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Chapter 1

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1.1 The Autor

I'm a pensioner of illness. So I have much time. Early I was a church musician and later a pastor in the Ev.-Lutherian church of Thuringia in Germany. In that time I often work with Bars&Pipes, to make music for my ministry.

With the help of my son Matthias (he is a programmer and a student of computer science) I've learned the C-programming language, because I was willing to write 1 (!) tool for my DB-50XG wavetablecard.

But during programming I realised that one tool for all functions will be too large. So I wrote 7 tools as a set. The Hex-Transmitter was the first of all. With this tool I found out the routines for transmitting sysex-data thru the pipeline.

If you also a programmer, and a beginner like I'm, you should read the "How to programm sysex". There try to I explain, so good I can, how this works.

Since Bill Gates has bought "Blue Ribbon Bakery" Bars&Pipes is free (not PD).

If you has read the whole guide before, you have seen the internet-site where you can download this absolut fantastic sequencer in the last version.

I often looking around the PC-market. There are also fantastic sequencer-programs. But Bars&Pipes, I mean, is the intuitivest I have ever seen.

And there is this fantastic possibility to write my own tools. So Bars&Pipes has (nearly) no limit.

For making fantastic music it is on the AMIGA the best sequencer ever. I now there are some other programs like "camouflage", but I say: Bars&Pipes has the simpler concept and is easier to use ...

Thats all, what I have to say ...

very fine living music.

Please be patient with me, I am a german men, and my english is far away from perfect ...

1.4 Disclaimer

This is necessary ...

With the help of my son, I have made all so good I can.

The Tool-code of all tools based farly on the code for the "pc3.ptool" from Richard Hagen. That's a very good tool, many thanks to him.

Richard has written his tool with DICE. We altered the codes to compile with the free GNU-C-compiler of the ADE. Especially the part was transcribed, that place the imagedate in chip-RAM, because the GNU-C-compiler hasn't as yet a keyword like DICE or other compiler for this. Have a look at the sourcecode, if you are a beginner of programming, like I. At the end in the inittoolmaster-routine you can see how to allocate the memory and put the data from the icon in it. We have done this, because DICE will not compile my source-code.

All the codes are released into the Public Domain, and may be freely distributed in its original form. I declare the codes and the tools as FREEWARE, because Bars&Pipes is free. You can download it without any coast from the internet.

It is supplied ``as is'', and comes with no warranty. This program code was released because it might be useful as a starting point for other programmers. However, if any damage arises from its use, the original author (Richard Hagen) and we will not be held liable.

You are free to use and modify this code to your heart's content, provided you acknowledge me as the original author in any code that you might distribute which is based largely on this code.

I acknowledge that the design of this tool is influenced strongly by the example code supplied with the Rules for Tools package. However, I have made substantial contributions of my own.

Alfred & Matthias Faust
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Richard Hagen
e-mail: R.Hagen@mailbox.uq.edu.au

Website: www.id.uq.edu.au/~richard/music/bars-and-pipes/index.html

(there you can download all what you need for Bars&Pipes ...)

1.5 Requirements

First at all you need a installed system of Bars&Pipes2.5.
If you haven't, download it from the WWW:

www.id.uq.edu.au/~richard/music/bars-and-pipes/index.html

This is Richard Hagens website in australia. That is the best Tool-programmer I now for Bars&Pipes. There is also the complete material to download for programming tools and much links to other Bars&Pipes-websites.

Second you need a XG-Device.

For Amiga all extern Devices : MU10, MU80, MU90 ...

Soundcard : DB-50XG~this is the cheapest
(in Germany only 200 DM)

For the DB-50XG card you must be familiar with building electronics. I have developed a MIDI-Interface for my own card. If you need my help, mail me:

j.k.dax@t-online.de

But be patience with me, I'm not a electronic-concern

It's good to have a MIDI-keybord. (I now, there is a tool: sparekeys.ptool, but is not so handy if you are willing to make good music.)

Third:
My XG-Toolset ...

1.6 Installation

Simple put the tools in your tools-directory from Bars&Pipes.

Start Bars&Pipes. Open the Toolbox (the Icon with the hammer). Choice in the menu: "Install Tool ..." and install the tools.

That all for installation.

When you now will experiment with the tools be shure that you first NOT work on your best song. I think, with the tools you can't make things wrong. But all is possible... .

If you not understand what the slider labels are means, please have a look at the explanation of the tools.

All actions of the tools will be answers with a tone you can hear. So you can hear the alteration in the moment you leave the sliders or a knob.

1.7 Beggars Online XG-Guide

Here is the internet address for the best XG-Guide in the net.

There is very, very good explained and documented, was SysEx is and how to handle.

http://huizen.dds.nl/~tmm/beg_toc.htm
(not beg_doc...)

There I've gotten the most information about the sysex-commands.

1.8 How program sysex in Bars&Pipes-Tools

How to programm SYSEX in Bars&Pipes Tools

by Alfred Faust j.k.dax@tonline.de

First: I'm a german man, and I am not so good in the english language

In the "Rules for Tools" manual I found the sentence:

(In the capture : "Events, Clips, & Tracks - Events - 'type'")

"... Only 'EVENT_VOICE' Events flow through the PipeLine; therefore Tools need only concern themselves with this one type. ... "

That isn't right. 'EVENT_SYSEX' Events are also flows through the Pipeline. I found out how to handle this events, sending directly through the PipeLine and writing them in the track.

