YAMAHA

XG Plug-in Board
XG Plug-in Karte
Carte Plug-in XG

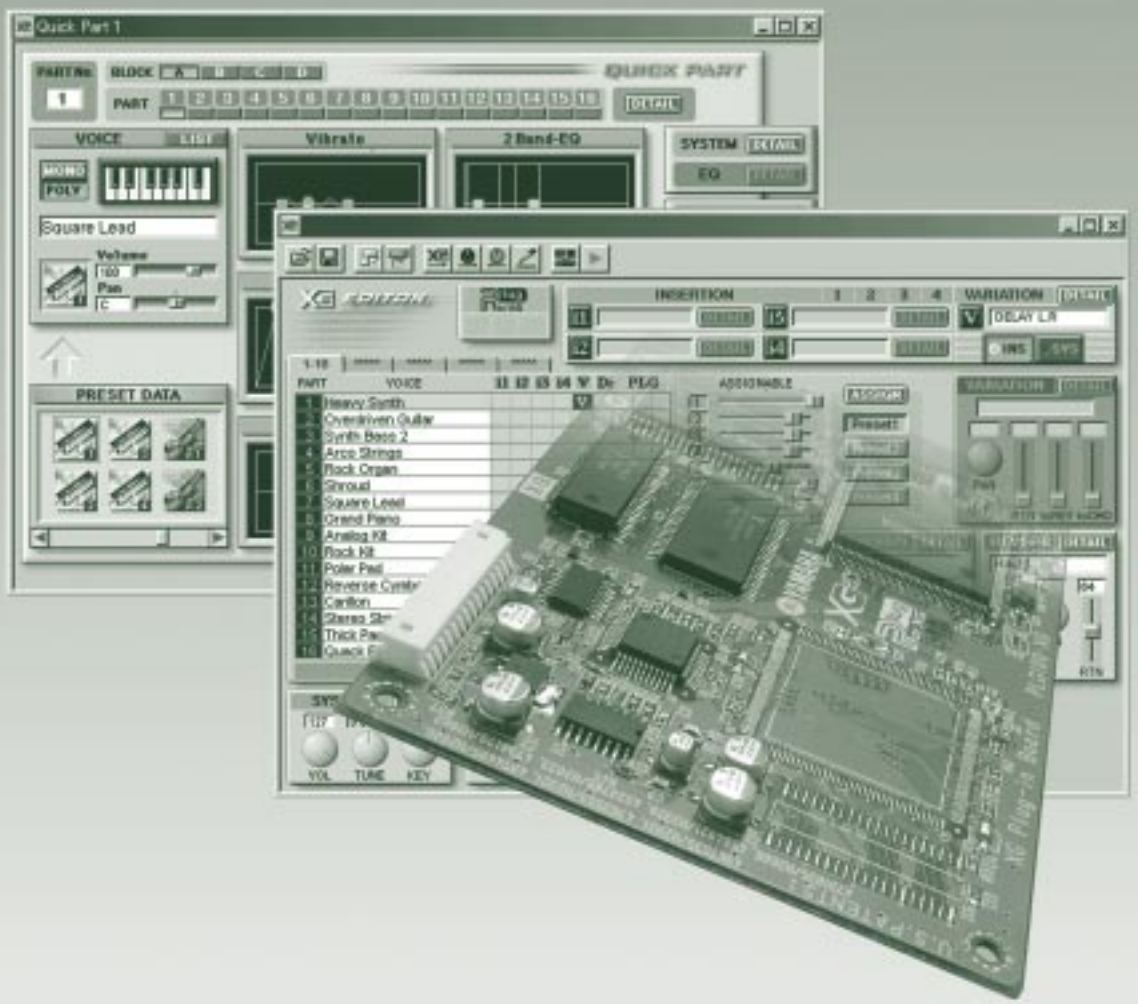
PLG100-XG

Owner's Manual
Bedienungsanleitung
Mode d'emploi

English

Deutsch

Français



MODULAR SYNTHESIS PLUG-IN SYSTEM

Plug for XG XG

Precautions

- Do not expose the plug-in board to direct sunlight, excessive humidity, high temperatures, excessive dust or strong vibrations.
- Before handling the plug-in board, be sure to touch a metal surface to discharge any static electricity which may be in your body.
- When holding the plug-in board, do not touch the inside area of the circuit board or apply excessive pressure to the board, and be sure to protect the board from contact with water or other liquids.
- Before installing the plug-in board onto a tone generator/sound card, unplug the power connector of your computer.
- Before connecting the computer to other devices, turn off the power switches of all devices.
- Yamaha is not responsible for loss of data through computer malfunctions or operator actions.
- The plug-in board contains no user-serviceable parts, so never touch the inside area of the circuit board or tamper with the electronic circuitry in any way. Doing so may result in electrical shock or damage to the plug-in board.

YAMAHA CANNOT BE HELD RESPONSIBLE FOR DAMAGE CAUSED BY IMPROPER CARE AND USE OF THE PLUG-IN BOARD.

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* The screens as illustrated in this owner's manual are for instructional purposes only, and may appear somewhat different from the ones of your instrument.

FCC INFORMATION (U.S.A.)

1. **IMPORTANT NOTICE: DO NOT MODIFY THIS UNIT!**
   This product, when installed as indicated in the instructions contained in this manual, meets FCC requirements. Modifications not expressly approved by Yamaha may void your authority, granted by the FCC, to use the product.
2. **IMPORTANT:** When connecting this product to accessories and/or another product use only high quality shielded cables. Cable/s supplied with this product MUST be used. Follow all installation instructions. Failure to follow instructions could void your FCC authorization to use this product in the USA.
3. **NOTE:** This product has been tested and found to comply with the requirements listed in FCC Regulations, Part 15 for Class "B" digital devices. Compliance with these requirements provides a reasonable level of assurance that your use of this product in a residential environment will not result in harmful interference with other electronic devices. This equipment generates/uses radio frequencies and, if not installed and used according to the instructions found in the users manual, may cause interference harmful to the operation of other electronic devices. Compliance with FCC regulations does not guarantee that interference will not occur in all installations. If this product is found to be the source of interference, which can be determined by turning the unit "OFF" and "ON", please try to eliminate the problem by using one of the following measures:

   Relocate either this product or the device that is being affected by the interference.

   Utilize power outlets that are on different branch (circuit breaker or fuse) circuits or install AC line filter/s.

   In the case of radio or TV interference, relocate/reorient the antenna. If the antenna lead-in is 300 ohm ribbon lead, change the lead-in to co-axial type cable.

   If these corrective measures do not produce satisfactory results, please contact the local retailer authorized to distribute this type of product. If you can not locate the appropriate, please contact Yamaha Corporation of America, Electronic Service Division, 6600 Orangethorpe Ave, Buena Park, CA 90620

* This applies only to products distributed by YAMAHA CORPORATION OF AMERICA.

CANADA

This Class B digital apparatus complies with Canadian ICES-003.
Cet appareil numérique de la classe B est conforme à la norme NMB-003 du Canada.

• This applies only to products distributed by Yamaha Canada Music Ltd.
• Ceci ne s'applique qu'aux produits distribués par Yamaha Canada Musique Ltée.

Thank you for purchasing the Yamaha XG Plug-in Board PLG100-XG.
The PLG100-XG is a full-featured XG/GM tone generator providing complete compatibility with commercially available XG/GM song data. The PLG100-XG is designed for use in MSPS (Modular Synthesis Plug-in System) compatible synthesizers and instruments, such as the CS6x and S80, that do not have built-in XG tone generation.

To install your PLG100-XG correctly and to ensure full enjoyment of its sophisticated functions, be sure to read this manual very carefully. When finished, keep the manual in a secure and convenient place for future reference.

MODULAR SYNTHESIS PLUG-IN SYSTEM

About the Modular Synthesis Plug-in System (MSPS)

The Yamaha Modular Synthesis Plug-in System offers powerful expansion and upgrade capabilities for MSPS-compatible synthesizers, tone generators and sound cards. This enables you to easily and effectively take advantage of the latest and most sophisticated synthesizer and effects technology, allowing you to keep pace with the rapid and multi-faceted advances in modern music production.

About the XG Plug-in System

The Yamaha XG Plug-in System offers powerful expansion and upgrade capabilities for XG-Plug-in-compatible tone generators and sound cards. This enables you to easily and effectively take advantage of the latest and most sophisticated XG tone generation and effects technology, allowing you to keep pace with the rapid and multi-faceted advances in modern music production.

Table of Contents

Overview of the PLG100-XG

Main Features of the PLG100-XG

- Exceptionally high-quality AWM2 tone generation system, with 480 instrument voices and 12 special drum voices. As a full tone generator in a single board, the PLG100-XG features maximum 32-note polyphony and 16-Part multi-timbral operation.
- Full-featured XG tone generator operation for non-XG-compatible instruments (such as the CS6x, S80, and CS6R), for complete playback compatibility with commercially available XG/GM song data, using a computer, sequencer, or other MIDI playback device. Since the PLG100-XG is also compatible with special XG/GM "Minus-one" song data, you can easily mute the melody and play it yourself (for practice or in performance), or sing along with the XG accompaniment.
- The PLG100-XG can also supplement even XG-compatible instruments, such as the MU2000, providing an additional tone generator with 16 Parts and 32-note polyphony.
- The PLG100-XG also lets you conveniently and easily edit all parameters from your computer, by using the included XGworks lite (Windows) or XG Editor (Macintosh).

Installing the PLG100-XG

To install your PLG100-XG board, refer to the manual that came with the "mother" or host synthesizer/tone generator (such as the CS6x or MU128). When using the CS6x, CS6R, or S80, make sure to install the board to slot 2.

Included Items

The following items have been included in the package of your new PLG100-XG. Please make sure that you have them all before starting to set up and use the instrument. If an item is missing, contact the store or dealer from which you purchased the PLG100-XG.

- PLG100-XG board
- PLG100-XG Owner's Manual (this book)
- CD-ROM
- Floppy disk

Required and Recommended Items

In addition to the included items listed above, you should also have the following:

■ Synthesizer or Tone Generator Compatible with the Modular Synthesis or XG Plug-in Systems

In order to use the PLG100-XG, you'll need a synthesizer or tone generator that is compatible with the Modular Synthesis Plug-in System (such as the CS6x) or the XG Plug-in System (such as the MU128). The synthesizer/tone generator should have an available slot or space for installing the PLG100-XG. Once, installed, the PLG100-XG functions seamlessly as a built-in tone generator for the host device.

● XGworks or XGworks lite Music Sequencing Software

These software sequencers (for Windows) provide convenient tools for taking full advantage of the PLG100-XG, letting you create and edit song data for automatically selecting and playing back the XG voices. XGworks lite (version 3.0) is provided in the included CD-ROM.

Specifications

Tone Generation System :	AWM2 (Advanced Wave Memory 2)
Polyphony :	32 (when using one-element voices)
Voices :	480 normal voices 12 drum voices
Interface :	Plug-in connector
Effects :	Reverb (11 types), Chorus (11 types), Variation (42 types)
Dimensions (W x H x D) :	138.5 x 89 x 8.5 mm
Weight :	56 g
Included Items :	Owner's Manual, CD-ROM, floppy disk

* Specifications subject to change without notice.

About the Included CD-ROM and Floppy Disk

The following software is included on the CD-ROM:

● XGworks lite (ver. 3.0)

This sequencing software is the entry level progam for the full-version XGworks, and it allows you to record your musical performances with a connected MIDI keyboard and freely edit the recorded data.

● XG Editor for Mac (ver. 2.1)

This convenient software allows you to download voice data to your Macintosh computer and edit the main XG parameters.

You can edit the various XG voice and effect parameters with the XG Editor, then and use them (in either SMF or XF format) with your favorite sequencer software to change the sounds automatically during song playback, or directly change the sounds on the XG tone generator.

The following data is included on the floppy disk:

● Demonstration Songs

These demonstration songs showcase the realistic and dynamic sounds of the PLG100-XG. To play back the songs, you can use any compatible sequence software (such as XGworks or XGworks lite) or a hardware sequencer (such as the Yamaha QY700). Also make sure that the instrument or tone generator with the installed PLG100-XG is properly connected to the sequencer.

NOTE Before playing the XG demonstration songs, you'll need to make a few Port-related settings (see page 8). Also, if you are using the CS6x, CS6R, or S80, make sure to set the instrument to the Performance mode.

- **"03 blues"**
  By: Takeshi Fuse

  This dynamic, powerful big band jazz piece showcases the highly realistic sounds and expresive potential of the PLG100-XG. Here, pitch bend is used liberally in various phrases throughout the song to create authentic sounding brass parts, while control change numbers 74 (Brightness) and 11 (Expression) are applied many of the parts for a highly expressive, natural sound.

  Even though the trumpet section is layered, the first trumpet stands out, and high notes are appropriately shifted in pitch, just as would be played by real horn players. Also notice how the effects have been applied to the sound and how they make it sound full and realistic without sacrificing the unique character of each individual instrument.

- **"Opus 7"**
  By: Etsuji Ogawa

  As its name suggests, seven separate motifs have been combined to make up this piece. Notice how each section concentrates on a specific genre of music and faithfully reproduces the feel and sound of the genre with a minimum of instruments, and spotlights a wide variety of solo instruments.

- **"Gale"**
  By: Katsumi Nagae

  This techno/dance song shows what can be done with just the PLG100-XG and a little programming wizardry. Listen especially to the intricate use of dual hi hats and snare over the four-beat techno kick drum, and check out the use of filter sweeps on the synth sounds for added dynamic effects and textures.

- **"Endless Night"**
  By: Takashi Morio

  This piece features several distinct musical sections and blends elements of funk, pop and R&B. To strengthen the rhythm part in the middle section, overdrive (an Insertion effect) has been applied to the drums, and the filter controls for the bass have been tweaked for added "fatness" — by increasing in the resonance and lowering the cutoff frequency.

Installing the Software

■ Installing XGworks lite 3.0 (for Windows 98/95 only)

Insert the included CD-ROM and double-click the “Setup.exe” file in the “XGworks” folder on the CD-ROM. Follow the subsequent instructions on the screen to complete the installation.

■ Installing XG Editor for Mac 2.1 (for Macintosh only)

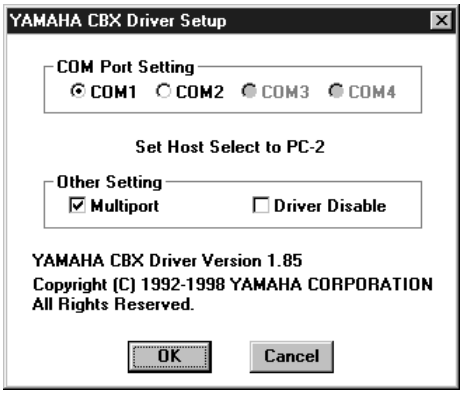
Installing XG Editor for Mac 2.1 (for Macintosh only) Insert the included CD-ROM and double-click the “Install XG Editor 2.1E” file (folder: International → XG Editor) on the CD-ROM. Follow the subsequent instructions on the screen to complete the installation.

Playing XG Song Data / Editing XG Voices — Port Settings

In order to properly play back XG song data with the PLG100-XG installed to a Plug-in-compatible device, you’ll need to make a few settings, as described below. (The instruction steps below assume that you are using XGworks V3.0 and the Yamaha CBX Driver software. If you are using another sequence software and driver, refer to the owner’s manuals or online help of those programs.)

1 Set the Yamaha CBX Driver to Multiport operation.

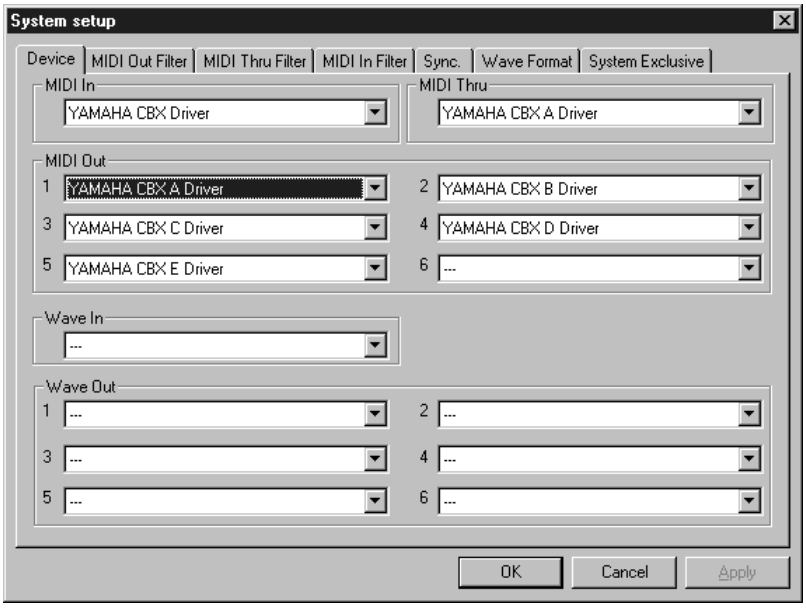
Double-click on the Yamaha CBX Driver icon in the Windows Control Panel.



2 Select the appropriate port within XGworks.

Start XGworks, then open the System Setup dialog by clicking “System Setup” in the Setup menu. Select the Device tab, and set the MIDI OUT ports (1 - 6) to the desired CBX Drivers (A - E). (Which Driver letter applies to the PLG100-XG depends on your particular instrument; see below for details.)

Any Driver letter A through E can be assigned to any MIDI OUT port number; however, the same Driver letter cannot be assigned to two different ports. This means that one of the ports will be left unassigned.

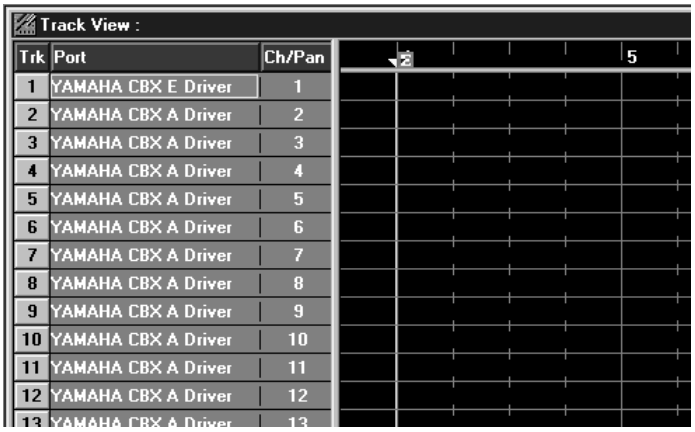


3 Set the specific port (and driver) to be used, depending on your particular application or instrument, as described below.

● When Playing XG Song Data from XGworks

In the Track View window of XGworks, set each track's Port to the appropriate number for use with the PLG100-XG. This will differ depending on your particular instrument.

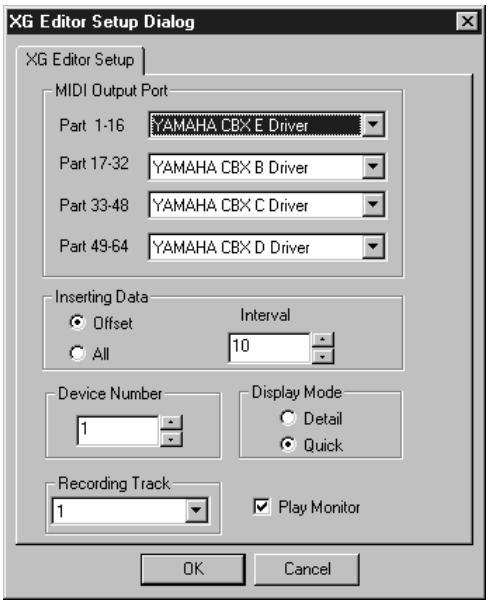
- For Modular Synthesis Plug-in System instruments (such as the CS6x, CS6R, S80, etc.), select the Port corresponding to "Yamaha CBX A Driver."
- For 64-Part XG tone generators (such as the MU128 or MU2000), select the Port corresponding to "Yamaha CBX E Driver."
- For 32-Part XG tone generators (such as the MU100R or SW1000XG), select the Port corresponding to "Yamaha CBX C Driver."



