7F	VARIATION PARAMETER 2 MSB	..	..
				00-7F	VARIATION PARAMETER 2 LSB	..	..
		46	2	00-7F	VARIATION PARAMETER 3 MSB	..	..
				00-7F	VARIATION PARAMETER 3 LSB	..	..
		48	2	00-7F	VARIATION PARAMETER 4 MSB	..	..
				00-7F	VARIATION PARAMETER 4 LSB	..	..
		4A	2	00-7F	VARIATION PARAMETER 5 MSB	..	..
				00-7F	VARIATION PARAMETER 5 LSB	..	..
		4C	2	00-7F	VARIATION PARAMETER 6 MSB	..	..
				00-7F	VARIATION PARAMETER 6 LSB	..	..
		4E	2	00-7F	VARIATION PARAMETER 7 MSB	..	..
				00-7F	VARIATION PARAMETER 7 LSB	..	..
		50	2	00-7F	VARIATION PARAMETER 8 MSB	..	..
				00-7F	VARIATION PARAMETER 8 LSB	..	..
		52	2	00-7F	VARIATION PARAMETER 9 MSB	..	..
				00-7F	VARIATION PARAMETER 9 LSB	..	..
		54	2	00-7F	VARIATION PARAMETER 10 MSB	..	..
				00-7F	VARIATION PARAMETER 10 LSB	..	..
		56	1	00-7F	VARIATION RETURN	-∞ dB...0dB...+6dB(0...64...127)	40
		57	1	01-7F	VARIATION PAN	L63...C...R63(1...64...127)	40
		58	1	00-7F	SEND VARIATION TO REVERB	-∞ dB...0dB...+6dB(0...64...127)	00
		59	1	00-7F	SEND VARIATION TO CHORUS	-∞ dB...0dB...+6dB(0...64...127)	00
		5A	1	00-01	VARIATION CONNECTION	0:INSERTION, 1:SYSTEM	00
		5B	1	00-0F,7F	VARIATION PART	Part1...16(0...15)	7F
						0FF (127)	
		5C	1	00-7F	MW VARIATION CONTROL DEPTH	-64 - +63	40
		5D	1	00-7F	BEND VARIATION CONTROL DEPTH	-64 - +63	40
		5E	1	00-7F	CAT VARIATION CONTROL DEPTH	-64 - +63	40
		5F	1	00-7F	AC1 VARIATION CONTROL DEPTH	-64 - +63	40
		60	1	00-7F	AC2 VARIATION CONTROL DEPTH	-64 - +63	40
TOTAL SIZE			21				
02	01	70	1	00-7F	VARIATION PARAMETER 11	see Effect Parameter List	Depends on variation type
		71	1	00-7F	VARIATION PARAMETER 12	..	..
		72	1	00-7F	VARIATION PARAMETER 13	..	..
		73	1	00-7F	VARIATION PARAMETER 14	..	..
		74	1	00-7F	VARIATION PARAMETER 15	..	..
		75	1	00-7F	VARIATION PARAMETER 16	..	..
TOTAL SIZE			6				

<Table 1-4>

MIDI Parameter Change table (MULTI PART) [XG]

Address (H)		Size (H)	Data (H)	Parameter	Description	Default value (H)
08	nn	00	1	00 - 20	ELEMENT RESERVE	0 - 32
	nn	01	1	00 - 7F	BANK SELECT MSB	0 - 127
	nn	02	1	00 - 7F	BANK SELECT LSB	0 - 127
	nn	03	1	00 - 7F	PROGRAM NUMBER	1 - 128