Here is the result of my (guess)work.

First make a string that hold the sysex:

```
{
    char *sysex;
    ...

    sysex = "F07E7F0901F7"; //this is the Geral-MIDI Reset

    ...
}
```

or:

```
{
    char *sysex;
    storage[16];

    ...

    sprintf(storage, "F07E7F0901F7");
    sysex = storage;

    ...
}
```

```
}

```

(It is very important that you ALWAYS use STRINGS (char) - not int- or BYTE-values. You must ALWAYS translate (int or BYTE)-values into (char).

Have a look at the source-codes of my XGTools. There you can also see, how to put a prop-gadget-value in the SysExString.

One possibility:

```
{
    char *sysex;
    storage[16];
    int value = 2;
    // this can be the value of a slider

    char hexstr[3][2]={"00","01","02"};
    //that are hexvalues !!!

    ...

    sprintf(storage, "F043104C020102%.2sF7", hexstr[value] );

/*
    this is the sysex for REVERB-time in XG-Devices
    The "%.2" will be replaced by "02" from hexstr-array,
    and then written into storage.

    You can also write:

    sprintf(storage, "F043104C020102%02lxF7", value)

    in this case you don't need the "hexstr"

    The "%02lx" will replaced by the value. Always a 2 nibble hexbyte will be
    written on this place.

    Exapmle:

    A value of a slider(Prop-Gadget) is given as decimal "20".
    %02lx will be replaced by "14" as hexbyte.
*/
    sysex = storage;

    ... )

```

For my routines it MUST be a string. Then put it on the way.

These are all functions you need:

```
//the clip-routines for writing in the track

static BOOL lock_clip(struct Clip *clip) {
    Forbid();
    if (clip->locked == 0)

```

```

    {
        clip->locked = 1;
        Permit();
        return TRUE;
    }
else
    {
        Permit();
        return FALSE;
    } }

static void unlock_clip(struct Clip *clip) {
    clip->locked = 0; }

//writes sysex into track

static void insertsysex(char *buff, short size,
                        struct MNXGTool *tool, const LONG time) {
    struct StringEvent *event;
    struct String *string;

    event = (struct StringEvent *) (*functions->allocevent)();
    if (event)
    {
        string = (struct String *) (*functions->myalloc)(size + 3, MEMF_CLEAR);
        if (string)
        {
            event->next = NULL;
            event->string = string;
            memcpy(string->string, buff, size);
            string->length = size + 2;
            event->type = EVENT_SYSEX;
            event->status = MIDI_SYSEX;
            event->time = time;
            event->tool = tool->tool.next;
            if (lock_clip(&(tool->tool.track->clip)))
            {
                event->next =
                    (struct StringEvent *)tool->tool.track->clip.events.first;

                tool->tool.track->clip.events.first =
                    (struct Event *) (*functions->sorteventlist)(event);

                unlock_clip(&(tool->tool.track->clip));
            }
            else
            {
                (*functions->freelist)(event);
            }
        }
    } }

// the routine for sending SysEx-data thru the pipeline

static void sendsysex(char *buff, short size,
                      struct MNXGTool *tool, const LONG time) {
    struct StringEvent *event;

```

```

struct String *string;

event = (struct StringEvent *) (*functions->allocevent)();
if (event)
{
    string = (struct String *) (*functions->myalloc)(size + 3, MEMF_CLEAR);
    if (string)
    {
        event->string = string;
        memcpy(string->string, buff, size);
        string->length = size + 2;
        event->type = EVENT_SYSX;
        event->status = MIDI_SYSX;
        event->time = time;
        event->tool = tool->tool.next;
        WaitTOF();
        (*functions->qevent)(event);
        (*functions->myfree)(string);
    }
} }

// THE MOST IMPORTANT TRANSLATION-ROUTINE

static void trans_hx(struct MNXGTool *tool,
                    const LONG time, char *sysx, int sw) {
    LONG size;
    int a, b, x, y ;
    UBYTE abuf[32];
    char chr[4];
    char *zbuf = NULL;
    struct Event *sysx_event;

/*
    translate sysexbuffer (there are single chars, with his own hexvalue)
    into hex (always two chars to one hexvalue)

    example: "F0"
    In the string there are two hexvalues :
    0x46 for "F" in the ASCII-table
    0x30 for "0" in the ASCII-table
    But we will send the hex-value "0xF0" AND NOT "0x46 0x30"
    so we must translate ... */

size = strlen(sysx); zbuf = (char *)AllocVec(size+2, MEMF_ANY|MEMF_CLEAR);
if(zbuf)
{
    CopyMem(sysx, zbuf, size);
    b=0;
    for(a=0;a < size;a=a+2)
    {
        chr[0] = zbuf[a];
        chr[1] = zbuf[a+1];

        x=(isdigit((int)chr[0]))? (chr[0]&0xF) : ((chr[0]&0xDF)-55);
        y=(isdigit((int)chr[1]))? (chr[1]&0xF) : ((chr[1]&0xDF)-55);
        //this is the translationscore - don't touch !!!

```



```

    abuf[b++] = ((x<<4)|y);
    //writing with bitmanipulation

}

FreeVec(zbuf);

if (sw == 0) sendsysex(abuf, b, tool, time);
if (sw == 1) insertsysex(abuf, b, tool, time);
//put hexdata away

} }

```

There are now two possibilities.