● When Editing XG Voices Using the XG Editor in XGworks

Start the XG Editor (select “XG Editor” in the Window menu). From the XG Editor, select “XG Editor Setup” in the Setup menu and set “Part 1 - 16” to the appropriate MIDI OUT Port for use with the PLG100-XG. This will differ depending on your particular instrument.

- For Modular Synthesis Plug-in System instruments (such as the CS6x, CS6R, S80, etc.), select the Port corresponding to “Yamaha CBX A Driver.”
- For 64-Part XG tone generators (such as the MU100 or MU128), select the Port corresponding to “Yamaha CBX E Driver.”
- For 32-Part XG tone generators (such as the MU100R or SW1000XG), select the Port corresponding to “Yamaha CBX C Driver.”



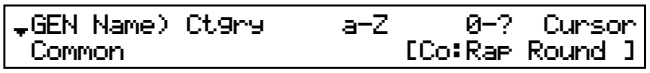
Selecting XG Voices (Modular Synthesis Plug-in System)

When the PLG100-XG is installed to a MSPS-compatible instrument, the XG voices can be selected in much the same way as the internal voices of the instrument. A different voice can be selected for each of the sixteen Parts, corresponding to the sixteen MIDI channels.

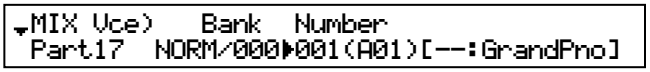
NOTE The example displays used in the following explanations are all taken from the CS6x.

1 Press the PERFORM button.

2 Press the EDIT button.



3 Use knob A to select the desired Part (from 17 - 32), then select the desired voice by using the BANK and PROGRAM buttons.



NOTE
- You can also use knobs B and C to select the bank number and program number, respectively.
- When the cursor is at the bank number or program number position, you can also change the respective number by using the DEC/INC buttons.

For a complete list of the available banks and their MSB/LSB values, refer to the “XG Voice List” on page 14.

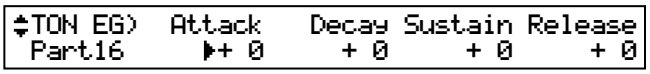
NOTE
- When using MU-series instruments (such as the MU100 or MU128), keep in mind that the PLG100-XG voices can only be selected remotely from the connected computer, and not from the front panel of the instrument itself.
- When playing back song data (of any format) with the CS6X/CS6R/S80, you may find that even though the voices change properly, the voice names shown in the LCD may not.
  Also, after playing back song data of a format that is neither XG nor GM, you may find that the voices sound correct but that the voice names shown in the LCD do not seem to match. In this case, you may want to reset the instrument so that the voices display properly. To do this, send a XG System On or GM System On message (play back an XG or GM song; the appropriate message is at the beginning of the song), or turn the power of the instrument off and on again.

Editing the XG Part Parameters (Modular Synthesis Plug-in System)

Keep in mind that the XG Part parameter values and settings as edited in the manner below represent offsets of the actual voice settings. This means that adjustments made to the parameters may not result in much change to the actual sound, depending on the original settings of the voice. For parameter values, a setting of “0” results in no change, while positive and negative values increase and decrease the value respectively.

1 **Select the desired XG voice, as described in Selecting XG Voices on page 11.**

2 **Select the desired parameter for editing by using the PAGE knob.**



3 **Change the value/setting of the selected XG Part parameter by using the appropriate knob (below the corresponding parameter) or by using the DEC/INC buttons (when the cursor is at the corresponding parameter).**

The actual parameter names may differ, depending on whether the instrument you are using is XG Plug-in System compatible or Modular Synthesis Plug-in System compatible. For details, refer to the Parameter List (XG/Modular Synthesis Plug-in System) on page 25.

NOTE XG Part parameter edits cannot be stored as voice data. However, if you are using the CS6x, CS6R, or S80, you can store the data to a Memory Card. (Use the “Save” function in the Card mode; for detailed instructions, refer to the owner’s manual of your particular instrument.)

Parameters

Performance Parameters		
Bank Select MSB/LSB	0...127	Determines the bank number (by MSB and LSB) of the Part's voice.
Program Number	1...128	Determines the specific voice (by program number) of the Part.
Receive Channel	1...16, off	Determines the MIDI receive channel for the Performance.
Velocity Limit Low	1...127	Determines the lowest velocity at which the Part's voice will play.
Velocity Limit High	1...127	Determines the highest velocity at which the Part's voice will play.
Note Limit Low	C-2...G8	Determines the lowest responding note for the Part's voice.
Note Limit High	C-2...G8	Determines the highest responding note for the Part's voice.
Pitch Bend Range	-24...+24	Determines the pitch range of the MIDI Pitch Bend (in semitone steps).
Velocity Sense Depth	0...127	Determines the degree to which velocity affects the Part's voice.
Velocity Sense Offset	0...127	Boosts or reduces all velocity values for the Part's voice by the specified amount, letting you tailor how the level responds to your playing touch.
Volume	0...127	Determines the overall level of the Part's voice.
Pan	RND, L63...C...R63	Determines the stereo position of the Part's voice.
Detune	-12.8...+12.7[Hz]	Determines the fine tuning of the Part's voice in 0.1-Hz increments.
Reverb Send	0...127	Determines the level of the Part's voice that is sent to the Reverb effect, letting you adjust the amount of the Reverb applied to the voice.
Chorus Send	0...127	Determines the level of the Part's voice that is sent to the Chorus effect, letting you adjust the amount of the Chorus applied to the voice.
Note Shift	-24...+24[semitone]	Determines the key transposition setting for the Part's voice (in semitone steps).
Filter Cutoff Frequency	-64...+63	Determines the cutoff frequency of the low pass filter.
Filter Resonance/Width	-64...+63	Determines the amount of filter resonance or emphasis of the Filter Cutoff Frequency above; it also affects the width of the frequency range to which resonance is applied.
Portamento Switch	off, on	Determines whether Portamento (continuous pitch glide) is on or off for the Part's voice.
Portamento Time	0...127	Determines the time of the Portamento effect (how long it takes to slide the pitch from one note to the next).
AEG Attack Time	-64...+63	Determines the time it takes for the sound to reach full volume when a note is played.
AEG Decay2 Time	-64...+63	Determines the time it takes for the sound to decrease in level to silence (as the note is held).
AEG Release Time	-64...+63	Determines the time it takes for the sound to decrease in level to silence (after the note is released).
MW Filter Control	-64...+63	Determines the degree to which the modulation wheel affects the Filter Cutoff Frequency (low pass filter).
MW Amplitude Control	-64...+63	Determines the degree to which the modulation wheel affects the volume (amplitude).
MW LFO Pitch Modulation Depth	0...127	Determines the degree to which the modulation wheel affects the LFO-controlled pitch modulation.
MW LFO Filter Modulation Depth	0...127	Determines the degree to which the modulation wheel affects the LFO-controlled Filter modulation (produces a “wah-wah” effect).
MW LFO Amplitude Modulation Depth	0...127	Determines the degree to which the modulation wheel affects the LFO-controlled amplitude (volume) modulation.
CAT Pitch Control	-24...+24[semitone]	Determines the degree to which channel after touch affects the pitch.
CAT Filter Control	-64...+63	Determines the degree to which channel after touch affects the Filter.
CAT Amplitude Control	-64...+63	Determines the degree to which channel after touch affects the volume (amplitude).
CAT LFO Pitch Modulation Depth	0...127	Determines the degree to which channel after touch affects the LFO-controlled pitch modulation.
CAT LFO Filter Modulation Depth	0...127	Determines the degree to which channel after touch affects the LFO-controlled Filter modulation (produces a “wah-wah” effect).
CAT LFO Amplitude Modulation Depth	0...127	Determines the degree to which channel after touch affects the LFO-controlled amplitude (volume) modulation.
AC1 Controller Number	0...95	Determines which MIDI control change number is assigned to Assignable Controller 1 (AC1) for the selected Part.
AC1 Filter Control	-64...+63	Determines the degree to which Assignable Controller 1 (AC1) affects the Cutoff Frequency of the Filter.
AC1 Amplitude Control	-64...+63	Determines the degree to which Assignable Controller 1 (AC1) affects the volume (amplitude).
AC1 LFO Pitch Modulation Depth	0...127	Determines the degree to which Assignable Controller 1 (AC1) affects the LFO-controlled pitch modulation.
AC1 LFO Filter Modulation Depth	0...127	Determines the degree to which Assignable Controller 1 (AC1) affects the LFO-controlled Filter modulation (produces a “wah-wah” effect).
AC1 LFO Amplitude Modulation Depth	0...127	Determines the degree to which Assignable Controller 1 (AC1) affects the LFO-controlled amplitude (volume) modulation.

System Parameters		
Master Volume	0...127	Determines the overall volume of the PLG100-XG.
Master Note Shift	-24...+24[semitone]	Determines the overall key transposition setting of the PLG100-XG (in semitone steps).
Master Tune	-102.4...+102.3[cent]	Determines the overall fine tuning setting of the PLG100-XG (in 0.1-cent increments).

XG Voice List (Normal voice)

■ Bank Select MSB=00

				KSP		Stereo		Single		Slow		Fast Decay		Double Attack		Bright		Dark		Rsonant		Attack	
Instrument Group	**Pgm#**	**Bank 0 Bank Select LSB=00**	**Bank 0**	**E**	**Bank 1**	**E**	**Bank 3**	**E**	**Bank 6**	**E**	**Bank 8**	**E**	**Bank 12**	**E**	**Bank 14**	**E**	**Bank 16**	**E**	**Bank 17**	**E**	**Bank 18**	**E**	**Bank 19**	**E**	**Bank 20**	**E**	**Bank 24**	**E**
Piano	1	Acoustic Grand Piano	GrandPno	1	GrndPnoK	1															MelloGrP	1						
	2	Bright Acoustic Piano	BritePno	1	BritPnoK	1																						
	3	Electric Grand Piano	El.Grand	2	ElGrPnoK	2																						
	4	Honky-tonk Piano	HnkyTonk	2	HnkyTnkK	2																						
	5	Electric Piano 1	E.Piano1	2	El.Pno1K	1															MelloEP1	2						
	6	Electric Piano 2	E.Piano2	2	El.Pno2K	1																						
	7	Harpsichord	Harpsi.	1	Harpsi.K	1																						
	8	Clavi	Clavi.	2	Clav K	1																						
Chromatic	9	Celesta	Celesta	1																								
Percussion	10	Glockenspiel	Glocken	1																								
	11	Music Box	MusicBox	2																								
	12	Vibraphone	Vibes	1	Vibes K	1																						
	13	Marimba	Marimba	1	MarimbaK	1																						
	14	Xylophone	Xylophon	1																								
	15	Tubular Bells	TubulBel	1																								
	16	Dulcimer	Dulcimer	1																								
Organ	17	Drawbar Organ 1	DrawOrgn	1																								
	18	Percussive Organ	PercOrgn	1																							70sPcOr1	2
	19	Rock Organ	RockOrgn	2																								
	20	Church Organ 1	ChrchOrg	2																								
	21	Reed Organ	ReedOrgn	1																								
	22	Accordion	Acordion	2																								
	23	Hamonica	Harmnica	1																								
	24	Tango Accordion	TangoAcd	2																								
Guitar	25	Acoustic Guitar (nylon) 1	NylonGtr	1													NylonGt2	1										
	26	Acoustic Guitar (steel)	SteelGtr	1													SteelGt2	1										
	27	Electric Guitar (jazz)	Jazz Gtr	1																	MelloGtr	1						
	28	Electric Guitar (clean)	CleanGtr	1																								
	29	Electric Guitar (muted)	Mute.Gtr	1																								
	30	Overdriven Guitar	Ovrdrive	1																								
	31	Distortion Guitar	Dist.Gtr	1																								
	32	Guitar Harmonics	GtrHarmo	1																								
Bass	33	Acoustic Bass	Aco.Bass	1																								
	34	Electric Bass (finger)	FngrBass	1																	FingrDrk	2						
	35	Electric Bass (pick)	PickBass	1																								
	36	Fretless Bass	Fretless	1																								
	37	Slap Bass 1	SlapBas1	1																								
	38	Slap Bass 2	SlapBas2	1																								
	39	Synth Bass 1	SynBass1	1																	SynBa1Dk	1			FastResB	1	AcidBass	1
	40	Synth Bass 2	SynBass2	2					MelloSBa	1			Seq Bass	2							ClkSynBa	2	SynBa2Dk	1				
Strings	41	Violin	Violin	1							Slow Vln	1																
	42	Viola	Viola	1																								
	43	Cello	Cello	1																								
	44	Contrabass	Contrabs	1																								
	45	Tremolo Strings	Trem.Str	1							SlwTrStr	1																
	46	Pizzicato Strings	Pizz.Str	1																								
	47	Orchestral Harp	Harp	1																								
	48	Timpani	Timpani	1																								
Ensemble	49	String Ensemble 1	Strings1	1			S.Strngs	2			Slow Str	1															Arco Str	2
	50	String Ensemble 2	Strings2	1			S.SlwStr	2			LegatoSt	2																
	51	Synth Strings 1	Syn.Str1	2																								
	52	Synth Strings 2	Syn.Str2	2																								
	53	Choir Aahs	ChoirAah	1			S.Choir	2									Ch.Aahs2	2										
	54	Voice Oohs	VoiceOoh	1																								
	55	Synth Voice	SynVoice	1																								
	56	Orchestra Hit	Orch.Hit	2																								
Brass	57	Trumpet	Trumpet	1													Trumpet2	1	BriteTrp	2								
	58	Trombone	Trombone	1																	Trmbone2	2						
	59	Tuba	Tuba	1													Tuba 2	1										
	60	Muted Trumpet	Mute.Trp	1																								
	61	French Horn	Fr. Horn	2					FrHrSolo	1																		
	62	Brass Section 1	BrasSect	1																								
	63	Synth Brass 1	SynBrss1	2									Quack Br	2											RezSynBr	2	PolyBrss	2
	64	Synth Brass 2	SynBrss2	1																	Soft Brs	2						
Reed	65	Soprano Sax	SprnoSax	1																								
	66	Alto Sax	Alto Sax	1																								
	67	Tenor Sax	TenorSax	1																								
	68	Baritone Sax	Bari.Sax	1																								
	69	Oboe	Oboe	2																								
	70	English Horn	Eng.Horn	1																								
	71	Bassoon	Bassoon	1																								
	72	Clarinet	Clarinet	1																								
Pipe	73	Piccolo	Piccolo	1																								
	74	Flute	Flute	1																								
	75	Recorder	Recorder	1																								
	76	Pan Flute	PanFlute	1																								
	77	Blown Bottle	Bottle	2																								
	78	Shakuhachi	Shakhchi	2																								
	79	Whistle	Whistle	1																								
	80	Ocarina	Ocarina	1																								
Synth Lead	81	Lead 1 (square)	SquareLd	2					SquarLd2	1	LMSquare	2									Hollow	1	Shroud	2				
	82	Lead 2 (sawtooth)	Saw Ld	2					Saw Ld 2	1	ThickSaw	2									Dyna Saw	1	Digi Saw	2	Big Lead	2	HeavySyn	2
	83	Lead 3 (calliope)	CaliopLd	2																								
	84	Lead 4 (chiff)	Chiff Ld	2																								
	85	Lead 5 (charang)	CharanLd	2																								
	86	Lead 6 (voice)	Voice Ld	2																							SynthAah	2
	87	Lead 7 (fifths)	Fifth Ld	2																								
	88	Lead 8 (bass+lead)	Bass&Ld	2													Big&Low	2										
Synth Pad	89	Pad 1 (new age)	NewAgePd	2																								
	90	Pad 2 (warm)	Warm Pad	2													ThickPad	2	Soft Pad	2	Sine Pad	2						
	91	Pad 3 (polysynth)	PolySyPd	2																								
	92	Pad 4 (choir)	ChoirPad	2																								
	93	Pad 5 (bowed)	BowedPad	2																								
	94	Pad 6 (metallic)	MetalPad	2																								
	95	Pad 7 (halo)	Halo Pad	2																								
	96	Pad 8 (sweep)	SweepPad	2																					Shwimmer	2		
Synth Effects	97	FX 1 (rain)	Rain	2																								
	98	FX 2 (soundtrack)	SoundTrk	2																								
	99	FX 3 (crystal)	Crystal	2									SynDrCmp	2	Popcorn	2					TinyBell	2						
	100	FX 4 (atmosphere)	Atmosphr	2																	WarmAtms	2	HollwRls	2				
	101	FX 5 (brightness)	Bright	2																								
	102	FX 6 (goblins)	Goblins	2																								
	103	FX 7 (echoes)	Echoes	2							Echoes 2	2			Echo Pan	2												
	104	FX 8 (sci-fi)	Sci-Fi	2																								
Ethnic	105	Sitar	Sitar	1																								
	106	Banjo	Banjo	1																								
	107	Shamisen	Shamisen	1																								
	108	Koto	Koto	1																								
	109	Kalimba	Kalimba	1																								
	110	Bagpipe	Bagpipe	2																								
	111	Fiddle	Fiddle	1																								
	112	Shanai	Shanai	1																								
Percussive	113	Tinkle Bell	TnklBell	2																								
	114	Agogo	Agogo	2																								
	115	Steel Drums	SteelDrm	2																								
	116	Woodblock	Woodblok	1																								
	117	Taiko Drum	TaikoDrm	1																								
	118	Melodic Tom 1	MelodTom	2																								
	119	Synth Drum	Syn Drum	1																								
	120	Reverse Cymbal	RevCymbl	1																								
Sound Effects	121	Guitar Fret Noise	FretNoiz	2																								
	122	Breath Noise	BrthNoiz	2																								
	123	Seashore	Seashore	2																								
	124	Bird Tweet	Tweet	2																								
	125	Telephone Ring	Telphone	1																								
	126	Helicopter	Helicptr	1																								
	127	Applause	Applause	1																								
	128	Gunshot	Gunshot	1																								