		nn	04	1	00 - 0F, 7F	Rev CHANNEL	1 - 16.OFF	part no.
		nn	05	1	00 - 01	MONO/POLY MODE	0:MONO	01
							1:POLY	
		nn	06	1	00 - 02	SAME NOTE NUMBER KEY ON ASSIGN	0:SINGLE	1 (all part)
							1:MULTI	part10=2, other=0
							2:INST (for DRUM)	
		nn	07	1	00 - 03	PART MODE	0:NORMAL	00 (other than Part10)
							1:DRUM	02 (Part10)
							2-3:DRUMS1 - 2	
		nn	08	1	28 - 58	NOTE SHIFT	-24 - +24 [semitones]	40
		nn	09	2	00 - FF	DETUNE	-12.8 - +12.7 [Hz]	08 00
		nn	0A				1st bit3-0→bit7-4	(80)
							2nd bit3-0→bit3-0	
		nn	0B	1	00 - 7F	VOLUME	0 - 127	64
		nn	0C	1	00 - 7F	VELOCITY SENSE DEPTH	0 - 127	40
		nn	0D	1	00 - 7F	VELOCITY SENSE OFFSET	0 - 127	40
		nn	0E	1	00 - 7F	PAN	0/random, 1/L63-64/C-127/R63	40
		nn	0F	1	00 - 7F	NOTE LIMIT LOW	C-2 - G8	00
		nn	10	1	00 - 7F	NOTE LIMIT HIGH	C-2 - G8	7F
		nn	11	1	00 - 7F	DRY LEVEL	0 - 127	7F
		nn	12	1	00 - 7F	CHORUS SEND	0 - 127	00
		nn	13	1	00 - 7F	REVERB SEND	0 - 127	40
		nn	14	1	00 - 7F	VARIATION SEND	0 - 127	00
		nn	15	1	00 - 7F	VIBRATO RATE	-64 - +63	40
		nn	16	1	00 - 7F	VIBRATO DEPTH	-64 - +63	40 (drum part ignores)
		nn	17	1	00 - 7F	VIBRATO DELAY	-64 - +63	40 (drum part ignores)
		nn	18	1	00 - 7F	FILTER CUTOFF FREQUENCY	-64 - +63	40
		nn	19	1	00 - 7F	FILTER RESONANCE	-64 - +63	40
		nn	1A	1	00 - 7F	EG ATTACK TIME	-64 - +63	40
		nn	1B	1	00 - 7F	EG DECAY TIME	-64 - +63	40
		nn	1C	1	00 - 7F	EG RELEASE TIME	-61 - +63	40
		nn	1D	1	28 - 58	MW PITCH CONTROL	-24 - +24 [semitones]	40
		nn	1E	1	00 - 7F	MW FILTER CONTROL	-9600 - +9450 [cent]	40
		nn	1F	1	00 - 7F	MW AMPLITUDE CONTROL	-64 - +63	40
		nn	20	1	00 - 7F	MW LFO PMOD DEPTH	0 - 127	0A
		nn	21	1	00 - 7F	MW LFO FMOD DEPTH	0 - 127	00
		nn	22	1	00 - 7F	MW LFO AMOD DEPTH	0 - 127	00
		nn	23	1	28 - 58	BEND PITCH CONTROL	-24 - +24 [semitones]	42
		nn	24	1	00 - 7F	BEND FILTER CONTROL	-9600 - +9450 [cent]	40
		nn	25	1	00 - 7F	BEND AMPLITUDE CONTROL	-64 - +63	40
		nn	26	1	00 - 7F	BEND LFO PMOD DEPTH	+100 - +100 [%]	40
		nn	27	1	00 - 7F	BEND LFO FMOD DEPTH	+100 - +100 [%]	40
		nn	28	1	00 - 7F	BEND LFO AMOD DEPTH	+100 - +100 [%]	40
TOTAL SIZE			29					
		nn	30	1	00 - 01	Rev PITCH BEND	0/OFF, 1/ON	01
		nn	31	1	00 - 01	Rev CH AFTER TOUCH (CAT)	0/OFF, 1/ON	01
		nn	32	1	00 - 01	Rev PROGRAM CHANGE	0/OFF, 1/ON	01
		nn	33	1	00 - 01	Rev CONTROL CHANGE	0/OFF, 1/ON	01
		nn	34	1	00 - 01	Rev POLY AFTER TOUCH (PAT)	0/OFF, 1/ON	01
		nn	35	1	00 - 01	Rev NOTE MESSAGE	0/OFF, 1/ON	01
		nn	36	1	00 - 01	Rev RPN	0/OFF, 1/ON	01
		nn	37	1	00 - 01	Rev NRPN	0/OFF, 1/ON	XG=01, GM=00
		nn	38	1	00 - 01	Rev MODULATION	0/OFF, 1/ON	01
		nn	39	1	00 - 01	Rev VOLUME	0/OFF, 1/ON	01
		nn	3A	1	00 - 01	Rev PAN	0/OFF, 1/ON	01
		nn	3B	1	00 - 01	Rev EXPRESSION	0/OFF, 1/ON	01
		nn	3C	1	00 - 01	Rev HOLD1	0/OFF, 1/ON	01
		nn	3D	1	00 - 01	Rev PORTAMENTO	0/OFF, 1/ON	01
		nn	3E	1	00 - 01	Rev SOSTENUTO	0/OFF, 1/ON	01
		nn	3F	1	00 - 01	Rev SOFT PEDAL	0/OFF, 1/ON	01
		nn	40	1	00 - 01	Rev BANK SELECT	0/OFF, 1/ON	XG=01, GM=00
		nn	41	1	00 - 7F	SCALE TUNING C	-64 - +63 [cent]	40
		nn	42	1	00 - 7F	SCALE TUNING C#	-64 - +63 [cent]	40
		nn	43	1	00 - 7F	SCALE TUNING D	-64 - +63 [cent]	40
		nn	44	1	00 - 7F	SCALE TUNING D#	-64 - +63 [cent]	40
		nn	45	1	00 - 7F	SCALE TUNING E	-64 - +63 [cent]	40
		nn	46	1	00 - 7F	SCALE TUNING F	-64 - +63 [cent]	40
		nn	47	1	00 - 7F	SCALE TUNING F#	-64 - +63 [cent]	40
		nn	48	1	00 - 7F	SCALE TUNING G	-64 - +63 [cent]	40
		nn	49	1	00 - 7F	SCALE TUNING G#	-64 - +63 [cent]	40
		nn	4A	1	00 - 7F	SCALE TUNING A	-64 - +63 [cent]	40
		nn	4B	1	00 - 7F	SCALE TUNING A#	-64 - +63 [cent]	40
		nn	4C	1	00 - 7F	SCALE TUNING B	-64 - +63 [cent]	40
		nn	4D	1	28 - 58	CAT PITCH CONTROL	-24 - +24 [semitones]	40
		nn	4E	1	00 - 7F	CAT FILTER CONTROL	-9600 - +9450 [cent]	40
		nn	4F	1	00 - 7F	CAT AMPLITUDE CONTROL	-64 - +63	40
		nn	50	1	00 - 7F	CAT LFO PMOD DEPTH	0 - 127	00
		nn	51	1	00 - 7F	CAT LFO FMOD DEPTH	0 - 127	00
		nn	52	1	00 - 7F	CAT LFO AMOD DEPTH	0 - 127	00
		nn	53	1	28 - 58	PAT PITCH CONTROL	-24 - +24 [semitones]	40
		nn	54	1	00 - 7F	PAT FILTER CONTROL	-9600 - +9450 [cent]	40
		nn	55	1	00 - 7F	PAT AMPLITUDE CONTROL	-64 - +63	40
		nn	56	1	00 - 7F	PAT LFO PMOD DEPTH	0 - 127	00
		nn	57	1	00 - 7F	PAT LFO FMOD DEPTH	0 - 127	00
		nn	58	1	00 - 7F	PAT LFO AMOD DEPTH	0 - 127	00
		nn	59	1	00 - 5F	AC1 CONTROLLER NUMBER	0 - 95	10
		nn	5A	1	28 - 58	AC1 PITCH CONTROL	-24 - +24 [semitones]	40
		nn	5B	1	00 - 7F	AC1 FILTER CONTROL	-9600 - +9450 [cent]	40

