The Beggar's DB-50XG *SysEx Guide*

version I.2

A printable Word 6.0 copy of the original Guide in WinHelp-file format

(slightly revised)

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*This document can be especially useful to the happy owners of a **Yamaha DB-50XG** daughterboard who are not able or willing to buy XG editing software (for whatever reasons; $...), but nevertheless like to have at least some SysEx control over this card. More see below:"Why this file?"*

Contents

Introduction

In General
Included: XG SysEx-messages (written in full - if possible) and quite a few necessary tables (in hexadecimal numbers only - to avoid tedious and confusing conversions). They are discussed in the preferred order (the sequence of sending them); it is explained briefly how to use and edit them. *Not included*: TG300B SysEx, XG Native Bulk Dump and QS300 Native Bulk Dump SysEx.

More Specific
- First: a little bit about **SYSEX**-messages for the DB50XG in general (just basics).
- The GM and XG **RESET** or "System On" messages; the first messages in any XG mid-file. They should precede other SysEx as well as controllers, notes and other Midi events (exceptions are: timing, tempo, and text events). Actually, the XG reset is just one (the most important one) of the group of...
- **SYSTEM** messages. These can be send next.
- **EFFECTS** SysEx-messages are next. The way they are related to the voices (parts) is discussed briefly. If you know a bit about the **routing** of the effects and the elusive **variation connection** parameter you can understand how to use the effect-messages:
- **Reverb**
- **Chorus**
- **Variation**
- **MULTIPART** SysEx-messages enable Voice selection and editing (including overall DrumKit editing).
- **DRUMSETUP** SysEx-messages enable DrumVoice editing (individual notes of the kits).
- To enable easy byte edit of System-, Effects-, MultiPart- and DrumSetup-SysEx quite a few lists and tables are included: a Hexadecimal Chart (more than one, actually), Effects Type lists and Effects Parameter tables, XG Normal Voice List, and XG Drum Voice list. There is even a complete list of Controllers for Adjustable Controller selection (but no explanations about AC...)
- All charts, tables etc. contain the **hexadecimal numbers** you need...
- Also included: **a quite comprehensive list of XG SysEx-messages** (defaults) with no text between the messages. Just copy the contents of that window into Windows NotePad (or something similar) and select those messages you want afterwards. They are listed in the preferred order: Reset, System, Effects, and MultiPart. The few SysEx messages you should always send are marked.
- Some of the **tips** and examples you will find in this file (basic stuff, mostly):
- Ordering SysEx-messages properly (what first and what next?).
- Combining effects (Reverb, Chorus, Variation).
- Routing several Parts to the Same Channel (in order to create totally new complex sounds and / or assign Voices to specific areas of you (master-)keyboard: the key range for a part: Keyboard Split.

A Few Notes

The file and the writer
- The writer is not an "SysEx-expert", just an ignorant but inquisitive amateur. Please, keep that in mind. This file was originally written for personal use only. It was only after I discovered that there were more just as ignorant and poor as I that I decided to rewrite it a bit and make it available to others. If you want to know more about SysEx and/or the XG-format I recommend a visit to the Yamaha sites (like: http://www.yamaha.co.uk) or Michael Banz' site (http://home.wtal.de/mbanz)
- Whenever I indicate my uncertainty or complete ignorance or in case you are not sure yourself I advise you to check your Owner's Manual.
- My English is far from perfect; please excuse my mistakes and awkward expressions.
- Feedback (esp. when it concerns grave errors or additional information) is appreciated!
- **Disclaimer: I will not be held responsible for any problem as a result of a mistake in this file or your mistakes based on the information provided in this file. I consider the user to be responsible for his or her own actions.**

- **You may do whatever you like with this file, as long as you don't change it without consulting me first, and provided you do not profit from it financially (by selling it in whatever way: separately, or in combination with another product).**

Why this file?
Some Basic Help-, that's all
In this file you will find the most basic and important XG System Exclusive messages controlling the various functions of the DB-50XG (written in full - as much as possible) as well as some tips and examples how to use and edit them. The SysEx-messages can all (well, almost all) be inferred from the *Owner's Manual*, but that has not proven to be easy for those mucisians who were so fortunate to purchase this wonderful daughterboard but lack the necessary degree in formal logic or computer-science. Yamaha's *The Alternative DB50 Guide*, although a great guide in other respects, does not offer much basic help either. I hope this file may just do that: provide some basic help.

It may make things a bit easier but do not expect miracles! The writer of this file is an amateur with limited knowledge. You cannot do without the *Owner's Manual* which is the basis for this file anyway; the information given here is not complete. (This is free, remember...). This file contains only the most important XG SysEx-messages.

NB. I am only a bit familiar with the DB50XG, but it has come to my attention that owner's of other Yahama XG stuff (like the SW60XG) could also benefit to some extend from the information presented here. Nevertheless, let me stress that it was originally written for the DB50XG...

JRG

What is *SysEx*?

SysEx is a way of addressing the basic levels of the DB50XG
A SysEx-message is a particular series of bytes with a specific order (to address the DB properly, right?). The bytes are in Hexadecimal Numbers (simply put: these numbers have ciphers as well as letters). The data can be entered using a SysEx- or Event List editor in your sequencer.

The *basic structure* of SysEx-messages for the DB50XG:

F0 43 10 4C (xx xx) F7

What does it mean?

First Byte	F0	Start of SysEx-message
Second Byte	43	Yamaha ID code
Third Byte	10	Device number (fixed to "All" devices)
Fourth Byte	4C	XG Model ID
Next Bytes	(xx xx)	Command Specific bytes
Last Byte	F7	End of SysEx-message

All XG-sysex messages discussed here have the first four bytes (F0 43 10 4C) and the last byte (F7) in common. All that remains to figure out is how to fill in the *Command Specific* bytes of each individual SysEx-message. These bytes usually consist of 3 Parameter Address bytes and 1 or 2 Parameter Data bytes. **To fill in those bytes is what this file is all about.**

Note that these SysEx-messages should not be send at the same midi time in a sequencer (and mid-file). They need some time to do their job. For this reason most people use SysEx only at the beginning of a mid (and sometimes also at the end). They *can* be send in the middle of a mid-file, but you may notice unwanted hiccups or click-noises in the music (if you do it: pick the right time).

NEXT The very first SysEx-messages in an XG type mid must be the GM and XG System On or RESET.

Reset

In a XG-mid-file you need a (non-XG) General Midi message (GM) - must be the very first SysEx-message in a mid-file - and an XG message (second message). These two are the only SysEx messages that really *must* be sent in order to ensure XG; all other SysExes are optional. It is advisable to leave some time between sending the GM and the XG messages (200 msec) as well as between the XG SysEx and the following system exclusive parameter changes (50 msec). All messages after the third don't need such gaps of time. Just send them one by one and make sure they don't interfere with other MIDI Events (e.g., notes, controllers, etc.)

The *Reset* or *System On* messages
GM F0 7E 7F 09 01 F7
GS F0 41 10 42 12 40 00 7F 00 41 F7
XG F0 43 10 4C 00 00 7E 00 F7

(You don't have to use the Roland GS message.)

NEXT The **XG** System On or Reset is actually just one - but the most important one - of the System messages.

System

The System messages speak for themselves: they are "system global" (just don't ask me about Master Tuning: I don't have that hexadecimal table here).

Short explanation of table below

- In the table you will find, from left to right: Name, SysEx-default, Value Range
- XG System messages can be recognized by their common *Base Address*: F0 43 10 4C **00 00** .. .. F7.
- To change values: change the bold green hexadecimal numbers in the SysEx using the value range indicated. The range is either given directly (in case of a simple on/off switch) or indirectly, i.e., by reference to a hexadecimal table (all numbers are hexadecimal). For value ranges consult the "Hexadecimal Chart 00 to 7F" unless otherwise indicated (go to other tables: "Transpose", "Parts", "Octaves" or voicelists when they are bold green in the Value Range column)
- "<" = decrement; ">" = increment.

Name	SysEx-default	Value Range
Master Tune	F0 43 10 4C 00 00 00 **00 04 00 00** F7	??
Master Volume	F0 43 10 4C 00 00 04 **7F** F7	00<>7F
Transpose	F0 43 10 4C 00 00 06 **40** F7	28<40>58 cf.**Transpose**
Drum Setup Reset	F0 43 10 4C 00 00 7D **00** F7	00=DrumSetup1; 01=DrumSetup2
XG System On	F0 43 10 4C 00 00 7E 00 F7	
All Parameter Reset	F0 43 10 4C 00 00 7F 00 F7	

Some Remarks

- Master Volume can be used for fade in and fade out, because it addresses all Parts. You can do this by creating a sequence of messages. Like this (fade out):
  F0 43 10 4C 00 00 04 **7F** F7
  F0 43 10 4C 00 00 04 **7E** F7
  F0 43 10 4C 00 00 04 **7D** F7
  F0 43 10 4C 00 00 04 **7C** F7
  F0 43 10 4C 00 00 04 **7B** F7 ...etc...

...Agreed, that is a lot of work, but if you create some sort of template you only have to write it once.

- Transpose could almost be called Master Transpose: it has effect on every part except for the default Drumpart.
- The DrumSetup Reset (re-)initializes the selected setup (can also be used in the middle of a mid - if timed well: in an intentional pauze in the music).

NEXT The next SysEx-messages to be send are the Effects.

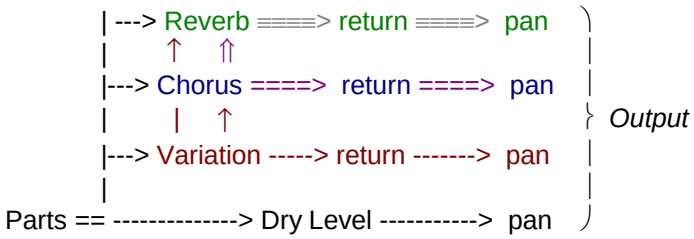
Effects

You can use three effects at the same time: 1 Reverb Type, 1 Chorus Type and 1 Variation Type. They can be combined in any way you want. Because almost all reverb and chorus effects are also listed as Variation Types it is possible to 2 reverbs or 2 chorus effects...
XG Effect messages can be recognized by their common Base Address: F0 43 10 4C **02 01** .. .. F7.
The messages can be edited using the tables further below

Signal Route

The order of SysEx messages is: effect first, parts (voices) next. The actual signal route, however, is different. (NB. I am only discussing the route when *System* mode is selected with the **Variation Connection** parameter [see further below])

A (primitive) graphic overview:



It all starts with the 16 Parts - (that's where you select and edit voices). Each part can **send** its signal (mono!) to Reverb, Chorus and Variation and determine the level of Effect Send. Also the Dry Level (direct output signal) can be edited here. I am referring to the following messages in the MultiPart table:

Dry Level
Chorus Send
Reverb Send
Variation Send

(The function of the last 3 SysEx-es is identical to that of the controllers 91, 93, 94).
Also the Pan of the Dry sound can be adjusted here (controller 10 = panning of total output)

- The part signal send to the effects is **modified** by the effect Type and its parameters (i.e., p1-p16). Each of the three effects has its own parameters (see links to Reverb, Chorus, and Variation below).
- **Parallel Effect output**. Next step can be: adjusting the level and panning of effect-signal that is returned to output by all three effects. I am referring to the following messages in the Effect tables:
  In Reverb table: Reverb Return and Reverb Pan
  In Chorus table: Chorus Return and Chorus Pan
  In Variation table: Variation Return and Variation Pan

That gives you quite a few possibilities, but there is more...

- **Serial Effect routing**. One Effect can also be send to another Effect before being returned to output. I am talking about the following options available in the Effect tables:
  In Variation table: Send Variation to Reverb
  In Variation table: Send Variation to Chorus
  In Chorus table: Send Chorus to Reverb

Almost limitless possibilities... (esp. in combination with your choice of Effect Types)

Variation Connection

The Variation effect can operate in either *System* or *Insertion* mode (cf. one of the Variation tables further below to understand to what messages this discussion refers to). This has several effects on the operation of the Effects Unit as a whole.

- In **System** mode Variation works for every Part. If System is selected the setting of the previous 4 Variation parameters has effect, i.e., the Variation Return, Variation Pan, Send Variation to Reverb, and Send Variation to Chorus (no effect in **Insertion** mode).
- If set to System the values of the Variation Part parameter are irrelevant. (not active).
- If set to System parameter 10: Dry/Wet of ALL three effects (Variation as well as Reverb and Chorus) and the Variation Part is not operative. In System-mode the Dry/Wet level of the parts must be controlled by the Multipart Dry Level parameter in combination with the Variation Send parameter.

- In **Insertion** mode each part is routed through the next parameter: Variation Part. The Variation Part parameter addresses only the one part selected here for the Variation effect. Only in Insertion mode has parameter 10: Dry/Wet any effect.

Note that by default the Variation Effect is "switched off"; Variation Connection is set to *Insertion* and Variation Part = *Off*! If you want to make things easy for yourself: select **System** instead of the default **Insertion** and don't bother about the Variation Part parameter (well, that's what I do). You can't use more than one Variation Type anyway and you can always control the amount of Variation for each part, so what's the point in selecting only one Part (except for sophisticated purposes for which most of us don't have the money)?

So, I recommend sending - directly after the Variation Type (so you don't forget it):

F0 43 10 4C 02 01 5A **01** F7.

If you chose Insertion (F0 43 10 4C 02 01 5A **00** F7) make sure you chose a particular part as well:

F0 43 10 4C 02 01 **5B ..** F7.

Reverb Effect

About the Reverb tables below

Default Reverb Type: **Hall1**

- XG Reverb Effect SysEx messages range from: F0 43 10 4C **02 01 00** .. .. F7 to: F0 43 10 4C **02 01 15** .. .. F7.
- You can use only one Reverb Effect (but you can select a second reverb type *as* Variation effect). The SysEx messages of all available Reverb Types are in the tables below.
- There is a problem of which you should be aware: You will not find the default values nor the value range of the effect parameters in the *Owner's Manual*. The *values* in the Reverb tables are the result of some "educated guesswork".
- The columns in the Reverb tables from left to right: First: parameter name. Second: SysEx with the default parameter values of one Effects type. Next (sometimes): columns with the default parameter values of other Reverb types (having the same type specific Reverb parameters in common). Finally: the Value Range of the parameters.
- First select a Type with the first message in the table (the default Reverb type is Hall1). If you select type Hall2 (F0 43 10 4C 02 01 00 **01 01** F7) the parameter defaults will be the values listed in the column under Hll2 and **01 01**. Next: edit the bold green hexadecimal numbers in the SysEx messages listed below using the value range indicated. For value ranges consult the "Hexadecimal Chart 00 to 7F" unless otherwise indicated (go to other tables: "Transpose", "Parts", "Octaves" or voicelists when they are bold green in the Value Range column)
- Apart from the types listed below there is also the option "no Reverb effect" (F0 43 10 4C **02 01 00 00 00** F7)
- I find it helpful to distinguish between type specific and common Reverb parameters. B.t.w., the defaults of Return and Pan parameters are always 40.

TABLE 1: **Hall 1,2, and Room 1,2,3**

Parameter	SysEx-default: Hall1	Hll2	Rm1	Rm2	Rm3	Val.range
Type	F0 43 10 4C 02 01 00 **01 00** F7	**01 01**	**02 00**	**02 01**	**02 02**	
Time	F0 43 10 4C 02 01 02 **12** F7	19	05	0C	09	00<>45
Diffusion	F0 43 10 4C 02 01 03 **0A** F7	0A	0A	0A	0A	00<>0A
Initial Delay	F0 43 10 4C 02 01 04 **08** F7	1C	10	05	2F	00<>3F
Hpf Cutoff	F0 43 10 4C 02 01 05 **0D** F7	06	04	04	05	00<>34
Lpf Cutoff	F0 43 10 4C 02 01 06 **31** F7	2E	31	26	24	22<>3C
Dry/Wet	F0 43 10 4C 02 01 0B **28** F7	28	28	28	28	01<>7F
Reverb Return	F0 43 10 4C 02 01 0C **40** F7					00<>7F
Reverb Pan	F0 43 10 4C 02 01 0D **40** F7					00<>7F
RevDelay	F0 43 10 4C 02 01 10 **00** F7	0D	05	00	00	00<>3F
Density	F0 43 10 4C 02 01 11 **04** F7	03	03	03	04	00<>04
Er/RevBal	F0 43 10 4C 02 01 12 **32** F7	4A	40	32	3C	01<>7F
Feedback	F0 43 10 4C 02 01 14 **40** F7	40	40	40	40	01<>7F

TABLE 2: **Stage 1,2, and Plate**

Parameter	SysEx-default: Stage1	St2	Plate	Val.range
Type	F0 43 10 4C 02 01 00 **03 00** F7	**03 01**	**04 00**	
Time	F0 43 10 4C 02 01 02 **13** F7	0B	19	00<>45
Diffusion	F0 43 10 4C 02 01 03 **0A** F7	0A	0A	00<>0A
Initial Delay	F0 43 10 4C 02 01 04 **10** F7	10	06	00<>3F
Hpf Cutoff	F0 43 10 4C 02 01 05 **07** F7	07	08	00<>34
Lpf Cutoff	F0 43 10 4C 02 01 06 **36** F7	33	31	22<>3C
Dry/Wet	F0 43 10 4C 02 01 0B **28** F7	28	28	01<>7F
Reverb Return	F0 43 10 4C 02 01 0C **40** F7			00<>7F
Reverb Pan	F0 43 10 4C 02 01 0D **40** F7			00<>7F
RevDelay	F0 43 10 4C 02 01 10 **00** F7	02	02	00<>3F
Density	F0 43 10 4C 02 01 11 **03** F7	02	03	00<>04
Er/RevBal	F0 43 10 4C 02 01 12 **40** F7	40	40	01<>7F
Feedback	F0 43 10 4C 02 01 14 **40** F7	40	40	01<>7F