: Same as Bank 0 : No sound E : Element number

Instrument Group	Pgm#	Bank 0 Bank Select LSB=00	Bank 0	E	Release Bank 25	E	Rezo Sweep Bank 27	E	Muted Bank 28	E	Detune 1 Bank 32	E	Detune 2 Bank 33	E	Detune 3 Bank 34	E	Octave 1 Bank 35	E	Octave 2 Bank 36	E	5th 1 Bank 37	E	5th 2 Bank 38	E	Bend Bank 39	E	Tutti Bank 40	E
Piano	1	Acoustic Grand Piano	GrandPno	1																							PianoStr	2
	2	Bright Acoustic Piano	BritePno	1																								
	3	Electric Grand Piano	El.Grand	2							Det.CP80	2															LayerCP1	2
	4	Honky-tonk Piano	HnkyTonk	2																								
	5	Electric Piano 1	E.Piano1	2							Chor.EP1	2															HardEl.P	2
	6	Electric Piano 2	E.Piano2	2							Chor.EP2	2	DX Hard	2	DXLegend	2											DX Phase	2
	7	Harpsichord	Harpsi.	1	Harpsi.2	2											Harpsi.3	2										
	8	Clavi	Clavi.	2			ClaviWah	2																				
Chromatic Percussion	9	Celesta	Celesta	1																								
	10	Glockenspiel	Glocken	1																								
	11	Music Box	MusicBox	2																								
	12	Vibraphone	Vibes	1																								
	13	Marimba	Marimba	1																								
	14	Xylophone	Xylophon	1																								
	15	Tubular Bells	TubulBel	1																								
	16	Dulcimer	Dulcimer	1													Dulcimr2	2										
Organ	17	Drawbar Organ 1	DrawOrgn	1							DetDrwOr	2	60sDrOr1	2	60sDrOr2	2	70sDrOr1	2	DrawOrg2	2	60sDrOr3	2	Even Bar	2			16+2"2/3	2
	18	Percussive Organ	PercOrgn	1							DetPrcOr	2	Lite Org	2							PercOrg2	2						
	19	Rock Organ	RockOrgn	2																								
	20	Church Organ 1	ChrchOrg	2							ChurOrg3	2					ChurOrg2	2									NotreDam	2
	21	Reed Organ	ReedOrgn	1																							Puff Org	2
	22	Accordion	Acordion	2							Accordit	2																
	23	Hamonica	Harmnica	1							Harmo. 2	2																
	24	Tango Accordion	TangoAcd	2																								
Guitar	25	Acoustic Guitar (nylon) 1	NylonGtr	1	NylonGt3	2																						
	26	Acoustic Guitar (steel)	SteelGtr	1													12StrGtr	2									Nyln&Stl	2
	27	Electric Guitar (jazz)	Jazz Gtr	1							Jazz Amp	2																
	28	Electric Guitar (clean)	CleanGtr	1							ChorusGt	2																
	29	Electric Guitar (muted)	Mute.Gtr	1																							FunkGtr1	2
	30	Overdriven Guitar	Ovrdrive	1																								
	31	Distortion Guitar	Dist.Gtr	1																							FeedbkGt	2
	32	Guitar Harmonics	GtrHarmo	1																								
Bass	33	Acoustic Bass	Aco.Bass	1																							JazzRthm	2
	34	Electric Bass (finger)	FngrBass	1			FlangeBa	2																			Ba&DstEG	2
	35	Electric Bass (pick)	PickBass	1					MutePkBa	1																		
	36	Fretless Bass	Fretless	1							Fretles2	2	Fretles3	2	Fretles4	2												
	37	Slap Bass 1	SlapBas1	1			ResoSlap	1			PunchThm	2																
	38	Slap Bass 2	SlapBas2	1																								
	39	Synth Bass 1	SynBass1	1													Clv Bass	2									TechnoBa	2
	40	Synth Bass 2	SynBass2	2							SmthSynB	2															ModulrBa	2
Strings	41	Violin	Violin	1																								
	42	Viola	Viola	1																								
	43	Cello	Cello	1																								
	44	Contrabass	Contrabs	1																								
	45	Tremolo Strings	Trem.Str	1																							Susp.Str	2
	46	Pizzicato Strings	Pizz.Str	1																								
	47	Orchestral Harp	Harp	1																							YangChin	2
	48	Timpani	Timpani	1																								
Ensemble	49	String Ensemble 1	Strings1	1													60sStrng	2									Orchestr	2
	50	String Ensemble 2	Strings2	1																							Warm Str	2
	51	Synth Strings 1	Syn.Str1	2			Reso Str	2																				
	52	Synth Strings 2	Syn.Str2	2																								
	53	Choir Aahs	ChoirAah	1							MelChoir	2															ChoirStr	2
	54	Voice Oohs	VoiceOoh	1																								
	55	Synth Voice	SynVoice	1																							SyVoice2	2
	56	Orchestra Hit	Orch.Hit	2													OrchHit2	2										
Brass	57	Trumpet	Trumpet	1							Warm Trp	2																
	58	Trombone	Trombone	1																								
	59	Tuba	Tuba	1																								
	60	Muted Trumpet	Mute.Trp	1																								
	61	French Horn	Fr. Horn	2							FrHorn 2	1									HornOrch	2						
	62	Brass Section 1	BrasSect	1													Tp&TbSec	2									BrssSec2	2
	63	Synth Brass 1	SynBrss1	2			SynBrss3	2			JumpBrss	2																
	64	Synth Brass 2	SynBrss2	1																							SynBrss4	2
Reed	65	Soprano Sax	SprnoSax	1																								
	66	Alto Sax	Alto Sax	1																							Sax Sect	2
	67	Tenor Sax	TenorSax	1																							BrthTnSx	2
	68	Baritone Sax	Bari.Sax	1																								
	69	Oboe	Oboe	2																								
	70	English Horn	Eng.Horn	1																								
	71	Bassoon	Bassoon	1																								
	72	Clarinet	Clarinet	1																								
Pipe	73	Piccolo	Piccolo	1																								
	74	Flute	Flute	1																								
	75	Recorder	Recorder	1																								
	76	Pan Flute	PanFlute	1																								
	77	Blown Bottle	Bottle	2																								
	78	Shakuhachi	Shakhchi	2																								
	79	Whistle	Whistle	1																								
	80	Ocarina	Ocarina	1																								
Synth Lead	81	Lead 1 (square)	SquareLd	2																								
	82	Lead 2 (sawtooth)	Saw Ld	2	WaspySyn	2																					PulseSaw	2
	83	Lead 3 (calliope)	CaliopLd	2																								
	84	Lead 4 (chiff)	Chiff Ld	2																								
	85	Lead 5 (charang)	CharanLd	2																								
	86	Lead 6 (voice)	Voice Ld	2																								
	87	Lead 7 (fifths)	Fifth Ld	2													Big Five	2										
	88	Lead 8 (bass+lead)	Bass&Ld	2																								
Synth Pad	89	Pad 1 (new age)	NewAgePd	2																								
	90	Pad 2 (warm)	Warm Pad	2																								
	91	Pad 3 (polysynth)	PolySyPd	2																								
	92	Pad 4 (choir)	ChoirPad	2																								
	93	Pad 5 (bowed)	BowedPad	2																								
	94	Pad 6 (metallic)	MetalPad	2																								
	95	Pad 7 (halo)	Halo Pad	2																								
	96	Pad 8 (sweep)	SweepPad	2			Converge	2																				
Synth Effects	97	FX 1 (rain)	Rain	2																								
	98	FX 2 (soundtrack)	SoundTrk	2			Prologue	2																				
	99	FX 3 (crystal)	Crystal	2													RndGlock	2									GlockChi	2
	100	FX 4 (atmosphere)	Atmosphr	2																							Nylon EP	2
	101	FX 5 (brightness)	Bright	2																								
	102	FX 6 (goblins)	Goblins	2																								
	103	FX 7 (echoes)	Echoes	2																								
	104	FX 8 (sci-fi)	Sci-Fi	2																								
Ethnic	105	Sitar	Sitar	1							DetSitar	2					Sitar 2	2										
	106	Banjo	Banjo	1					MuteBnjo	1																		
	107	Shamisen	Shamisen	1																								
	108	Koto	Koto	1																								
	109	Kalimba	Kalimba	1																								
	110	Bagpipe	Bagpipe	2																								
	111	Fiddle	Fiddle	1																								
	112	Shanai	Shanai	1																								
Percussive	113	Tinkle Bell	TnklBell	2																								
	114	Agogo	Agogo	2																								
	115	Steel Drums	SteelDrm	2																								
	116	Woodblock	Woodblok	1																								
	117	Taiko Drum	TaikoDrm	1																								
	118	Melodic Tom 1	MelodTom	2																								
	119	Synth Drum	Syn Drum	1																								
	120	Reverse Cymbal	RevCymbl	1																								
Sound Effects	121	Guitar Fret Noise	FretNoiz	2																								
	122	Breath Noise	BrthNoiz	2																								
	123	Seashore	Seashore	2																								
	124	Bird Tweet	Tweet	2																								
	125	Telephone Ring	Telphone	1																								
	126	Helicopter	Helicptr	1																								
	127	Applause	Applause	1																								
	128	Gunshot	Gunshot	1																								

: Same as Bank 0 : No sound E : Element number

XG Voice List (Normal voice)

									Velo-Switch		Velo-Xfade		other wave																	
Instrument Group	**Pgm#**	**Bank 0 Bank Select LSB=00**	**Bank 0**	**E**	**Bank 41**	**E**	**Bank 42**	**E**	**Bank 43**	**E**	**Bank 45**	**E**	**Bank 64**	**E**	**Bank 65**	**E**	**Bank 66**	**E**	**Bank 67**	**E**	**Bank 68**	**E**	**Bank 69**	**E**	**Bank 70**	**E**	**Bank 71**	**E**
Piano	1	Acoustic Grand Piano	GrandPno	1	Dream	2																						
	2	Bright Acoustic Piano	BritePno	1																								
	3	Electric Grand Piano	El.Grand	2	LayerCP2	2																						
	4	Honky-tonk Piano	HnkyTonk	2																								
	5	Electric Piano 1	E.Piano1	2							VX El.P1	2	60sEl.P1	1														
	6	Electric Piano 2	E.Piano2	2	DX+Analg	2	DXKotoEP	2			VX El.P2	2																
	7	Harpsichord	Harpsi.	1																								
	8	Clavi	Clavi.	2									PulseClv	1	PierceCl	2												
Chromatic Percussion	9	Celesta	Celesta	1																								
	10	Glockenspiel	Glocken	1																								
	11	Music Box	MusicBox	2									Orgel	2														
	12	Vibraphone	Vibes	1							HardVibe	2																
	13	Marimba	Marimba	1									SineMrmb	2														
	14	Xylophone	Xylophon	1																								
	15	Tubular Bells	TubulBel	1																								
	16	Dulcimer	Dulcimer	1																								
Organ	17	Drawbar Organ 1	DrawOrgn	1									Organ Ba	1	70sDrOr2	2	CheezOrg	2	DrawOrg3	2								
	18	Percussive Organ	PercOrgn	1																								
	19	Rock Organ	RockOrgn	2									RotaryOr	2	SloRotar	2	FstRotar	2										
	20	Church Organ 1	ChrchOrg	2									OrgFlute	2	TrmOrgFl	2												
	21	Reed Organ	ReedOrgn	1																								
	22	Accordion	Acordion	2																								
	23	Hamonica	Harmnica	1																								
	24	Tango Accordion	TangoAcd	2									TngoAcd2	2														
Guitar	25	Acoustic Guitar (nylon) 1	NylonGtr	1					VelGtHrm	2																		
	26	Acoustic Guitar (steel)	SteelGtr	1	Stl&Body	2																						
	27	Electric Guitar (jazz)	Jazz Gtr	1																								
	28	Electric Guitar (clean)	CleanGtr	1																								
	29	Electric Guitar (muted)	Mute.Gtr	1	MuteStlG	2			FunkGtr2	2	Jazz Man	1																
	30	Overdriven Guitar	Ovrdrive	1					Gt.Pinch	2																		
	31	Distortion Guitar	Dist.Gtr	1	FeedbkG2	2																						
	32	Guitar Harmonics	GtrHarmo	1											GtFeedbk	1	GtrHrmo2	1										
Bass	33	Acoustic Bass	Aco.Bass	1							VXUprght	2																
	34	Electric Bass (finger)	FngrBass	1					FngrSlap	2	FngBass2	2			Mod.Bass	2												
	35	Electric Bass (pick)	PickBass	1																								
	36	Fretless Bass	Fretless	1																								
	37	Slap Bass 1	SlapBas1	1																								
	38	Slap Bass 2	SlapBas2	1					VeloSlap	2																		
	39	Synth Bass 1	SynBass1	1									Orbiter	2	Sqr.Bass	1	RubberBa	2										
	40	Synth Bass 2	SynBass2	2	DX Bass	2							X WireBa	2														
Strings	41	Violin	Violin	1																								
	42	Viola	Viola	1																								
	43	Cello	Cello	1																								
	44	Contrabass	Contrabs	1																								
	45	Tremolo Strings	Trem.Str	1																								
	46	Pizzicato Strings	Pizz.Str	1																								
	47	Orchestral Harp	Harp	1																								
	48	Timpani	Timpani	1																								
Ensemble	49	String Ensemble 1	Strings1	1	Orchstr2	2	TremOrch	2			Velo.Str	2																
	50	String Ensemble 2	Strings2	1	Kingdom	2							70s Str	1	Strings3	1												
	51	Synth Strings 1	Syn.Str1	2									Syn Str4	2	Syn Str5	2												
	52	Synth Strings 2	Syn.Str2	2																								
	53	Choir Aahs	ChoirAah	1																								
	54	Voice Oohs	VoiceOoh	1																								
	55	Synth Voice	SynVoice	1	Choral	2							AnaVoice	1														
	56	Orchestra Hit	Orch.Hit	2									Impact	2														
Brass	57	Trumpet	Trumpet	1																								
	58	Trombone	Trombone	1																								
	59	Tuba	Tuba	1																								
	60	Muted Trumpet	Mute.Trp	1																								
	61	French Horn	Fr. Horn	2																								
	62	Brass Section 1	BrasSect	1	Hi Brass	2	MelloBrs	2																				
	63	Synth Brass 1	SynBrss1	2							AnVelBr1	2	AnaBrss1	2														
	64	Synth Brass 2	SynBrss2	1	ChoirBrs	2					AnVelBr2	2	AnaBrss2	2														
Reed	65	Soprano Sax	SprnoSax	1																								
	66	Alto Sax	Alto Sax	1					HyprAlto	2																		
	67	Tenor Sax	TenorSax	1	SoftTenr	2							TnrSax 2	1														
	68	Baritone Sax	Bari.Sax	1																								
	69	Oboe	Oboe	2																								
	70	English Horn	Eng.Horn	1																								
	71	Bassoon	Bassoon	1																								
	72	Clarinet	Clarinet	1																								
Pipe	73	Piccolo	Piccolo	1																								
	74	Flute	Flute	1																								
	75	Recorder	Recorder	1																								
	76	Pan Flute	PanFlute	1																								
	77	Blown Bottle	Bottle	2																								
	78	Shakuhachi	Shakhchi	2																								
	79	Whistle	Whistle	1																								
	80	Ocarina	Ocarina	1																								
Synth Lead	81	Lead 1 (square)	SquareLd	2									Mellow	2	SoloSine	2	SineLead	1										
	82	Lead 2 (sawtooth)	Saw Ld	2	Dr. Lead	2					VeloLead	2																
	83	Lead 3 (calliope)	CaliopLd	2											PureLead	2												
	84	Lead 4 (chiff)	Chiff Ld	2									Rubby	2														
	85	Lead 5 (charang)	CharanLd	2									DistLead	2	WireLead	2												
	86	Lead 6 (voice)	Voice Ld	2									Vox Lead	2														
	87	Lead 7 (fifths)	Fifth Ld	2																								
	88	Lead 8 (bass+lead)	Bass&Ld	2									Fat&Prky	2	Soft Wrl	2												
Synth Pad	89	Pad 1 (new age)	NewAgePd	2									Fantasy	2														
	90	Pad 2 (warm)	Warm Pad	2									Horn Pad	2	RotarStr	2												
	91	Pad 3 (polysynth)	PolySyPd	2									PolyPd80	2	ClickPad	2	Ana. Pad	2	SquarPad	2								
	92	Pad 4 (choir)	ChoirPad	2									Heaven	2			Itopia	2	CC Pad	2								
	93	Pad 5 (bowed)	BowedPad	2									Glacier	2	GlassPad	2												
	94	Pad 6 (metallic)	MetalPad	2									Tine Pad	2	Pan Pad	2												
	95	Pad 7 (halo)	Halo Pad	2																								
	96	Pad 8 (sweep)	SweepPad	2									PolarPad	2			Celstial	2										
Synth Effects	97	FX 1 (rain)	Rain	2							ClaviPad	2	HrmoRain	2	AfrcnWnd	2	Carib	2										
	98	FX 2 (soundtrack)	SoundTrk	2									Ancestrl	2														
	99	FX 3 (crystal)	Crystal	2	ClearBel	2	ChorBell	2					SynMalet	1	SftCryst	2	LoudGlok	2	ChrstBel	2	VibeBell	2	DigiBell	2	AirBells	2	BellHarp	2
	100	FX 4 (atmosphere)	Atmosphr	2									NylnHarp	2	Harp Vox	2	AtmosPad	2	Planet	2								
	101	FX 5 (brightness)	Bright	2									FantaBel	2														
	102	FX 6 (goblins)	Goblins	2									GobSynth	2	Creeper	2	Ring Pad	2	Ritual	2	ToHeaven	2			Night	2	Glisten	2
	103	FX 7 (echoes)	Echoes	2									EchoBell	2	Big Pan	2	SynPiano	2	Creation	2	StarDust	2	Reso&Pan	2				
	104	FX 8 (sci-fi)	Sci-Fi	2									Starz	2														
Ethnic	105	Sitar	Sitar	1																								
	106	Banjo	Banjo	1																								
	107	Shamisen	Shamisen	1																								
	108	Koto	Koto	1																								
	109	Kalimba	Kalimba	1																								
	110	Bagpipe	Bagpipe	2																								
	111	Fiddle	Fiddle	1																								
	112	Shanai	Shanai	1									Shanai 2	1														
Percussive	113	Tinkle Bell	TnklBell	2																								
	114	Agogo	Agogo	2																								
	115	Steel Drums	SteelDrm	2																								
	116	Woodblock	Woodblok	1																								
	117	Taiko Drum	TaikoDrm	1																								
	118	Melodic Tom 1	MelodTom	2									Mel Tom2	1	Real Tom	2	Rock Tom	2										
	119	Synth Drum	Syn Drum	1									Ana Tom	1	ElecPerc	2												
	120	Reverse Cymbal	RevCymbl	1																								
Sound Effects	121	Guitar Fret Noise	FretNoiz	2																								
	122	Breath Noise	BrthNoiz	2																								
	123	Seashore	Seashore	2																								
	124	Bird Tweet	Tweet	2																								
	125	Telephone Ring	Telphone	1																								
	126	Helicopter	Helicptr	1																								
	127	Applause	Applause	1																								
	128	Gunshot	Gunshot	1																								