nn	5C	1	00 - 7F	AC1 AMPLITUDE CONTROL	-64 - +63	40
nn	5D	1	00 - 7F	AC1 LFO PMOD DEPTH	0 - 127	00
nn	5E	1	00 - 7F	AC1 LFO FMOD DEPTH	0 - 127	00
nn	5F	1	00 - 7F	AC1 LFO AMOD DEPTH	0 - 127	00
nn	60	1	00 - 5F	AC2 CONTROLLER NUMBER	0 - 95	11
nn	61	1	28 - 58	AC2 PITCH CONTROL	-24 - +24 [semitones]	40
nn	62	1	00 - 7F	AC2 FILTER CONTROL	-9600 - +9450 [cent]	40
nn	63	1	00 - 7F	AC2 AMPLITUDE CONTROL	-64 - +63	40
nn	64	1	00 - 7F	AC2 LFO PMOD DEPTH	0 - 127	00
nn	65	1	00 - 7F	AC2 LFO FMOD DEPTH	0 - 127	00
nn	66	1	00 - 7F	AC2 LFO AMOD DEPTH	0 - 127	00
nn	67	1	00 - 01	PORTAMENTO SWITCH	0/OFF, 1/ON	00
nn	68	1	00 - 7F	PORTAMENTO TIME	0 - 127	00
nn	69	1	00 - 7F	PITCH EG INITIAL LEVEL	-64 -+63	40
nn	6A	1	00 - 7F	PITCH EG ATTACK TIME	-64 - +63	40
nn	6B	1	00 - 7F	PITCH EG RELEASE LEVEL	-64 - +63	40
nn	6C	1	00 - 7F	PITCH EG RELEASE TIME	-64 - +63	40
nn	6D	1	01 - 7F	VELOCITY LIMIT LOW	1 - 127	01
nn	6E	1	01 - 7F	VELOCITY LIMIT HIGH	1 - 127	7F
TOTAL SIZE		3F				