1. Sending through the PipeLine:

```

{
    struct my_Tool *tool;
    // a pointer to your Tool-structure

    char *sysex;
    ...

    sysex = "F07E7F0901F7";
    //this is the Geral-MIDI Reset

    trans_hx(tool, functions->timenow, sysex, 0)
    // "0" = switch for sending
    ...

}

```

If you only need the sendsysex-routine the clip-routines are here not necessary.

2. Writing in the Track:

```

{
    struct my_Tool *tool;
    // a pointer to your Tool-structure

    char *sysex;

    ...

    sysex = "F07E7F0901F7"; //this is the Geral-MIDI Reset

if ((*functions->areyousure) ("write to track ? Play-pointer on right place?"))
    //this is a nice question ...

    {

```

```

if (!functions->running)
    // You CAN'T write into track, if the sequencer is running !!!

    {
trans_hx(tool, functions->starttime, sysex, 1)
// "1" = switch for writing

    }
}

...

}

```

If you don't need my comments - kill them ...

I hope my pain, sweat and many sleepless nights are not only useful for my own.

1.9 XG-Main-Editor

XG-Main-Editor

(picture)

This is the main tool of the set. It is also useable for normal GM-Devices. (The difference to the other tools in this toolset: this editor works on Controllers and not on SysEx - System Exclusive Data commands.)

In this case don't touch the "bank"-slider. Also the VarFX has no effect.

Here is the explanation of the sliders:

value	
Volume	< >
x	
Panpot	< >
x	
Reverb	< >
x	
Chorus	< >
x	
I	
Var-FX	< >
x	
Harmonic	< >
x	
Bright	< >
x	

Vibrato < >
x

Express.(ion) < >
x

Attack < >
x

Release < >
x

Name:

Bank: < >
x

0

Pgrm# < >
x

Write to Track

Default

Test

1.10 Chorus

Here you can adjust the chorus that added to the instrument you had chosen. The effect is, that the instrument will sounds like a choir. The sound will be bigger and fater.

The default value is 0.

1.11 Harmonic

Here you can adjust the harmonic uppertones that added to the instrument you~had choosen.

The effect is, how good the self-assertion of the instrument in the song is.

The default value is 40.

1.12 Pan

Here you can adjust the instrument you had choosen between right and left.
The default value is 64. That is the middle.

1.13 Reverb

Here you can adjust the reverb that added to the instrument you had choosen.
The effect is, how deep in the room the instrument will stay.
The default value is 40.

1.14 value

Here you can see what the current value of the slider is.

1.15 Variantion Effect

Here you can adjust the variable effect that added to the instrument you had choosen.

The little button left of the slider must be selected. Otherwise you can't hear anywhat.

The default of the slider is 0.

The default effect ist "Delay LCR". The explanation of all the effects of the XG-Device you will find in the XG-Variation-FX-Editor section of this guide.

There you can choose the third effect, that you will use at this time.

CAUTION !

When you use the Reverb-,
,
Chorus-
or
VarFX-Editor
, the effect you choose
is for the whole device.

That means: ALL reverb-, chorus-, or varfx-sliders in other tools use the effect you had choosen in the Reverb-, Chorus- or VarFX-Editor.

You can only use one reverbeffect and only one choruseffect and only one variationeffect at the same time.

1.16 Volume

Here you can adjust the instrument volume you had choosen.

The default value is 100.

You can try it over 100 but be careful. Some sound are not good, when the volume is higher then 100. But it is possible that this is, what you want.

1.17 Brightness

Here you can adjust the brightness of the instrument you~had choosen.

The effect is, how light or dark the instrument sounds.

The default value is 40.

1.18 Vibrato

Here you can adjust the density of vibrato, that added to the instrument you~had choosen.

The default value is 0.

1.19 Expression

Here you can adjust the density of expression you have for the instrument you~had choosen.

In the expressionvalue you affect first the maximalvolume but also the timbre of the instrument. Some instruments reacts more other less if you work on this slider. Try it out ...

The default value is 127.

1.20 Envelope

1.23 Program

Here you can choose the programnumber of the instrument you will hear.

Then you can hear the sound thru your audio-output.

With the bank-slider you can choose a variation of your sound if there is one. Have a look at your XG-voice-list in the owners manual.

You have no voice list ??? :(

It doesn't matter !!! :) I've insert all sound names of the XG-sounds.

If you see a "«empty»" in the Name-field then is there no sound, and the XG-Device use the GM-sound of bank 0. This name you see, when the bank-slider is left (=0).

I think for work with the tools, this is easier then hold the voice list in the hand, to choose the sound.

1.24 Variationseffect on/off

Here you can switch on or off the variations effect.

I = insertion effect off
S = system effect on

The default is I = effect off.

1.25 0/1-button

At the beginning of my work with the MIDI-equipment I was often confused by the use of the programnumber.

In the track I had to put the numbers from 0 - 127, but in the manuals always the programnumbers are from 1 - 128.

So I insert this little knob. You can switch between 0 or 1. That means: the first programnumber is 0 or 1 :) .

The tool always works with the numbers from 0.

You can use what you want

Default is 0.

1.26 Write to Track

THAT IS THE MOST IMPORTANT KNOB - I think.

You can write all what you have done to the track.