: Same as Bank 0 : No sound E : Element number

■ Bank Select MSB=64

Instrument Group	Pgm#	Bank 0 Bank Select LSB=00	Bank 0	E	Bank 72	E	Bank 96	E	Bank 97	E	Bank 98	E	Bank 99	E	Bank 100	E	Bank 101	E
Piano	1	Acoustic Grand Piano	GrandPno	1														
	2	Bright Acoustic Piano	BritePno	1														
	3	Electric Grand Piano	El.Grand	2														
	4	Honky-tonk Piano	HnkyTonk	2														
	5	Electric Piano 1	E.Piano1	2														
	6	Electric Piano 2	E.Piano2	2														
	7	Harpsichord	Harpsi.	1														
	8	Clavi	Clavi.	2														
Chromatic Percussion	9	Celesta	Celesta	1														
	10	Glockenspiel	Glocken	1														
	11	Music Box	MusicBox	2														
	12	Vibraphone	Vibes	1														
	13	Marimba	Marimba	1					Balimba	2	Log Drum	2						
	14	Xylophone	Xylophon	1														
	15	Tubular Bells	TubulBel	1			ChrchBel	2	Carillon	2								
	16	Dulcimer	Dulcimer	1			Cimbalom	2	Santur	2								
Organ	17	Drawbar Organ 1	DrawOrgn	1														
	18	Percussive Organ	PercOrgn	1														
	19	Rock Organ	RockOrgn	2														
	20	Church Organ 1	ChrchOrg	2														
	21	Reed Organ	ReedOrgn	1														
	22	Accordion	Acordion	2														
	23	Hamonica	Harmnica	1														
	24	Tango Accordion	TangoAcd	2														
Guitar	25	Acoustic Guitar (nylon) 1	NylonGtr	1			Ukulele	1										
	26	Acoustic Guitar (steel)	SteelGtr	1			Mandolin	2										
	27	Electric Guitar (jazz)	Jazz Gtr	1														
	28	Electric Guitar (clean)	CleanGtr	1														
	29	Electric Guitar (muted)	Mute.Gtr	1														
	30	Overdriven Guitar	Ovrdrive	1														
	31	Distortion Guitar	Dist.Gtr	1														
	32	Guitar Harmonics	GtrHarmo	1														
Bass	33	Acoustic Bass	Aco.Bass	1														
	34	Electric Bass (finger)	FngrBass	1														
	35	Electric Bass (pick)	PickBass	1														
	36	Fretless Bass	Fretless	1			SynFretl	2	SmthFrtl	2								
	37	Slap Bass 1	SlapBas1	1														
	38	Slap Bass 2	SlapBas2	1														
	39	Synth Bass 1	SynBass1	1			Hammer	2										
	40	Synth Bass 2	SynBass2	2														
Strings	41	Violin	Violin	1														
	42	Viola	Viola	1														
	43	Cello	Cello	1														
	44	Contrabass	Contrabs	1														
	45	Tremolo Strings	Trem.Str	1														
	46	Pizzicato Strings	Pizz.Str	1														
	47	Orchestral Harp	Harp	1														
	48	Timpani	Timpani	1														
Ensemble	49	String Ensemble 1	Strings1	1														
	50	String Ensemble 2	Strings2	1														
	51	Synth Strings 1	Syn.Str1	2														
	52	Synth Strings 2	Syn.Str2	2														
	53	Choir Aahs	ChoirAah	1														
	54	Voice Oohs	VoiceOoh	1														
	55	Synth Voice	SynVoice	1														
	56	Orchestra Hit	Orch.Hit	2														
Brass	57	Trumpet	Trumpet	1														
	58	Trombone	Trombone	1														
	59	Tuba	Tuba	1														
	60	Muted Trumpet	Mute.Trp	1														
	61	French Horn	Fr. Horn	2														
	62	Brass Section 1	BrasSect	1														
	63	Synth Brass 1	SynBrss1	2														
	64	Synth Brass 2	SynBrss2	1														
Reed	65	Soprano Sax	SprnoSax	1														
	66	Alto Sax	Alto Sax	1														
	67	Tenor Sax	TenorSax	1														
	68	Baritone Sax	Bari.Sax	1														
	69	Oboe	Oboe	2														
	70	English Horn	Eng.Horn	1														
	71	Bassoon	Bassoon	1														
	72	Clarinet	Clarinet	1														
Pipe	73	Piccolo	Piccolo	1														
	74	Flute	Flute	1														
	75	Recorder	Recorder	1														
	76	Pan Flute	PanFlute	1														
	77	Blown Bottle	Bottle	2														
	78	Shakuhachi	Shakhchi	2														
	79	Whistle	Whistle	1														
	80	Ocarina	Ocarina	1														
Synth Lead	81	Lead 1 (square)	SquareLd	2														
	82	Lead 2 (sawtooth)	Saw Ld	2			Seq Ana.	2										
	83	Lead 3 (calliope)	CalliopLd	2														
	84	Lead 4 (chiff)	Chiff Ld	2														
	85	Lead 5 (charang)	CharanLd	2														
	86	Lead 6 (voice)	Voice Ld	2														
	87	Lead 7 (fifths)	Fifth Ld	2														
	88	Lead 8 (bass+lead)	Bass&Ld	2														
Synth Pad	89	Pad 1 (new age)	NewAgePd	2														
	90	Pad 2 (warm)	Warm Pad	2														
	91	Pad 3 (polysynth)	PolySyPd	2														
	92	Pad 4 (choir)	ChoirPad	2														
	93	Pad 5 (bowed)	BowedPad	2														
	94	Pad 6 (metallic)	MetalPad	2														
	95	Pad 7 (halo)	Halo Pad	2														
	96	Pad 8 (sweep)	SweepPad	2														
Synth Effects	97	FX 1 (rain)	Rain	2														
	98	FX 2 (soundtrack)	SoundTrk	2														
	99	FX 3 (crystal)	Crystal	2	Gamelmba	2												
	100	FX 4 (atmosphere)	Atmosphr	2														
	101	FX 5 (brightness)	Bright	2			Smokey	2										
	102	FX 6 (goblins)	Goblins	2			BelChoir	2										
	103	FX 7 (echoes)	Echoes	2														
	104	FX 8 (sci-fi)	Sci-Fi	2														
Ethnic	105	Sitar	Sitar	1			Tambra	2	Tamboura	2								
	106	Banjo	Banjo	1			Rabab	2	Gopichnt	2	Oud	2						
	107	Shamisen	Shamisen	1														
	108	Koto	Koto	1			Taisho-k	2	Kanoon	2								
	109	Kalimba	Kalimba	1														
	110	Bagpipe	Bagpipe	2														
	111	Fiddle	Fiddle	1														
	112	Shanai	Shanai	1			Pungi	1	Hichriki	2								
Percussive	113	Tinkle Bell	TnklBell	2			Bonang	2	Altair	2	Gamelan	2	S.Gamlan	2	Rama Cym	2	AsianBel	2
	114	Agogo	Agogo	2														
	115	Steel Drums	SteelDrm	2					GlasPerc	2	ThaiBell	2						
	116	Woodblock	Woodblok	1			Castanet	1										
	117	Taiko Drum	TaikoDrm	1			Gr.Cassa	1										
	118	Melodic Tom 1	MelodTom	2														
	119	Synth Drum	Syn Drum	1														
	120	Reverse Cymbal	RevCymbl	1														
Sound Effects	121	Guitar Fret Noise	FretNoiz	2														
	122	Breath Noise	BrthNoiz	2														
	123	Seashore	Seashore	2														
	124	Bird Tweet	Tweet	2														
	125	Telephone Ring	Telphone	1														
	126	Helicopter	Helicptr	1														
	127	Applause	Applause	1														
	128	Gunshot	Gunshot	1														

SFX

Pch#	Bank 0	E
1	CuttngNz	1
2	CttngNz2	2
3		
4	Str Slap	1
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17	Fl.KClik	1
18		
19		
20		
21		
22		
23		
24		
25		
26		
27		
28		
29		
30		
31		
32		
33	Shower	1
34	Thunder	1
35	Wind	1
36	Stream	2
37	Bubble	2
38	Feed	2
39		
40		
41		
42		
43		
44		
45		
46		
47		
48		
49	Dog	1
50	Horse	1
51	Tweet 2	1
52		
53		
54		
55	Ghost	2
56	Maou	2
57		
58		
59		
60		
61		
62		
63		
64		
65	PhonCall	1
66	DoorSqek	1
67	Door Slam	1
68	ScratchC	1
69	ScratchS	2
70	WindChim	1
71	Telphon2	1
72		
73		
74		
75		
76		
77		
78		
79		
80		
81	CarEIgnt	1
82	CarTSqel	1
83	Car Pass	1
84	CarCrash	1
85	Siren	2
86	Train	1
87	JetPlane	2
88	Starship	2
89	Burst	2
90	Coaster	2
91	Submarin	2
92		
93		
94		
95		
96		
97	Laugh	1
98	Scream	1
99	Punch	1
100	Heart	1
101	Footstep	1
102		
103		
104		
105		
106		
107		
108		
109		
110		
111		
112		
113	MchinGun	1
114	LaserGun	2
115	Xplosion	2
116	Firework	2
117		
118		
119		
120		
121		
122		
123		
124		
125		
126		
127		
128		

: Same as Bank 0 : No sound E : Element number

XG Drum Map (Drum voice)

Bank MSB#				127	127	127	127	127	127
Program #				1	2	9	17	25	26
Note#	Note	Rcv Note off	Alternate Group	StandKit	StndKit2	Room Kit	Rock Kit	ElctrKit	AnalgKit
13	C♯ -1		3	Surdo Mute					
14	D -1		3	Surdo Open					
15	D♯ -1			Hi Q					
16	E -1			Whip Slap					
17	F -1		4	Scratch H					
18	F♯ -1		4	Scratch L					
19	G -1			Finger Snap					
20	G♯ -1			Click Noise					
21	A -1			Mtrnm Click					
22	A♯ -1			Mtrnm Bell					
23	B -1			Seq Click L					
24	C 0			Seq Click H					
25	C♯ 0			Brush Tap					
26	D 0	O		Brush Swirl					
27	D♯ 0			Brush Slap					
28	E 0	O		BrushTapSwrl				ReversCymbal	ReversCymbal
29	F 0	O		Snare Roll	Snare Roll 2				
30	F♯ 0			Castanet				Hi Q 2	Hi Q 2
31	G 0			Snare Soft	Snare Soft 2		Snare Noisy	SnrSnpyElctr	SnareNoisy 4
32	G♯ 0			Sticks					
33	A 0			Kick Soft			Kick Tight 2	Kick 3	Kick Tight 2
34	A♯ 0			OpenRimShot	RimShotHShrt				
35	B 0			Kick Tight	KickTghtShrt		Kick 2	Kick Gate	KickAnlgShrt
36	C 1			Kick	Kick Short		Kick Gate	KckGateHeavy	Kick Analog
37	C♯ 1			Side Stick					SideStickAn
38	D 1			Snare	Snare Short	Snare Snappy	Snare Rock	SnareNoisy 2	SnareAnalog
39	D♯ 1			Hand Clap					
40	E 1			Snare Tight	SnareTight H	SnrTightSnpy	Snare Rock Rim	SnareNoisy 3	SnareAnalog2
41	F 1			Floor Tom L		Tom Room 1	Tom Rock 1	TomElectro 1	Tom Analog 1
42	F♯ 1		1	Hi-HatClosed					HatCloseAnlg
43	G 1			Floor Tom H		Tom Room 2	Tom Rock 2	TomElectro 2	Tom Analog 2
44	G♯ 1		1	Hi-Hat Pedal					HatCloseAn 2
45	A 1			Low Tom		Tom Room 3	Tom Rock 3	TomElectro 3	Tom Analog 3
46	A♯ 1		1	Hi-Hat Open					HatOpen Anlg
47	B 1			Mid Tom L		Tom Room 4	Tom Rock 4	TomElectro 4	Tom Analog 4
48	C 2			Mid Tom H		Tom Room 5	Tom Rock 5	TomElectro 5	Tom Analog 5
49	C♯ 2			CrashCymbal1					Crash Analog
50	D 2			High Tom		Tom Room 6	Tom Rock 6	TomElectro 6	Tom Analog 6
51	D♯ 2			RideCymbal 1					
52	E 2			Chinese Cym					
53	F 2			Ride Cym Cup					
54	F♯ 2			Tambourine					
55	G 2			SplashCymbal					
56	G♯ 2			Cowbell					Cowbell Anlg
57	A 2			CrashCymbal2					
58	A♯ 2			Vibraslap					
59	B 2			RideCymbal 2					
60	C 3			Bongo H					
61	C♯ 3			Bongo L					
62	D 3			Conga H Mute					Conga Anlg H
63	D♯ 3			Conga H Open					Conga Anlg M
64	E 3			Conga L					Conga Anlg L
65	F 3			Timbale H					
66	F♯ 3			Timbale L					
67	G 3			Agogo H					
68	G♯ 3			Agogo L					
69	A 3			Cabasa					
70	A♯ 3			Maracas					Maracas 2
71	B 3	O		SambaWhistlH					
72	C 4	O		SambaWhistlL					
73	C♯ 4			Guiro Short					
74	D 4	O		Guiro Long					
75	D♯ 4			Claves					Claves 2
76	E 4			Wood Block H					
77	F 4			Wood Block L					
78	F♯ 4			Cuica Mute				Scratch H 2	Scratch H 2
79	G 4			Cuica Open				Scratch L 2	Scratch L 2
80	G♯ 4		2	TriangleMute					
81	A 4		2	TriangleOpen					
82	A♯ 4			Shaker					
83	B 4			Jingle Bells					
84	C 5			Bell Tree					
85	C♯ 5								
86	D 5								
87	D♯ 5								
88	E 5								
89	F 5								
90	F♯ 5								
91	G 5								

: Same as Standard Kit : No sound

Bank MSB#				127	127	127	127	127	126	126
Program #				1	28	33	41	49	1	2
Note#	Note	Rcv Note off	Alternate Group	StandKit	DanceKit	Jazz Kit	BrushKit	SymphKit	SFXKit 1	SFXKit 2
13	C♯ -1		3	Surdo Mute						
14	D -1		3	Surdo Open						
15	D♯ -1			Hi Q						
16	E -1			Whip Slap						
17	F -1		4	Scratch H						
18	F♯ -1		4	Scratch L						
19	G -1			Finger Snap						
20	G♯ -1			Click Noise						
21	A -1			Mtrnm Click						
22	A♯ -1			Mtrnm Bell						
23	B -1			Seq Click L						
24	C 0			Seq Click H						
25	C♯ 0			Brush Tap						
26	D 0	O		Brush Swirl						
27	D♯ 0			Brush Slap						
28	E 0	O		BrushTapSwrl	ReversCymbal					
29	F 0	O		Snare Roll						
30	F♯ 0			Castanet	Hi Q 2					
31	G 0			Snare Soft	Snare Tchno 3		Brush Slap 2			
32	G♯ 0			Sticks						
33	A 0			Kick Soft	Kick Techno Q			Kick Soft 2		
34	A♯ 0			OpenRimShot	Rim Gate					
35	B 0			Kick Tight	Kick Techno L			Gran Cassa		
36	C 1			Kick	Kick Techno 2	Kick Jazz	Kick Small	GranCassa Mu	CuttingNoiz	Phone Call
37	C♯ 1			Side Stick	Side Stick Analog				CuttingNoiz	Door Squeak
38	D 1			Snare	Snare Clap		Brush Slap 3	Band Snare		Door Slam
39	D♯ 1			Hand Clap					String Slap	Scratch Cut
40	E 1			Snare Tight	Snare Dry 2		Brush Tap 2	Band Snare 2		Scratch H 3
41	F 1			Floor Tom L	Tom Analog 1	Tom Jazz 1	Tom Brush 1	Tom Jazz 1		Wind Chime
42	F♯ 1		1	Hi-HatClosed	Hi-Hat Closed 3					Telephone 2
43	G 1			Floor Tom H	Tom Analog 2	Tom Jazz 2	Tom Brush 2	Tom Jazz 2		
44	G♯ 1		1	Hi-Hat Pedal	HatCloseAn 2					
45	A 1			Low Tom	Tom Analog 3	Tom Jazz 3	Tom Brush 3	Tom Jazz 3		
46	A♯ 1		1	Hi-Hat Open	Hi-Hat Open 3					
47	B 1			Mid Tom L	Tom Analog 4	Tom Jazz 4	Tom Brush 4	Tom Jazz 4		
48	C 2			Mid Tom H	Tom Analog 5	Tom Jazz 5	Tom Brush 5	Tom Jazz 5		
49	C♯ 2			CrashCymbal1	Clash Analog			Hand Cymbal		
50	D 2			High Tom	Tom Analog 6	Tom Jazz 6	Tom Brush 6	Tom Jazz 6		
51	D♯ 2			RideCymbal 1				HandCymShort		
52	E 2			Chinese Cym					Fl.Key Click	CarEngnIgnit
53	F 2			Ride Cym Cup						CarTireSqeal
54	F♯ 2			Tambourine						Car Passing
55	G 2			SplashCymbal						Car Crash
56	G♯ 2			Cowbell	Cowbell Anlg					Siren
57	A 2			CrashCymbal2				HandCymbal 2		Train
58	A♯ 2			Vibraslap						Jet Plane
59	B 2			RideCymbal 2				HandCym2Shrt		Starship
60	C 3			Bongo H						Burst
61	C♯ 3			Bongo L						Coaster
62	D 3			Conga H Mute	Conga Anlg H					Submarine
63	D♯ 3			Conga H Open	Conga Anlg M					
64	E 3			Conga L	Conga Anlg L					
65	F 3			Timbale H						
66	F♯ 3			Timbale L						
67	G 3			Agogo H						
68	G♯ 3			Agogo L					Shower	Laugh
69	A 3			Cabasa					Thunder	Scream
70	A♯ 3			Maracas	Maracas 2				Wind	Punch
71	B 3	O		SambaWhistlH					Stream	Heartbeat
72	C 4	O		SambaWhistlL					Bubble	Footsteps
73	C♯ 4			Guiro Short					Feed	
74	D 4	O		Guiro Long						
75	D♯ 4			Claves	Claves 2					
76	E 4			Wood Block H						
77	F 4			Wood Block L						
78	F♯ 4			Cuica Mute	Scratch H 2					
79	G 4			Cuica Open	Scratch L 3					
80	G♯ 4		2	TriangleMute						
81	A 4		2	TriangleOpen						
82	A♯ 4			Shaker						
83	B 4			Jingle Bells						
84	C 5			Bell Tree					Dog	Machine Gun
85	C♯ 5								Horse	Laser Gun
86	D 5								Bird Tweet 2	Explosion
87	D♯ 5									FireWork
88	E 5									
89	F 5									
90	F♯ 5								Ghost	
91	G 5								Maou	

Effect Parameter List

NOTE Parameters marked with a ● in the "Control" column can be controlled from an AC1 (assignable controller 1) etc. However, this is valid only for a Variation effect (when selected for Insertion).