TABLE 3: **White Room, Tunnel, and Basement**

Parameter	SysEx-defaults: Wh.Room	Tunnel	Basemnt	Val.range
Type	F0 43 10 4C 02 01 00 **10 00** F7	**11 00**	**13 00**	
Time	F0 43 10 4C 02 01 02 **09** F7	30	03	00<>45
Diffusion	F0 43 10 4C 02 01 03 **05** F7	06	06	00<>0A
Initial Delay	F0 43 10 4C 02 01 04 **0B** F7	13	03	00<>3F
Hpf Cutoff	F0 43 10 4C 02 01 05 **01** F7	01	01	00<>34
Lpf Cutoff	F0 43 10 4C 02 01 06 **2E** F7	2C	23	22<>3C
Width	F0 43 10 4C 02 01 07 **1E** F7	21	1A	00<>25
Height	F0 43 10 4C 02 01 08 **32** F7	34	1D	00<>49
Depth	F0 43 10 4C 02 01 09 **46** F7	46	3B	00<>68
Wall Vary	F0 43 10 4C 02 01 0A **07** F7	10	0F	00<>1E
Dry/Wet	F0 43 10 4C 02 01 0B **28** F7	28	28	01<>7F
Reverb Return	F0 43 10 4C 02 01 0C **40** F7			00<>7F
Reverb Pan	F0 43 10 4C 02 01 0D **40** F7			00<>7F
RevDelay	F0 43 10 4C 02 01 10 **22** F7	14	20	00<>3F
Density	F0 43 10 4C 02 01 11 **03** F7	03	03	00<>04
Er/RevBal	F0 43 10 4C 02 01 12 **40** F7	40	40	01<>7F
Feedback	F0 43 10 4C 02 01 14 **40** F7	40	40	01<>7F

Chorus Effect

About the Chorus tables below

Default Chorus Type: **Chorus1**

- XG Chorus Effect SysEx messages range from: F0 43 10 4C **02 01 20** .. .. F7 to: F0 43 10 4C **02 01 35** .. .. F7.
- You can use only one Chorus Effect (but you can select a second chorus type as Variation effect). The SysEx messages of all available Chorus Types are in the tables below.
- There is a problem of which you should be aware: You will not find the default values nor the value range of the effect parameters in the *Owner's Manual*. The values in the Chorus tables are the result of some "educated guesswork".
- The columns in the Chorus tables from left to right: First: parameter name. Second: SysEx with the default parameter values of one Effects type. Next (sometimes): columns with the default parameter values of other Chorus types (having the same type specific Chorus parameters in common). Finally: the Value Range of the parameters.
- First select a Type with the first message in the table (the default Chorus type is Chorus1). If you select type Chorus2 (F0 43 10 4C 02 01 20 **41 01** F7) the parameter defaults will be the values listed in the column under Ch2 and **41 01**. Next: edit the bold green hexadecimal numbers in the SysEx messages listed below using the value range indicated. For value ranges consult the "Hexadecimal Chart 00 to 7F" unless otherwise indicated (go to other tables: "Transpose", "Parts", "Octaves" or voicelists when they are bold green in the Value Range column)
- Apart from the types listed below there is also the option "no Chorus effect" (F0 43 10 4C **02 01 20 00 00** F7)
- I find it helpful to distinguish between type specific and common Chorus parameters. B.t.w., the defaults of Return and Pan parameters are always 40; Send Chorus to Reverb is by default 00.

TABLE 1: **Chorus 1,2,3,4**

Parameter	SysEx-default Chorus1	Ch2	Ch3	Ch4	Val. Range
Type	F0 43 10 4C 02 01 20 **41 00** F7	**41 01**	**41 02**	**41 08**	
LFO Freq	F0 43 10 4C 02 01 22 **06** F7	08	04	07	00<>7F
LFO pm Depth	F0 43 10 4C 02 01 23 **36** F7	3F	2C	20	00<>7F
FeedbLevel	F0 43 10 4C 02 01 24 **4D** F7	40	40	45	01<>7F
DelayOffset	F0 43 10 4C 02 01 25 **6A** F7	1E	6E	68	00<>7F
EqLowFreq	F0 43 10 4C 02 01 27 **1C** F7	1C	1C	1C	08<>28
EqLowGain	F0 43 10 4C 02 01 28 **40** F7	3E	40	40	34<>4C
EqHighFreq	F0 43 10 4C 02 01 29 **2E** F7	2A	2E	2E	1C<>3A
EqHighGain	F0 43 10 4C 02 01 2A **40** F7	3A	42	40	34<>4C
Dry/Wet	F0 43 10 4C 02 01 2B **40** F7	40	40	40	01<>7F
Chorus Return	F0 43 10 4C 02 01 2C **40** F7				00<>7F
Chorus Pan	F0 43 10 4C 02 01 2D **40** F7				00<>7F
Snd Chor>Rev	F0 43 10 4C 02 01 2E **00** F7				00<>7F
Input	F0 43 10 4C 02 01 34 **00** F7	00	00	01	00=M, 01=St

TABLE 2: **Celeste 1,2,3,4**

Parameter	SysEx-default Celeste1	Cel2	Cel3	Cel4	Val. Range
Type	F0 43 10 4C 02 01 20 **42 00** F7	**42 01**	**42 02**	**42 08**	
LFO Freq	F0 43 10 4C 02 01 22 **0C** F7	1C	04	07	00<>7F
LFO pm Depth	F0 43 10 4C 02 01 23 **20** F7	12	3F	1D	00<>7F
FeedbLevel	F0 43 10 4C 02 01 24 **40** F7	5A	2C	40	01<>7F
DelayOffset	F0 43 10 4C 02 01 25 **00** F7	02	02	00	00<>7F
EqLowFreq	F0 43 10 4C 02 01 27 **1C** F7	1C	1C	1C	08<>28
EqLowGain	F0 43 10 4C 02 01 28 **40** F7	3E	40	40	34<>4C
EqHighFreq	F0 43 10 4C 02 01 29 **2E** F7	2A	2E	33	1C<>3A
EqHighGain	F0 43 10 4C 02 01 2A **40** F7	3C	44	42	34<>4C
Dry/Wet	F0 43 10 4C 02 01 2B **7F** F7	54	7F	7F	01<>7F
Chorus Return	F0 43 10 4C 02 01 2C **40** F7				00<>7F
Chorus Pan	F0 43 10 4C 02 01 2D **40** F7				00<>7F
Snd Chor>Rev	F0 43 10 4C 02 01 2E **00** F7				00<>7F
Input	F0 43 10 4C 02 01 34 **00** F7	00	00	01	00=M, 01=St

TABLE 3: **Flanger 1,2,3**

Parameter	SysEx-default Flanger1	Fl2	Fl3	Value Range
Type	F0 43 10 4C 02 01 20 **43 00** F7	**43 01**	**43 08**	
LFO Freq	F0 43 10 4C 02 01 22 **0E** F7	20	03	00<>7F
LFO pm Depth	F0 43 10 4C 02 01 23 **0E** F7	11	6D	00<>7F
FeedbLevel	F0 43 10 4C 02 01 24 **68** F7	1A	6D	01<>7F
DelayOffset	F0 43 10 4C 02 01 25 **02** F7	02	02	00<>3F
EqLowFreq	F0 43 10 4C 02 01 27 **1C** F7	1C	1C	08<>28
EqLowGain	F0 43 10 4C 02 01 28 **40** F7	40	40	34<>4C
EqHighFreq	F0 43 10 4C 02 01 29 **2E** F7	2E	2E	1C<>3A
EqHighGain	F0 43 10 4C 02 01 2A **40** F7	3C	40	34<>4C
Dry/Wet	F0 43 10 4C 02 01 2B **60** F7	60	7F	01<>7F
Chorus Return	F0 43 10 4C 02 01 2C **40** F7			00<>7F
Chorus Pan	F0 43 10 4C 02 01 2D **40** F7			00<>7F
Snd Chor>Rev	F0 43 10 4C 02 01 2E **00** F7			00<>7F
LFO PhaseDiff	F0 43 10 4C 02 01 33 **04** F7	04	04	04<>7C

Variation Effect

About the Variation tables below

Default Variation Type: **Delay LCR**.

NB! By default the Variation Effect is "switched off".

- XG Variation Effect SysEx messages range from: F0 43 10 4C **02 01 40** .. .. F7 to: F0 43 10 4C **02 01 75** .. .. F7.
- You can use only one Variation Effect. The SysEx messages of all available Types can be found below.
- Two problems: 1) You will not find the *default values* of the type specific parameters in the *Owner's Manual* (i.e., par. 1-16). 2) MSB and LSB *value range* of parameters 1-16 is not clearly indicated in the *Owner's Manual* ... Based on trail and error my guess is that MSB (first data byte of par. 1-10) must be 00 for all Variation Types except the Delay and Echo types. So it is the LSB (second data byte) you must look for in most cases. (Heavy stuff? Don't worry, you'll see what to do.)
- NB: The default values in the Variation tables are the result of some "educated guesswork".
- Apart from the types listed below thereare also these two options: "no Variation effect" (F0 43 10 4C **02 01 40 00 00** F7) and "THRU (=bypass effect)" (F0 43 10 4C **02 01 40 40 00** F7)

Brief explanation of Variation Tables below

- The columns in the variation tables from left to right: First: parameter name. Second: SysEx with the default parameter values of one variation type. Next (sometimes): columns with the default parameter values of other variation types (having the same type specific Variation parameters in common). Finally: the Value Range of the parameters.
- First select a Type with the first message in the table (default Variation type Delay LCR: **05 00**). Next: edit the bold green hexadecimal numbers in the messages listed below using the value range indicated. For value ranges consult the "Hexadecimal Chart 00 to 7F" unless otherwise indicated (other tables: "Transpose", "Parts", "Octaves" or the voicelists).
- I find it helpful to distinguish between type specific and common Variation parameters. Note that the defaults of the type specific parameters are the result of guesswork...
- Don't forget to edit the Variation Connection parameter (or you won't hear any Variation effect at all).

The tables ...

1	Hall1, 2, Room1, 2, 3	2	Stage1, 2, and Plate
3	Delay LCR	4	Delay LR
5	Echo	6	Cross Delay
7	Early Reflect1 and 2	8	Gate Reverb and Reverse Gate
9	Karaoke1, 2, 3	10	Chorus1, 2, 3, 4
11	Celeste1, 2, 3, 4	12	Flanger1, 2, 3
13	Symphonic	14	Rotary Speaker
15	Tremolo	16	Auto Pan
17	Phaser1, 2	18	Distortion and Overdrive
19	Guitar Amp	20	Auto Wah
21	3Band EQ	22	2Band EQ

The asterisks in the tables below:

* MSB value of the parameters (the 00 before the **value**) higher than 00 seems identical to maximum LSB value.

** Only if Variation Connection = Insertion.

*** MSB value range when needed identical to LSB value range

TABLE 1: **Hall & Room** *(as variation effect!)*

Parameter	SysEx-default* Hall1	Hll2	Rm1	Rm2	Rm3	Val Range LSB
Type	F0 43 10 4C 02 01 40 **01 00** F7	**01 01**	**02 00**	**02 01**	**02 02**	
ReverbTime	F0 43 10 4C 02 01 42 00 **12** F7	19	05	0C	09	00<>45
Diffusion	F0 43 10 4C 02 01 44 00 **0A** F7	0A	0A	0A	0A	00<>0A
Initial Delay	F0 43 10 4C 02 01 46 00 **08** F7	1C	10	05	2F	00<>3F
HpfCutoff	F0 43 10 4C 02 01 48 00 **0D** F7	06	04	04	05	00<>34
LpfCutoff	F0 43 10 4C 02 01 4A 00 **31** F7	2E	31	26	24	22<>3C
Dry/Wet**	F0 43 10 4C 02 01 54 00 **28** F7	28	28	28	28	01<>7F
Var Return	F0 43 10 4C 02 01 56 **40** F7					00<>7F
Var Pan	F0 43 10 4C 02 01 57 **40** F7					00<>7F
Snd Var to Rev	F0 43 10 4C 02 01 58 **00** F7					00<>7F
Snd Var to Chor	F0 43 10 4C 02 01 59 **00** F7					00<>7F
Var Connect	F0 43 10 4C 02 01 5A **00** F7					=Ins;Sys=01
Var Part	F0 43 10 4C 02 01 5B **7F** F7					cf.**Parts**
MW Var CntrlDpth	F0 43 10 4C 02 01 5C **40** F7					00<>7F
Bnd Var CntrlDpth	F0 43 10 4C 02 01 5D **40** F7					00<>7F
Cat Var CntrlDpth	F0 43 10 4C 02 01 5E **40** F7					00<>7F
AC1 Var CntrlDpth	F0 43 10 4C 02 01 5F **40** F7					00<>7F
AC2 Var CntrlDpth	F0 43 10 4C 02 01 60 **40** F7					00<>7F
RevDelay	F0 43 10 4C 02 01 70 **00** F7	0D	05	00	00	00<>3F
Density	F0 43 10 4C 02 01 71 **04** F7	03	03	03	03	00<>04
Er/Rev Bal	F0 43 10 4C 02 01 72 **32** F7	4A	40	32	3C	01<>7F
FeedbckLev	F0 43 10 4C 02 01 74 **40** F7	40	40	40	40	01<>7F

TABLE 2: **Stage & Plate** *(as variation effect!)*

Parameter	SysEx-default* Stage1	St2	Plate	Val Range LSB
Type	F0 43 10 4C 02 01 40 **03 00** F7	**03 01**	**04 00**	
ReverbTime	F0 43 10 4C 02 01 42 00 **13** F7	0B	19	00<>45
Diffusion	F0 43 10 4C 02 01 44 00 **0A** F7	0A	0A	00<>0A
Initial Delay	F0 43 10 4C 02 01 46 00 **10** F7	10	06	00<>3F
HpfCutoff	F0 43 10 4C 02 01 48 00 **07** F7	07	08	00<>34
LpfCutoff	F0 43 10 4C 02 01 4A 00 **36** F7	33	31	22<>3C
Dry/Wet**	F0 43 10 4C 02 01 54 00 **28** F7	28	28	01<>7F
Var Return	F0 43 10 4C 02 01 56 **40** F7			00<>7F
Var Pan	F0 43 10 4C 02 01 57 **40** F7			00<>7F
Snd Var to Rev	F0 43 10 4C 02 01 58 **00** F7			00<>7F
Snd Var to Chor	F0 43 10 4C 02 01 59 **00** F7			00<>7F
Var Connect	F0 43 10 4C 02 01 5A **00** F7			=Ins;Sys=01
Var Part	F0 43 10 4C 02 01 5B **7F** F7			cf.**Parts**
MW Var CntrlDpth	F0 43 10 4C 02 01 5C **40** F7			00<>7F
Bnd Var CntrlDpth	F0 43 10 4C 02 01 5D **40** F7			00<>7F
Cat Var CntrlDpth	F0 43 10 4C 02 01 5E **40** F7			00<>7F
AC1 Var CntrlDpth	F0 43 10 4C 02 01 5F **40** F7			00<>7F
AC2 Var CntrlDpth	F0 43 10 4C 02 01 60 **40** F7			00<>7F
RevDelay	F0 43 10 4C 02 01 70 **00** F7	02	02	00<>3F
Density	F0 43 10 4C 02 01 71 **03** F7	02	03	00<>04
Er/Rev Bal	F0 43 10 4C 02 01 72 **40** F7	40	40	01<>7F
FeedbckLev	F0 43 10 4C 02 01 74 **40** F7	40	40	01<>7F

TABLE 3: **Delay LCR**

Parameter	SysEx	Val Range MSB***&LSB
Type	F0 43 10 4C 02 01 40 **05 00** F7	
LchDelay	F0 43 10 4C 02 01 42 **1A 05** F7	00<>7F
RchDelay	F0 43 10 4C 02 01 44 **0D 03** F7	00<>7F
CchDelay	F0 43 10 4C 02 01 46 **27 08** F7	00<>7F
FeedbDelay	F0 43 10 4C 02 01 48 **27 08** F7	00<>7F
FeedbLevel	F0 43 10 4C 02 01 4A 00 **4A** F7	01<>7F
CchLevel	F0 43 10 4C 02 01 4C 00 **64** F7	00<>7F
HighDamp	F0 43 10 4C 02 01 4E 00 **0A** F7	01<>0A
Dry/Wet**	F0 43 10 4C 02 01 54 00 **20** F7	01<>7F
Var Return	F0 43 10 4C 02 01 56 **40** F7	00<>7F
Var Pan	F0 43 10 4C 02 01 57 **40** F7	00<>7F
Snd Var to Rev	F0 43 10 4C 02 01 58 **00** F7	00<>7F
Snd Var to Chor	F0 43 10 4C 02 01 59 **00** F7	00<>7F
Var Connect	F0 43 10 4C 02 01 5A **00** F7	=Ins;Sys=01
Var Part	F0 43 10 4C 02 01 5B **7F** F7	cf.**Parts**
MW Var CntrlDpth	F0 43 10 4C 02 01 5C **40** F7	00<>7F
Bnd Var CntrlDpth	F0 43 10 4C 02 01 5D **40** F7	00<>7F
Cat Var CntrlDpth	F0 43 10 4C 02 01 5E **40** F7	00<>7F
AC1 Var CntrlDpth	F0 43 10 4C 02 01 5F **40** F7	00<>7F
AC2 Var CntrlDpth	F0 43 10 4C 02 01 60 **40** F7	00<>7F
EqLowFreq	F0 43 10 4C 02 01 72 **1C** F7	08<>28
EqLowGain	F0 43 10 4C 02 01 73 **40** F7	34<>4C
EqHighFreq	F0 43 10 4C 02 01 74 **2E** F7	1C<>3A
EqHighGain	F0 43 10 4C 02 01 75 **40** F7	34<>4C