nn = Part Number (0:1Part, 1:2Part, 2:3Part, ..., 15:16Part)
For the DRUM PART, the following parameters have no effect.

- SOFT PEDAL
 - BANK SELECT LSB
 - MONO/POLY
 - SCALE TUNING
 - PORTAMENTO
- PITCH EG INITIAL LEVEL
 - PITCH EG ATTACK TIME
 - PITCH EG RELEASE LEVEL
 - PITCH EF RELEASE TIME
 - POLY AFTER TOUCH

<Table 1-5>

MIDI Parameter Change table (DRUM SETUP) [XG]

Address (H)		Size (H)	Data (H)	Parameter	Description	Default
3n	rr	00	1	00 - 7F	PITCH COARSE	-64 - +63
3n	rr	01	1	00 - 7F	PITCH FINE	-64 - +63 [cent]
3n	rr	02	1	00 - 7F	LEVEL	0 - 127
3n	rr	03	1	00 - 7F	ALTERNATE GROUP	0/OFF, 1 - 127
3n	rr	04	1	00 - 7F	PAN	0/random, 1/L63 - 64/C - 127/R63
3n	rr	05	1	00 - 7F	REVERB SEND	0 - 127
3n	rr	06	1	00 - 7F	CHORUS SEND	0 - 127
3n	rr	07	1	00 - 7F	VARIATION SEND	0 - 127
3n	rr	08	1	00 - 01	KEY ASSIGN	0/SINGLE, 1/MULTI
3n	rr	09	1	00 - 01	Rev NOTE OFF	0/OFF, 1/ON
3n	rr	0A	1	00 - 01	Rev NOTE ON	0/OFF, 1/ON
3n	rr	0B	1	00 - 7F	FILTER CUTOFF FREQUENCY	-64 - +63
3n	rr	0C	1	00 - 7F	FILTER RESONANCE	-64 - +63
3n	rr	0D	1	00 - 7F	EG ATTACK RATE	-64 - +63
3n	rr	0E	1	00 - 7F	EG DECAY1 RATE	-64 - +63
3n	rr	0F	1	00 - 7F	EG DECAY2 RATE	-64 - +63
TOTAL SIZE		10				

[Note]
n: Drum number (0 - 1)
rr: note number (0D - 5B)
When XG system on or GM mode on messages are received, all Drum Setup parameters are initialized.
The Drum Setup Reset message can be used to initialized each Drum Setup parameter.
Selecting a Drum Set will cause the Drum Setup parameter values to be initialized.

<Table 2-1>

Parameter Bass Address
Model ID = 4B [QS300]

Bulk Dump				
Address				Description
	(H)	(M)	(L)	
USER	11	00	00	User Normal Voice 1
NORMAL				:
VOICE	11	1F	00	User Normal Voice 32

<Table 2-2>

MIDI Bulk Dump table (USER NORMAL VOICE) [QS300]

Address (H)		Size (H)	Data (H)	Parameter	Description	Default value (H)
11	nn	00	17D	20-7E	Voice Name	[Common]
		:				
		07				