HALL1,HALL2
ROOM1,ROOM2,ROOM3
STAGE1,STAGE2
PLATE (reverb, variation block)

No.	Parameter	Display	Value	See Table	Control
1	Reverb Time	0.3 - 30.0s	0 - 69	table#4	
2	Diffusion	0 - 10	0 - 10		
3	Initial Delay	0.1 - 99.3ms	0 - 63	table#5	
4	HPF Cutoff	Thru - 8.0kHz	0 - 52	table#3	
5	LPF Cutoff	1.0k - Thru	34 - 60	table#3	
6					
7					
8					
9					
10	Dry/Wet	D63>W - D=W - D<W63	1 - 127		●
11	Rev Delay	0 - 63	0 - 63	table#5	
12	Density	0 - 3	0 - 3		
13	Er/Rev Balance	E63>R - E=R - E<R63	1 - 127		
14					
15	Feedback Level	-63 - +63	1 - 127		
16					

WHITE ROOM
TUNNEL
BASEMENT (reverb block)

No.	Parameter	Display	Value	See Table	Control
1	Reverb Time	0.3 - 30.0s	0 - 69	table#4	
2	Diffusion	0 - 10	0 - 10		
3	Initial Delay	0.1 - 99.3ms	0 - 63	table#5	
4	HPF Cutoff	Thru - 8.0kHz	0 - 52	table#3	
5	LPF Cutoff	1.0k - Thru	34 - 60	table#3	
6	Width	0.5 - 10.2m	0 - 37	table#8	
7	Heigt	0.5 - 20.2m	0 - 73	table#8	
8	Depth	0.5 - 30.2m	0 - 104	table#8	
9	Wall Vary	0 - 30	0 - 30		
10					
11	Rev Delay	0 - 63	0 - 63	table#5	
12	Density	0 - 3	0 - 3		
13	Er/Rev Balance	E63>R - E=R - E<R63	1 - 127		
14					
15	Feedback Level	-63 - +63	1 - 127		
16					

DELAY L,C,R (variation block)

No.	Parameter	Display	Value	See Table	Control
1	Lch Delay	0.1 - 715.0ms (variation block)	1 - 7150		
2	Rch Delay	0.1 - 715.0ms (variation block)	1 - 7150		
3	Cch Delay	0.1 - 715.0ms (variation block)	1 - 7150		
4	Feedback Delay	0.1 - 715.0ms (variation block)	1 - 7150		
5	Feedback Level	-63 - +63	1 - 127		
6	Cch Level	0 - 127	0 - 127		
7	High Damp	0.1 - 1.0	1 - 10		
8					
9					
10	Dry/Wet	D63>W - D=W - D<W63	1 - 127		●
11					
12					
13	EQ Low Frequency	50Hz - 2.0kHz	8 - 40	table#3	
14	EQ Low Gain	-12 - +12dB	52 - 76		
15	EQ High Frequency	500Hz - 16.0kHz	28 - 58	table#3	
16	EQ High Gain	-12 - +12dB	52 - 76		

DELAY L,R (variation block)

No.	Parameter	Display	Value	See Table	Control
1	Lch Delay	0.1 - 715.0ms (variation block)	1 - 7150		
2	Rch Delay	0.1 - 715.0ms (variation block)	1 - 7150		
3	Feedback Delay 1	0.1 - 715.0ms (variation block)	1 - 7150		
4	Feedback Delay 2	0.1 - 715.0ms (variation block)	1 - 7150		
5	Feedback Level	-63 - +63	1 - 127		
6	High Damp	0.1 - 1.0	1 - 10		
7					
8					
9					
10	Dry/Wet	D63>W - D=W - D<W63	1 - 127		●
11					
12					
13	EQ Low Frequency	50Hz - 2.0kHz	8 - 40	table#3	
14	EQ Low Gain	-12 - +12dB	52 - 76		
15	EQ High Frequency	500Hz - 16.0kHz	28 - 58	table#3	
16	EQ High Gain	-12 - +12dB	52 - 76		

ECHO (variation block)

No.	Parameter	Display	Value	See Table	Control
1	Lch Delay1	0.1 - 355.0ms (variation block)	1 - 3550		
2	Lch Feedback Level	-63 - +63	1 - 127		
3	Rch Delay1	0.1 - 355.0ms (variation block)	1 - 3550		
4	Rch Feedback Level	-63 - +63	1 - 127		
5	High Damp	0.1 - 1.0	1 - 10		
6	Lch Delay2	0.1 - 355.0ms (variation block)	1 - 3550		
7	Rch Delay2	0.1 - 355.0ms (variation block)	1 - 3550		
8	Delay2 Level	0 - 127	0 - 127		
9					
10	Dry/Wet	D63>W - D=W - D<W63	1 - 127		●
11					
12					
13	EQ Low Frequency	50Hz - 2.0kHz	8 - 40	table#3	
14	EQ Low Gain	-12 - +12dB	52 - 76		
15	EQ High Frequency	500Hz - 16.0kHz	28 - 58	table#3	
16	EQ High Gain	-12 - +12dB	52 - 76		

CROSS DELAY (variation block)

No.	Parameter	Display	Value	See Table	Control
1	L->R Delay	0.1 - 355.0ms (variation block)	1 - 3550		
2	R->L Delay	0.1 - 355.0ms (variation block)	1 - 3550		
3	Feedback Level	-63 - +63	1 - 127		
4	Input Select	L,R,L&R	0 - 2		
5	High Damp	0.1 - 1.0	1 - 10		
6					
7					
8					
9					
10	Dry/Wet	D63>W - D=W - D<W63	1 - 127		●
11					
12					
13	EQ Low Frequency	50Hz - 2.0kHz	8 - 40	table#3	
14	EQ Low Gain	-12 - +12dB	52 - 76		
15	EQ High Frequency	500Hz - 16.0kHz	28 - 58	table#3	
16	EQ High Gain	-12 - +12dB	52 - 76		

EARLY REF1,EARLY REF2(variation block)

No.	Parameter	Display	Value	See Table	Control
1	Type	S-H, L-H, Rdm, Rvs, Plt, Spr	0 - 5		
2	Room Size	0.1 - 7.0	0 - 44	table#6	
3	Diffusion	0 - 10	0 - 10		
4	Initial Delay	0.1 - 99.3ms	0 - 63	table#5	
5	Feedback Level	-63 - +63	1 - 127		
6	HPF Cutoff	Thru - 8.0kHz	0 - 52	table#3	
7	LPF Cutoff	1.0k - Thru	34 - 60	table#3	
8					
9					
10	Dry/Wet	D63>W - D=W - D<W63	1 - 127		●
11	Liveness	0 - 10	0 - 10		
12	Density	0 - 3	0 - 3		
13	High Damp	0.1 - 1.0	1 - 10		
14					
15					
16					

GATE REVERB
REVERSE GATE (variation block)

No.	Parameter	Display	Value	See Table	Control
1	Type	TypeA,TypeB	0 - 1		
2	Room Size	0.1 - 7.0	0 - 44	table#6	
3	Diffusion	0 - 10	0 - 10		
4	Initial Delay	0.1 - 99.3ms	0 - 63	table#5	
5	Feedback Level	-63 - +63	1 - 127		
6	HPF Cutoff	Thru - 8.0kHz	0 - 52	table#3	
7	LPF Cutoff	1.0k - Thru	34 - 60	table#3	
8					
9					
10	Dry/Wet	D63>W - D=W - D<W63	1 - 127		●
11	Liveness	0 - 10	0 - 10		
12	Density	0 - 3	0 - 3		
13	High Damp	0.1 - 1.0	1 - 10		
14					
15					
16					

KARAOKE1,2,3 (variation block)

No.	Parameter	Display	Value	See Table	Control
1	Delay Time	0.1 - 400ms	0 - 127	table#7	
2	Feedback Level	-63 - +63	1 - 127		
3	HPF Cutoff	Thru - 8.0kHz	0 - 52	table#3	
4	LPF Cutoff	1.0k - Thru	34 - 60	table#3	
5					
6					
7					
8					
9					
10	Dry/Wet	D63>W - D=W - D<W63	1 - 127		●
11					
12					
13					
14					
15					
16					

CHORUS1,2,3,4
CELESTE1,2,3,4 (chorus, variation block)

No.	Parameter	Display	Value	See Table	Control
1	LFO Frequency	0.00Hz - 39.7Hz	0 - 127	table#1	
2	LFO Depth	0 - 127	0 - 127		
3	Feedback Level	-63 - +63	1 - 127		
4	Delay Offset	0.0 - 50	0 - 127	table#2	
5					
6	EQ Low Frequency	50Hz - 2.0kHz	8 - 40	table#3	
7	EQ Low Gain	-12 - +12dB	52 - 76		
8	EQ High Frequency	500Hz - 16.0kHz	28 - 58	table#3	
9	EQ High Gain	-12 - +12dB	52 - 76		
10	Dry/Wet	D63>W - D=W - D<W63	1 - 127		●
11					
12					
13					
14					
15	Input Mode	mono/stereo	0 - 1		
16					

FLANGER1,2,3 (chorus, variation block)

No.	Parameter	Display	Value	See Table	Control
1	LFO Frequency	0.00Hz - 39.7Hz	0 - 127	table#1	
2	LFO Depth	0 - 127	0 - 127		
3	Feedback Level	-63 - +63	1 - 127		
4	Delay Offset	0 - 63	0 - 63	table#2	
5					
6	EQ Low Frequency	50Hz - 2.0kHz	8 - 40	table#3	
7	EQ Low Gain	-12 - +12dB	52 - 76		
8	EQ High Frequency	500Hz - 16.0kHz	28 - 58	table#3	
9	EQ High Gain	-12 - +12dB	52 - 76		
10	Dry/Wet	D63>W - D=W - D<W63	1 - 127		●
11					
12					
13					
14	LFO Phase Difference	-180 - +180deg	4 - 124	resolution=3deg.	
15					
16					

SYMPHONIC (variation block)

No.	Parameter	Display	Value	See Table	Control
1	LFO Frequency	0.00Hz - 39.7Hz	0 - 127	table#1	
2	LFO Depth	0 - 127	0 - 127		
3	Delay Offset	0.0 - 50	0 - 127	table#2	
4					
5					
6	EQ Low Frequency	50Hz - 2.0kHz	8 - 40	table#3	
7	EQ Low Gain	-12 - +12dB	52 - 76		
8	EQ High Frequency	500Hz - 16.0kHz	28 - 58	table#3	
9	EQ High Gain	-12 - +12dB	52 - 76		
10	Dry/Wet	D63>W - D=W - D<W63	1 - 127		●
11					
12					
13					
14					
15					
16					

ROTARY SPEAKER (variation block)

No.	Parameter	Display	Value	See Table	Control
1	LFO Frequency	0.00Hz - 39.7Hz	0 - 127	table#1	●
2	LFO Depth	0 - 127	0 - 127		
3					
4					
5					
6	EQ Low Frequency	50Hz - 2.0kHz	8 - 40	table#3	
7	EQ Low Gain	-12 - +12dB	52 - 76		
8	EQ High Frequency	500Hz - 16.0kHz	28 - 58	table#3	
9	EQ High Gain	-12 - +12dB	52 - 76		
10	Dry/Wet	D63>W - D=W - D<W63	1 - 127		
11					
12					
13					
14					
15					
16					

TREMOLO (variation block)

No.	Parameter	Display	Value	See Table	Control
1	LFO Frequency	0.00Hz - 39.7Hz	0 - 127	table#1	●
2	AM Depth	0 - 127	0 - 127		
3	PM Depth	0 - 127	0 - 127		
4					
5					
6	EQ Low Frequency	50Hz - 2.0kHz	8 - 40	table#3	
7	EQ Low Gain	-12 - +12dB	52 - 76		
8	EQ High Frequency	500Hz - 16.0kHz	28 - 58	table#3	
9	EQ High Gain	-12 - +12dB	52 - 76		
10					
11					
12					
13					
14	LFO Phase Difference	-180 - +180deg	4 - 124	resolution=3deg.	
15	Input Mode	mono/stereo	0 - 1		
16					

AUTO PAN (variation block)

No.	Parameter	Display	Value	See Table	Control
1	LFO Frequency	0.00Hz - 39.7Hz	0 - 127	table#1	●
2	L/R Depth	0 - 127	0 - 127		
3	F/R Depth	0 - 127	0 - 127		
4	PAN Direction	L<->R,L->R,L<-R,Lturn,Rturn,L/R	0 - 5		
5					
6	EQ Low Frequency	50Hz - 2.0kHz	8 - 40	table#3	
7	EQ Low Gain	-12 - +12dB	52 - 76		
8	EQ High Frequency	500Hz - 16.0kHz	28 - 58	table#3	
9	EQ High Gain	-12 - +12dB	52 - 76		
10					
11					
12					
13					
14					
15					
16					

PHASER 1 (variation block)

No.	Parameter	Display	Value	See Table	Control
1	LFO Frequency	0.00Hz - 39.7Hz	0 - 127	table#1	
2	LFO Depth	0 - 127	0 - 127		
3	Phase Shift Offset	0 - 127	0 - 127		
4	Feedback Level	-63 - +63	1 - 127		
5					
6	EQ Low Frequency	50Hz - 2.0kHz	8 - 40	table#3	
7	EQ Low Gain	-12 - +12dB	52 - 76		
8	EQ High Frequency	500Hz - 16.0kHz	28 - 58	table#3	
9	EQ High Gain	-12 - +12dB	52 - 76		
10	Dry/Wet	D63>W - D=W - D<W63	1 - 127		●
11	Stage	6 - 10	6 - 10		
12					
13					
14					
15					
16					

PHASER 2 (variation block)

No.	Parameter	Display	Value	See Table	Control
1	LFO Frequency	0.00Hz - 39.7Hz	0 - 127	table#1	
2	LFO Depth	0 - 127	0 - 127		
3	Phase Shift Offset	0 - 127	0 - 127		
4	Feedback Level	-63 - +63	1 - 127		
5					
6	EQ Low Frequency	50Hz - 2.0kHz	8 - 40	table#3	
7	EQ Low Gain	-12 - +12dB	52 - 76		
8	EQ High Frequency	500Hz - 16.0kHz	28 - 58	table#3	
9	EQ High Gain	-12 - +12dB	52 - 76		
10	Dry/Wet	D63>W - D=W - D<W63	1 - 127		●
11	Stage	3 - 5	3 - 5		
12					
13	LFO Phase Difference	-180deg - +180deg	4 - 124	resolution=3deg.	
14					
15					
16					

DISTORTION
OVERDRIVE (variation block)

No.	Parameter	Display	Value	See Table	Control
1	Drive	0 - 127	0 - 127		●
2	EQ Low Frequency	50Hz - 2.0kHz	8 - 40	table#3	
3	EQ Low Gain	-12 - +12dB	52 - 76		
4	LPF Cutoff	1.0k - Thru	34 - 60	table#3	
5	Output Level	0 - 127	0 - 127		
6					
7	EQ Mid Frequency	500Hz - 10.0kHz	28 - 54	table#3	
8	EQ Mid Gain	-12 - +12dB	52 - 76		
9	EQ Mid Width	1.0 - 12.0	10 - 120		
10	Dry/Wet	D63>W - D=W - D<W63	1 - 127		
11	Edge(Clip Curve)	0 - 127	0 - 127	mild - sharp	
12					
13					
14					
15					
16					

AMP SIMULATOR (variation block)

No.	Parameter	Display	Value	See Table	Control
1	Drive	0 - 127	0 - 127		●
2	AMP Type	Off,Stack,Combo,Tube	0 - 3		
3	LPF Cutoff	1.0k - Thru	34 - 60	table#3	
4	Output Level	0 - 127	0 - 127		
5					
6					
7					
8					
9					
10	Dry/Wet	D63>W - D=W - D<W63	1 - 127		
11	Edge(Clip Curve)	0 - 127	0 - 127	mild - sharp	
12					
13					
14					
15					
16					

3BAND EQ(MONO) (variation block)

No.	Parameter	Display	Value	See Table	Control
1	EQ Low Gain	-12 - +12dB	52 - 76		
2	EQ Mid Frequency	500Hz - 10.0kHz	28 - 54	table#3	
3	EQ Mid Gain	-12 - +12dB	52 - 76		
4	EQ Mid Width	1.0 - 12.0	10 - 120		
5	EQ High Gain	-12 - +12dB	52 - 76		
6	EQ Low Frequency	50Hz - 2.0kHz	8 - 40	table#3	
7	EQ High Frequency	500Hz - 16.0kHz	28 - 58	table#3	
8					
9					
10					
11					
12					
13					
14					
15					
16					

2BAND EQ(STEREO) (variation block)

No.	Parameter	Display	Value	See Table	Control
1	EQ Low Frequency	50Hz - 2.0kHz	8 - 40	table#3	
2	EQ Low Gain	-12 - +12dB	52 - 76		
3	EQ High Frequency	500Hz - 16.0kHz	28 - 58	table#3	
4	EQ High Gain	-12 - +12dB	52 - 76		
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					

AUTO WAH (variation block)

No.	Parameter	Display	Value	See Table	Control
1	LFO Frequency	0.00Hz - 39.7Hz	0 - 127	table#1	
2	LFO Depth	0 - 127	0 - 127		
3	Cutoff Frequency Offset	0 - 127	0 - 127		●
4	Resonance	1.0 - 12.0	10 - 120		
5					
6	EQ Low Frequency	50Hz - 2.0kHz	8 - 40	table#3	
7	EQ Low Gain	-12 - +12dB	52 - 76		
8	EQ High Frequency	500Hz - 16.0kHz	28 - 58	table#3	
9	EQ High Gain	-12 - +12dB	52 - 76		
10	Dry/Wet	D63>W - D=W - D<W63	1 - 127		
11					
12					
13					
14					
15					
16					

Effect Data Assign Table

table#1
LFO Frequency

Data	Value	Data	Value
0	0.00	64	0.69
1	0.04	65	2.77
2	0.08	66	2.86
3	0.12	67	2.94
4	0.16	68	3.02
5	0.21	69	3.11
6	0.25	70	3.19
7	0.29	71	3.28
8	0.33	72	3.36
9	0.37	73	3.44
10	0.42	74	3.53
11	0.46	75	3.61
12	0.50	76	3.70
13	0.54	77	3.86
14	0.58	78	4.03
15	0.63	79	4.20
16	0.67	80	4.37
17	0.71	81	4.54
18	0.75	82	4.71
19	0.79	83	4.87
20	0.84	84	5.04
21	0.88	85	5.21
22	0.92	86	5.38
23	0.96	87	5.55
24	1.00	88	5.72
25	1.05	89	6.05
26	1.09	90	6.39
27	1.13	91	6.72
28	1.17	92	7.06
29	1.22	93	7.40
30	1.26	94	7.73
31	1.30	95	8.07
32	1.34	96	8.41
33	1.38	97	8.74
34	1.43	98	9.08
35	1.47	99	9.42
36	1.51	100	9.75
37	1.55	101	10.0
38	1.59	102	10.7
39	1.64	103	11.4
40	1.68	104	12.1
41	1.72	105	12.7
42	1.76	106	13.4
43	1.80	107	14.1
44	1.85	108	14.8
45	1.89	109	15.4
46	1.93	110	16.1
47	1.97	111	16.8
48	2.01	112	17.5
49	2.06	113	18.1
50	2.10	114	19.5
51	2.14	115	20.8
52	2.18	116	22.2
53	2.22	117	23.5
54	2.27	118	24.8
55	2.31	119	26.2
56	2.35	120	27.5
57	2.39	121	28.9
58	2.43	122	30.2
59	2.48	123	31.6
60	2.52	124	32.9
61	2.56	125	34.3
62	2.60	126	37.0
63	2.65	127	39.7

table#2
Modulation Delay Offset

Data	Value	Data	Value
0	0.0	64	6.4
1	0.1	65	6.5
2	0.2	66	6.6
3	0.3	67	6.7
4	0.4	68	6.8
5	0.5	69	6.9
6	0.6	70	7.0
7	0.7	71	7.1
8	0.8	72	7.2
9	0.9	73	7.3
10	1.0	74	7.4
11	1.1	75	7.5
12	1.2	76	7.6
13	1.3	77	7.7
14	1.4	78	7.8
15	1.5	79	7.9
16	1.6	80	8.0
17	1.7	81	8.1
18	1.8	82	8.2
19	1.9	83	8.3
20	2.0	84	8.4
21	2.1	85	8.5
22	2.2	86	8.6
23	2.3	87	8.7
24	2.4	88	8.8
25	2.5	89	8.9
26	2.6	90	9.0
27	2.7	91	9.1
28	2.8	92	9.2
29	2.9	93	9.3
30	3.0	94	9.4
31	3.1	95	9.5
32	3.2	96	9.6
33	3.3	97	9.7
34	3.4	98	9.8
35	3.5	99	9.9
36	3.6	100	10.0
37	3.7	101	11.1
38	3.8	102	12.2
39	3.9	103	13.3
40	4.0	104	14.4
41	4.1	105	15.5
42	4.2	106	17.1
43	4.3	107	18.6
44	4.4	108	20.2
45	4.5	109	21.8
46	4.6	110	23.3
47	4.7	111	24.9
48	4.8	112	26.5
49	4.9	113	28.0
50	5.0	114	29.6
51	5.1	115	31.2
52	5.2	116	32.8
53	5.3	117	34.3
54	5.4	118	35.9
55	5.5	119	37.5
56	5.6	120	39.0
57	5.7	121	40.6
58	5.8	122	42.2
59	5.9	123	43.7
60	6.0	124	45.3
61	6.1	125	46.9
62	6.2	126	48.4
63	6.3	127	50.0

table#3
EQ Frequency

Data	Value
0	THRU(20)
1	22
2	25
3	28
4	32
5	36
6	40
7	45
8	50
9	56
10	63
11	70
12	80
13	90
14	100
15	110
16	125
17	140
18	160
19	180
20	200
21	225
22	250
23	280
24	315
25	355
26	400
27	450
28	500
29	560
30	630
31	700
32	800
33	900
34	1.0k
35	1.1k
36	1.2k
37	1.4k
38	1.6k
39	1.8k
40	2.0k
41	2.2k
42	2.5k
43	2.8k
44	3.2k
45	3.6k
46	4.0k
47	4.5k
48	5.0k
49	5.6k
50	6.3k
51	7.0k
52	8.0k
53	9.0k
54	10.0k
55	11.0k
56	12.0k
57	14.0k
58	16.0k
59	18.0k
60	THRU(20.0k)

table#4
Reverb time

Data	Value	Data	Value
0	0.3	64	17.0
1	0.4	65	18.0
2	0.5	66	19.0
3	0.6	67	20.0
4	0.7	68	25.0
5	0.8	69	30.0
6	0.9		
7	1.0		
8	1.1		
9	1.2		
10	1.3		
11	1.4		
12	1.5		
13	1.6		
14	1.7		
15	1.8		
16	1.9		
17	2.0		
18	2.1		
19	2.2		
20	2.3		
21	2.4		
22	2.5		
23	2.6		
24	2.7		
25	2.8		
26	2.9		
27	3.0		
28	3.1		
29	3.2		
30	3.3		
31	3.4		
32	3.5		
33	3.6		
34	3.7		
35	3.8		
36	3.9		
37	4.0		
38	4.1		
39	4.2		
40	4.3		
41	4.4		
42	4.5		
43	4.6		
44	4.7		
45	4.8		
46	4.9		
47	5.0		
48	5.5		
49	6.0		
50	6.5		
51	7.0		
52	7.5		
53	8.0		
54	8.5		
55	9.0		
56	9.5		
57	10.0		
58	11.0		
59	12.0		
60	13.0		
61	14.0		
62	15.0		
63	16.0		

table#5
Delay Time(200.0ms)