TABLE 4: **Delay LR**

Parameter	SysEx	Val Range MSB***&LSB
Type	F0 43 10 4C 02 01 40 **06 00** F7	
LchDelay	F0 43 10 4C 02 01 42 **13 44** F7	00<>7F
RchDelay	F0 43 10 4C 02 01 44 **1D 26** F7	00<>7F
FeedbDelay1	F0 43 10 4C 02 01 46 **1D 28** F7	00<>7F
FeedbDelay2	F0 43 10 4C 02 01 48 **1D 26** F7	00<>7F
FeedbLevel	F0 43 10 4C 02 01 4A 00 **57** F7	01<>7F
HighDamp	F0 43 10 4C 02 01 4C 00 **0A** F7	01<>0A
Dry/Wet**	F0 43 10 4C 02 01 54 00 **20** F7	01<>7F
Var Return	F0 43 10 4C 02 01 56 **40** F7	00<>7F
Var Pan	F0 43 10 4C 02 01 57 **40** F7	00<>7F
Snd Var to Rev	F0 43 10 4C 02 01 58 **00** F7	00<>7F
Snd Var to Chor	F0 43 10 4C 02 01 59 **00** F7	00<>7F
Var Connect	F0 43 10 4C 02 01 5A **00** F7	=Ins;Sys=01
Var Part	F0 43 10 4C 02 01 5B **7F** F7	cf.**Parts**
MW Var CntrlDpth	F0 43 10 4C 02 01 5C **40** F7	00<>7F
Bnd Var CntrlDpth	F0 43 10 4C 02 01 5D **40** F7	00<>7F
Cat Var CntrlDpth	F0 43 10 4C 02 01 5E **40** F7	00<>7F
AC1 Var CntrlDpth	F0 43 10 4C 02 01 5F **40** F7	00<>7F
AC2 Var CntrlDpth	F0 43 10 4C 02 01 60 **40** F7	00<>7F
EqLowFreq	F0 43 10 4C 02 01 72 **1C** F7	08<>28
EqLowGain	F0 43 10 4C 02 01 73 **40** F7	34<>4C
EqHighFreq	F0 43 10 4C 02 01 74 **2E** F7	1C<>3A
EqHighGain	F0 43 10 4C 02 01 75 **40** F7	34<>4C

TABLE 5: **Echo**

Parameter	SysEx	Val Range MSB***&LSB
Type	F0 43 10 4C 02 01 40 **07 00** F7	
LchDelay1	F0 43 10 4C 02 01 42 **0D 24** F7	00<>7F
LchFeedbLev	F0 43 10 4C 02 01 44 00 **50** F7	01<>7F
RchDelay1	F0 43 10 4C 02 01 46 **0D 74** F7	00<>7F
RchFeedbLev	F0 43 10 4C 02 01 48 00 **50** F7	01<>7F
HighDamp	F0 43 10 4C 02 01 4A 00 **0A** F7	01<>0A
LchDelay2	F0 43 10 4C 02 01 4C **0D 24** F7	00<>7F
RchDelay2	F0 43 10 4C 02 01 4E **0D 74** F7	00<>7F
Delay2Level	F0 43 10 4C 02 01 50 00 **00** F7	00<>7F
Dry/Wet**	F0 43 10 4C 02 01 54 00 **28** F7	01<>7F
Var Return	F0 43 10 4C 02 01 56 **40** F7	00<>7F
Var Pan	F0 43 10 4C 02 01 57 **40** F7	00<>7F
Snd Var to Rev	F0 43 10 4C 02 01 58 **00** F7	00<>7F
Snd Var to Chor	F0 43 10 4C 02 01 59 **00** F7	00<>7F
Var Connect	F0 43 10 4C 02 01 5A **00** F7	=Ins;Sys=01
Var Part	F0 43 10 4C 02 01 5B **7F** F7	cf.**Parts**
MW Var CntrlDpth	F0 43 10 4C 02 01 5C **40** F7	00<>7F
Bnd Var CntrlDpth	F0 43 10 4C 02 01 5D **40** F7	00<>7F
Cat Var CntrlDpth	F0 43 10 4C 02 01 5E **40** F7	00<>7F
AC1 Var CntrlDpth	F0 43 10 4C 02 01 5F **40** F7	00<>7F
AC2 Var CntrlDpth	F0 43 10 4C 02 01 60 **40** F7	00<>7F
EqLowFreq	F0 43 10 4C 02 01 72 **1C** F7	08<>28
EqLowGain	F0 43 10 4C 02 01 73 **40** F7	34<>4C
EqHighFreq	F0 43 10 4C 02 01 74 **2E** F7	1C<>3A
EqHighGain	F0 43 10 4C 02 01 75 **40** F7	34<>4C

TABLE 6: **Cross Delay**

Parameter	SysEx	Val Range MSB***&LSB
Type	F0 43 10 4C 02 01 40 **08 00** F7	
L>RDelay	F0 43 10 4C 02 01 42 **0D 24** F7	00<>7F
R>LDelay	F0 43 10 4C 02 01 44 **0D 56** F7	00<>7F
FeedbLevel	F0 43 10 4C 02 01 46 00 **6F** F7	01<>7F
InpSel:L/R/L&R	F0 43 10 4C 02 01 48 00 **01** F7	00/01/02
HighDamp	F0 43 10 4C 02 01 4A 00 **0A** F7	01<>0A
Dry/Wet**	F0 43 10 4C 02 01 54 00 **20** F7	01<>7F
Var Return	F0 43 10 4C 02 01 56 **40** F7	00<>7F
Var Pan	F0 43 10 4C 02 01 57 **40** F7	00<>7F
Snd Var to Rev	F0 43 10 4C 02 01 58 **00** F7	00<>7F
Snd Var to Chor	F0 43 10 4C 02 01 59 **00** F7	00<>7F
Var Connect	F0 43 10 4C 02 01 5A **00** F7	=Ins;Sys=01
Var Part	F0 43 10 4C 02 01 5B **7F** F7	cf.**Parts**
MW Var CntrlDpth	F0 43 10 4C 02 01 5C **40** F7	00<>7F
Bnd Var CntrlDpth	F0 43 10 4C 02 01 5D **40** F7	00<>7F
Cat Var CntrlDpth	F0 43 10 4C 02 01 5E **40** F7	00<>7F
AC1 Var CntrlDpth	F0 43 10 4C 02 01 5F **40** F7	00<>7F
AC2 Var CntrlDpth	F0 43 10 4C 02 01 60 **40** F7	00<>7F
EqLowFreq	F0 43 10 4C 02 01 72 **1C** F7	08<>28
EqLowGain	F0 43 10 4C 02 01 73 **40** F7	34<>4C
EqHighFreq	F0 43 10 4C 02 01 74 **2E** F7	1C<>3A
EqHighGain	F0 43 10 4C 02 01 75 **40** F7	34<>4C

TABLE 7: **Early Reflection**

Parameter	SysEx-default* EarlyRef1	ER2	Val Range LSB
Type	F0 43 10 4C 02 01 40 **09 00** F7	**09 01**	
EF Type:SH,LH, Rdm,Rvs,Plt,Spr	F0 43 10 4C 02 01 42 00 **00** F7	02	00,01, 02,03,04,05
RoomSize	F0 43 10 4C 02 01 44 00 **13** F7	07	00<>2C
Diffusion	F0 43 10 4C 02 01 46 00 **05** F7	0A	00<>0A
InitialDelay	F0 43 10 4C 02 01 48 00 **10** F7	10	00<>3F
FeedbLevel	F0 43 10 4C 02 01 4A 00 **40** F7	40	01<>7F
HPFCutoff	F0 43 10 4C 02 01 4C 00 **00** F7	03	00<>34
LPFCutoff	F0 43 10 4C 02 01 4E 00 **2E** F7	2E	22<>3C
Dry/Wet**	F0 43 10 4C 02 01 54 00 **20** F7	20	01<>7F
Var Return	F0 43 10 4C 02 01 56 **40** F7		00<>7F
Var Pan	F0 43 10 4C 02 01 57 **40** F7		00<>7F
Snd Var to Rev	F0 43 10 4C 02 01 58 **00** F7		00<>7F
Snd Var to Chor	F0 43 10 4C 02 01 59 **00** F7		00<>7F
Var Connect	F0 43 10 4C 02 01 5A **00** F7		=Ins;Sys=01
Var Part	F0 43 10 4C 02 01 5B **7F** F7		cf.**Parts**
MW Var CntrlDpth	F0 43 10 4C 02 01 5C **40** F7		00<>7F
Bnd Var CntrlDpth	F0 43 10 4C 02 01 5D **40** F7		00<>7F
Cat Var CntrlDpth	F0 43 10 4C 02 01 5E **40** F7		00<>7F
AC1 Var CntrlDpth	F0 43 10 4C 02 01 5F **40** F7		00<>7F
AC2 Var CntrlDpth	F0 43 10 4C 02 01 60 **40** F7		00<>7F
Liveness	F0 43 10 4C 02 01 70 **05** F7	05	00<>0A
Density	F0 43 10 4C 02 01 71 **00** F7	02	00,01,02,03
HighDamp	F0 43 10 4C 02 01 72 **0A** F7	0A	01<>0A

TABLE 8: **Gate Reverb & Reverse Gate**

Parameter	SysEx-default* GateRev	RevGate	Val Range LSB
Type	F0 43 10 4C 02 01 40 **0A 00** F7	**0B 00**	
Type: A/B	F0 43 10 4C 02 01 42 00 **00** F7	01	00/01
RoomSize	F0 43 10 4C 02 01 44 00 **0F** F7	13	00<>2C
Diffusion	F0 43 10 4C 02 01 46 00 **06** F7	08	00<>0A
InitialDelay	F0 43 10 4C 02 01 48 00 **02** F7	03	00<>3F
FeedbLevel	F0 43 10 4C 02 01 4A 00 **40** F7	40	01<>7F
HPFCutoff	F0 43 10 4C 02 01 4C 00 **00** F7	00	00<>34
LPFCutoff	F0 43 10 4C 02 01 4E 00 **2C** F7	2F	22<>3C
Dry/Wet**	F0 43 10 4C 02 01 54 00 **20** F7	20	01<>7F
Var Return	F0 43 10 4C 02 01 56 **40** F7		00<>7F
Var Pan	F0 43 10 4C 02 01 57 **40** F7		00<>7F
Snd Var to Rev	F0 43 10 4C 02 01 58 **00** F7		00<>7F
Snd Var to Chor	F0 43 10 4C 02 01 59 **00** F7		00<>7F
Var Connect	F0 43 10 4C 02 01 5A **00** F7		=Ins;Sys=01
Var Part	F0 43 10 4C 02 01 5B **7F** F7		cf.**Parts**
MW Var CntrlDpth	F0 43 10 4C 02 01 5C **40** F7		00<>7F
Bnd Var CntrlDpth	F0 43 10 4C 02 01 5D **40** F7		00<>7F
Cat Var CntrlDpth	F0 43 10 4C 02 01 5E **40** F7		00<>7F
AC1 Var CntrlDpth	F0 43 10 4C 02 01 5F **40** F7		00<>7F
AC2 Var CntrlDpth	F0 43 10 4C 02 01 60 **40** F7		00<>7F
Liveness	F0 43 10 4C 02 01 70 **04** F7	06	00<>0A
Density	F0 43 10 4C 02 01 71 **03** F7	03	00,01,02,03
HighDamp	F0 43 10 4C 02 01 72 **0A** F7	0A	01<>0A

TABLE 9: **Karaoke**

Parameter	SysEx-default* Kar1	Kar2	Kar3	Val Range LSB
Type	F0 43 10 4C 02 01 40 **14 00** F7	**14 01**	**14 02**	
Delay Time	F0 43 10 4C 02 01 42 00 **3F** F7	37	2B	00<>7F
FeedbLevel	F0 43 10 4C 02 01 44 00 **61** F7	69	6E	01<>7F
HPFCutoff	F0 43 10 4C 02 01 46 00 **00** F7	00	0E	00<>34
LPFCutoff	F0 43 10 4C 02 01 48 00 **30** F7	32	35	22<>3C
Dry/Wet**	F0 43 10 4C 02 01 54 00 **40** F7	40	40	01<>7F
Var Return	F0 43 10 4C 02 01 56 **40** F7			00<>7F
Var Pan	F0 43 10 4C 02 01 57 **40** F7			00<>7F
Snd Var to Rev	F0 43 10 4C 02 01 58 **00** F7			00<>7F
Snd Var to Chor	F0 43 10 4C 02 01 59 **00** F7			00<>7F
Var Connect	F0 43 10 4C 02 01 5A **00** F7			=Ins;Sys=01
Var Part	F0 43 10 4C 02 01 5B **7F** F7			cf.**Parts**
MW Var CntrlDpth	F0 43 10 4C 02 01 5C **40** F7			00<>7F
Bnd Var CntrlDpth	F0 43 10 4C 02 01 5D **40** F7			00<>7F
Cat Var CntrlDpth	F0 43 10 4C 02 01 5E **40** F7			00<>7F
AC1 Var CntrlDpth	F0 43 10 4C 02 01 5F **40** F7			00<>7F
AC2 Var CntrlDpth	F0 43 10 4C 02 01 60 **40** F7			00<>7F

TABLE 10: **Chorus** *(as variation effect)*

Parameter	SysEx-default* Chorus1	Ch2	Ch3	Ch4	Val Rnge LSB
Type	F0 43 10 4C 02 01 40 **41 00** F7	**41 01**	**41 02**	**41 08**	
LFO Freq.	F0 43 10 4C 02 01 42 00 **06** F7	08	04	07	00<>7F
LFO PM Depth	F0 43 10 4C 02 01 44 00 **36** F7	3F	2C	20	00<>7F
FeedbLevel	F0 43 10 4C 02 01 46 00 **4D** F7	40	40	45	01<>7F
DelayOffset	F0 43 10 4C 02 01 48 00 **6A** F7	1E	6E	68	00<>7F
EqLowFreq	F0 43 10 4C 02 01 4C 00 **1C** F7	1C	1C	1C	08<>28
EqLowGain	F0 43 10 4C 02 01 4E 00 **40** F7	3E	40	40	34<>4C
EqHighFreq	F0 43 10 4C 02 01 50 00 **2E** F7	2A	2E	2E	1C<>3A
EqHighGain	F0 43 10 4C 02 01 52 00 **40** F7	3A	42	40	34<>4C
Dry/Wet**	F0 43 10 4C 02 01 54 00 **40** F7	40	40	40	01<>7F
Var Return	F0 43 10 4C 02 01 56 **40** F7				00<>7F
Var Pan	F0 43 10 4C 02 01 57 **40** F7				00<>7F
Snd Var to Rev	F0 43 10 4C 02 01 58 **00** F7				00<>7F
Snd Var to Chor	F0 43 10 4C 02 01 59 **00** F7				00<>7F
Var Connect	F0 43 10 4C 02 01 5A **00** F7				=Ins;Sys=01
Var Part	F0 43 10 4C 02 01 5B **7F** F7				cf.**Parts**
MW Var CntrlDpth	F0 43 10 4C 02 01 5C **40** F7				00<>7F
Bnd Var CntrlDpth	F0 43 10 4C 02 01 5D **40** F7				00<>7F
Cat Var CntrlDpth	F0 43 10 4C 02 01 5E **40** F7				00<>7F
AC1 Var CntrlDpth	F0 43 10 4C 02 01 5F **40** F7				00<>7F
AC2 Var CntrlDpth	F0 43 10 4C 02 01 60 **40** F7				00<>7F
Input Mo/St	F0 43 10 4C 02 01 74 **00** F7	00	00	01	00/01

TABLE 11: **Celeste** *(as variation effect)*

Parameter	SysEx-default* Celeste1	Cel2	Cel3	Cel4	ValRngeLSB
Type	F0 43 10 4C 02 01 40 **42 00** F7	**42 01**	**42 02**	**42 08**	
LFO Freq.	F0 43 10 4C 02 01 42 00 **0C** F7	1C	04	07	00<>7F
LFO PM Depth	F0 43 10 4C 02 01 44 00 **20** F7	12	3F	1D	00<>7F
FeedbLevel	F0 43 10 4C 02 01 46 00 **40** F7	5A	2C	40	01<>7F
DelayOffset	F0 43 10 4C 02 01 48 00 **00** F7	02	02	00	00<>7F
EqLowFreq	F0 43 10 4C 02 01 4C 00 **1C** F7	1C	1C	1C	08<>28
EqLowGain	F0 43 10 4C 02 01 4E 00 **40** F7	3E	40	40	34<>4C
EqHighFreq	F0 43 10 4C 02 01 50 00 **2E** F7	2A	2E	33	1C<>3A
EqHighGain	F0 43 10 4C 02 01 52 00 **40** F7	3C	44	42	34<>4C
Dry/Wet**	F0 43 10 4C 02 01 54 00 **7F** F7	54	7F	7F	01<>7F
Var Return	F0 43 10 4C 02 01 56 **40** F7				00<>7F
Var Pan	F0 43 10 4C 02 01 57 **40** F7				00<>7F
Snd Var to Rev	F0 43 10 4C 02 01 58 **00** F7				00<>7F
Snd Var to Chor	F0 43 10 4C 02 01 59 **00** F7				00<>7F
Var Connect	F0 43 10 4C 02 01 5A **00** F7				=Ins;Sys=01
Var Part	F0 43 10 4C 02 01 5B **7F** F7				cf.**Parts**
MW Var CntrlDpth	F0 43 10 4C 02 01 5C **40** F7				00<>7F
Bnd Var CntrlDpth	F0 43 10 4C 02 01 5D **40** F7				00<>7F
Cat Var CntrlDpth	F0 43 10 4C 02 01 5E **40** F7				00<>7F
AC1 Var CntrlDpth	F0 43 10 4C 02 01 5F **40** F7				00<>7F
AC2 Var CntrlDpth	F0 43 10 4C 02 01 60 **40** F7				00<>7F
Input Mo/St	F0 43 10 4C 02 01 74 **00** F7	00	00	01	00/01