08		not used	
:		"	
0A		"	
0B	01-03	Element Switch	1:Element 1 on, 2:Element 2 on, 3:Element 1 and 2 on
0C	00-7F	Voice Level	
0D		not used	
:		"	
3C			
3D	00-7F	Wave Number High	[Element 1]
3E	00-7F	Wave Number Low	bit13-bit7
3F	00-7F	Note Limit Low	bit6-bit0
40	00-7F	Note Limit High	
41	00-7F	Velocity Limit Low	
42	00-7F	Velocity Limit High	
43	00-01	Filter EG Velocity Curve	
44	00-02	LFO Wave Select	0:saw, 1:tri, 2:S&H
45	00-01	LFO Phase Initialize	0:OFF, 1:ON
46	00-3F	LFO Speed	
47	00-7F	LFO Delay	
48	00-7F	LFO Fade Time	
49	00-3F	LFO PMD Depth	
4A	00-0F	LFO CMD Depth	
4B	00-1F	LFO AMD Depth	
4C	20-60	Note Shift	
4D	0E -72	Detune	
4E	00-05	Pitch Scaling	
4F	00-7F	Pitch Scaling Center Note	0:100%, 1:50%, 2:20%, 3:10%, 4:5%, 5:0%
50	00-03	Pitch EG Depth	
51	39-47	Velocity PEG Level Sensitivity	0:1/2oct, 1:1oct, 2:2oct, 3:4oct
52	39-47	Velocity PEG Rate Sensitivity	
53	39-47	PEG Rate Scaling	
54	00-7F	PEG Rate Scaling Center Note	
55	00-3F	PEG Rate 1	
56	00-3F	PEG Rate 2	
57	00-3F	PEG Rate 3	
58	00-3F	PEG Rate 4	
59	00-7F	PEG Level 0	
5A	00-7F	PEG Level 1	
5B	00-7F	PEG Level 2	
5C	00-7F	PEG Level 3	
5D	00-7F	PEG Level 4	
5E	00-3F	Filter Resonance	
5F	00-07	Velocity Sensitivity	
60	00-7F	Cutoff Frequency	
61	00-7F	Cutoff Scaling Break Point 1	
62	00-7F	Cutoff Scaling Break Point 2	
63	00-7F	Cutoff Scaling Break Point 3	
64	00-7F	Cutoff Scaling Break Point 4	
65	00-7F	Cutoff Scaling Offset 1	
66	00-7F	Cutoff Scaling Offset 2	
67	00-7F	Cutoff Scaling Offset 3	
68	00-7F	Cutoff Scaling Offset 4	
69	39-47	Velocity FEG Level Sensitivity	
6A	39-47	Velocity FEG Rate Sensitivity	
6B	39-47	FEG Rate Scaling	
6C	00-7F	FEG Rate Scaling Center Note	
6D	00-3F	FEG Rate 1	
6E	00-3F	FEG Rate 2	
6F	00-3F	FEG Rate 3	
70	00-3F	FEG Rate 4	
71	00-7F	FEG Level 0	
72	00-7F	FEG Level 1	
73	00-7F	FEG Level 2	
74	00-7F	FEG Level 3	
75	00-7F	FEG Level 4	
76	00-7F	Element Level	
77	00-7F	Level Scaling Break Point 1	
78	00-7F	Level Scaling Break Point 2	
79	00-7F	Level Scaling Break Point 3	
7A	00-7F	Level Scaling Break Point 4	
7B	00-7F	Level Scaling Offset 1	
7C	00-7F	Level Scaling Offset 2	
7D	00-7F	Level Scaling Offset 3	
7E	00-7F	Level Scaling Offset 4	
7F	00-06	Velocity Curve	
80	00-0F	Pan	0 (Left)-14 (Right), 15:Scaling
81	39-47	AEG Rate Scaling	
82	00-7F	AEG Scaling Center Note	
83	00-0F	AEG Key on Delay	
84	00-7F	AEG Attack Rate	
85	00-7F	AEG Decay 1 Rate	
86	00-7F	AEG Decay 2 Rate	
87	00-7F	AEG Release Rate	
88	00-7F	AEG Decay 1 Level	
89	00-7F	AEG Decay 2 Level	
8A	00-7F	Address Offset High	bit13-bit7
8B	00-7F	Address Offset Low	bit6-bit0
8C	39-47	Resonance Sensitivity	
8D			[Element 2]
:			same as [Element 1]
DC			"
			"
DD			[Element 3]
:			not used
12C			"
12D			"
:			[Element 4]
17C			not used
TOTAL SIZE 17D			"
nn=Voice Number (00-1F)			