Later you can alter all (controller)data - if you want - with Bars&Pipes track-editor.

Before writing you will be ask : Are you shure to write ... ?

1.27 Default

I have altered so much, but - panic - what was the values at the beginning of my work ???

Be quiet - press the Default-knob !!

All sliders jumps to the default-position and the tool sends the default to the XG-Device.

1.28 Test

By pressing this knob you will hear some tones.

I think this knob is not necessary, but at the beginning of my programming of this tool, I was like a baby. I used Richard Hages pc3-Tool as model.

Because I had learned so much by using and studing his toolsourcecode, I leave the knob as it is. That is my thanksgiving to Richard Hagen.

1.29 Reverb-Editor

The XG-Reverb-Editor picture

Not all labels of the slider are visibile in all reverb-effects. Only if you see a label you can alter the value, and it have an effect.

CAUTION !!!

First of all you have to choose a reverb-typ. Then alter the values, you want. After that write it to track. The reason: Every time you alter the reverb-typ all values will be altered to default. That is a "feature" of the DB-50XG-soundcard, not of the tool.

Name

the reverbeffects

Typ

Time
Diffusion
InitDelay
HpfCutoff
LpfCutoff
Width
Height
Depth
Wallvary
Dry<->Wet
RvReturn
RvPan
RvDelay
Density
Er/RevBal
Feedback
Write

1.30 Reverb-Name

Na what ? Of course: Here you can see the name of the reverb-effect.

1.31 Reverb-Time

Here you can alter the reverb - duration.

1.32 Diffusion

Here you can alter the width of the hall room, or with other words: you can alter between mono <> stereo-hall.

1.33 Initial-Delay

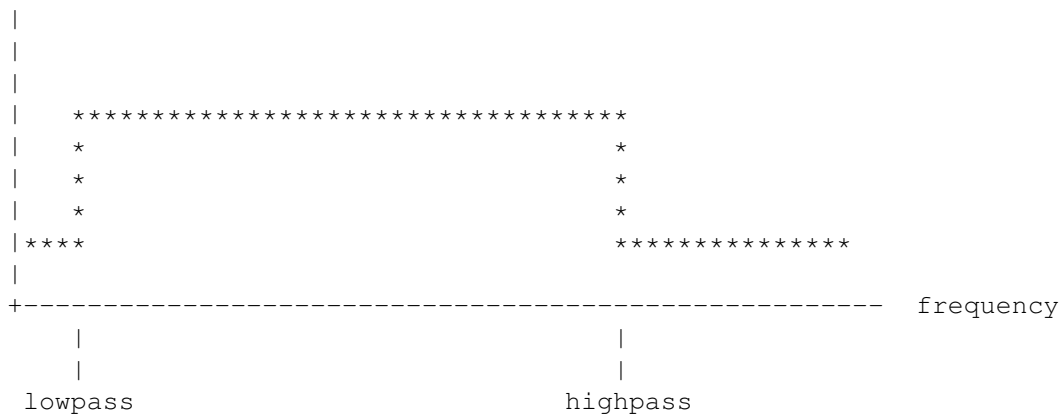
InitDelay = Initial Delay of the reverb. Try it ...

1.34 Highpassfrequency&Lowpassfrequency Cutoff

HpfCutoff = High - pass - frequency Cutoff
LpfCutoff = Low - pass - frequency Cutoff

A primitive graphic:

level



With this slider you can cut high or low frequencies. The sound of the hall-effect you want, is your rule.

1.35 Width - Height - Depth

Here alter the dimensions of your hall - room.

Only White Room, Tunnel and Basement

1.36 Wall- variation

Wallvary have only small effect.

But for finetuning the reverbsound it is necessary.

1.37 Dry<->Wet

This is a slider with no effect :(here ...

Sorry, I've insert it because there is a SysEx-command for it.

If you want use "Dry<>Wet", then work with the "
Multipart-Editor
" and switch
VarFX on.

Dry<->Wet is the level of the directsignal.

Try it ... (with the Multipart-Editor)

1.38 Reverb - return

The level of the reverb - effect.
In my XG-Device that has no effect. I don't now why.

1.39 Reverb - panorama

In what direction the reverb shall sound ...

1.40 Reverb - Density

That is also a parameter that it is not easy to explain. Hear accurate
please. Try it ... it's for finetuning the stereo impression ...

1.41 Early Reflection / Reverb - Balance

The balance between the early reflection and the later reverb.

1.42 Feedback

Here you can alter very good the sound color of the reverb - effect.

1.43 Reverb-Typ

You can choose between 11 Reverb-Effects:

Hall 1, 2, 3

Room 1, 2, 3

Stage 1, 2

Plate

Wh.Room = White Room

Tunnel

Basemnt = Basement

Always you choose a new typ of reverb-effect the sliders jump to default. I've made it because the soundcard make it. So it is not neccessary to make a "default"-knob like in the XG-Main-Editor.

1.44 Reverb-Delay

The time between the begin of the sound and the begin of the reverb.
try it ...
;)

1.45 Write

You can now write your work to track.

Put the play-pointer to the place, you will write on.

Befor writing you will ask : "Are you shure ..."

Then you can work in the event-editor of Bars&Pipes. Switch in the Prefs of the Event-Editor-Window List-Editing on. So you can see better all the SysEx-commands.