Data	Value	Data	Value
0	0.1	64	100.8
1	1.7	65	102.4
2	3.2	66	104.0
3	4.8	67	105.6
4	6.4	68	107.1
5	8.0	69	108.7
6	9.5	70	110.3
7	11.1	71	111.9
8	12.7	72	113.4
9	14.3	73	115.0
10	15.8	74	116.6
11	17.4	75	118.2
12	19.0	76	119.7
13	20.6	77	121.3
14	22.1	78	122.9
15	23.7	79	124.4
16	25.3	80	126.0
17	26.9	81	127.6
18	28.4	82	129.2
19	30.0	83	130.7
20	31.6	84	132.3
21	33.2	85	133.9
22	34.7	86	135.5
23	36.3	87	137.0
24	37.9	88	138.6
25	39.5	89	140.2
26	41.0	90	141.8
27	42.6	91	143.3
28	44.2	92	144.9
29	45.7	93	146.5
30	47.3	94	148.1
31	48.9	95	149.6
32	50.5	96	151.2
33	52.0	97	152.8
34	53.6	98	154.4
35	55.2	99	155.9
36	56.8	100	157.5
37	58.3	101	159.1
38	59.9	102	160.6
39	61.5	103	162.2
40	63.1	104	163.8
41	64.6	105	165.4
42	66.2	106	166.9
43	67.8	107	168.5
44	69.4	108	170.1
45	70.9	109	171.7
46	72.5	110	173.2
47	74.1	111	174.8
48	75.7	112	176.4
49	77.2	113	178.0
50	78.8	114	179.5
51	80.4	115	181.1
52	81.9	116	182.7
53	83.5	117	184.3
54	85.1	118	185.8
55	86.7	119	187.4
56	88.2	120	189.0
57	89.8	121	190.6
58	91.4	122	192.1
59	93.0	123	193.7
60	94.5	124	195.3
61	96.1	125	196.9
62	97.7	126	198.4
63	99.3	127	200.0

Effect Data Assign Table

table#6
Room Size

Data	Value
0	0.1
1	0.3
2	0.4
3	0.6
4	0.7
5	0.9
6	1.0
7	1.2
8	1.4
9	1.5
10	1.7
11	1.8
12	2.0
13	2.1
14	2.3
15	2.5
16	2.6
17	2.8
18	2.9
19	3.1
20	3.2
21	3.4
22	3.5
23	3.7
24	3.9
25	4.0
26	4.2
27	4.3
28	4.5
29	4.6
30	4.8
31	5.0
32	5.1
33	5.3
34	5.4
35	5.6
36	5.7
37	5.9
38	6.1
39	6.2
40	6.4
41	6.5
42	6.7
43	6.8
44	7.0

table#7
Delay Time(400.0ms)

Data	Value	Data	Value
0	0.1	64	201.6
1	3.2	65	204.8
2	6.4	66	207.9
3	9.5	67	211.1
4	12.7	68	214.2
5	15.8	69	217.4
6	19.0	70	220.5
7	22.1	71	223.7
8	25.3	72	226.8
9	28.4	73	230.0
10	31.6	74	233.1
11	34.7	75	236.3
12	37.9	76	239.4
13	41.0	77	242.6
14	44.2	78	245.7
15	47.3	79	248.9
16	50.5	80	252.0
17	53.6	81	255.2
18	56.8	82	258.3
19	59.9	83	261.5
20	63.1	84	264.6
21	66.2	85	267.7
22	69.4	86	270.9
23	72.5	87	274.0
24	75.7	88	277.2
25	78.8	89	280.3
26	82.0	90	283.5
27	85.1	91	286.6
28	88.3	92	289.8
29	91.4	93	292.9
30	94.6	94	296.1
31	97.7	95	299.2
32	100.9	96	302.4
33	104.0	97	305.5
34	107.2	98	308.7
35	110.3	99	311.8
36	113.5	100	315.0
37	116.6	101	318.1
38	119.8	102	321.3
39	122.9	103	324.4
40	126.1	104	327.6
41	129.2	105	330.7
42	132.4	106	333.9
43	135.5	107	337.0
44	138.6	108	340.2
45	141.8	109	343.3
46	144.9	110	346.5
47	148.1	111	349.6
48	151.2	112	352.8
49	154.4	113	355.9
50	157.5	114	359.1
51	160.7	115	362.2
52	163.8	116	365.4
53	167.0	117	368.5
54	170.1	118	371.7
55	173.3	119	374.8
56	176.4	120	378.0
57	179.6	121	381.1
58	182.7	122	384.3
59	185.9	123	387.4
60	189.0	124	390.6
61	192.2	125	393.7
62	195.3	126	396.9
63	198.5	127	400.0

table#8
Reverb Width;Depth;Height

Data	Value	Data	Value
0	0.5	64	17.6
1	0.8	65	17.9
2	1.0	66	18.2
3	1.3	67	18.5
4	1.5	68	18.8
5	1.8	69	19.1
6	2.0	70	19.4
7	2.3	71	19.7
8	2.6	72	20.0
9	2.8	73	20.2
10	3.1	74	20.5
11	3.3	75	20.8
12	3.6	76	21.1
13	3.9	77	21.4
14	4.1	78	21.7
15	4.4	79	22.0
16	4.6	80	22.4
17	4.9	81	22.7
18	5.2	82	23.0
19	5.4	83	23.3
20	5.7	84	23.6
21	5.9	85	23.9
22	6.2	86	24.2
23	6.5	87	24.5
24	6.7	88	24.9
25	7.0	89	25.2
26	7.2	90	25.5
27	7.5	91	25.8
28	7.8	92	26.1
29	8.0	93	26.5
30	8.3	94	26.8
31	8.6	95	27.1
32	8.8	96	27.5
33	9.1	97	27.8
34	9.4	98	28.1
35	9.6	99	28.5
36	9.9	100	28.8
37	10.2	101	29.2
38	10.4	102	29.5
39	10.7	103	29.9
40	11.0	104	30.2
41	11.2		
42	11.5		
43	11.8		
44	12.1		
45	12.3		
46	12.6		
47	12.9		
48	13.1		
49	13.4		
50	13.7		
51	14.0		
52	14.2		
53	14.5		
54	14.8		
55	15.1		
56	15.4		
57	15.6		
58	15.9		
59	16.2		
60	16.5		
61	16.8		
62	17.1		
63	17.3		

XG Parameter List

Modular Synthesis Plug-in System	XG Plug-in System	(LCD of CS6x/CS6R/S80/etc.)	
Parameter Name	**Parameter Name**	**Group**	**Parameter Name**
Bank Select MSB	BANK SELECT MSB	MIX*Vce	Bank
Bank Select LSB	BANK SELECT LSB	MIX*Vce	Bank
Program Number	PROGRAM NUMBER	MIX*Vce	Number
Receive Channel	Rcv CHANNEL	LYR*Mode	RcvCh
Velocity Limit Low	VELOCITY LIMIT LOW	LYR*Limit	Vel Limit
Velocity Limit High	VELOCITY LIMIT HIGH	LYR*Limit	Vel Limit
Note Limit Low	NOTE LIMIT LOW	LYR*Limit	Note Limit
Note Limit High	NOTE LIMIT HIGH	LYR*Limit	Note Limit
Pitch Bend Range	BEND PITCH CONTROL	TON*Other	Pitch Bend
Velocity Sense Depth	VELOCITY SENSE DEPTH	TON*Other	VelDepth
Velocity Sense Offset	VELOCITY SENSE OFFSET	TON*Other	VelOffset
Volume	VOLUME	MIX*Level	Vol
Pan	PAN	MIX*Level	Pan
Detune	DETUNE	LYR*Tune	Detune
Reverb Send	REVERB SEND	MIX*Level	RevSend
Chorus Send	CHORUS SEND	MIX*Level	ChoSend
Note Shift	NOTE SHIFT	LYR*Tune	NoteShift
Filter Cutoff Frequency	LOW PASS FILTER CUTOFF FREQUENCY	TON*Filter	Cutoff
Filter Resonance/Width	LOW PASS FILTER RESONANCE	TON*Filter	Reso
Portamento Switch	PORTAMENTO SWITCH	TON*Portamento	Switch
Portamento Time	PORTAMENTO TIME	TON*Portamento	Time
AEG Attack Time (EG Attack Time)	EG ATTACK TIME	TON*EG	Attack
AEG Decay2 Time (EG Decay Time)	EG DECAY TIME	TON*EG	Decay
AEG Release Time (EG Release Time)	EG RELEASE TIME	TON*EG	Release
MW Filter Control	MW LOW PASS FILTER CONTROL	CTL*MW Control	Filter
MW Amplitude Control	MW AMPLITUDE CONTROL	CTL*MW Control	Amp
MW LFO Pitch Modulation Depth	MW LFO PMOD DEPTH	CTL*MW Modulation	PMod
MW LFO Filter Modulation Depth	MW LFO FMOD DEPTH	CTL*MW Modulation	FMod
MW LFO Amplitude Modulation Depth	MW LFO AMOD DEPTH	CTL*MW Modulation	AMod
CAT Pitch Control	CAT PITCH CONTROL	CTL*AT Control	Pitch
CAT Filter Control	CAT LOW PASS FILTER CONTROL	CTL*AT Control	Filter
CAT Amplitude Control	CAT AMPLITUDE CONTROL	CTL*AT Control	Amp
CAT LFO Pitch Modulation Depth	CAT LFO PMOD DEPTH	CTL*AT Modulation	PMod
CAT LFO Filter Modulation Depth	CAT LFO FMOD DEPTH	CTL*AT Modulation	FMod
CAT LFO Amplitude Modulation Depth	CAT LFO AMOD DEPTH	CTL*AT Modulation	AMod
AC1 Controller Number	AC1 CONTROLLER NUMBER	CTL*AC Control	Source
AC1 Filter Control	AC1 FILTER CONTROL	CTL*AC Control	Filter
AC1 Amplitude Control	AC1 AMPLITUDE CONTROL	CTL*AC Control	Amp
AC1 LFO Pitch Modulation Depth	AC1 LFO PMOD DEPTH	CTL*AC Modulation	PMod
AC1 LFO Filter Modulation Depth	AC1 LFO FMOD DEPTH	CTL*AC Modulation	FMod
AC1 LFO Amplitude Modulation Depth	AC1 LFO AMOD DEPTH	CTL*AC Modulation	AMod

1. Channel messages

1.1 Note on/note off

These messages convey keyboard performance data.

Range of note numbers received = 0 (C-2)...60 (C3)...127 (G8)
Velocity range = 1...127 (Velocity is received only for note-on)

When the Multi Part parameter "Rcv NOTE MESSAGE" = OFF, that part will not receive these messages.
For a drum part*, key-off is not received if the DrumSetup parameter Rcv NOTE OFF = OFF.
For a drum part, key-on is not received if the DrumSetup parameter Rcv NOTE ON = OFF.

* Drum Part indicates that the Multi Part parameter PART MODE is “set to DRUM, DRUMS1, DRUMS2.”

1.2 Control changes

These messages control volume or pan etc.
Their functions are differentiated by the control number (Ctrl#).
If the Multi Part parameter Rcv CONTROL CHANGE = OFF, that part will not receive control changes.

1.2.1 Bank Select

This message selects the voice bank.

Control#	Parameter	Data Range
0	Bank Select MSB	0, 64, 126, 127 (Normal voice, SFX voice, SFX kit, Drum kit)
32	Bank Select LSB	0...127

The Bank Select data will be processed only after a Program Change is received, and then voice bank will change at that time.
If you wish to change the voice bank as well as the voice, you must transmit Bank Select and Program Change messages as a set, in the order of Bank Select MSB, LSB, and Program Change.

1.2.2 Modulation

This message is used primarily to control the depth of vibrato, but the depth of the following 7 types of effect can be controlled.
The effect of this message can be changed by the following parameters.

- Multi Part Parameter
  1. MW PITCH CONTROL
  2. MW FILTER CONTROL
  3. MW AMPLITUDE CONTROL
  4. MW LFO PMOD DEPTH
  5. MW LFO FMOD DEPTH
  6. MW LFO AMOD DEPTH

- Effect1 Parameter
  7. MW VARIATION CONTROL DEPTH
     (Valid when Variation Effect is assigned to a part as Insertion)

By default, an LFO Pitch Modulation (PMOD) effect will apply.

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

If the Multi Part parameter Rcv MODULATION = OFF, that part will not receive Modulation.

1.2.3 Portamento Time

This message controls the degree of Portamento (refer to 1.2.9).

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

When Portamento (control number 065) is ON, this regulates the speed of the pitch change.
A value of 0 is the shortest portamento time, and 127 is the longest portamento time.
If the receive channel is a drum part, Portamento Time is not received.

1.2.4 Data Entry

This message sets the value of the parameter which was specified by RPN MSB/LSB (see 1.2.22) and NRPN MSB/LSB (see 1.2.21).

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

1.2.5 Main Volume

This message controls the volume of each part.
This is used to adjust the volume balance between parts.

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

When the Multi Part parameter Rcv VOLUME = OFF, that part will not receive Main Volume.
With a value of 0 there will be no sound, and a value of 127 will be the maximum volume.

1.2.6 Panpot

This message control the panning (stereo location) of each part.

Control#	Parameter	Data Range
10	Pan	0...64...127

When the Multi Part parameter Rcv PAN = OFF, that part will not receive Panpot.
0 is left, 64 is center, and 127 is right.

1.2.7 Expression

This message controls expression (dynamics within a musical line) for each part.
It is used to create volume changes during a song.

Control#	Parameter	Data Range
11	Expression	0...127

If the Multi Part parameter Rcv EXPRESSION = OFF, that part will not receive Expression.

1.2.8 Hold1

This message controls sustain pedal on/off.

Control#	Parameter	Data Range
64	Hold1	0...63,64...127 (OFF, ON)

When this is ON, currently-sounding notes will continue to sound even if note-off messages are received.
If the Multi Part parameter Rcv HOLD1 = OFF, that part will not receive Hold1.

1.2.9 Portamento

This message controls portamento on/off.

Control#	Parameter	Data Range
65	Portamento	0...63, 64...127 (OFF, ON)

When this is ON, the pitch will change smoothly between notes. The time over which the pitch changes is adjusted by Portamento Time (see 1.2.3). Also, when the Multi Part parameter MONO/POLY MODE = MONO, the tone will also change smoothly (legato) if Portamento = ON.
If any of the following Multi Part parameter settings apply, that part will not receive Portamento.

- Rcv PORTAMENTO = OFF
- PART MODE = DRUM, DRUMS1, DRUMS2

1.2.10 Sostenuto

This message controls sostenuto pedal on/off.

Control#	Parameter	Data Range
66	Sostenuto	0...63,64...127 (OFF, ON)

If sostenuto is turned on while a note is sounding, that note will be sustained until sostenuto is turned OFF.
If the Multi Part parameter Rcv SOSTENUTO = OFF, that part will not receive Sostenuto.

1.2.11 Soft Pedal

This message controls soft pedal on/off.

Control#	Parameter	Data Range
67	Soft Pedal	0...63, 64...127 (OFF, ON)

The sound will become mellower when Soft Pedal is ON.
If any of the following Multi Part parameter settings apply, that part will not receive the Soft Pedal.

- Rcv SOFT PEDAL = OFF
- PART MODE = DRUM, DRUMS1, DRUMS2

1.2.12 Harmonic Content

This message adjusts the resonance of the filter that is specified for the sound.

Control#	Parameter	Data Range
71	Harmonic Content	0...64...127 (-64...0...+63)

Since this is a relative change parameter, it specifies a boost or cut relative to 64.
Higher values will produce a more distinctive sound.
For some sounds, the effective range may be less than the possible range of settings.

1.2.13 Release Time

This message adjusts the EG release time that was specified by the sound data.

Control#	Parameter	Data Range
72	Release Time	0...64...127 (-64...0...+63)

Since this is a relative change parameter, it specifies an increase or decrease relative to 64.
Increasing this value will lengthen the release that follows a note-off.

1.2.14 Attack Time

This message adjusts the EG attack time that was specified by the sound data.

Control#	Parameter	Data Range
73	Attack Time	0...64...127 (-64...0...+63)

Since this is a relative change parameter, it specifies an increase or decrease relative to 64.
Increasing this value will make the attack more gradual, and decreasing this value will make the attack sharper.

1.2.15 Brightness

This message adjusts the cutoff frequency of the low pass filter specified by the sound data.

Control#	Parameter	Data Range
74	Brightness	0...64...127 (-64...0...+63)

Since this is a relative change parameter, it specifies an increase or decrease relative to 64.
Lower values will produce a more mellow sound.
For some sounds, the effective range may be less than the possible range of settings.

1.2.16 Portamento Control

This message specifies the portamento source key number (the key number at which portamento will begin).
Data of 0...127 specifies the portamento source key.
When Portamento Control is received, the currently-sounding pitch will change at a Portamento Time of 0 to the key of the next-received note-on of the same channel.

Control#	Parameter	Data Range
84	Portamento Control	0...127 (C-2...G8)

This is received even if Rcv PORTAMENTO = OFF.

1.2.17 Effect1 Depth(Reverb Send Level)

This message specifies the send level for the reverb effect.

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

Increasing this value will produce a richer reverb. The effect of the value will depend on the state of the reverb effect.

1.2.18 Effect3 Depth(Chorus Send Level)

This message specifies the send level for the chorus effect.

Control#	Parameter	Data Range
93	Effect3 Depth	0...127

Raising this value will increase the modulation or spaciousness. The effect of the value will depend on the state of the chorus effect.