TABLE 12: **Flanger** (as variation effect)

Parameter	SysEx-default* Flanger1	Fl2	Fl3	Value Range LSB
Type	F0 43 10 4C 02 01 40 **43 00** F7	**43 01**	**43 08**	
LFO Freq.	F0 43 10 4C 02 01 42 00 **0E** F7	20	03	00<>7F
LFO Depth	F0 43 10 4C 02 01 44 00 **0E** F7	11	6D	00<>7F
FeedbLevel	F0 43 10 4C 02 01 46 00 **68** F7	1A	6D	01<>7F
DelayOffset	F0 43 10 4C 02 01 48 00 **02** F7	02	02	00<>3F
EqLowFreq	F0 43 10 4C 02 01 4C 00 **1C** F7	1C	1C	08<>28
EqLowGain	F0 43 10 4C 02 01 4E 00 **40** F7	40	40	34<>4C
EqHighFreq	F0 43 10 4C 02 01 50 00 **2E** F7	2E	2E	1C<>3A
EqHighGain	F0 43 10 4C 02 01 52 00 **40** F7	3C	40	34<>4C
Dry/Wet**	F0 43 10 4C 02 01 54 00 **60** F7	60	7F	01<>7F
Var Return	F0 43 10 4C 02 01 56 **40** F7			00<>7F
Var Pan	F0 43 10 4C 02 01 57 **40** F7			00<>7F
Snd Var to Rev	F0 43 10 4C 02 01 58 **00** F7			00<>7F
Snd Var to Chor	F0 43 10 4C 02 01 59 **00** F7			00<>7F
Var Connect	F0 43 10 4C 02 01 5A **00** F7			=Ins;Sys=01
Var Part	F0 43 10 4C 02 01 5B **7F** F7			cf.**Parts**
MW Var CntrlDpth	F0 43 10 4C 02 01 5C **40** F7			00<>7F
Bnd Var CntrlDpth	F0 43 10 4C 02 01 5D **40** F7			00<>7F
Cat Var CntrlDpth	F0 43 10 4C 02 01 5E **40** F7			00<>7F
AC1 Var CntrlDpth	F0 43 10 4C 02 01 5F **40** F7			00<>7F
AC2 Var CntrlDpth	F0 43 10 4C 02 01 60 **40** F7			00<>7F
LFO PhaseDiff	F0 43 10 4C 02 01 73 **04** F7	04	04	04<>7C

TABLE 13: **Symphonic**

Parameter	SysEx-default*	Value Range LSB
Type	F0 43 10 4C 02 01 40 **44 00** F7	
LFO Freq.	F0 43 10 4C 02 01 42 00 **0C** F7	00<>7F
LFO Depth	F0 43 10 4C 02 01 44 00 **19** F7	00<>7F
DelayOffset	F0 43 10 4C 02 01 46 00 **10** F7	00<>7F
EqLowFreq	F0 43 10 4C 02 01 4C 00 **1C** F7	08<>28
EqLowGain	F0 43 10 4C 02 01 4E 00 **40** F7	34<>4C
EqHighFreq	F0 43 10 4C 02 01 50 00 **2E** F7	1C<>3A
EqHighGain	F0 43 10 4C 02 01 52 00 **40** F7	34<>4C
Dry/Wet**	F0 43 10 4C 02 01 54 00 **7F** F7	01<>7F
Var Return	F0 43 10 4C 02 01 56 **40** F7	00<>7F
Var Pan	F0 43 10 4C 02 01 57 **40** F7	00<>7F
Snd Var to Rev	F0 43 10 4C 02 01 58 **00** F7	00<>7F
Snd Var to Chor	F0 43 10 4C 02 01 59 **00** F7	00<>7F
Var Connect	F0 43 10 4C 02 01 5A **00** F7	=Ins;Sys=01
Var Part	F0 43 10 4C 02 01 5B **7F** F7	cf.**Parts**
MW Var CntrlDpth	F0 43 10 4C 02 01 5C **40** F7	00<>7F
Bnd Var CntrlDpth	F0 43 10 4C 02 01 5D **40** F7	00<>7F
Cat Var CntrlDpth	F0 43 10 4C 02 01 5E **40** F7	00<>7F
AC1 Var CntrlDpth	F0 43 10 4C 02 01 5F **40** F7	00<>7F
AC2 Var CntrlDpth	F0 43 10 4C 02 01 60 **40** F7	00<>7F

TABLE 14: **Rotary Speaker**

Parameter	SysEx-default*	Value Range LSB
Type	F0 43 10 4C 02 01 40 **45 00** F7	
LFO Freq.	F0 43 10 4C 02 01 42 00 **51** F7	00<>7F
LFO Depth	F0 43 10 4C 02 01 44 00 **23** F7	00<>7F
EqLowFreq	F0 43 10 4C 02 01 4C 00 **18** F7	08<>28
EqLowGain	F0 43 10 4C 02 01 4E 00 **3C** F7	34<>4C
EqHighFreq	F0 43 10 4C 02 01 50 00 **2D** F7	1C<>3A
EqHighGain	F0 43 10 4C 02 01 52 00 **36** F7	34<>4C
Dry/Wet**	F0 43 10 4C 02 01 54 00 **7F** F7	01<>7F
Var Return	F0 43 10 4C 02 01 56 **40** F7	00<>7F
Var Pan	F0 43 10 4C 02 01 57 **40** F7	00<>7F
Snd Var to Rev	F0 43 10 4C 02 01 58 **00** F7	00<>7F
Snd Var to Chor	F0 43 10 4C 02 01 59 **00** F7	00<>7F
Var Connect	F0 43 10 4C 02 01 5A **00** F7	=Ins;Sys=01
Var Part	F0 43 10 4C 02 01 5B **7F** F7	cf.**Parts**
MW Var CntrlDpth	F0 43 10 4C 02 01 5C **40** F7	00<>7F
Bnd Var CntrlDpth	F0 43 10 4C 02 01 5D **40** F7	00<>7F
Cat Var CntrlDpth	F0 43 10 4C 02 01 5E **40** F7	00<>7F
AC1 Var CntrlDpth	F0 43 10 4C 02 01 5F **40** F7	00<>7F
AC2 Var CntrlDpth	F0 43 10 4C 02 01 60 **40** F7	00<>7F

TABLE 15: **Tremolo**

Parameter	SysEx-default*	Val Range LSB
Type	F0 43 10 4C 02 01 40 **46 00** F7	
LFO Freq.	F0 43 10 4C 02 01 42 00 **53** F7	00<>7F
AM Depth	F0 43 10 4C 02 01 44 00 **38** F7	00<>7F
PM Depth	F0 43 10 4C 02 01 46 00 **00** F7	00<>7F
EqLowFreq	F0 43 10 4C 02 01 4C 00 **1C** F7	08<>28
EqLowGain	F0 43 10 4C 02 01 4E 00 **40** F7	34<>4C
EqHighFreq	F0 43 10 4C 02 01 50 00 **2E** F7	1C<>3A
EqHighGain	F0 43 10 4C 02 01 52 00 **40** F7	34<>4C
Var Return	F0 43 10 4C 02 01 56 **40** F7	00<>7F
Var Pan	F0 43 10 4C 02 01 57 **40** F7	00<>7F
Snd Var to Rev	F0 43 10 4C 02 01 58 **00** F7	00<>7F
Snd Var to Chor	F0 43 10 4C 02 01 59 **00** F7	00<>7F
Var Connect	F0 43 10 4C 02 01 5A **00** F7	=Ins;Sys=01
Var Part	F0 43 10 4C 02 01 5B **7F** F7	cf.**Parts**
MW Var CntrlDpth	F0 43 10 4C 02 01 5C **40** F7	00<>7F
Bnd Var CntrlDpth	F0 43 10 4C 02 01 5D **40** F7	00<>7F
Cat Var CntrlDpth	F0 43 10 4C 02 01 5E **40** F7	00<>7F
AC1 Var CntrlDpth	F0 43 10 4C 02 01 5F **40** F7	00<>7F
AC2 Var CntrlDpth	F0 43 10 4C 02 01 60 **40** F7	00<>7F
LFO PhaseDiff	F0 43 10 4C 02 01 73 **40** F7	04<>7C
Input Mo/St	F0 43 10 4C 02 01 74 **00** F7	00/01

TABLE 16: **Auto Pan**

Parameter	SysEx-default*	Val Range LSB
Type	F0 43 10 4C 02 01 40 **47 00** F7	
LFO Freq.	F0 43 10 4C 02 01 42 00 **4C** F7	00<>7F
L/R Depth	F0 43 10 4C 02 01 44 00 **50** F7	00<>7F
F/R Depth	F0 43 10 4C 02 01 46 00 **20** F7	00<>7F
Pan Direction: L<>R,L>R,R>L, Lturn,Rturn,L.R	F0 43 10 4C 02 01 48 00 **05** F7	00,01,02, 03,04,05
EqLowFreq	F0 43 10 4C 02 01 4C 00 **1C** F7	08<>28
EqLowGain	F0 43 10 4C 02 01 4E 00 **40** F7	34<>4C
EqHighFreq	F0 43 10 4C 02 01 50 00 **2E** F7	1C<>3A
EqHighGain	F0 43 10 4C 02 01 52 00 **40** F7	34<>4C
Var Return	F0 43 10 4C 02 01 56 **40** F7	00<>7F
Var Pan	F0 43 10 4C 02 01 57 **40** F7	00<>7F
Snd Var to Rev	F0 43 10 4C 02 01 58 **00** F7	00<>7F
Snd Var to Chor	F0 43 10 4C 02 01 59 **00** F7	00<>7F
Var Connect	F0 43 10 4C 02 01 5A **00** F7	=Ins;Sys=01
Var Part	F0 43 10 4C 02 01 5B **7F** F7	cf.**Parts**
MW Var CntrlDpth	F0 43 10 4C 02 01 5C **40** F7	00<>7F
Bnd Var CntrlDpth	F0 43 10 4C 02 01 5D **40** F7	00<>7F
Cat Var CntrlDpth	F0 43 10 4C 02 01 5E **40** F7	00<>7F
AC1 Var CntrlDpth	F0 43 10 4C 02 01 5F **40** F7	00<>7F
AC2 Var CntrlDpth	F0 43 10 4C 02 01 60 **40** F7	00<>7F

TABLE 17: **Phaser**

Parameter	SysEx-default* Phas1	Phas2	Val Range LSB
Type	F0 43 10 4C 02 01 40 **48 00** F7	**48 08**	
LFO Freq.	F0 43 10 4C 02 01 42 00 **08** F7	08	00<>7F
LFO Depth	F0 43 10 4C 02 01 44 00 **6F** F7	6F	00<>7F
PhaseShftOffset	F0 43 10 4C 02 01 46 00 **4A** F7	4A	00<>7F
FeedbLevel	F0 43 10 4C 02 01 48 00 **68** F7	6C	01<>7F
EqLowFreq	F0 43 10 4C 02 01 4C 00 **1C** F7	1C	08<>28
EqLowGain	F0 43 10 4C 02 01 4E 00 **40** F7	40	34<>4C
EqHighFreq	F0 43 10 4C 02 01 50 00 **2E** F7	2E	1C<>3A
EqHighGain	F0 43 10 4C 02 01 52 00 **40** F7	40	34<>4C
Dry/Wet**	F0 43 10 4C 02 01 54 00 **40** F7	40	01<>7F
Var Return	F0 43 10 4C 02 01 56 **40** F7		00<>7F
Var Pan	F0 43 10 4C 02 01 57 **40** F7		00<>7F
Snd Var to Rev	F0 43 10 4C 02 01 58 **00** F7		00<>7F
Snd Var to Chor	F0 43 10 4C 02 01 59 **00** F7		00<>7F
Var Connect	F0 43 10 4C 02 01 5A **00** F7		=Ins;Sys=01
Var Part	F0 43 10 4C 02 01 5B **7F** F7		cf.**Parts**
MW Var CntrlDpth	F0 43 10 4C 02 01 5C **40** F7		00<>7F
Bnd Var CntrlDpth	F0 43 10 4C 02 01 5D **40** F7		00<>7F
Cat Var CntrlDpth	F0 43 10 4C 02 01 5E **40** F7		00<>7F
AC1 Var CntrlDpth	F0 43 10 4C 02 01 5F **40** F7		00<>7F
AC2 Var CntrlDpth	F0 43 10 4C 02 01 60 **40** F7		00<>7F
Stage	F0 43 10 4C 02 01 70 **06** F7	05	03<>0A
Diffusion	F0 43 10 4C 02 01 71 **01** F7	01	00, 01
LFO PhaseDiff	F0 43 10 4C 02 01 72 **40** F7	04	04<>7C

TABLE 18: **Distortion & Overdrive**

Parameter	SysEx-default* Dist	Ovrdr	Val Range LSB
Type	F0 43 10 4C 02 01 40 **49 00** F7	**4A 00**	
Drive	F0 43 10 4C 02 01 42 00 **28** F7	1D	00<>7F
EqLowFreq	F0 43 10 4C 02 01 44 00 **14** F7	18	08<>28
EqLowGain	F0 43 10 4C 02 01 46 00 **48** F7	44	34<>4C
LPFCutoff	F0 43 10 4C 02 01 48 00 **35** F7	2D	22<>3C
Output Level	F0 43 10 4C 02 01 4A 00 **30** F7	37	00<>7F
EqMidFreq	F0 43 10 4C 02 01 4E 00 **2B** F7	29	1C<>36
EqMidGain	F0 43 10 4C 02 01 50 00 **4A** F7	48	34<>4C
EqMidWidth	F0 43 10 4C 02 01 52 00 **0A** F7	0A	0A<>78
Dry/Wet**	F0 43 10 4C 02 01 54 00 **7F** F7	7F	01<>7F
Var Return	F0 43 10 4C 02 01 56 **40** F7		00<>7F
Var Pan	F0 43 10 4C 02 01 57 **40** F7		00<>7F
Snd Var to Rev	F0 43 10 4C 02 01 58 **00** F7		00<>7F
Snd Var to Chor	F0 43 10 4C 02 01 59 **00** F7		00<>7F
Var Connect	F0 43 10 4C 02 01 5A **00** F7		=Ins;Sys=01
Var Part	F0 43 10 4C 02 01 5B **7F** F7		cf.**Parts**
MW Var CntrlDpth	F0 43 10 4C 02 01 5C **40** F7		00<>7F
Bnd Var CntrlDpth	F0 43 10 4C 02 01 5D **40** F7		00<>7F
Cat Var CntrlDpth	F0 43 10 4C 02 01 5E **40** F7		00<>7F
AC1 Var CntrlDpth	F0 43 10 4C 02 01 5F **40** F7		00<>7F
AC2 Var CntrlDpth	F0 43 10 4C 02 01 60 **40** F7		00<>7F
Edge/ClipCurve	F0 43 10 4C 02 01 70 **78** F7	68	00<>7F

TABLE 19: **Guitar Amp**

Parameter	SysEx-default*	Val Range LSB
Type	F0 43 10 4C 02 01 40 **4B 00** F7	
Drive	F0 43 10 4C 02 01 42 00 **27** F7	00<>7F
AmpType: Off, Stack,Cmbo,Tube	F0 43 10 4C 02 01 44 00 **01** F7	00, 01,02,03
LPFCutoff	F0 43 10 4C 02 01 46 00 **30** F7	22<>3C
Output Level	F0 43 10 4C 02 01 48 00 **37** F7	00<>7F
Dry/Wet**	F0 43 10 4C 02 01 54 00 **7F** F7	01<>7F
Var Return	F0 43 10 4C 02 01 56 **40** F7	00<>7F
Var Pan	F0 43 10 4C 02 01 57 **40** F7	00<>7F
Snd Var to Rev	F0 43 10 4C 02 01 58 **00** F7	00<>7F
Snd Var to Chor	F0 43 10 4C 02 01 59 **00** F7	00<>7F
Var Connect	F0 43 10 4C 02 01 5A **00** F7	=Ins;Sys=01
Var Part	F0 43 10 4C 02 01 5B **7F** F7	cf.**Parts**
MW Var CntrlDpth	F0 43 10 4C 02 01 5C **40** F7	00<>7F
Bnd Var CntrlDpth	F0 43 10 4C 02 01 5D **40** F7	00<>7F
Cat Var CntrlDpth	F0 43 10 4C 02 01 5E **40** F7	00<>7F
AC1 Var CntrlDpth	F0 43 10 4C 02 01 5F **40** F7	00<>7F
AC2 Var CntrlDpth	F0 43 10 4C 02 01 60 **40** F7	00<>7F
Edge/ClipCurve	F0 43 10 4C 02 01 70 **70** F7	00<>7F