1.46 The Reverb effects

Hall	: Reverb simulating the resonance of hall
Room	: Reverb simulating the resonance of a room
Stage	: Reverb appropriate for a solo instrument
Plate	: Reverb simulating a metal plate reverb unit
White Room	: A unique short reverb with a bit of initial delay
Tunnel	: Simulation of a tunnel space expanding to left and right
Basement	: A bit of initial delay followed by reverb with a unique resonance

1.47 Multi-Part-Editor

This is the biggest tool I've written. That was hard work. But it was worth the trouble. With this editor you can finetune the sound you want. You can create big new sounds. With this editor you can reach the core of your XG-Device.

Before:

If you will use this editor, you MUST switch on the "System Exclusive" in the MIDI-Out-Tool !!! In the other way the MIDI-Out-Tool will filter out all what the Multipart-Editor will send. It works only with System-Exclusive messages.

Switch off the "Send MIDI defaults" in the preferences menu. This means, that always if the sequencer is stopped default values will be send to MIDI-OUT. Some of the values, you have written, with this tool, will be overwritten.

I had searched for a long time, why the SysEx, I've written to track, won't work, if I started the sequencer to play this SysEx (these are not to hear) and stopped again.

!!!!!! ATTENTION !!!!!!

If you use the XG-Multipart-Editor, don't use the XG-Main-Editor to choose instruments in the same pipeline. It will be run afoul of the use of the MIDI-Channels. The part-number you have used in the Multipart-Editor you can't use as MIDI-channel-number with the Main-Editor.

Its equal in the other way. If you have used one channel with the Main-Editor, you can't use this as part and MIDI-channel in the Multipart-Editor.

example:

You put the XG-Multipart-Editor to first pipeline and choose on the MIDI-Out-side channel 1.

You create a complex sound with part 1, 2, 3 to channel 1 in the Multipart-Editor.

Now you can't use in any other pipeline MIDI-channel 1,2&3.

The next MIDI-channel you can use in the next pipeline (with the Main-Editor or other tools) is MIDI-channel 4.

To avoid confusions I'm strongly recommend not to use both editors in one song. If you want more instruments and not so complex sounds use the XG-Main-Editor in the other case the Multipart-Editor.

Here some other

tips and hints
for use the XGMultipart-Editor.

I've arranged the sliders at the top in the order you have to use it.

In this form you see the window (picture), when it is opened.

Here I write the full Name, what the shortcut-label means.

The red numbers or words are the variables.

Some slider are like a switch.

I have not insert the real values in the most cases, because I mean, that is not necessary in use.

Part

MIDI-Channel

Write

Default

NormalVoice

Poly

Multi

Name

Bank

Attack

.

Programnumber

Decay

.

Noteshift

Release

.

Detune rough

Detune fine

PIniLvl

.

Volume

PAttack

.

Velocity sense depth

PRevLvl

.

Velocity sense offset

PRevTime

.
Velocity limit high
. Panpot
. Tune C
. Note limit high
. Tune C#
Note limit low
Tune D
Dry level
Tune D#
Chorus
Tune E
Reverb
Tune F
*
Variations effect
Tune F#
Vibrato rate
Tune G
Vibrato depth
Tune G#
Vibrato delay
Tune A
Filter cutoff frequency
Tune A#
Filter cutoff resonance
Tune B

1.48 Part

"Part" is the part of your sound, not the MIDI-Channel

.
You have at all 16 parts available. This parts can you connect to the 16 MIDI-channels, alone or in groups.

Part is the first thing you have to choice in this editor.

A primitive graphic:

```
part 1  ---|
part 2  ---|-----> MIDI-channel 1
part 3  ---|
```

```
part 4  ---|
part 5  ---|-----> MIDI-channel 2
```

```
part 6  -----> MIDI-channel 3
```

```
part 7  ---|
part 8  ---|
part 9  ---|-----> MIDI-channel4
part10  ---|
part11  ---|
```

```
.           .
.           .
.           .
```

and so on - just you like ...

But you can't use a part twice in the same song, because the DB-50XG-card (or other XG-Devices) connect the part to the MIDI-channel with the same number. The result is: this MIDI-Channel is not to use in other ways. Think on that, what I've written at the beginning of the

Multipart-Editor

.

1.49 MIDI-channel

MIDI-channel is the second step you have to do at the beginning of your work. ↔

That means you have to connect a part to a MIDI-channel.

CAUTION!

ONLY THEN you can choose a sound for your current part (!).

1.50 Name

Like in the other Tools of my toolset, you can here see the name of the sound you have chosen.

1.51 Bank

Choose here the bank-number of the sound, you will use. If there is no sound, you will see an «empty» in the Name-field.

1.52 Program-number

Programnumber: that is the number of your sound. Please have a look at your table in the user-manual.

A little confusing is, that the programnumber begins at 0, but the soundtable of YAMAHA begins at 1.

But because I have inserted all soundnames of a XG-device, I think it is not a so great problem.

In the Main-Editor of my toolset I had inserted a little knob, that switches between 0 and 1. In the use of my Main-Editor I found out, that it is not necessary, to have that knob ... I have inserted all names ...

1.53 Noteshift

Here you can shift your instrument in half-tone-steps up or down.

What is it good for ?

If you bring the volume down and shift the instrument as a part of your complex sound some half-tones up or down, you will create exotic sound.

Test it ...

1.54 Detune rough

Here you can tune your whole instrument in bigger steps up or down.