1.2.19 Effect4 Depth (Variation Effect Send Level)

This message specifies the send level for the variation effect.

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

However, this is not received if the Variation Effect parameter Variation Connection = 0 (Insertion).

1.2.20 Data Increment/Decrement (for RPN)

This message increases or decreases the parameter value specified for RPN (see 1.2.22), by increments of 1.

Control#	Parameter	Data Range
96	RPN Increment	--
97	RPN Decrement	--

The data byte is ignored.

1.2.21 NRPN (Non-registered parameter number)

This message is used to specify a sound parameter (such as vibrato, filter, EG, drum setup etc.) as an offset value.
Use NRPN MSB and NRPN LSB to specify the parameter that you wish to modify, and then use Data Entry (see 1.2.4) to set the value for the specified parameter.

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

If the Multi Part parameter Rcv NRPN = OFF, that part will not receive NRPN.

The following NRPN messages can be received.

NRPN MSB	NRPN LSB	Data Entry *1 MSB	Data Entry *1 LSB	Parameter name and value range
01	08	mm	-- *2	Vibrato rate mm: 00 - 64 - 127 (-64...0...+63)
01	09	mm	--	Vibrato depth mm: 00 - 64 - 127 (-64...0...+63)
01	10	mm	--	Vibrato delay mm: 00 - 64 - 127 (-64...0...+63)
01	32	mm	--	Low pass filter cutoff frequency mm: 00 - 64 - 127 (-64...0...+63)
01	33	mm	--	Low pass filter resonance mm : 00 - 64 - 127 (-64...0...+63)
01	99	mm	--	EG attack time mm: 00 - 64 - 127 (-64...0...+63)
01	100	mm	--	EG decay time mm: 00 - 64 - 127 (-64...0...+63)
01	102	mm	--	EG release time mm: 00 - 64 - 127 (-64...0...+63)
20	rr	mm	--	Drum low pass filter cutoff frequency rr: drum instrument note number mm: 00 - 64 - 127 (-64...0...+63)
21	rr	mm	--	Drum low pass filter resonance rr: drum instrument note number mm: 00 - 64 - 127 (-64...0...+63)
22	rr	mm	--	Drum EG attack rate rr: drum instrument note number mm: 00 - 64 - 127 (-64...0...+63)
23	rr	mm	--	Drum EG decay rate rr: drum instrument note number mm: 00 - 64 - 127 (-64...0...+63) The effect will apply both to Decay 1 and 2.
24	rr	mm	--	Drum instrument pitch coarse rr: drum instrument note number mm: 00 - 64 - 127 (-64...0...+63)
25	rr	mm	--	Drum instrument pitch fine rr: drum instrument note number mm: 00 - 64 - 127 (-64...0...+63)
26	rr	mm	--	Drum instrument level rr: drum instrument note number mm: 00 - 127(0...maximum)
28	rr	mm	--	Drum instrument panpot rr: drum instrument note number mm: 00, 01-64-127(RND, L63...C...R63)
29	rr	mm	--	Drum instrument reverb send level rr: drum instrument note number mm: 00 - 127(0...maximum)
30	rr	mm	--	Drum instrument chorus send level rr: drum instrument note number mm: 00 - 127(0...maximum)
31	rr	mm	--	Drum instrument variation send level rr: drum instrument note number mm: 00 - 127(0...maximum) (when Variation Connection = SYSTEM) mm: 00, 01-127 (OFF,ON) (when Variation Connection = INSERTION)

MSB 20-31 (for drums) is received when Multi Part parameter PART MODE = DRUMS1, 2.

*1 Refer to 1.2.4
*2 '--' indicates that the setting value is ignored.

1.2.22 RPN (Registered parameter number)

This message is used to specify part parameters such as Pitch Bend Sensitivity or Tuning etc. as an offset value.
Use RPN MSB and RPN LSB to specify the parameter that you wish to modify, and then use Data Entry (see 1.2.4) to set the value of the specified parameter.

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

If the Multi Part parameter Rcv RPN = OFF, that part will not receive this message.

The following RPN messages can be received.

RPN MSB	RPN LSB	Data Entry *1 MSB	Data Entry *1 LSB	Parameter name and value range
00	00	mm	-- *2	Pitch bend sensitivity mm: 00-24 (0...+24 semitones) Specify up to 2 octaves in semitone steps
00	01	mm	ll	Fine tuning mm ll: 00 00 -100 cents : : mm ll: 64 00 0 cents : : mm ll: 127 127 +100 cents [Note] mm ll: 00 127 (=-87.5) cents is followed by 01 00 (=-87.4) cents.
00	02	mm	--	Coarse tuning mm: 40 - 64 - 88 (-24...0...+24 semitones)
127	127	--	--	RPN Null This sets RPN and NRPN numbers to an unset state. Internal data is not affected.

*1 Refer to 1.2.4
*2 '--' indicates that the setting value is ignored.

1.2.23 Assignable controller

By assigning a control change number of 0...95 to a part, the specified effect can be controlled.
This device allows two control change numbers (AC1 and AC2) to be specified for each part.
The following parameters specify the effect of AC1 and AC2.

- Multi Part Parameter
  1. AC1, AC2 PITCH CONTROL
  2. AC1, AC2 FILTER CONTROL
  3. AC1, AC2 AMPLITUDE CONTROL
  4. AC1, AC2 LFO PMOD DEPTH
  5. AC1, AC2 LFO FMOD DEPTH
  6. AC1, AC2 LFO AMOD DEPTH

- Effect1 Parameter
  7. AC1, AC2 VARIATION CONTROL DEPTH
     (Valid if Variation Effect is assigned to a part as Insertion)

The AC1 control change number is specified by the Multi Part parameter AC1 CONTROLLER NUMBER, and the AC2 control change number is specified by the Multi Part parameter AC2 CONTROLLER NUMBER.

1.3 Channel mode messages

These messages specify the basic operation of a part.

1.3.1 All Sound Off

This message silences all currently-sounding notes on the corresponding channel.
However, the settings of channel messages such as Hold 1 and Sostenuto will be maintained.

Control#	Parameter	Data Range
120	All Sound Off	0

1.3.2 Reset All Controllers

This message resets the following controllers to their default values.

Controller	Value
Pitch bend change	±0 (center)
Channel pressure	0 (off)
Polyphonic key pressure	0 (off)
Modulation	0 (off)
Expression	127 (maximum)
Hold	0 (off)
Portamento	0 (off)
Sostenuto	0 (off)
Soft pedal	0 (off)
Portamento control	Reset the portamento source note number that was received
RPN	Number unset, internal data is not affected.
NRPN	Number unset, internal data is not affected.

The following data is not changed
Parameter values specified by program change, bank select MSB/LSB, volume, pan, effect send levels 1, 3, 4, RPN and NRPN.

Control#	Parameter	Data Range
121	Reset All Controllers	0

1.3.3 All Note Off

This message turns off all notes which are currently on for the corresponding part.
However, if Hold 1 or Sostenuto are on, notes will continue to sound until these are turned off.

Control#	Parameter	Data Range
123	All Note Off	0

1.3.4 Omni Off

Perform the same processing as when All Note Off is received.

Control#	Parameter	Data Range
124	Omni Off	0

1.3.5 Omni On

Perform the same processing as when All Note Off is received.

Control#	Parameter	Data Range
125	Omni On	0

1.3.6 Mono

Perform the same processing as when All Sound Off is received, and if the value (mono number) is in the range of 0...16, set the corresponding channel to Mode4* (m = 1).

Control#	Parameter	Data Range
126	Mono	0...16

* Mode4 is a state in which only channel messages on the specified channel will be received, and notes will be sounded individually (monophonically).

1.3.7 Poly

Perform the same processing as when All Sound Off is received, and set the corresponding channel to Mode3*.

Control#	Parameter	Data Range
127	Poly	0

* Mode3 is when channel messages will be received only on the specified channel, and will be sounded polyphonically.

1.4 Program change

This message reports sound selection changes and changes the program number of the receiving channel.
In order to include changes to the voice bank, Program Change and Bank Select messages must be sent as a set (see 1.2.1).
When RevPROGRAM CHANGE=OFF for Multi Part Parameter, the program change for that part is not received.

1.5 Pitch bend

This message conveys movements of the pitch bender.
This message is generally used to modify the pitch of a part, but the depth of the following seven effects can be controlled.
The effect of this message can be modified by the following parameters.

- Multi Part Parameter
  1. BEND PITCH CONTROL
  2. BEND FILTER CONTROL
  3. BEND AMPLITUDE CONTROL
  4. BEND LFO PMOD DEPTH
  5. BEND LFO FMOD DEPTH
  6. BEND LFO AMOD DEPTH

- Effect1 Parameter
  7. BEND VARIATION CONTROL DEPTH
     (Valid when Variation Effect is assigned to a part as Insertion)

By default, the Pitch Control effect is applied.
If the Multi Part parameter Rcv PITCH BEND CHANGE = OFF, that part will not receive pitch bend messages.

1.6 Channel aftertouch

This message conveys the pressure which is applied to the keyboard after playing a note in order to create tonal changes (for an entire MIDI channel). The pressure can be controlled for each part. This message will affect the currently-sounding notes.
The effect of this message will be determined by the settings of the following parameters.

- Multi Part Parameter
  1. CAT PITCH CONTROL
  2. CAT FILTER CONTROL
  3. CAT AMPLITUDE CONTROL
  4. CAT LFO PMOD DEPTH
  5. CAT LFO FMOD DEPTH
  6. CAT LFO AMOD DEPTH

- Effect1 Parameter
  7. CAT VARIATION CONTROL DEPTH
     (Valid when the Variation Effect is assigned to a part as Insertion)

By default, there will be no effect.
If the Multi Part parameter Rcv CHANNEL AFTER TOUCH = OFF, that part will not receive Channel Aftertouch.

1.7 Polyphonic aftertouch

This message conveys the pressure that is applied to the keyboard after playing a note (for individual note numbers).
The pressure can be controlled independently for each note. This message will affect currently-sounding notes.
The effect of this message is determined by the following Multi Part parameters.

1. PAT PITCH CONTROL
2. PAT FILTER CONTROL
3. PAT AMPLITUDE CONTROL
4. PAT LFO PMOD DEPTH
5. PAT LFO FMOD DEPTH
6. PAT LFO AMOD DEPTH

By default, there will be no effect.
The effect will apply to note numbers 36...97.
In the case of either of the following Multi Part parameter settings, that part will not receive Polyphonic Aftertouch.

- Rcv CHANNEL AFTER TOUCH = OFF
- PART MODE = DRUM, DRUMS1...4

2. System exclusive messages

2.1 Parameter changes

This devices uses the following parameter changes.

[UNIVERSAL REALTIME MESSAGE]
1) Master Volume

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

[XG PARAMETER CHANGE]
1) XG System on
2) XG System parameter change
3) Multi Effect1 parameter change
4) Multi Part parameter change
5) Drums Setup parameter change

[MU128 NATIVE PARAMETER CHANGE 2]
1) Current Performance parameter change

[Others]
1) Master tuning

2.1.1 Universal realtime messages

2.1.1.1 Master Volume

11110000	F0H	= Exclusive status
01111111	7FH	= Universal Real Time
01111111	7FH	= ID of target device
00000100	04H	= Sub-ID #1 = Device Control Message
00000001	01H	= Sub-ID #2 = Master Volume
* 0sssssss	SSH	= Volume LSB
0ttttttt	TTH	= Volume MSB
11110111	F7H	= End of Exclusive
or,		
11110000	F0H	= Exclusive status
01111111	7FH	= Universal Real Time
0xxxnnnn	XNH	= Device Number, xxx = don't care
00000100	04H	= Sub-ID #1 = Device Control Message
00000001	01H	= Sub-ID #2 = Master Volume
0sssssss	SSH	= Volume LSB
0ttttttt	TTH	= Volume MSB
11110111	F7H	= End of Exclusive

When this is received, the Volume MSB will be reflected by the System parameter MASTER VOLUME.

* The binary expression 0sssssss is expressed in hexadecimal as SSH. The same applies elsewhere.

2.1.2 Universal non-realtime messages

2.1.2.1 General MIDI System On

11110000	F0H	= Exclusive status
01111110	7EH	= Universal Non-Real Time
01111111	7FH	= ID of target device
00001001	09H	= Sub-ID #1 = General MIDI Message
00000001	01H	= Sub-ID #2 = General MIDI On
11110111	F7H	= End of Exclusive
or,		
11110000	F0H	= Exclusive status
01111110	7EH	= Universal Non-Real Time
0xxxnnnn	XNH	= N:Device Number, X:don't care
00001001	09H	= Sub-ID #1 = General MIDI Message
00000001	01H	= Sub-ID #2 = General MIDI On
11110111	F7H	= End of Exclusive

When this message is received, the SOUND MODULE MODE is set to XG, and all MIDI messages defined by GM will be received.
All data except for MIDI Master Tuning will be restored to the default value.
However this message will not be received in any of the following cases.
Since approximately 50[ms] is required in order to process this message, be sure to allow an appropriate interval before sending the next message.

2.1.3 XG parameter change

This message sets XG-related parameters. Each message can set a single parameter.
The message format is as follows.

11110000	F0H	Exclusive status
01000011	43H	YAMAHA ID
0001nnnn	1NH	N:device Number
01001100	4CH	Model ID
0ggggggg	GGH	Address High
0mmmmmmm	MMH	Address Mid
0lllllll	LLH	Address Low
0ssssssss	SSH	Data
:	:	
11110111	F7H	End of Exclusive

For parameters whose Data Size is 2 or 4, the appropriate amount of data will be transmitted as indicated by Size.

2.1.3.1 XG System On

11110000	F0H	Exclusive status
01000011	43H	YAMAHA ID
0001nnnn	1NH	N:device Number
01001100	4CH	Model ID
00000000	00H	Address High
00000000	00H	Address Mid
01111110	7EH	Address Low
00000000	00H	Data
11110111	F7H	End of Exclusive

When On is received, the SOUND MODULE MODE will be set to XG. Since approximately 50[ms] are required in order to execute this message, please allow an appropriate interval before transmitting the next message.

2.1.3.2 XG System parameter change

This message sets the XG SYSTEM block (refer to tables <1 -1>, <1 - 2>).

2.1.3.3 Multi Effect1 parameter change

This message sets the MULTI EFFECT1 block (refer to tables <1 - 1>, <1 - 3>).

2.1.3.4 Multi Part parameter change

This message sets the MULTI PART block (refer to tables <1 - 1>, <1 - 4>).

2.1.3.5 Drums Setup parameter change

This message sets the DRUMS SETUP block (refer to tables <1 - 1> , <1 - 5>).

2.1.4 Other parameter changes

2.1.4.1 Master tuning

This message simultaneously modifies the tuning of all channels.

11110000	F0H	Exclusive status
01000011	43H	YAMAHA ID
0001nnnn	1NH	N:device Number
00100111	27H	Model ID
00110000	30H	Address High
00000000	00H	Address Mid
00000000	00H	Address Low
0000mmmm	0MH	Master Tune MSB
0000llll	0LH	Master Tune LSB
0xxxxxxx	XXH	don't care
11110111	F7H	End of Exclusive

Normally, the XG SYSTEM message MASTER TUNE should be used (refer to table <1-2>).

2.2 Bulk dump

This device uses the following bulk dump messages.

[XG BULK DUMP]
1) XG System bulk dump
2) Multi Effect1 bulk dump
3) Multi Part bulk dump
4) Drums Setup bulk dump

2.2.1 XG bulk dump

This message sets XG-related parameters. Unlike parameter change messages, a single message can modify multiple parameters. The message format is as follows.

11110000	F0H	Exclusive status
01000011	43H	YAMAHA ID
0000nnnn	0NH	N:Device Number
01001100	4CH	Model ID
0ssssssss	SSH	ByteCountMSB
0ttttttt	TTH	ByteCountLSB
0gggggggg	GGH	Address High
0mmmmmmm	MMH	Address Mid
0lllllll	LLH	Address Low
0vvvvvvv	VVH	Data
:	:	
0kkkkkkk	KKH	Check-sum
11110111	F7H	End of Exclusive

Address and Byte Count are given in tables 1-n. Byte Count is indicated by the total size of the Data in tables 1-n.
Bulk dump and dump request messages are received when the beginning of the block is specified as the 'Address'.
'Block' indicates the unit of the data string that is indicated in tables 1-n as 'Total size'.
Check sum is the value that produces a lower 7 bits of 0 when the Start Address, Byte Count, Data, and the Check-sum itself are added.

2.2.1.1 XG System bulk dump

This message sets the XG SYSTEM block (refer to tables <1 -1>, <1 - 2>).

2.2.1.2 Multi Effect1 bulk dump

This message sets the MULTI EFFECT1 block (refer to tables <1 - 1>, <1 - 3>).

2.2.1.3 Multi Part bulk dump

This message sets the MULTI PART block (refer to tables <1 - 1>, <1 - 4>).

2.2.1.4 Drums Setup bulk dump

This message sets the DRUMS SETUP block (refer to tables <1 - 1>, <1 - 5>).

3. Realtime messages

3.1 Active sensing

a) Transmission
not transmitted.

b) Receive
Once FE has been received, failure to receive any MIDI message for an interval longer than approximately 300 msec will cause processing to be performed as if ALL SOUND OFF, ALL NOTE OFF, and RESET ALL CONTROLLERS messages were received, and the unit will reset to a condition in which FE was never received.