TABLE 20: **Auto Wah**

Parameter	SysEx-default*	Val Range LSB
Type	F0 43 10 4C 02 01 40 **4E 00** F7	
LFO Freq.	F0 43 10 4C 02 01 42 00 **46** F7	00<>7F
LFO Depth	F0 43 10 4C 02 01 44 00 **38** F7	00<>7F
CutoffFreqOffset	F0 43 10 4C 02 01 46 00 **27** F7	00<>7F
Resonance	F0 43 10 4C 02 01 48 00 **19** F7	0A<>78
EqLowFreq	F0 43 10 4C 02 01 4C 00 **1C** F7	08<>28
EqLowGain	F0 43 10 4C 02 01 4E 00 **42** F7	34<>4C
EqHighFreq	F0 43 10 4C 02 01 50 00 **2E** F7	1C<>3A
EqHighGain	F0 43 10 4C 02 01 52 00 **40** F7	34<>4C
Dry/Wet**	F0 43 10 4C 02 01 54 00 **7F** F7	01<>7F
Var Return	F0 43 10 4C 02 01 56 **40** F7	00<>7F
Var Pan	F0 43 10 4C 02 01 57 **40** F7	00<>7F
Snd Var to Rev	F0 43 10 4C 02 01 58 **00** F7	00<>7F
Snd Var to Chor	F0 43 10 4C 02 01 59 **00** F7	00<>7F
Var Connect	F0 43 10 4C 02 01 5A **00** F7	=Ins;Sys=01
Var Part	F0 43 10 4C 02 01 5B **7F** F7	cf.**Parts**
MW Var CntrlDpth	F0 43 10 4C 02 01 5C **40** F7	00<>7F
Bnd Var CntrlDpth	F0 43 10 4C 02 01 5D **40** F7	00<>7F
Cat Var CntrlDpth	F0 43 10 4C 02 01 5E **40** F7	00<>7F
AC1 Var CntrlDpth	F0 43 10 4C 02 01 5F **40** F7	00<>7F
AC2 Var CntrlDpth	F0 43 10 4C 02 01 60 **40** F7	00<>7F

TABLE 21: **3-Band Equalizer** *(mono)*

Parameter	SysEx-default*	Val Range LSB
Type	F0 43 10 4C 02 01 40 **4C 00** F7	
EqLowGain	F0 43 10 4C 02 01 42 00 **46** F7	34<>4C
EqMidFreq	F0 43 10 4C 02 01 44 00 **22** F7	1C<>36
EqMidGain	F0 43 10 4C 02 01 46 00 **3C** F7	34<>4C
EqMidWidth	F0 43 10 4C 02 01 48 00 **0A** F7	0A<>78
EqHighGain	F0 43 10 4C 02 01 4A 00 **46** F7	34<>4C
EqLowFreq	F0 43 10 4C 02 01 4C 00 **1C** F7	08<>28
EqHighFreq	F0 43 10 4C 02 01 4E 00 **2E** F7	1C<>3A
Var Return	F0 43 10 4C 02 01 56 **40** F7	00<>7F
Var Pan	F0 43 10 4C 02 01 57 **40** F7	00<>7F
Snd Var to Rev	F0 43 10 4C 02 01 58 **00** F7	00<>7F
Snd Var to Chor	F0 43 10 4C 02 01 59 **00** F7	00<>7F
Var Connect	F0 43 10 4C 02 01 5A **00** F7	=Ins;Sys=01
Var Part	F0 43 10 4C 02 01 5B **7F** F7	cf.**Parts**
MW Var CntrlDpth	F0 43 10 4C 02 01 5C **40** F7	00<>7F
Bnd Var CntrlDpth	F0 43 10 4C 02 01 5D **40** F7	00<>7F
Cat Var CntrlDpth	F0 43 10 4C 02 01 5E **40** F7	00<>7F
AC1 Var CntrlDpth	F0 43 10 4C 02 01 5F **40** F7	00<>7F
AC2 Var CntrlDpth	F0 43 10 4C 02 01 60 **40** F7	00<>7F

TABLE 22: **2-Band Equalizer** *(stereo)*

Parameter	SysEx-default*	Value Range LSB
Type	F0 43 10 4C 02 01 40 **4D 00** F7	
EqLowFreq	F0 43 10 4C 02 01 42 00 **1C** F7	08<>28
EqLowGain	F0 43 10 4C 02 01 44 00 **46** F7	34<>4C
EqHighFreq	F0 43 10 4C 02 01 46 00 **2E** F7	1C<>3A
EqHighGain	F0 43 10 4C 02 01 48 00 **46** F7	34<>4C
Var Return	F0 43 10 4C 02 01 56 **40** F7	00<>7F
Var Pan	F0 43 10 4C 02 01 57 **40** F7	00<>7F
Snd Var to Rev	F0 43 10 4C 02 01 58 **00** F7	00<>7F
Snd Var to Chor	F0 43 10 4C 02 01 59 **00** F7	00<>7F
Var Connect	F0 43 10 4C 02 01 5A **00** F7	=Ins;Sys=01
Var Part	F0 43 10 4C 02 01 5B **7F** F7	cf.**Parts**
MW Var CntrlDpth	F0 43 10 4C 02 01 5C **40** F7	00<>7F
Bnd Var CntrlDpth	F0 43 10 4C 02 01 5D **40** F7	00<>7F
Cat Var CntrlDpth	F0 43 10 4C 02 01 5E **40** F7	00<>7F
AC1 Var CntrlDpth	F0 43 10 4C 02 01 5F **40** F7	00<>7F
AC2 Var CntrlDpth	F0 43 10 4C 02 01 60 **40** F7	00<>7F

NEXT After (1) GM & XG System On, (2) the System-messages, and (3) the Effects, come (4) the Voices themselves: with the *MultiPart* and *DrumSetup* SysEx-messages you select and edit the Voices of the DB50XG.

MultiPart

The MultiPart SysEx messages
In MultiPart you can *select* and *edit* the voices of the DB50XG. (An example of voice selection can be found below the table.)

Why bother with SysEx to select Voices if you can do it with *Controllers*?
Well, knowledge of MultiPart Bank- and Program selection is the key to editing Voices and making new complex sounds by routing Parts to one Channel as well as assigning the voices of the Parts to specific areas to play on your Midi (master-) keyboard: the key range for a part (see below). That's why.

Explanation of table below

- In the table you will find, from left to right: Name, SysEx-default for MultiPart 1, Value Range
- XG MultiPart messages can be recognized by their *Base Address*: F0 43 10 4C **08 xx** .. .. F7. The xx is the hexadecimal number of one particular Part. In the table below are all the *default values for MultiPart 1* (the **00** in: F0 43 10 4C 08 **00** .. .. F7). Further below it is explained how to address MP 2-16.
- To change values: change the bold green hexadecimal numbers in the SysEx messages listed below using the value range indicated. The range is either given directly (in case of a simple on/off switch) or indirectly, i.e., by reference to a hyperlink to the appropriate table. All numbers are hexadecimal. Note that some of the parameters in the table have no effect on the Drum Part (default: MP 10 = in hexadecimals: 09).
- NB The defaults are those given by Yamaha in the DB50XG *Owner's Manual*; they are not necessarily the actual defaults of the DB50XG (so I noticed)!
- "<" = decrement; ">" = increment.
- The parameters in the table that have no effect on the Drum Part are indicated by noDrum.

Name	SysEx-default for MultiPart 1	Value Range	drum?
Element reserve	F0 43 10 4C 08 00 00 **02** F7	all Parts except Drum=00	
Bank select MSB	F0 43 10 4C 08 00 01 **00** F7	NormalVoices =00 NormalSFXVoices =40 DrumVoices =7F DrumSFXVoices =7E	
Bank select LSB	F0 43 10 4C 08 00 02 **00** F7	cf. **NormalVoices**	noDrum
Program number	F0 43 10 4C 08 00 03 **00** F7	cf. **NormalVoices** **SFXVoices** **DrumVoices**	
Rcv channel	F0 43 10 4C 08 00 04 **00** F7	=default Part 1 cf.**Parts**	
Mono/poly mode	F0 43 10 4C 08 00 05 **01** F7	=Poly; Mono=00	noDrum
Same note number (key on assign)	F0 43 10 4C 08 00 06 **01** F7	=Multi,Single=00, Inst=02	
Part mode	F0 43 10 4C 08 00 07 **00** F7	=Normal (exc.Mp09); Drums=01,02,03	
Note shift	F0 43 10 4C 08 00 08 **40** F7	28<40>58 cf.**Transpose**	
Detune	F0 43 10 4C 08 00 09 **08 00** F7	00<08 00>FF (pffff)	
??	F0 43 10 4C 08 00 0A **??** F7	??	
Volume	F0 43 10 4C 08 00 0B **64** F7	00<64>7F	
Velocity sense depth	F0 43 10 4C 08 00 0C **40** F7	00<40>7F	
Velocity sense offset	F0 43 10 4C 08 00 0D **40** F7	00<40>7F	
Pan	F0 43 10 4C 08 00 0E **40** F7	00<40>7F 00=random	
Note limit low	F0 43 10 4C 08 00 0F **00** F7	00<>7F cf. **Octaves**	
Note limit high	F0 43 10 4C 08 00 10 **7F** F7	00<>7F cf. **Octaves**	
Dry level	F0 43 10 4C 08 00 11 **7F** F7	00<>7F	

Name	SysEx-default for MultiPart 1	Value Range	drum?
Chorus send	F0 43 10 4C 08 00 12 **00** F7	00<>7F	
Reverb send	F0 43 10 4C 08 00 13 **28** F7	00<28>7F	
Variation send	F0 43 10 4C 08 00 14 **00** F7	00<>7F	
Vibrato rate	F0 43 10 4C 08 00 15 **40** F7	00<40>7F	
Vibrato depth	F0 43 10 4C 08 00 16 **40** F7	00<40>7F	
Vibrato delay	F0 43 10 4C 08 00 17 **40** F7	00<40>7F	
Filter cutoff freq	F0 43 10 4C 08 00 18 **40** F7	00<40>7F	
Filter resonance	F0 43 10 4C 08 00 19 **40** F7	00<40>7F	
Eg attack time	F0 43 10 4C 08 00 1A **40** F7	00<40>7F	
Eg decay time	F0 43 10 4C 08 00 1B **40** F7	00<40>7F	
Eg release time	F0 43 10 4C 08 00 1C **40** F7	00<40>7F	
Mw pitch control	F0 43 10 4C 08 00 1D **40** F7	28<40>58 cf.**Transpose**	
Mw filter control	F0 43 10 4C 08 00 1E **40** F7	00<40>7F	
Mw amplitude contrl	F0 43 10 4C 08 00 1F **40** F7	00<40>7F	
Mw lfo pmod depth	F0 43 10 4C 08 00 20 **0A** F7	00<0A>7F	
Mw lfo fmod depth	F0 43 10 4C 08 00 21 **00** F7	00<>7F	
Mw lfo amod depth	F0 43 10 4C 08 00 22 **00** F7	00<>7F	
Bend pitch control	F0 43 10 4C 08 00 23 **42** F7	28<40>58 cf.**Transpose**	
Bend filter control	F0 43 10 4C 08 00 24 **40** F7	00<40>7F	
Bend amplitude control	F0 43 10 4C 08 00 25 **40** F7	00<40>7F	
Bnd lfo pmod depth	F0 43 10 4C 08 00 26 **40** F7	00<40>7F	
Bnd lfo fmod depth	F0 43 10 4C 08 00 27 **40** F7	00<40>7F	
Bnd lfo amod depth	F0 43 10 4C 08 00 28 **40** F7	00<40>7F	
Rcv pitch bend	F0 43 10 4C 08 00 30 **01** F7	=On;Off=00	
Rcv ch.aftertouch (cat)	F0 43 10 4C 08 00 31 **01** F7	=On;Off=00	
Rcv program change	F0 43 10 4C 08 00 32 **01** F7	=On;Off=00	
Rcv control change	F0 43 10 4C 08 00 33 **01** F7	=On;Off=00	
Rcv polyaftertouch (pat)	F0 43 10 4C 08 00 34 **01** F7	=On;Off=00	noDrum
Rcv note message	F0 43 10 4C 08 00 35 **01** F7	=On;Off=00	
Rcv rpn	F0 43 10 4C 08 00 36 **01** F7	=On;Off=00	
Rcv nrpn	F0 43 10 4C 08 00 37 **01** F7	=On;Off=00(=GM)	
Rcv modulation	F0 43 10 4C 08 00 38 **01** F7	=On;Off=00	
Rcv volume	F0 43 10 4C 08 00 39 **01** F7	=On;Off=00	
Rcv pan	F0 43 10 4C 08 00 3A **01** F7	=On;Off=00	
Rcv expression	F0 43 10 4C 08 00 3B **01** F7	=On;Off=00	
Rcv hold 1	F0 43 10 4C 08 00 3C **01** F7	=On;Off=00	
Rcv portamento	F0 43 10 4C 08 00 3D **01** F7	=On;Off=00	noDrum
Rcv sostenuto	F0 43 10 4C 08 00 3E **01** F7	=On;Off=00	
Rcv soft pedal	F0 43 10 4C 08 00 3F **01** F7	=On;Off=00	noDrum
Rcv bank select	F0 43 10 4C 08 00 40 **01** F7	=On;Off=00(=GM)	
Scale tuning c	F0 43 10 4C 08 00 41 **40** F7	00<40>7F	noDrum
Scale tuning c#	F0 43 10 4C 08 00 42 **40** F7	00<40>7F	noDrum
Scale tuning d	F0 43 10 4C 08 00 43 **40** F7	00<40>7F	noDrum
Scale tuning d#	F0 43 10 4C 08 00 44 **40** F7	00<40>7F	noDrum
Scale tuning e	F0 43 10 4C 08 00 45 **40** F7	00<40>7F	noDrum
Scale tuning f	F0 43 10 4C 08 00 46 **40** F7	00<40>7F	noDrum
Scale tuning f#	F0 43 10 4C 08 00 47 **40** F7	00<40>7F	noDrum
Scale tuning g	F0 43 10 4C 08 00 48 **40** F7	00<40>7F	noDrum
Scale tuning g#	F0 43 10 4C 08 00 49 **40** F7	00<40>7F	noDrum
Scale tuning a	F0 43 10 4C 08 00 4A **40** F7	00<40>7F	noDrum
Scale tuning a#	F0 43 10 4C 08 00 4B **40** F7	00<40>7F	noDrum
Scale tuning b	F0 43 10 4C 08 00 4C **40** F7	00<40>7F	noDrum

Name	SysEx-default for MultiPart 1	Value Range	drum?
Cat pitch control	F0 43 10 4C 08 00 4D **40** F7	28<40>58 cf.**Transpose**	
Cat filter control	F0 43 10 4C 08 00 4E **40** F7	00<40>7F	
Cat amplitude control	F0 43 10 4C 08 00 4F **40** F7	00<40>7F	
Cat lfo pmod depth	F0 43 10 4C 08 00 50 **00** F7	00<>7F	
Cat lfo fmod depth	F0 43 10 4C 08 00 51 **00** F7	00<>7F	
Cat lfo pmod depth	F0 43 10 4C 08 00 52 **00** F7	00<>7F	
Pat pitch control	F0 43 10 4C 08 00 53 **40** F7	28<40>58 cf.**Transpose**	noDrum
Pat filter control	F0 43 10 4C 08 00 54 **40** F7	00<40>7F	noDrum
Pat amplitude control	F0 43 10 4C 08 00 55 **40** F7	00<40>7F	noDrum
Pat lfo pmod depth	F0 43 10 4C 08 00 56 **00** F7	00<>7F	noDrum
Pat lfo fmod depth	F0 43 10 4C 08 00 57 **00** F7	00<>7F	noDrum
Pat lfo amod depth	F0 43 10 4C 08 00 58 **00** F7	00<>7F	noDrum
Ac1 controller number	F0 43 10 4C 08 00 59 **10** F7	cf. **Controllers**	
Ac1 pitch control	F0 43 10 4C 08 00 5A **40** F7	28<40>58 cf.**Transpose**	
Ac1 filter control	F0 43 10 4C 08 00 5B **40** F7	00<40>7F	
Ac1 amplitude control	F0 43 10 4C 08 00 5C **40** F7	00<40>7F	
ac1 lfo pmod depth	F0 43 10 4C 08 00 5D **00** F7	00<>7F	
Ac1 lfo fmod depth	F0 43 10 4C 08 00 5E **00** F7	00<>7F	
Ac1 lfo amod depth	F0 43 10 4C 08 00 5F **00** F7	00<>7F	
Ac2 controller number	F0 43 10 4C 08 00 60 **11** F7	cf. **Controllers**	
Ac2 pitch control	F0 43 10 4C 08 00 61 **40** F7	28<40>58 cf.**Transpose**	
Ac2 filter control	F0 43 10 4C 08 00 62 **40** F7	00<40>7F	
Ac2 amplitude control	F0 43 10 4C 08 00 63 **40** F7	00<40>7F	
Ac2 lfo pmod depth	F0 43 10 4C 08 00 64 **00** F7	00<>7F	
Ac2 lfo fmod depth	F0 43 10 4C 08 00 65 **00** F7	00<>7F	
Ac2 lfo amod depth	F0 43 10 4C 08 00 66 **00** F7	00<>7F	
Pitch eg initial level	F0 43 10 4C 08 00 69 **40** F7	00<40>7F	noDrum
Pitch eg attack time	F0 43 10 4C 08 00 6A **40** F7	00<40>7F	noDrum
Pitch eg release level	F0 43 10 4C 08 00 6B **40** F7	00<40>7F	noDrum
Pitch eg release time	F0 43 10 4C 08 00 6C **40** F7	00<40>7F	noDrum
Velocity limit low	F0 43 10 4C 08 00 6D **01** F7	01<>7F	
Velocity limit high	F0 43 10 4C 08 00 6E **7F** F7	01<>7F	

Examples

MultiPart parameters of Parts 2-16.
The table above adresses **Part 1** with the 00 byte in each line. In order to address other Parts you must change this number in all the lines of the table. Like this:

from: F0 43 10 4C 08 00 .. .. .. (=Part 1)
to: F0 43 10 4C 08 01 .. .. .. (=Part 2)
or: F0 43 10 4C 08 02 .. .. .. (=Part 3) (cf. **Parts**)

Assigning Channels to Parts
To assign a Channel to a certain Part you must edit the Rcv Channel SysEx (i.e., F0 43 10 4C 08 00 04 .. F7). Like this:

from: F0 43 10 4C 08 **00** 04 **00** F7 (=Part 1 to Channel 1)
to: F0 43 10 4C 08 **01** 04 **01** F7 (=Part 2 to Channel 2)
or: F0 43 10 4C 08 **05** 04 **02** F7 (=Part 6 to Channel 3...!) (etc.)