1.55 Detune fine

Here you can tune your whole instrument in very fine steps if you want

1.56 Volume

If you not now what "volume" is :-)) - look at the explanation of the XG-Main-Editor .

1.57 Write

Writing your datas to track.

A word to the data of the Multipart-Editor.

If you (theoretical) altered all slider in all part, then the editor have stored 672 sysex-messages and will write them to track.

If you open the track editor after writing, you will see much much sysexdata. Switch in the preferences of the editor-window the Listediting on. So you can see all data and alter them (if you want;)). But I think it is easier to erease the track, and work with the tool...

My suggestion for the work with the Multipart-Editor:

In the first tact put the RESET-data with the RESET-Tool.

Then put the play-pointer (the litte read triangle - you now ...) to "2" (second tact). And then beginn your work with the Multipart-Tool.

1.58 Velocity sense depth

You have made a complex sound, and you want that the sound you just have choosen shall react to the velocity not so strong like an other sound -

then alter Velocity sense depth.

1.59 Velocity sense offset

That is the lowest value for the velocity of your choosen sound.

1.60 Velocity limit high

That is the highest value for the velocity of your chosen sound.

1.61 Variation effect

Here you can adjust the variable effect that added to the instrument you had chosen.

You have switch VarFX:on before. Otherwise you can't hear anything.

The default of the slider is 0.

The default effect is "Delay LCR". The explanation of all the effects of the XG-Device you will find in the XG-Variation-FX-Editor section of this guide.

Here you can choose the third effect, that you will use at this time.

CAUTION !

When you use the Reverb-, Chorus- or VarFX-Editor, the effect you chose is for the whole device.

That means: ALL reverb-, chorus-, or varfx-sliders in other tools use the effect you had chosen in the Reverb-, Chorus- or VarFX-Editor.

You can ONLY use ONE reverbeffect and ONLY ONE choruseffect and ONLY ONE variationeffect at the same time.

1.62 Note limit low and high

With this sliders you can set the lowest or highest note your chosen instrument will sound. So you can use an other sound in the bass then in the soprano.

1.63 Vibrato rate

You can edit how slow or fast vibrato shall swing.

1.64 Vibrato Depth

Edit the depth of vibrato here ...

1.65 Vibrato delay

For some instruments (especially natural instruments like violin, flute, trumpet ...) it is good, the vibrato begins a little later, the beginning of the sound.

Here you can edit the timepoint.

1.66 Filter cutoff frequency

That is like the
Brightness
in the
XG-Main-Editor
.

1.67 Filter cutoff resonance

Look at the
explanation
from the
XG-Main_Editor
.

1.68 Attack

Look at the
explanation
from the
XG-Main-Editor
.

1.69 Decay

Have a look at the
explanation
in the
XG-Main-Editor
.

Here is the only the Decay1 you can edit.

1.70 Release

In the
explanation
in the
XG-Main-Editor
is here also the same.

1.71 Normal <> SFX-voice

There are two types of voices available.

Normal Voices : that are all 439 instruments in 17 Groups

SFX Voices : that are all 41 effect voices

1.72 Dry <-> Wet

To reach this, please switch
VarFX on

Then you can edit the value of the signal direct level.

The effect is in example with the
reverb
-slider, that you can
put the instrument deep in the room.

With other sliders and the XG-VarFX-Editor you can put the instrument
outside the door in a big tunnel, or so ...

Here you have 10000000..... possibilities, try it ... :))

1.73 Poly - Mono

Switch between polyphonic and mono mode.

This works only fine, if the noteoff comes after the new noteon.
With other words, its not useable in legato.

But your rule is, what sound you want to create ...

1.74 Single - Multi - Instrument

Sorry, sorry, ...
Please ask me not what that is good for. There is no explanation
available. Is there anybody who now it.

I've insert this because there is a sysex-command in the table.

If you now it please, contact
me
.

1.75 VarFX on<>off

Oh - it's easy :) Switch VarFX on or of -- in your current ←
choosen
instrument.

It is important for the use of
DryLevel
.

1.76 Tuning

For this 12 sliders is only one explanation necessary.

Have you ever heared somthing about different tune systems?

Here you can give your instrument another one.

Especially older music sound in original (old) tunesystem
interesting.

I CAN NOT EXPLAIN THE DIFFERENT TUNE-SYSTEMS HERE.
Here is no room for.

But basically:

We normally in this century with the "temper" tune-system.
That means we can play in all scales, and they will sound
equal. Have you ever heared an music with historical instruments?
Then you now the difference.

Example:

Play an C-maj-accord on the keyboard then alter the
E-slider to 48 - the sound of the accord is now pure.
Isn't it fine ?

And now play with the same value of the E-slider an E-maj-accord
or an A-maj-accord.

Oh, thats not so good :(... You see how tuning works.

Your rule is the sound you will create ... no other limits ...

But experiment with the sliders, and you will heare how it
sounds to play for example an organ sound with little altering
of some tones.

In this section I collect hints & tips in no order !

1. You can assign multiple parts to one MIDI-Channel. The Tool only send out to that MIDI-Channel that is assigned to the track you have put it in.

If you want go to another track, and so to another MIDI-Channel, simple make a copy of the tool (drag and drop it to the track, you will work away). Then assign the MIDI-Channel to the track and use this MIDI-Channel in the tool for the next steps (or you can't hear anyway), and work away. All work you have done before will be hold in the copy of the tool you have made... ;) It's nice, isn't it ?