< Table 1-1 >

Parameter Base Address
MODEL ID = 4C

Parameter	Address (H)	Address (M)	Address (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 : 08	00 : 0F	00 : 00	Multi Part 1 : Multi Part 16
DRUM	30 31	0D 0D	00 00	Drum Setup 1 Drum Setup 2

→

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

< Table 1-2 >

MIDI Parameter Change table (XG SYSTEM)

Address (H)			Size (H)	Data (H)	Parameter	Description	Default value (H)
00	00	00	4	00 - 0F	MASTER TUNE	-102.4...0...+102.3[cent]	00 04 00 00
		01		00 - 0F		1st bit3-0→bit15-12	
		02		00 - 0F		2nd bit3-0→bit11-8	
		03		00 - 0F		3rd bit3-0→bit7-4	
						4th bit3-0→bit3-0	
		04	1	00 - 7F	MASTER VOLUME	0...127	7F
		05	1		not used		
		06	1	28 - 58	TRANSPOSE	-24...0...+24[semitones]	40
		7D	1	N	DRUM SETUP RESET	N: Drum setup number(0,1)	--
		7E	1	00	XG SYSTEM ON	00=XG system ON (receive only)	--
		7F	1	00	ALL PARAMETER RESET	00=ON (receive only)	--
TOTAL SIZE			07				

< Table 1-3 >

MIDI Parameter Change table (EFFECT 1)

Address (H)			Size (H)	Data (H)	Parameter	Description	Default value (H)
02	01	00	2	00 - 7F	REVERB TYPE MSB	refer to Effect Program List	01(=HALL1)
				00 - 7F	REVERB TYPE LSB	refer to Effect Program List	0
		02	1	00 - 7F	REVERB PARAMETER 1	refer to Effect Program List	12(depends on reverb type)
		03	1	00 - 7F	REVERB PARAMETER 2	refer to Effect Program List	0A(depends on reverb type)
		04	1	00 - 7F	REVERB PARAMETER 3	refer to Effect Program List	08(depends on reverb type)
		05	1	00 - 7F	REVERB PARAMETER 4	refer to Effect Program List	0D(depends on reverb type)
		06	1	00 - 7F	REVERB PARAMETER 5	refer to Effect Program List	31(depends on reverb type)
		07	1	00 - 7F	REVERB PARAMETER 6	refer to Effect Program List	00(depends on reverb type)
		08	1	00 - 7F	REVERB PARAMETER 7	refer to Effect Program List	00(depends on reverb type)
		09	1	00 - 7F	REVERB PARAMETER 8	refer to Effect Program List	00(depends on reverb type)
		0A	1	00 - 7F	REVERB PARAMETER 9	refer to Effect Program List	00(depends on reverb type)
		0B	1	00 - 7F	REVERB PARAMETER 10	refer to Effect Program List	00(depends on reverb type)
		0C	1	00 - 7F	REVERB RETURN	-∞dB...0dB...+6dB(0...96...127)	40
		0D	1	01 - 7F	REVERB PAN	L63...C...R63	40
TOTAL SIZE			0E				
02	01	10	1	00 - 7F	REVERB PARAMETER 11	refer to Effect Parameter List	00(depends on reverb type)
		11	1	00 - 7F	REVERB PARAMETER 12	refer to Effect Parameter List	04(depends on reverb type)
		12	1	00 - 7F	REVERB PARAMETER 13	refer to Effect Parameter List	32(depends on reverb type)
		13	1	00 - 7F	REVERB PARAMETER 14	refer to Effect Parameter List	08(depends on reverb type)
		14	1	00 - 7F	REVERB PARAMETER 15	refer to Effect Parameter List	40(depends on reverb type)
		15	1	00 - 7F	REVERB PARAMETER 16	refer to Effect Parameter List	00(depends on reverb type)
TOTAL SIZE			6				
02	01	20	2	00 - 7F	CHORUS TYPE MSB	refer to Effect Program List	41(=CHORUS1)
				00 - 7F	CHORUS TYPE LSB	refer to Effect Program List	0
		22	1	00 - 7F	CHORUS PARAMETER 1	refer to Effect Program List	06(depends on chorus type)
		23	1	00 - 7F	CHORUS PARAMETER 2	refer to Effect Program List	36(depends on chorus type)
		24	1	00 - 7F	CHORUS PARAMETER 3	refer to Effect Program List	4D(depends on chorus type)
		25	1	00 - 7F	CHORUS PARAMETER 4	refer to Effect Program List	6A(depends on chorus type)
		26	1	00 - 7F	CHORUS PARAMETER 5	refer to Effect Program List	00(depends on chorus type)
		27	1	00 - 7F	CHORUS PARAMETER 6	refer to Effect Program List	1C(depends on chorus type)
		28	1	00 - 7F	CHORUS PARAMETER 7	refer to Effect Program List	40(depends on chorus type)
		29	1	00 - 7F	CHORUS PARAMETER 8	refer to Effect Program List	2E(depends on chorus type)
		2A	1	00 - 7F	CHORUS PARAMETER 9	refer to Effect Program List	40(depends on chorus type)
		2B	1	00 - 7F	CHORUS PARAMETER 10	refer to Effect Program List	40(depends on chorus type)
		2C	1	00 - 7F	CHORUS RETURN	-∞dB...0dB...+6dB(0...96...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...96...127)	0
TOTAL SIZE			0F				

Address (H)			Size (H)	Data (H)	Parameter	Description	Default value (H)
02	01	30	1	00 - 7F	CHORUS PARAMETER 11	refer to Effect Parameter List	2E(depends on chorus type)
		31	1	00 - 7F	CHORUS PARAMETER 12	refer to Effect Parameter List	40(depends on chorus type)
		32	1	00 - 7F	CHORUS PARAMETER 13	refer to Effect Parameter List	0A(depends on chorus type)
		33	1	00 - 7F	CHORUS PARAMETER 14	refer to Effect Parameter List	00(depends on chorus type)
		34	1	00 - 7F	CHORUS PARAMETER 15	refer to Effect Parameter List	00(depends on chorus type)
		35	1	00 - 7F	CHORUS PARAMETER 16	refer to Effect Parameter List	00(depends on chorus type)
TOTAL SIZE			6				
02	01	40	2	00 - 7F	VARIATION TYPE MSB	refer to Effect Program List	05(=DELAY L,C,R)
				00 - 7F	VARIATION TYPE LSB	refer to Effect Program List	0
		42	2	00 - 7F	VARIATION PARAMETER 1 MSB	refer to Effect Program List	1A(depends on variation type)
				00 - 7F	VARIATION PARAMETER 1 LSB	refer to Effect Program List	05(depends on variation type)
		44	2	00 - 7F	VARIATION PARAMETER 2 MSB	refer to Effect Program List	0D(depends on variation type)
				00 - 7F	VARIATION PARAMETER 2 LSB	refer to Effect Program List	03(depends on variation type)
		46	2	00 - 7F	VARIATION PARAMETER 3 MSB	refer to Effect Program List	27(depends on variation type)
				00 - 7F	VARIATION PARAMETER 3 LSB	refer to Effect Program List	08(depends on variation type)
		48	2	00 - 7F	VARIATION PARAMETER 4 MSB	refer to Effect Program List	27(depends on variation type)
				00 - 7F	VARIATION PARAMETER 4 LSB	refer to Effect Program List	08(depends on variation type)
		4A	2	00 - 7F	VARIATION PARAMETER 5 MSB	refer to Effect Program List	00(depends on variation type)
				00 - 7F	VARIATION PARAMETER 5 LSB	refer to Effect Program List	4A(depends on variation type)
		4C	2	00 - 7F	VARIATION PARAMETER 6 MSB	refer to Effect Program List	00(depends on variation type)
				00 - 7F	VARIATION PARAMETER 6 LSB	refer to Effect Program List	64(depends on variation type)
		4E	2	00 - 7F	VARIATION PARAMETER 7 MSB	refer to Effect Program List	00(depends on variation type)
				00 - 7F	VARIATION PARAMETER 7 LSB	refer to Effect Program List	0A(depends on variation type)
		50	2	00 - 7F	VARIATION PARAMETER 8 MSB	refer to Effect Program List	00(depends on variation type)
				00 - 7F	VARIATION PARAMETER 8 LSB	refer to Effect Program List	00(depends on variation type)
		52	2	00 - 7F	VARIATION PARAMETER 9 MSB	refer to Effect Program List	00(depends on variation type)
				00 - 7F	VARIATION PARAMETER 9 LSB	refer to Effect Program List	00(depends on variation type)
		54	2	00 - 7F	VARIATION PARAMETER 10 MSB	refer to Effect Program List	00(depends on variation type)
				00 - 7F	VARIATION PARAMETER 10 LSB	refer to Effect Program List	20(depends on variation type)
		56	1	00 - 7F	VARIATION RETURN	-∞dB...0dB...+6dB(0...96...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...96...127)	0
		59	1	00 - 7F	SEND VARIATION TO CHORUS	-∞dB...0dB...+6dB(0...96...127)	0
		5A	1	00 - 01	VARIATION CONNECTION	INSERTION , SYSTEM	0
		5B	1	00 - 7F	VARIATION PART NUMBER	Part1 OFF(127)	7F
		5C	1	00 - 7F	MW VARIATION CONTROL DEPTH	-64...0...+63	40
		5D	1	00 - 7F	BEND VARIATION CONTROL DEPTH	-64...0...+63	40
		5E	1	00 - 7F	CAT VARIATION CONTROL DEPTH	-64...0...+63	40
		5F	1	00 - 7F	AC1 VARIATION CONTROL DEPTH	-64...0...+63	40
		60	1	00 - 7F	AC2 VARIATION CONTROL DEPTH	-64...0...+63	40
TOTAL SIZE			21				
02	01	70	1	00 - 7F	VARIATION PARAMETER 11	refer to Effect Parameter List	00(depends on variation type)
		71	1	00 - 7F	VARIATION PARAMETER 12	refer to Effect Parameter List	3C(depends on variation type)
		72	1	00 - 7F	VARIATION PARAMETER 13	refer to Effect Parameter List	1C(depends on variation type)
		73	1	00 - 7F	VARIATION PARAMETER 14	refer to Effect Parameter List	40(depends on variation type)
		74	1	00 - 7F	VARIATION PARAMETER 15	refer to Effect Parameter List	2E(depends on variation type)
		75	1	00 - 7F	VARIATION PARAMETER 16	refer to Effect Parameter List	40(depends on variation type)
TOTAL SIZE			6				

< Table 1-4 >

MIDI Parameter Change table (MULTI PART)

Address (H)			Size (H)	Data (H)	Parameter	Description	Default value (H)
08	nn	00	1	00 - 20	ELEMENT RESERVE	0	part10 = 0 other parts =2
	nn	01	1	00 - 7F	BANK SELECT MSB	0...127	part10 = 7F other parts=0
	nn	02	1	00 - 7F	BANK SELECT LSB	0...127	00
	nn	03	1	00 - 7F	PROGRAM NUMBER	1...128	00
	nn	04	1	00-0F,7F	Rcv CHANNEL	A1...A16, OFF	Part No.
	nn	05	1	00 - 01	MONO/POLY MODE	MONO , POLY	01
	nn	06	1	00 - 02	SAME NOTE NUMBER KEY ON ASSIGN	SINGLE, MULTI, INST(for DRUM)	01
	nn	07	1	00 - 03	PART MODE	NORMAL, DRUM, DRUMS1, 2	Part10=2 other parts=0
	nn	08	1	28 - 58	NOTE SHIFT	-24...0...+24[semitones]	40
	nn	09	2	00 - 0F	DETUNE	-12.8...0...+12.7[Hz]	08 00
	nn	0A		00 - 0F		1st bit3-0→bit7-4 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	RND, L63...C...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	28
	nn	14	1	00 - 7F	VARIATION SEND	0...127	00
	nn	15	1	00 - 7F	VIBRATO RATE	-64...0...+63	40
	nn	16	1	00 - 7F	VIBRATO DEPTH	-64...0...+63	40(drum part ignores)
	nn	17	1	00 - 7F	VIBRATO DELAY	-64...0...+63	40(drum part ignores)

Address (H)	Size (H)	Data (H)	Parameter	Description	Default value (H)
nn 18	1	00 - 7F	LOW PASS FILTER CUTOFF FREQUENCY	-64...0...+63	40
nn 19	1	00 - 7F	LOW PASS FILTER RESONANCE	-64...0...+63	40
nn 1A	1	00 - 7F	EG ATTACK TIME	-64...0...+63	40
nn 1B	1	00 - 7F	EG DECAY TIME	-64...0...+63	40
nn 1C	1	00 - 7F	EG RELEASE TIME	-64...0...+63	40
nn 1D	1	28 - 58	MW PITCH CONTROL	-24...0...+24[semitones]	40
nn 1E	1	00 - 7F	MW LOW PASS FILTER CONTROL	-9600...0...+9450[cent]	40
nn 1F	1	00 - 7F	MW AMPLITUDE CONTROL	-100...0...+100[%]	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...0...+24[semitones]	42
nn 24	1	00 - 7F	BEND LOW PASS FILTER CONTROL	-9600...0...+9450[cent]	40
nn 25	1	00 - 7F	BEND AMPLITUDE CONTROL	-100...0...+100[%]	40
nn 26	1	00 - 7F	BEND LFO PMOD DEPTH	0...127	00
nn 27	1	00 - 7F	BEND LFO FMOD DEPTH	0...127	00
nn 28	1	00 - 7F	BEND LFO AMOD DEPTH	0...127	00
TOTAL SIZE	29				
nn 30	1	00 - 01	Rcv PITCH BEND	OFF, ON	01
nn 31	1	00 - 01	Rcv CH AFTER TOUCH(CAT)	OFF, ON	01
nn 32	1	00 - 01	Rcv PROGRAM CHANGE	OFF, ON	01
nn 33	1	00 - 01	Rcv CONTROL CHANGE	OFF, ON	01
nn 34	1	00 - 01	Rcv POLY AFTER TOUCH(PAT)	OFF, ON	01
nn 35	1	00 - 01	Rcv NOTE MESSAGE	OFF, ON	01
nn 36	1	00 - 01	Rcv RPN	OFF, ON	01
nn 37	1	00 - 01	Rcv NRPN	OFF, ON	XGmode=01, GMmode=00
nn 38	1	00 - 01	Rcv MODURATION	OFF, ON	01
nn 39	1	00 - 01	Rcv VOLUME	OFF, ON	01
nn 3A	1	00 - 01	Rcv PAN	OFF, ON	01
nn 3B	1	00 - 01	Rcv EXPRESSION	OFF, ON	01
nn 3C	1	00 - 01	Rcv HOLD1	OFF, ON	01
nn 3D	1	00 - 01	Rcv PORTAMENTO	OFF, ON	01
nn 3E	1	00 - 01	Rcv SOSTENUTO	OFF, ON	01
nn 3F	1	00 - 01	Rcv SOFT PEDAL	OFF, ON	01
nn 40	1	00 - 01	Rcv BANK SELECT	OFF, ON	XGmode=01, GMmode=00
nn 41	1	00 - 7F	SCALE TUNING C	-64...0...+63[cent]	40
nn 42	1	00 - 7F	SCALE TUNING C#	-64...0...+63[cent]	40
nn 43	1	00 - 7F	SCALE TUNING D	-64...0...+63[cent]	40
nn 44	1	00 - 7F	SCALE TUNING D#	-64...0...+63[cent]	40
nn 45	1	00 - 7F	SCALE TUNING E	-64...0...+63[cent]	40
nn 46	1	00 - 7F	SCALE TUNING F	-64...0...+63[cent]	40
nn 47	1	00 - 7F	SCALE TUNING F#	-64...0...+63[cent]	40
nn 48	1	00 - 7F	SCALE TUNING G	-64...0...+63[cent]	40
nn 49	1	00 - 7F	SCALE TUNING G#	-64...0...+63[cent]	40
nn 4A	1	00 - 7F	SCALE TUNING A	-64...0...+63[cent]	40
nn 4B	1	00 - 7F	SCALE TUNING A#	-64...0...+63[cent]	40
nn 4C	1	00 - 7F	SCALE TUNING B	-64...0...+63[cent]	40
nn 4D	1	28 - 58	CAT PITCH CONTROL	-24...0...+24[semitones]	40
nn 4E	1	00 - 7F	CAT LOW PASS FILTER CONTROL	-9600...0...+9450[cent]	40
nn 4F	1	00 - 7F	CAT AMPLITUDE CONTROL	-100...0...+100[%]	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...0...+24[semitones]	40
nn 54	1	00 - 7F	PAT LOW PASS FILTER CONTROL	-9600...0...+9450[cent]	40
nn 55	1	00 - 7F	PAT AMPLITUDE CONTROL	-100...0...+100[%]	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...0...+24[semitones]	40
nn 5B	1	00 - 7F	AC1 LOW PASS FILTER CONTROL	-9600...0...+9450[cent]	40
nn 5C	1	00 - 7F	AC1 AMPLITUDE CONTROL	-100...0...+100[%]	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...0...+24[semitones]	40
nn 62	1	00 - 7F	AC2 LOW PASS FILTER CONTROL	-9600...0...+9450[cent]	40
nn 63	1	00 - 7F	AC2 AMPLITUDE CONTROL	-100...0...+100[%]	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	OFF, ON	00
nn 68	1	00 - 7F	PORTAMENTO TIME	0...127	00
nn 69	1	00 - 7F	PITCH EG INITIAL LEVEL	-64...0...+63	40
nn 6A	1	00 - 7F	PITCH EG ATTACK TIME	-64...0...+63	40
nn 6B	1	00 - 7F	PITCH EG RELEASE LEVEL	-64...0...+63	40
nn 6C	1	00 - 7F	PITCH EG RELEASE TIME	-64...0...+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

In the case of a DRUM PART, the following parameters will have no effect.

- BANK SELECT LSB
- MONO/POLY MODE
- SCALE TUNING
- PORTAMENTO
- PITCH EG

< Table 1-5 >

MIDI Parameter Change table (DRUM SETUP)

Address (H)			Size (H)	Data (H)	Parameter	Description	Default value (H)
3n	rr	00	1	00 - 7F	PITCH COARSE	-64...0...+63	40
		01	1	00 - 7F	PITCH FINE	-64...0...+63[cent]	40
		02	1	00 - 7F	LEVEL	0...127	depend on the note
		03	1	00 - 7F	ALTERNATE GROUP	OFF,1...127	depend on the note
		04	1	00 - 7F	PAN	RND,L63...C...R63	depend on the note
		05	1	00 - 7F	REVERB SEND	0...127	depend on the note
		06	1	00 - 7F	CHORUS SEND	0...127	depend on the note
		07	1	00 - 7F	VARIATION SEND	0...127	7F
		08	1	00 - 01	KEY ASSIGN	SINGLE , MULTI	00
		09	1	00 - 01	Rcv NOTE OFF	OFF , ON	depend on the note
		0A	1	00 - 01	Rcv NOTE ON	OFF , ON	01
		0B	1	00 - 7F	LOW PASS FILTER CUTOFF FREQUENCY	-64...0...63	40
		0C	1	00 - 7F	LOW PASS FILTER RESONANCE	-64...0...63	40
		0D	1	00 - 7F	EG ATTACK RATE	-64...0...63	40
		0E	1	00 - 7F	EG DECAY1 RATE	-64...0...63	40
		0F	1	00 - 7F	EG DECAY2 RATE	-64...0...63	40
TOTAL SIZE			10				

n:Drum Setup Number(0 - 1)
rr:note number(0D - 5B)

In the following cases, all Drum Setups will be initialized.
XG SYSTEM ON received
GM SYSTEM ON received
DRUM SETUP RESET received (only setup applies)

[Note]
When a part to which a Drum Setup is assigned receives a program change, the assigned Drum Setup will be initialized.
If the same Drum Setup is assigned to two or more parts, changes in Drum Setup parameters (including program changes)will apply to all parts to which it is assigned.

YAMAHA [XG Plug-in Board] Date:19-OCT-1999
Model PLG100-XG MIDI Implementation Chart Version : 1.0

Function...		Transmitted	Recognized	Remarks
Basic	Default	x	1 - 16	
Channel	Changed	x	1 - 16	
	Default	x	3	
Mode	Messages	x	3,4 (m=1) *2	
	Altered	**********	x	
Note		x	0 - 127	
Number :	True voice	**********	0 - 127	
Velocity	Note ON	x	o 9nH,v=1-127	
	Note OFF	x	x	
After	Key's	x	o *1	
Touch	Ch's	x	o *1	
Pitch Bend		x	o 0-24 semi *1	
	0,32	x	o *1	Bank Select
	1,5,7,10,11	x	o *1	
	6,38	x	o *1	Data Entry
	64-67	x	o *1	
Control	71-74	x	o *1	Sound Controller
Change	84	x	o *1	Portamento Cntrl
	91,93,94	x	o *1	Effect Depth
	96-97	x	o *1	RPN Inc,Dec
	98-99	x	o *1	NRPN LSB,MSB
	100-101	x	o *1	RPN LSB,MSB

Prog Change : True #	x **********	o 0 - 127	
System Exclusive	x	o	
: Song Pos. Common : Song Sel. : Tune	x x x	x x x	
System : Clock Real Time: Commands	x x	x x	
Aux :All Sound OFF :Reset All Cntrls :Local ON/OFF :All Notes OFF Mes- :Active Sense sages:Reset	x x x x x x	o(120,126,127) o(121) x o(123-125) o x	
Notes: *1 receive if switch is on. *2 m is always treated as "1" regardless of its value.			

Mode 1 : OMNI ON , POLY Mode 2 : OMNI ON ,MONO o : Yes
Mode 3 : OMNI OFF, POLY Mode 4 : OMNI OFF,MONO x : No

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