In this way more than 1 Part can be connected with the Same Channel (more: see below). This is, of course, only interesting if you also change the Bank Select and the Program Number lines. This allows you to create complex new sounds by combining Voices, and also to assign different Voices to specific areas of you keyboard (no matter how primitive this keyboard in itself is [if it has MIDI OUT it works]!)

Voice Selection & Editing

SELECTION
Suppose you want the voice **Ritual** for part 1. Follow these steps:

- Select *Part* 2: F0 43 10 4C 08 00 .. .. (i.e., in all following messages):
- Adjust Bank Select MSB, Bank Select LSB, Program Number. Like this:
  F0 43 10 4C 08 00 **01 00** F7 (=MSB for Ritual)
  F0 43 10 4C 08 00 **02 43** F7 (=LSB for Ritual)
  F0 43 10 4C 08 00 **03 65** F7 (=Prog for Ritual)
- Send it to a particular *Channel* with the Rcv Channel parameter:
  F0 43 10 4C 08 **00** 04 **00** F7 (=Part1 to Channel1)

EDITING
Basically, you edit Parts. This means - in our example - that to edit the voice **Ritual** now you must be sure always to address part 1. Every MultiPart line intended to edit this voice now must, therefore, start with this address:
F0 43 10 4C 08 **00**

Creating complex Sounds & KeyBoard Split

You can create totally new sounds and/or split the KeyBoard Split by routing different Voices assigned to different Parts to the same Channel and defining specific areas of you (master-) keyboard for each Part / Voice. A simple example will show you how to do it. If you know how this works you can do much more elaborate things.

AN EXAMPLE

Say, you want to play a **PickBass** with your left hand and the **DX Phase** piano voice with your right hand. For whatever reason you want to do this by sending Part 2 and Part 3 to Channel 2 (any Part and Channel may be used).

The steps (the order is interchangable):

First: define Part 2 and Part 3 and send them to Channel 2

Part 2: PickBass

- Use the MultiPart SysEx-messages to define the parameters: Bank MSB, Bank LSB and Program Number:
  F0 43 10 4C 08 **01 01 00** F7 (Part 2, Bank MSB, default)
  F0 43 10 4C 08 01 **02 00** F7 (Bank LSB, LSB for PickBass)
  F0 43 10 4C 08 01 **03 22** F7 (Program Number, PickBass)
- Send this Part / Voice to Channel 2:
  F0 43 10 4C 08 01 **04 01** F7 (Rcv Channel, 2)

Part 3: DX Phase

- Use the MultiPart SysEx-messages to define the parameters: Bank MSB, Bank LSB and Program Number:
  F0 43 10 4C 08 **02 01 00** F7 (Part 3, Bank MSB, default)
  F0 43 10 4C 08 02 **02 28** F7 (Bank LSB, LSB for DX Phase)
  F0 43 10 4C 08 02 **03 05** F7 (Program Number, DX Phase)
- Send this Part/Voice also to Channel 2:
  F0 43 10 4C 08 02 **04 01** F7

When you send the SysEx-messages *at this point* bass and piano will be heard simultaniously when you play the keyboard: a new sound is born (Aaaaah). With the MultiPart parameters you can now really dive into the unknown depths of your DB-50XG... But that's up to you - right now we just want to split the keyboard:

Second: define the Split by editing the default parameters for the Key Range for each Part / Voice: Note Limit Low and Note Limit High. You want to define 4 octaves (poor beggar...)

- *Pick Bass, Part 2, to the lower two octaves:* (compare MultiPart & Octaves)
  F0 43 10 4C 08 01 **0F 24** F7 (NtLimitLow ...)
  F0 43 10 4C 08 01 **10 3B** F7 (NtLimitHigh ...)
- *DX Phase, Part 3, to the higher two octaves:*
  F0 43 10 4C 08 02 **0F 3C** F7
  F0 43 10 4C 08 02 **10 53** F7

Third: adjust it to your own taste. E.g.:

- Transpose the Bass -1octave (NoteShift)
  F0 43 10 4C 08 **01 08 34** F7 (PickBass, NoteShift, value)
- Emphazise the piano by adjusting the Volume parameters of both Parts:
  F0 43 10 4C 08 **01 0B 49** F7 (PickBass, Volume, value)
  F0 43 10 4C 08 **02 0B 7A** F7 (DXPhase, Volume, value)
- Give the Piano a bit more Reverb:
  F0 43 10 4C 08 **02 13 60** F7 (DXPhase, Reverb, value)
- To get the balance better you might also want to adjust the sound a bit with the Filter parameters (Cutoff: F0 43 10 4C 08 02 18 .. .. and Resonance: F0 43 10 4C 08 02 19 .. ..). Whatever you like; your imagination is the limit (well, you can of course exceed maximum polyphony, i.e., go beyond 32 Elements played at the same time).
- You can really complicate matters by sending Part 4, Warm Strings (LSB 28, ProgN 31) to Channel 2 as well: to the upper 3 octaves using a long attack time (say: F0 43 10 4C 08 03 1A 6B F7). ...

NEXT What all the MultiPart parameters can do is for YOU to find out... First you might want to know more about the DrumSetup parameters.

DrumSetup

The *DrumSetup* SysEx-messages
Individual Drum Voices can be changed by edited the individual *Notes* using the DrumSetup SysEx-messages below. In order to do so you must know the hexadecimal numbers corresponding to these individual voices. They can be found in the XG Drum Voice List.

Explanation of table below

- In the table you will find, from left to right: Name, SysEx-default for DrumSetup 1, Value Range.
- XG DrumSetup messages can be recognized by their *Base Address*: F0 43 10 4C **3x rr** .. .. F7. The 3x is the hexadecimal number of the chosen DrumSetup. DrumSetup 1 is addressed by F0 43 10 4C **30** .. .. F7 (DrumSetup 2: F0 43 10 4C **31** .. .. F7). The letters **rr** refer to the Note numbers that can be found in the XG Drum Voice List.
- To change values: change the bold green hexadecimal numbers or questionmarks (??) in the SysEx messages listed below using the value range indicated. The range is either given directly (in case of a simple on/off switch) or indirectly, i.e., by reference to a hyperlink to the appropriate table. All numbers are hexadecimal.
- The questionmarks (??) indicate that the default value depends on the Note Number.
- "<" = decrement; ">" = increment.

Name	SysEx-default DrumSetup 1	Value Range
Pitch Course	F0 43 10 4C 30 rr 00 **40** F7	00<40>7F
Pitch Fine	F0 43 10 4C 30 rr 01 **40** F7	00<40>7F
Level	F0 43 10 4C 30 rr 02 **??** F7	00<>7F
Alternate Group	F0 43 10 4C 30 rr 03 **??** F7	00<>7F 00=Off
Pan	F0 43 10 4C 30 rr 04 **??** F7	00<>7F 00=random
Reverb send	F0 43 10 4C 30 rr 05 **??** F7	00<>7F
Chorus send	F0 43 10 4C 30 rr 06 **??** F7	00<>7F
Variation send	F0 43 10 4C 30 rr 07 **7F** F7	00<>7F
Key Assign	F0 43 10 4C 30 rr 08 **00** F7	=Single; Multi=01
Rcv Note Off	F0 43 10 4C 30 rr 09 **??** F7	00=Off;01=On
Rcv Note On	F0 43 10 4C 30 rr 0A **01** F7	=On;00=Off
Filter Cutoff Frequency	F0 43 10 4C 30 rr 0B **40** F7	00<40>7F
Filter Resonance	F0 43 10 4C 30 rr 0C **40** F7	00<40>7F
EG Attack Rate	F0 43 10 4C 30 rr 0D **40** F7	00<40>7F
EG Decay1 Rate	F0 43 10 4C 30 rr 0E **40** F7	00<40>7F
EG Decay2 Rate	F0 43 10 4C 30 rr 0F **40** F7	00<40>7F

EXAMPLE

Lets drastically modify the StandardKit *Vibraslap* voice (Note number: 3A / an "A#" note on the keyboard)

- Listen to "the default VibraSlap"
- Modify Pitch, Pan, the Filter settings, Attack and Decay:
  - F0 43 10 4C 30 **3A 00 25** F7 (**Vibraslap**, **Pitch Course**, **value**)
  - F0 43 10 4C 30 **3A 04 40** F7 (**Vibraslap**, **Pan**, **value**)
  - F0 43 10 4C 30 **3A 0B 20** F7 (**Vibraslap**, **Filter Cutoff Frequency**, **value**)
  - F0 43 10 4C 30 **3A 0C 20** F7 (**Vibraslap**, **Filter Resonance**, **value**)
  - F0 43 10 4C 30 **3A 0D 00** F7 (**Vibraslap**, **EG Attack Rate**, **value**)
  - F0 43 10 4C 30 **3A 0E 10** F7 (**Vibraslap**, **EG Decay1 Rate**, **value**)

(or: F0 43 10 4C 30 **3A 0F 10** F7 (**Vibraslap**, **EG Decay2 Rate** [=slower decay], **value**)

- Check the messages if you like and send them - one after another.
- Listen again ...

Some Essential Tables...

1) Parts

Variation Parts or **Parts to Channel**
The hexadecimal numbers corresponding to Parts 1-16:

Part 1	00
Part 2	01
Part 3	02
Part 4	03
Part 5	04
Part 6	05
Part 7	06
Part 8	07
Part 9	08
Part 10	09 (=default DrumPart)
Part 11	0A
Part 12	0B
Part 13	0C
Part 14	0D
Part 15	0E
Part 16	0F
OFF	7F

2) Hexadecimals 00 to 7F

Amost all the **hexadecimals** you need: from 00 to 7F (i.e. decimal: 0-127 or 1-128). The default values of parameters are often 00, 40, 64 or 7F (=decimal: 0, 64, 100, 127). You can figure out yourself the effect of incrementing or decrementing them. Mind the *value range* indicated for the parameter you change!

00	10	20	30	40	50	60	70
01	11	21	31	41	51	61	71
02	12	22	32	42	52	62	72
03	13	23	33	43	53	63	73
04	14	24	34	44	54	64	74
05	15	25	35	45	55	65	75
06	16	26	36	46	56	66	76
07	17	27	37	47	57	67	77
08	18	28	38	48	58	68	78
09	19	29	39	49	59	69	79
0A	1A	2A	3A	4A	5A	6A	7A
0B	1B	2B	3B	4B	5B	6B	7B
0C	1C	2C	3C	4C	5C	6C	7C
0D	1D	2D	3D	4D	5D	6D	7D
0E	1E	2E	3E	4E	5E	6E	7E
0F	1F	2F	3F	4F	5F	6F	7F

3) Transpose / Note Shift / Pitch

Transposing whole octaves when the default value is 40:

-2oct	28
-1oct	34
default	**40**
+1oct	4C
+2oct	58

Of course you can use all values in between 28<>58:

28	**34**	**40**	**4C**	**58**
29	35	41	4D	
2A	36	42	4E	
2B	37	43	4F	
2C	38	44	50	
2D	39	45	51	
2E	3A	46	52	
2F	3B	47	53	
30	3C	48	54	
31	3D	49	55	
32	3E	4A	56	
33	3F	4B	57	

4) Octaves

In the value range from 00 to 7F the octaves (from C to B) are:

Note	**C - B**
Octave 1	00 - 0B
Octave 2	0C - 17
Octave 3	18 - 23
Octave 4	24 - 2F
Octave 5	30 - 3B
Octave 6	**3C** - 47
Octave 7	48 - 53
Octave 8	54 - 5F
Octave 9	60 - 6B
Octave 10	6C - 7F

On a Keyboard with an even number of octaves (2/4/6) the central C note is 3C (=the hexadecimal number in the table above).

5) XG Normal Voice List

Normal Voices are selected for MultiParts by editing the MP lines for *Bank Select LSB* and *Program Number*. The *Bank Select MSB* must be set to default, i.e. 00. The SysEx-message referred to are:

- Bank Select MSB F0 43 10 4C 08 00 01 00 F7 (=default; *Normal Voices*)
- Bank Select LSB F0 43 10 4C 08 00 02 00 F7 (edit with table below)
- Program Number F0 43 10 4C 08 00 03 00 F7 (edit with table below)
- In table below Bank Select LSB and Program numbers are in hexadecimals **Bold**: Bank 0 (GM) The XG Normal SFX Voices and Drum Voices are further below

LSB	Prog	VoiceName	InstrGroup
00	00	**GrandPiano**(default)	PIANO
01	00	GrandPiano KS	
12	00	MelloGrandPiano	
28	00	Piano&Strings	
29	00	Dream(=+SynthPad)	
00	01	BritePiano	
01	01	BritePiano KS	
00	02	**ElectrGrandPiano**	
01	02	ElectrGrndPiano KS	
20	02	DetConcertPiano80	
28	02	ElectrGrandPiano1	
29	02	ElectrGrandPiano2	
00	03	**HonkyTonk**	
01	03	HonkyTonk KS	
00	04	**ElectronicPiano1**	
01	04	ElectronicPiano1 KS	
12	04	MelloElectrPiano1	
20	04	Chor.ElectrPiano1	
28	04	HardElectronicPiano	
2D	04	VX ElectronicPiano1	
40	04	60sElectronicPiano	
00	05	**ElectronicPiano2**	
01	05	ElectronicPiano2 KS	
20	05	Chor.ElectrPiano2	
21	05	DX Hard	
22	05	DX Legend	
28	05	DX Phase	
29	05	DX+Analog	
2A	05	DX Koto EP	
2D	05	VX ElectronicPiano2	
00	06	**Harpsichord**	
01	06	Harpsichord KS	
19	06	Harpsichord 2	
23	06	Harpsichord 3	
00	07	**Clavichord**	
01	07	Clavichord KS	
1B	07	Clavichord+Wah	
40	07	PulseClavichord	
41	07	PierceClavichord	
00	08	**Celesta**	CHROMATIC
00	09	**Glocken**	PERCUSSION
00	0A	**MusicBox**	
40	0A	Orgel	
00	0B	**Vibes**	
01	0B	VibesK	
2D	0B	HardVibe	
00	0C	**Marimba**	
01	0C	MarimbaK	
40	0C	SineMarimba	
61	0C	Balafon2	
62	0C	Log Drum	
00	0D	**Xylophone**	
00	0E	**TubularBell**	
60	0E	ChurchBell	
61	0E	Carillon	
00	0F	**Dulcimer**	
23	0F	Dulcimer2	
60	0F	Cimbalom	
61	0F	Santur	
00	10	**DrawOrgan**	ORGAN
20	10	DetunedDrawOrgan	
21	10	60s DrawOrgan1	
22	10	60s DrawOrgan2	
23	10	70s DrawOrgan1	
24	10	DrawOrgan2	
25	10	60s DrawOrgan3	
26	10	Even Bar	
28	10	16+2"2/3	
40	10	Organ Ba	
41	10	70s DrawOrgan2	
42	10	CheezOrgan	
43	10	DrawOrgan3	
00	11	**PercussiveOrgan**	
18	11	70s PercOrgan1	
21	11	Detuned PercOrgan	
22	11	LiteOrgan	
25	11	PercussiveOrgan2	
00	12	**RockOrgan**	
40	12	RotaryOrgan	
41	12	SlowRotar	
42	12	FastRotar	
00	13	**ChurchOrgan**	
20	13	ChurchOrgan3	
23	13	ChurchOrgan2	
28	13	NotreDam	
40	13	OrganFlute	
41	13	TremoloOrganFlute	
00	14	**ReedOrgan**	
28	14	PuffOrgan	
00	15	**Accordion**	
20	15	AccordionIt	
00	16	**Harmonica**	
20	16	Harmonica2	
00	17	**TangoAccordion**	
40	17	TangoAccordion2	