That means in the other way:

If you are: work->copy->work with copy->copy->work with copy ... in the last copy all your work, you have done before is stored.

At the end of your work you have to write (if you will) the result of the work of all tracks ONLY IN ONE TRACK !!!

DON'T WRITE THE SAME RESULT TO MORE THAN ONE TRACK. THAT WILL CONFUSE THE XG-DEVICE AND/OR BARS&PIPES.

After writing to track you can see in the trackeditor much sysex-entrys (doubleclick on the track, and switch on in the show-menu the system exclusive).

I suggest, to make a separate track, that sends to MIDI-channel 1, for all systemdata (reset, XG-On, all sysex-commands). In that case make the last copy of that tool to that track, delete all cypys in the other tracks, and let the last copy stay in the track. When you save your work ALL datas of this tool will be stored with the song. Have a look also to the "

Load & Save
" section.

2. I've written the tool so, that only a sysex will be written to track if a slider is touched.

Don't touch a slider, if it is not necessary, so you can save Bars&Pipes to send unnecessary sysex-commands to your XG-Device, or write to track, and your AMIGA needs lesser calculations time.

3. If you have altered something:

BEFORE YOU WRITE THE NEW VALUES TO TRACK DELETE ALL SYSEX THAT ARE WRITTEN IN THE TRACK BEFORE. YOU AVOID CONFUSION OF YOUR XGSOUND-DEVICE OR OF BARS&PIPES !!!

4. It is possible to change all sysex later, but it is not so easy, because Bars&Pipes shows on the screen only the begin of all sysexcommands. You will see only "F043104C". The second part (where the main datas are placed) you will only see if you choose in the editor the "magic wand" to alter the sysex and click on a entry. The

SysEx-Editor will appear and then you can see and edit the entry. If you will alter sysex I recommend to use the ListEditor. (switch on the "List Editing" in the Prefs-menu of the Track-Editor)

5. I recommend to write sysex to track before you save your work. If you reload this song later play it up to this point, when all sysex are sent to MIDI-Out. So the XG-Device will be in the state before you have saved the song.
6. There is a standard for the begin of a MIDI-File (also for Bars&Pipes-songs)for the XG-Devices, because at the beginning are some commands are necessary that the XG-Device works propper.

1.bar

XGReset XGOn

There MUST be a time between this two messages of 200 milliseconds. I think 2 timebeats between are enough. So I've written the XGReset-Tool, that it send and write in the right distance.

2.bar

all other commands : program, controllers, sysex

3.bar

begin of your song

I recommend by use of the
 XGReverb-Editor
 &
 XGVarFX-Editor
 &

XGMultipart-Editor

to make a 3.bar for all the sysex-commands, and
 begin with the music in the 4.bar

7. Write always sysex-commands to that track, that is connected to MIDI-channel 1 (see point 1). This also is a part of these standard.
 If you load a song from another musician (With the accessory "sMerFF3.1" you can load and save .mid files. There are billions of that files in the internet ;D ...), you can merge all tracks that are connected to MIDI-Channel 1, then switch on the "System Exclusive" in the MIDI-Out, and then start the song. Because there is that standard, you will send in that way ALL sysex that are written in the song to MIDI-Out.

1.80 Hex-Transmitter

This tool was the beginning of my work. Here I've learned how to put the sysex in the pipeline.

Have a look at "How to programm sysex", if you are a programmer and

a beginner like I. There I've tried to explain how you can program the sysex flowing thru the pipeline, and write them to track.

Here you can insert commands direct in a string-gadget. If the tool pops up (picture), you can see, that the first and last sysexbyte (f0f7) is just there. If you want other sysex put there simple delete this two bytes.

After Enter you will hear a tone, to control what the sysex have done in your XG-device - or not ...

1.81 Reset

This is a simple Reset-Tool. (picture)

That are two command: first XG-Reset
 second XG-On
 (XG-Reset have also a effect
 to GM-Devices.)

There are only two buttons.

Send - you can send a reset-signal to your XG-Device.

Write - the sysex will be written in the first bar.

Open the Track-Editor (Click twice on the track, you have written in), an you will see the sysexdata.
 (Before you have to switch on "System Exclusive" in the "Show"-menu.)

1.82 Variations effect editor

Variations effect editor (picture)

With this editor you can choose one of the 42 variations effects. Then you can finetune your choosen effect. Because there are very different sliderlabels here I explain the effects and in the effects the sliderlabels.

FIRST OFF ALL SWITCH VARFX ON - OR YOU WILL HEAR NOTHING !!
 (In the XG-Main-Editor the little knob beside the VarFX-Slider to red S) Then, I suggest, put the VarFX-slider to right (127). So you can hear also the fin alterations you make. Later choose the value of this effect you want.

Don't be worried if you hear no alterations, when you move a slider in a effect. That's no error. Some slider have only very small effect. Or NO effect ... !?!? :(

Before: When you choose an effect, the XG-Device internal ALWAYS all values put to default. That is the reason, why there is no Default knob.

Be careful, and be warned!! If you have finetuned a effect and switch to another effect all work will be lost. In the other way means this, when you will back to the default values, you only have to click on the first knob (VarFXType), and all slider jump to default.