LSB	Prog	VoiceName	InstrGroup
00	18	**NylonGuitar**	GUITAR
10	18	NylonGuitar2	
19	18	NylonGuitar3	
2B	18	VelGtHrm	
60	18	Ukelele	
00	19	**SteelGuitar**	
10	19	SteelGuitar2	
23	19	12 SteelGuitar	
28	19	Nylon&Steel	
29	19	Steel & Body	
60	19	Mandolin	
00	1A	**Jazz Guitar**	
12	1A	Mello Guitar	
20	1A	Jazz Amp	
00	1B	**Clean Guitar**	
20	1B	Chorus Guitar	
00	1C	**Mute Guitar**	
28	1C	Funk Guitar 1	
29	1C	MuteSteelGuitar	
2B	1C	Funk Guitar 2	
2D	1C	Jazz Man	
00	1D	**Overdrive**	
2B	1D	Guitar Pinch	
00	1E	**Distorted Guitar**	
28	1E	Feedback Guitar	
29	1E	Feedback Guitar	
00	1F	**Guitar Harmonic**	
41	1F	Guitar Feedback	
42	1F	Guitar Harmonic 2	
00	20	**Acoustic Bass**	BASS
28	20	Jazz Rythm	
2D	20	VX Upright	
00	21	**Fingered Bass**	
12	21	Fingered Dark	
1B	21	Flanged Bass	
28	21	Bass&DistortGuitar	
2B	21	Fingered Slap	
2D	21	Fingered Bass 2	
41	21	Mod Alem	
00	22	**PickBass**	
1C	22	Mute PickBass	
00	23	**Fretless Bass**	
20	23	Fretless Bass 2	
21	23	Fretless Bass 3	
22	23	Fretless Bass 4	
60	23	SynFretlessBass	
61	23	Smooth	
00	24	**SlapBass1**	
1B	24	ResoSlap	
20	24	PunchThm	
00	25	**SlapBass2**	
2B	25	VeloSlap	
00	26	**SynBass1**	
12	26	SynBass1Drk	
14	26	Fast Res Bass	
18	26	Acid Bass	
23	26	Clv Bass	
28	26	Tekno Bass	
40	26	Oscar	
41	26	Sqr Bass	
42	26	Rubber Bass	
60	26	Hammer	
00	27	**SynBass2**	
06	27	Mellow SynBass1	
0C	27	Seq Bass	
12	27	ClkSynBass	
13	27	SynBass2Drk	
20	27	SmthBass 2	
28	27	ModularBass	
29	27	DX Bass	
40	27	X WireBass	
00	28	**Violin**	STRINGS
08	28	Slow Violin	
00	29	**Viola**	
00	2A	**Cello**	
00	2B	**Contrabass**	
00	2C	**Tremolo Strings**	
08	2C	SlowTremoloStrings	
28	2C	Suspense Strings	
00	2D	**Pizzicato Strings**	
00	2E	**Harp**	
28	2E	Yang Chin	
00	2F	**Timpani**	
00	30	**Strings 1**	ENSEMBLE
03	30	Stereo Strings	
08	30	Slow Strings	
18	30	Arco Strings	
23	30	60s Strings	
28	30	Orchestra	
29	30	Orchestra 2	
2A	30	Tremolo Orchestra	
2D	30	Velo Strings	
00	31	**Strings 2**	
03	31	Stereo SlowStrings	
08	31	Legato Strings	
28	31	Warm Strings	
29	31	Kingdom	
40	31	70s Strings	
41	31	String Ensemble 3	
00	32	**Syn. Strings 1**	
1B	32	Reso Strings	
40	32	Syn Strings 4	
41	32	SS Strings	
00	33	**Syn.Strings 2**	
00	34	**Choir Aah**	
03	34	Stereo Choir	
10	34	Choir Aah 2	
20	34	Mel Choir	
28	34	Choir Strings	
00	35	**VoiceOoh**	
00	36	**Synth Voice**	
28	36	Synth Voice 2	
29	36	Choral	
40	36	Ana Voice	
00	37	**Orchestral Hit**	
23	37	Orchestral Hit	
40	37	Impact	
00	38	**Trumpet**	BRASS
10	38	Trumpet 2	
11	38	Brite Trumpet	
20	38	Warm Trumpet	
00	39	**Trombone**	
12	39	Trombone 2	
00	3A	**Tuba**	
10	3A	Tuba 2	
00	3B	**MutedTrumpet**	

LSB	Prog	VoiceName	InstrGroup
00	3C	**French Horn**	(BRASS)
06	3C	French HornSolo	
20	3C	French Horn2	
25	3C	Horn Orchestra	
00	3D	**Brass Section**	
23	3D	Trumpet&TubaSect	
28	3D	Brass Section 2	
29	3D	Hi Brass	
2A	3D	Mellow Brass	
00	3E	**Syn Brass 1**	
0C	3E	Quack Brass	
14	3E	RezSyn Brass	
18	3E	Poly Brass	
1B	3E	Syn Brass 3	
20	3E	Jump Brass	
2D	3E	Ana Vel Brass	
40	3E	Ana Brass1	
00	3F	**Syn Brass 2**	
12	3F	Soft Brass	
28	3F	Syn Brass4	
29	3F	Choir Brass	
2D	3F	Vel Brass	
40	3F	Ana Brass 2	
00	40	**Soprano Sax**	REED
00	41	**Alto Sax**	
28	41	Sax Section	
2B	41	Hypr Alto	
00	42	**Tenor Sax**	
28	42	Breath TenorS	
29	42	Soft TenorS	
40	42	Tenor Sax 2	
00	43	**Bariton Sax**	
00	44	**Oboe**	
00	45	**English Horn**	
00	46	**Bassoon**	
00	47	**Clarinet**	
00	48	**Piccolo**	PIPE
00	49	**Flute**	
00	4A	**Recorder**	
00	4B	**PanFlute**	
00	4C	**Bottle**	
00	4D	**Shakhchi**	
00	4E	**Whistle**	
00	4F	**Ocarina**	
00	50	**SquareLead**	SYNTH
06	50	SquareLead2	LEAD
08	50	LmSquare	
12	50	Hollow	
13	50	Shmoog	
40	50	Mellow	
41	50	SoloSine	
42	50	SineLead	
00	51	**SawtoothLead**	
06	51	SawtoothLead2	
08	51	Thick SawtL	
12	51	Dynamic SawtL	
13	51	Digital SawtL	
14	51	Big Lead	
18	51	Heavy Syn	
19	51	Waspy Syn	
28	51	Pulse Saw	
29	51	Dr. Lead	
60	51	Seq Ana	
00	52	**CalliopeLead**	
41	52	Pure Pad	
00	53	**Chiff Lead**	
40	53	Rubby	
00	54	**CharanLead**	
40	54	Distorted Lead	
41	54	Wire Lead	
00	55	**Voice Lead**	
18	55	Synth Aah	
40	55	Vox Lead	
00	56	**Fifth Lead**	
23	56	Big Five	
00	57	**Bass&Lead**	
10	57	Big&Low	
40	57	Fat&Porky	
41	57	Soft Wurl	
00	58	**NewAge Pad**	SYNTH
40	58	Fantasy 2PAD	
00	59	**Warm Pad**	
10	59	Thick Pad	
11	59	Soft Pad	
12	59	Sine Pad	
40	59	Horn Pad	
41	59	Rotar String	
00	5A	**PolySyn Pad**	
40	5A	Poly Pad 80	
41	5A	Click Pad	
42	5A	Analog Pad	
43	5A	Square Pad	
00	5B	**ChoirPad**	
40	5B	Heaven2	
42	5B	Itopia	
43	5B	CC Pad	
00	5C	**BowedPad**	
40	5C	Glacier	
41	5C	Glass Pad	
00	5D	**MetalPad**	
40	5D	Tine Pad	
41	5D	Pan Pad	
00	5E	**HaloPad**	
00	5F	**SweepPad**	
14	5F	Shwimmer	
1B	5F	Converge	
40	5F	Polar Pad	
41	5F	Celestial	
00	60	**Rain**	SYNTH
2D	60	Clavichord Pad	EFFECTS
40	60	Hrmo Rain	
41	60	African Wind	
42	60	Carribean	
00	61	**SoundTrack**	
1B	61	Prologue	
40	61	Ancestral	
00	62	**Crystal**	
0C	62	SynDrCmp	
0E	62	Popcorn	
12	62	Tiny Bell	
23	62	Round Glock	
28	62	Glock&Chimes	
29	62	ClearBell	
2A	62	ChorBell	

LSB	Prog	VoiceName	InstrGroup
40	62	Synth Mallet	(SYNTH
41	62	Soft Cryst	EFFECTS)
42	62	Loud Glock	
43	62	Xmas Bell	
44	62	VibeBell	
45	62	DigitalBell	
46	62	AirBells	
47	62	Bell Harp	
48	62	Gamelemba	
00	63	**Atmosphere**	
12	63	WarmAtmosphere	
13	63	Hollow Rls	
28	63	NylonEP	
40	63	Nylon Harp	
41	63	Harp Vox	
42	63	Atmosphere Pad	
43	63	Planet	
00	64	**Bright**	
40	64	FantasyBell	
60	64	Smokey	
00	65	**Goblins**	
40	65	GobSyn	
41	65	50sSciFi	
42	65	Ring Pad	
43	65	Ritual	
44	65	To Heaven	
46	65	Night	
47	65	Glisten	
60	65	BelChoir	
00	66	**Echoes**	
08	66	Echo Pad 2	
0E	66	Echo Pan	
40	66	Echo Bell	
41	66	Big Pan	
42	66	Syn Piano	
43	66	Creation	
44	66	Stardust	
45	66	Reso Pan	
00	67	**Sci-Fi**	
40	67	Starz	
00	68	**Sitar**	ETHNIC
20	68	Det Sitar	
23	68	Sitar 2	
60	68	Tambra	
61	68	Tamboura	
00	69	**Banjo**	
1C	69	Mute Banjo	
60	69	Rabab	
61	69	Gopichnt	
62	69	Oud	
00	6A	**Shamisen**	
00	6B	**Koto**	
60	6B	T.Koto	
61	6B	Kanoon	
00	6C	**Kalimba**	
00	6D	**Bagpipe**	
00	6E	**Fiddle**	
00	6F	**Shanai**	
40	6F	Shanai 2	
60	6F	Pungi	
61	6F	Hichriki	

LSB	Prog	VoiceName	InstrGroup
00	70	**TinkleBell**	PERCUSSIVE
60	70	Bonang	
61	70	Gender	
62	70	Gamelan	
63	70	S. Gamelan	
64	70	Rama Cym	
65	70	Asian Bell	
00	71	**Agogo**	
00	72	**SteelDrum**	
61	72	GlasPerc	
62	72	ThaiBell	
00	73	**WoodBlok**	
60	73	Castanet	
00	74	**TaikoDrm**	
60	74	Gr. Cassa	
00	75	**Melod Tom**	
40	75	Melod Tom 2	
41	75	Real Tom	
42	75	Rock Tom	
00	76	**Syn.Drum**	
40	76	Ana Tom	
41	76	Elec Perc	
00	77	**Rev.Cymbal**	
00	78	**FretNoise**	SOUND
00	79	**BreathNoise**	EFFECTS
00	7A	**Seashore**	
00	7B	**BirdTweet**	
00	7C	**Telephone**	
00	7D	**Helicopter**	
00	7E	**Applause**	
00	7F	**Gunshot**	

6) XG Normal SFX Voice List

Normal SFX Voices are selected for MultiParts by editing the MP Program Number line. The Bank Select MSB must be set to 40, and the Bank Select LSB must be 00 (=default). The MultiPart SysEx-message lines to which I am referring here are:

- Bank Select MSB: F0 43 10 4C 08 00 01 40 F7(*Normal SFX*)
- Bank Select LSB: F0 43 10 4C 08 00 02 00 F7(=default)
- Program Number: F0 43 10 4C 08 00 03 00 F7(edit with table below)

Prog	VoiceName
00	Guitar Cutting Noise
01	Guitar Cutting Noise2
03	StringSlap
10	Fl.KeyClck
20	Rain
21	Thunder
22	Wind
23	Stream
24	Bubble
25	Feed
30	Dog
31	Horse Gallop
31	Bird2
36	Ghost
37	Maou
40	TelephoneDailTone
41	DoorCreak
42	DoorSlam
43	Scratch
44	Scratch2
45	WindChime
46	TelephoneRing
50	CarEngineStart
51	CarStop
52	CarPassing
53	CarCrash
54	Siren
55	Train
56	Jetplane
57	StarShip
58	BurstNoise
59	Coaster
5A	SubMarine
60	Laughing
61	Screaming
62	Punch
63	HeartBeat
64	FootSteps
70	MachineGun
71	LaserGun
72	Explosion
73	Firework

7) XG Drum Voice List

The two tables below serve two main purposes

- to select and edit entire DrumKits
- to select and edit the individual DrumVoices of these Kits

Drum Kits are selected for MultiParts by editing the MP lines for Bank Select MSB and Program Number. The Bank Select MSB can be set to 7F (=default) or 7E (SFX Drum1&2); there are 11 possible Program Numbers (see table below). The Bank Select LSB must be set to default, i.e. 00 (so don't change LSB if you select Drum Voices...). The MultiPart SysEx-message lines to which I am referring here are:

Bank MSB for Drum Voices:
F0 43 10 4C 08 09 01 7F F7 (=default: all DrumKits except SFXDrum1&2 =7E)

Bank LSB for Drum Voices:
F0 43 10 4C 08 09 02 00 F7 (=default, you don't have to change that)

Program Number:
F0 43 10 4C 08 09 03 00 F7 (=default, edit with table below)

(The Drum Kits are, by default, assigned to MultiPart 10: F0 43 10 4C 08 09 ..)

Individual Drum Voices of each Kit can be modified by selecting and editing the individual *Notes* (rr) in the DrumSetup Table. In order to do so you must know the numbers corresponding to these individual voices. These hexadecimal Note Numbers can be found in the tables below (=N#; first column).
For your convenience the actual notes are mentioned next (=N, 2nd column).
In the following columns you will find the individual Drum Voices; each of these columns has a Bank MSB and Program Number which corresponds to one of the DrumKits lined up horizontally (first two rows of the tables).
The empty space in a column indicates: this Voice in this Kit is identical to the Voice mentioned in the Standard-Kit column.
The shaded cells indicate: No Sound.

XG Drum Voice List 1: **Kits: Standard, Standard 2, Room, Rock, Electro, Analog**

		MSB 7F Prog# 00	**7F 01**	**7F 08**	**7F 10**	**7F 18**	**7F 19**
N#	**N**	**Standard Kit**	**Standard2 Kit**	**Room Kit**	**Rock Kit**	**Electro Kit**	**Analog Kit**
0D	C#-1	SurdoMute					
0E	D-1	SurdoOpen					
0F	D#-1	HiQ					
10	E-1	WhipSlap					
11	F-1	ScratchPush					
12	F#-1	ScratchPull					
13	G-1	FingerSnap					
14	G#-1	ClickNoise					
15	A-1	MetronomeClick					
16	A#-1	MetronomeBell					
17	B-1	SeqClickL					
18	C0	SeqClickH					
19	C#0	BrushTap					
1A	D0	BrushSwirlL					
1B	D#0	BrushSlap					
1C	E0	BrushSwirlH				ReverseCym	ReverseCym
1D	F0	SnareRoll	SnRoll2				
1E	F#0	Castanet				HiQ	HiQ
1F	G0	SnareL	SnL2		SDRkM	SnM	SDRkH
20	G#0	Sticks					
21	A0	BassDrumL			BDM	BDH4	BDM
22	A#0	OpenRimShot	OpenRim2				
23	B0	BassDrumM	BDM2		BDH3	BDRk	BDAnL
24	C1	BassDrumH	BDH2		BDRk	BDGate	BDAnH
25	C#1	SideStick					AnSideSt
26	D1	SnareM	SnM2	SDRmL	SDRk	SDRkL	AnSnL
27	D#1	HandClap					
28	E1	SnareH	SnH2	SDRmH	SDRkRim	SDRkH	AnSnH
29	F1	FloorTomL		RmTom1	RkTom1	ETom1	AnTom1
2A	F#1	Hi-HatClosed					AnHHClo1
2B	G1	FloorTomH		RmTom2	RkTom2	ETom2	AnTom2
2C	G#1	Hi-HatPedal					AnHHClo2
2D	A1	LowTom		RmTom3	RkTom3	ETom3	AnTom3
2E	A#1	Hi-HatOpen					AnHHOpen
2F	B1	MidTomL		RmTom4	RkTom4	ETom4	AnTom4
30	C2	MidTomH		RmTom5	RkTom5	ETom5	AnTom5
31	C#2	CrashCymbal1					AnCymbal
32	D2	HighTom		RmTom6	RkTom6	ETom6	AnTom6
33	D#2	RideCymbal1					
34	E2	ChineseCymbal					
35	F2	RideCymbalCup					
36	F#2	Tambourine					
37	G2	SplashCymbal					
38	G#2	Cowbell					AnCowbll
39	A2	CrashCymbal2					
3A	A#2	Vibraslap					
3B	B2	RideCymbal2					
3C	C3	BongoH					
3D	C#3	BongoL					
3E	D3	CongaHMute					AnCongH
3F	D#3	CongaHOpen					AnCongM
40	E3	CongaL					AnCongL
41	F3	TimbaleH					
42	F#3	TimbaleL					
43	G3	AgogoH					
44	G#3	AgogoL					
45	A3	Cabasa					
46	A#3	Maracas					AnMarac
47	B3	SambaWhistleH					
48	C4	SambaWhistleL					
49	C#4	GuiroShort					
4A	D4	GuiroLong					
4B	D#4	Claves					AnClaves
4C	E4	WoodBlockH					
4D	F4	WoodBlockL					
4E	F#4	CuicaMute				ScratchPush	ScratchPush
4F	G4	CuicaOpen				ScratchPull	ScratchPull
50	G#4	TriangleMute					
51	A4	TriangleOpen					
52	A#4	Shaker					
53	B4	JingleBell					
54	C5	BellTree					
55	C#5	[Nosound]					
56	D5	[Nosound]					
57	D#5	[Nosound]					
58	E5	[Nosound]					
59	F5	[Nosound]					
5A	F#5	[Nosound]					
5B	G5	[Nosound]					

XG Drum Voice List 2: **Kits: Standard, Jazz, Brush, Classic, SFX 1, 2**

		MSB 7F Prog# 00	7F 01	7F 08	7F 10	7F 18	7F 19
N#	**N**	**Standard Kit**	**Jazz Kit**	**Brush Kit**	**Classic Kit**	**SFX 1 Kit**	**SFX 2 Kit**
0D	C#-1	SurdoMute					
0E	D-1	SurdoOpen					
0F	D#-1	HiQ					
10	E-1	WhipSlap					
11	F-1	ScratchPush					
12	F#-1	ScratchPull					
13	G-1	FingerSnap					
14	G#-1	ClickNoise					
15	A-1	MetronomeClick					
16	A#-1	MetronomeBell					
17	B-1	SeqClickL					
18	C0	SeqClickH					
19	C#0	BrushTap					
1A	D0	BrushSwirlL					
1B	D#0	BrushSlap					
1C	E0	BrushSwirlH					
1D	F0	SnareRoll					
1E	F#0	Castanet					
1F	G0	SnareL		BrSlapL			
20	G#0	Sticks					
21	A0	BassDrumL			BassDL2		
22	A#0	OpenRimShot					
23	B0	BassDrumM			GranCassa		
24	C1	BassDrumH	BDJzz	BDSoft	GranCassMt	GuitCutting	DailTone
25	C#1	SideStick				GuitCutting2	DoorCreak
26	D1	SnareM		BrSlap	MarchSnM		DoorSlam
27	D#1	HandClap				StringSlap	Scratch
28	E1	SnareH		BrTap	MarchSnH		Scratch2
29	F1	FloorTomL	JzzTom1	BrTom1	JzzTom1		WindChime
2A	F#1	Hi-HatClosed					TelephRing
2B	G1	FloorTomH	JzzTom2	BrTom2	JzzTom2		
2C	G#1	Hi-HatPedal					
2D	A1	LowTom	JzzTom3	BrTom3	JzzTom3		
2E	A#1	Hi-HatOpen					
2F	B1	MidTomL	JzzTom4	BrTom4	JzzTom4		
30	C2	MidTomH	JzzTom5	BrTom5	JzzTom5		
31	C#2	CrashCymbal1			HndCymO.L		
32	D2	HighTom	JzzTom6	BrTom6	JzzTom6		
33	D#2	RideCymbal1			HndCymbCl.L		
34	E2	ChineseCymbal				Fl.KeyClick	EngineStart
35	F2	RideCymbalCup					TireScreech
36	F#2	Tambourine					CarPassing
37	G2	SplashCymbal					Crash
38	G#2	Cowbell					Siren
39	A2	CrashCymbal2			HndCymbOp.H		Train
3A	A#2	Vibraslap					Jetplane
3B	B2	RideCymbal2			HndCymbCl.H		StarShip
3C	C3	BongoH					Burst Noise
3D	C#3	BongoL					Coaster
3E	D3	CongaHMute					SubMarine
3F	D#3	CongaHOpen					
40	E3	CongaL					
41	F3	TimbaleH					
42	F#3	TimbaleL					
43	G3	AgogoH					
44	G#3	AgogoL				Rain	Laughing
45	A3	Cabasa				Thunder	Screaming
46	A#3	Maracas				Wind	Punch
47	B3	SambaWhistleH				Stream	HeartBeat
48	C4	SambaWhistleL				Bubble	FootSteps
49	C#4	GuiroShort				Feed	
4A	D4	GuiroLong					
4B	D#4	Claves					
4C	E4	WoodBlockH					
4D	F4	WoodBlockL					
4E	F#4	CuicaMute					
4F	G4	CuicaOpen					
50	G#4	TriangleMute					
51	A4	TriangleOpen					
52	A#4	Shaker					
53	B4	JingleBell					
54	C5	BellTree				Dog	MachineGun
55	C#5	[Nosound]				HorseGallop	LaserGun
56	D5	[Nosound]				Bird2	Explosion
57	D#5	[Nosound]					Firework
58	E5	[Nosound]					
59	F5	[Nosound]					
5A	F#5	[Nosound]				Ghost	
5B	G5	[Nosound]				Maou	

8) Controller List

If you want to select an *Adjustable Controller* (range: 00<>5F): you need the hexadecimal numbers in the first column of the table below. Note that *all* hexadecimals between 00 and 5F may be used, but only those controllers are listed which are actually used by XG (and GM).
For obvious (non-sysex) purposes the decimal numbers and range are included as well :-)

Hexadecimal	ControllerName	Decimal	Range
00	Bank MSB	0	0-127
01	Modulation Wheel	1	0-127
05	Portamento Time	5	0-127
06	MSB Data Entry	6	0-127
07	Main Volume	7	0-127
0A	Pan	10	0-127
0B	Expression	11	0-127
20	Bank LSB	32	0-127
26	LSB Data Entry	38	0-127
40	Sustain Hold	16	40=Off / 127=On
41	Portamento Switch	65	0=Off / 127=On
42	Sostenuto Switch	66	0=Off / 127=On
43	Soft Pedal	67	0=Off / 127=On
47	Harmonic Cntnt (Reson.)	71	0-127
48	Release Time	72	0-127
49	Attack Time	73	0-127
50	Brightness (Cutoff Freq)	74	0-127
54	Portamento Control	84	0-127
5B	Reverb Depth	91	0-127
5D	Chorus Depth	93	0-127
	Variation Depth	94	0-127
	Data Increment	96	0 or 127
	Data Decrement	97	0 or 127
	Non Reg. Parameter LSB	98	0-127
	Non Reg. Parameter MSB	99	0-127
	Reg. Parameter LSB	100	0-127
	Reg. Parameter MSB	101	0-127
	All Sounds Off	120	0
	Reset All controllers	121	127
	All Notes Off	123	0
	Omni Off	124	0
	Omni On	125	0
	Mono On	126	0-16
	Poly On	127	0

XG SysEx List

A quite comprehensive list of SysEx-messages. The most important messages are pointed out with an asterisk (*). Those with the "xx" are not used by default (but can, e.g. when you select another Reverb Type). The "??" in combination with "nn" means that values depend on selection of a particular note (drumvoice). Use of this table? Quick reference.

Reset	
F0 7E 7F 09 01 F7*	GM
F0 43 10 4C 00 00 7E 00 F7*	XG
System:	
F0 43 10 4C 00 00 00 00 04 00 00 F7	MTune
F0 43 10 4C 00 00 04 7F F7	MVolume
F0 43 10 4C 00 00 06 40 F7	Transpose
F0 43 10 4C 00 00 7D 00 F7	DSReset
F0 43 10 4C 00 00 7E 00 F7	XG
F0 43 10 4C 00 00 7F 00 F7	Par.reset
Reverb:	
F0 43 10 4C 02 01 00 01 00 F7*	Type
F0 43 10 4C 02 01 02 12 F7	Time
F0 43 10 4C 02 01 03 0A F7	Diffus
F0 43 10 4C 02 01 04 08 F7	InDel
F0 43 10 4C 02 01 05 0D F7	Hpf
F0 43 10 4C 02 01 06 31 F7	Lpf
F0 43 10 4C 02 01 07 xx F7	Width
F0 43 10 4C 02 01 08 xx F7	Height
F0 43 10 4C 02 01 09 xx F7	Depth
F0 43 10 4C 02 01 0A xx F7	WallV
F0 43 10 4C 02 01 0B 28 F7	Dry/Wet
F0 43 10 4C 02 01 0C 40 F7	R.Return
F0 43 10 4C 02 01 0D 40 F7	R.Pan
F0 43 10 4C 02 01 10 00 F7	R.Delay
F0 43 10 4C 02 01 11 04 F7	Density
F0 43 10 4C 02 01 12 32 F7	Er/RevBal
F0 43 10 4C 02 01 13 xx F7	..
F0 43 10 4C 02 01 14 40 F7	Feedback
F0 43 10 4C 02 01 15 xx F7	..
Chorus:	
F0 43 10 4C 02 01 20 41 00 F7*	Type
F0 43 10 4C 02 01 22 06 F7	LfoF
F0 43 10 4C 02 01 23 36 F7	LfopmF
F0 43 10 4C 02 01 24 4D F7	FeedbLev
F0 43 10 4C 02 01 25 6A F7	Del.Offs
F0 43 10 4C 02 01 26 xx F7	..
F0 43 10 4C 02 01 27 1C F7	EqLFreq
F0 43 10 4C 02 01 28 40 F7	EqLGain
F0 43 10 4C 02 01 29 2E F7	EqHFreq
F0 43 10 4C 02 01 2A 40 F7	EqHGain
F0 43 10 4C 02 01 2B 40 F7	Dry/Wet
F0 43 10 4C 02 01 2C 40 F7	C.Return
F0 43 10 4C 02 01 2D 40 F7	C.Pan
F0 43 10 4C 02 01 2E 00 F7	Ch>Rev
F0 43 10 4C 02 01 30 xx F7	..
F0 43 10 4C 02 01 31 xx F7	..
F0 43 10 4C 02 01 32 xx F7	..
F0 43 10 4C 02 01 33 xx F7	LfoPhDiff
F0 43 10 4C 02 01 34 00 F7	Input
F0 43 10 4C 02 01 35 xx F7	..
Variation:	
F0 43 10 4C 02 01 40 05 00 F7*	Type
F0 43 10 4C 02 01 42 0A 05 F7	p.1
F0 43 10 4C 02 01 44 0D 03 F7	p.2
F0 43 10 4C 02 01 46 27 08 F7	p.3
F0 43 10 4C 02 01 48 27 08 F7	p.4
F0 43 10 4C 02 01 4A 00 4A F7	p.5
F0 43 10 4C 02 01 4C 00 64 F7	p.6
F0 43 10 4C 02 01 4E 00 0A F7	p.7
F0 43 10 4C 02 01 50 xx xx F7	p.8
F0 43 10 4C 02 01 52 xx xx F7	p.9
F0 43 10 4C 02 01 54 00 20 F7	p.10 D/W
F0 43 10 4C 02 01 56 40 F7	V.Return
F0 43 10 4C 02 01 57 40 F7	V.Pan
F0 43 10 4C 02 01 58 00 F7	Var>Rev
F0 43 10 4C 02 01 59 00 F7	Var>Chor
F0 43 10 4C 02 01 5A 00 F7*	V.Conn
F0 43 10 4C 02 01 5B 7F F7	V.Part
F0 43 10 4C 02 01 5C 40 F7	mwV.CD
F0 43 10 4C 02 01 5D 40 F7	bndV.CD
F0 43 10 4C 02 01 5E 40 F7	catV.CD
F0 43 10 4C 02 01 5F 40 F7	ac1V.CD
F0 43 10 4C 02 01 60 40 F7	ac2V.CD
F0 43 10 4C 02 01 70 xx F7	p.11
F0 43 10 4C 02 01 71 xx F7	p.12
F0 43 10 4C 02 01 72 1C F7	p.13
F0 43 10 4C 02 01 73 40 F7	p.14
F0 43 10 4C 02 01 74 2E F7	p.15
F0 43 10 4C 02 01 75 40 F7	p.16

MultiPart (part1=08 **00**):	
F0 43 10 4C 08 00 00 02 F7	El.res
F0 43 10 4C 08 00 01 00 F7	MSB
F0 43 10 4C 08 00 02 00 F7	LSB
F0 43 10 4C 08 00 03 00 F7	Prog
F0 43 10 4C 08 00 04 00 F7	Chan
F0 43 10 4C 08 00 05 01 F7	M/Pmode
F0 43 10 4C 08 00 06 01 F7	SNno
F0 43 10 4C 08 00 07 00 F7	Partmode
F0 43 10 4C 08 00 08 40 F7	NoteShift
F0 43 10 4C 08 00 09 08 00 F7	Detune
F0 43 10 4C 08 00 0A xx F7	..
F0 43 10 4C 08 00 0B 64 F7	Volume
F0 43 10 4C 08 00 0C 40 F7	VelSD
F0 43 10 4C 08 00 0D 40 F7	VelSO
F0 43 10 4C 08 00 0E 40 F7	Pan
F0 43 10 4C 08 00 0F 00 F7	NotelmL
F0 43 10 4C 08 00 10 7F F7	NoteLmH
F0 43 10 4C 08 00 11 7F F7	DryLevel
F0 43 10 4C 08 00 12 00 F7	Cho.Send
F0 43 10 4C 08 00 13 28 F7	Rev.Send
F0 43 10 4C 08 00 14 00 F7	Var.Send
F0 43 10 4C 08 00 15 40 F7	VibRate
F0 43 10 4C 08 00 16 40 F7	VibDepth
F0 43 10 4C 08 00 17 40 F7	VibDelay
F0 43 10 4C 08 00 18 40 F7	FCutFreq
F0 43 10 4C 08 00 19 40 F7	FReson
F0 43 10 4C 08 00 1A 40 F7	EGAtt
F0 43 10 4C 08 00 1B 40 F7	EGDec
F0 43 10 4C 08 00 1C 40 F7	EGRel
F0 43 10 4C 08 00 1D 40 F7	MWPitC
F0 43 10 4C 08 00 1E 40 F7	MWFilC
F0 43 10 4C 08 00 1F 40 F7	MWAmpC
F0 43 10 4C 08 00 20 0A F7	MWLfoPmD
F0 43 10 4C 08 00 21 00 F7	MWLfoFmD
F0 43 10 4C 08 00 22 00 F7	MWLfoAmD
F0 43 10 4C 08 00 23 42 F7	BndPitC
F0 43 10 4C 08 00 24 40 F7	BndFilC
F0 43 10 4C 08 00 25 40 F7	BndAmpC
F0 43 10 4C 08 00 26 40 F7	BndLfoPmD
F0 43 10 4C 08 00 27 40 F7	BndLfoFmD
F0 43 10 4C 08 00 28 40 F7	BndLfoAmD
F0 43 10 4C 08 00 30 01 F7	RcvPitchB
F0 43 10 4C 08 00 31 01 F7	RcvCat
F0 43 10 4C 08 00 32 01 F7	RcvProgCh
F0 43 10 4C 08 00 33 01 F7	RcvCntrCh
F0 43 10 4C 08 00 34 01 F7	RcvPat
F0 43 10 4C 08 00 35 01 F7	RcvNoteM
F0 43 10 4C 08 00 36 01 F7	RcvRPN
F0 43 10 4C 08 00 37 01 F7	RcvNRPN
F0 43 10 4C 08 00 38 01 F7	RcvMod
F0 43 10 4C 08 00 39 01 F7	RcvVol
F0 43 10 4C 08 00 3A 01 F7	RcvPan
F0 43 10 4C 08 00 3B 01 F7	RcvExpr
F0 43 10 4C 08 00 3C 01 F7	RcvHold1
F0 43 10 4C 08 00 3D 01 F7	RcvPort
F0 43 10 4C 08 00 3E 01 F7	RcvSost
F0 43 10 4C 08 00 3F 01 F7	RcvSftPed
F0 43 10 4C 08 00 40 01 F7	RcvBnkSel
F0 43 10 4C 08 00 41 40 F7	ScT C
F0 43 10 4C 08 00 42 40 F7	ScT C#
F0 43 10 4C 08 00 43 40 F7	ScT D
F0 43 10 4C 08 00 44 40 F7	ScT D#
F0 43 10 4C 08 00 45 40 F7	ScT E
F0 43 10 4C 08 00 46 40 F7	ScT F
F0 43 10 4C 08 00 47 40 F7	ScT F#
F0 43 10 4C 08 00 48 40 F7	ScT G
F0 43 10 4C 08 00 49 40 F7	ScT G#
F0 43 10 4C 08 00 4A 40 F7	ScT A
F0 43 10 4C 08 00 4B 40 F7	ScT A#
F0 43 10 4C 08 00 4C 40 F7	ScT B
F0 43 10 4C 08 00 4D 40 F7	CatPitC
F0 43 10 4C 08 00 4E 40 F7	CatFilC
F0 43 10 4C 08 00 4F 40 F7	CatAmpC
F0 43 10 4C 08 00 50 00 F7	CatLfoPmD
F0 43 10 4C 08 00 51 00 F7	CatLfoFmD
F0 43 10 4C 08 00 52 00 F7	CatLfoAmD
F0 43 10 4C 08 00 53 40 F7	PatPitC
F0 43 10 4C 08 00 54 40 F7	PatFilC
F0 43 10 4C 08 00 55 40 F7	PatAmpC

F0 43 10 4C 08 00 56 00 F7	PatLfoPmD
F0 43 10 4C 08 00 57 00 F7	PatLfoFmD
F0 43 10 4C 08 00 58 00 F7	PatLfoAmD
F0 43 10 4C 08 00 59 10 F7	Ac1CntrlN
F0 43 10 4C 08 00 5A 40 F7	Ac1PittchC
F0 43 10 4C 08 00 5B 40 F7	Ac1FilterC
F0 43 10 4C 08 00 5C 40 F7	Ac1AmpC
F0 43 10 4C 08 00 5D 00 F7	Ac1LfoPmD
F0 43 10 4C 08 00 5E 00 F7	Ac1LfoFmD
F0 43 10 4C 08 00 5F 00 F7	Ac1LfoAmD
F0 43 10 4C 08 00 60 11 F7	Ac2CntrlN
F0 43 10 4C 08 00 61 40 F7	Ac2PittchC
F0 43 10 4C 08 00 62 40 F7	Ac2FilterC
F0 43 10 4C 08 00 63 40 F7	Ac2AmpC
F0 43 10 4C 08 00 64 00 F7	Ac2LfoPmD
F0 43 10 4C 08 00 65 00 F7	Ac2LfoFmD
F0 43 10 4C 08 00 66 00 F7	Ac2LfoAmD
F0 43 10 4C 08 00 69 40 F7	PtchEGInLev
F0 43 10 4C 08 00 6A 40 F7	PtchEGAttTm
F0 43 10 4C 08 00 6B 40 F7	PtchEGRelL
F0 43 10 4C 08 00 6C 40 F7	PtchEGRelT
F0 43 10 4C 08 00 6D 01 F7	VelLmtL
F0 43 10 4C 08 00 6E 7F F7	VelLmtH
DrumSetup (DS1=**30**)	
F0 43 10 4C 30 nn 00 40 F7	PtchCoarse
F0 43 10 4C 30 nn 01 40 F7	PtchFine
F0 43 10 4C 30 nn 02 ?? F7	Level
F0 43 10 4C 30 nn 03 ?? F7	AltnGrp
F0 43 10 4C 30 nn 04 ?? F7	Pan
F0 43 10 4C 30 nn 05 ?? F7	RevSnd
F0 43 10 4C 30 nn 06 ?? F7	ChorSnd
F0 43 10 4C 30 nn 07 7F F7	VarSnd
F0 43 10 4C 30 nn 08 00 F7	KeyAssng
F0 43 10 4C 30 nn 09 ?? F7	RcvNtOff
F0 43 10 4C 30 nn 0A 01 F7	RcvNtOn
F0 43 10 4C 30 nn 0B 40 F7	FCutFreq
F0 43 10 4C 30 nn 0C 40 F7	FReson
F0 43 10 4C 30 nn 0D 40 F7	EGAttack
F0 43 10 4C 30 nn 0E 40 F7	EGDecay1
F0 43 10 4C 30 nn 0F 40 F7	EGDecay2