So the effects:

Hall 1, Hall 2,
 Room 1, Room 2, Room 3,
 Stage 1, Stage 2, Plate
 Delay LCR, Delay LR, Echo, Cross Delay,
 Early Reflection 1, Early Reflection 2,
 Gate Reverb, Reverse Gate,
 Karaoke 1, Karaoke 2, Karaoke 3,
 Chorus 1, Chorus 2, Chorus 3,
 Celeste 1, Celeste 2, Celeste 3, Celeste 4,
 Flanger 1, Flanger 2, Flanger 3,
 Symphonic, Rotary Speaker, Tremolo, Auto Pan,
 Phaser 1, Phaser 2, Phaser 3,
 Distortion, Overdrive, AmpSimulator,
 3Band Equalizer (mono); 2Band Equalizer(stereo), AutoWah

The Write - icon: All SysEx-Data will be written to that place in the track, where the play-pointer is. (my suggestion is: hold bar 1 free for the reset-SysEx.)
 Only that values will be written, you have altered.

1.83 Hall 1 + 2

Reverb simulating the resonance of hall

Reverb Time

Diffusion

Initial Delay

High pass frequency cutoff

Low pass frequency cutoff
 Dry < - > Wet
 Variations effect return
 Variations effect pan
 Send Variationseffec to Reverb
 Send Variationseffec to Chorus
 Reverb Delay
 Density
 Early Reflection/Reverb Balance
 Feedback Level

1.84 Reverb time

The time, how long the reverb shall sound.

1.85 Reverb Delay

Hear exact ! That effect is small.
 You can choose how fast the Hall shall swing.

1.86 Send effect to reverb

You can take the output a second time to the reverb (first ↔ effect in the

XG-Main-Editor
).

So you can make for example playing a trumpet outdoor in a big room.

1.87 Send effect to chorus

You can also send the outputsignal a second time to the Chorus ↔
 (the second
 effect in the

XG-Main-Editor
).

Oh, that possibilities

1.88 Room 1 + 2 + 3

Reverb simulating the resonance of a room

Reverb Time

Diffusion

Initial Delay

High pass frequency cutoff

Low pass frequency cutoff

Dry < - > Wet

Reverb Delay

Density

Early Reflection/Reverb Balance

Feedback Level

1.89 Stage 1 +2 , Plate

Stage : Reverb appropriate for a solo instrument

Plate : Reverb simulating a metal plate reverb unit

Reverb Time

Diffusion

Initial Delay

High pass frequency cutoff

Low pass frequency cutoff

Dry < - > Wet

Variations effect return

Variations effect pan

Send variations effect to reverb

Send variations effect to chorus

Reverb Delay

Density

Early reflection / Reverb balance

Feedback Level

1.90 Delay LCR + LR, Echo, Cross Delay

Delay : A program that creates two or three delay sound
(Left, Right, Center)
Echo : Two delays (L & R) and independent feedback delays for L & R
Cross Delay: A program that crosses the feedback of two delays

Here are some differences between the slider labels in the different effects. So I will explain in alphabetical order:

Label	Realname
CchDelay	Central channel Delay
CchLevel	Central channel Feedback Level
Dry<->Wet	Balance between direct signal and effect signal
EqHigFreq	Equalizer high frequency
EqHigGain	Equalizer high gain
EqLowFreq	Equalizer low frequency
EqLowGain	Equalizer low gain
FeedbDly1	Feedback Delay 1
FeedbDly2	Feedback Delay 2
FeedbLvl	Feedback Level
HighDamp	High Damp
Input:L,R,LR	Input: Left, Right, Left&Right

L->RDelay
Left to Right Delay

LchDelay
Left channel Delay

LchDelay1
Left channel Delay 1

LchDelay2
Left channel Delay 2

LchFdbLvl
Left channel Feedback Level

R->LDelay
Right to Left Delay

RchDelay
Right channel Delay

RchDelay1
Right channel Delay 1

RchDelay2
Right channel Delay 2

RchFdbLvl
Right channel Feedback Level

SndVxtoCh
Send Variationseffect to Chorus

SndVxtoRv
Send Variationseffect to Reverb

VarPan
Variationseffect Panorama

VarReturn
Variationseffect Return

1.91 channel delay

The time between original signal and beginn of the "delayed" signal in this channel.

1.92 Central channel Level

Here alter the level of the "delayed" signal. This have also an effect how often you will the "Delay" hear.

1.97 Equalizer low frequency

You can choose the low frequency, the gain slider shall effect to. So you not only can adjust the level of the low frequencys. You can also the frequency range adjust, like a parametric equalizer.

That all effects to the effectsignal, not to the original signal.

1.98 Equalizer high frequency

You can choose the high frequency, the gain slider shall effect to. So you not only can adjust the level of the high frequencys. You can also the frequency range adjust, like a parametric equalizer.

That all effects to the effectsignal, not to the original signal.

1.99 Equalizer High Gain

This is just like a volume slider, but it works on the high frequencys you had adjusted with the
EqHigFreq-slider

1.100 Equalizer low gain

This works like a volume controller, but it has an effect to ↔
the
low frequencys you have adjusted with the
EqLowGain-slider

It effects to the effect-signal not to the original signal. Hear on the "Delays".

1.101 Input

The red label shows the direction, from where the first "Delay" comes.

L from left

R from right

LR means from Left and Right at the same time.

1.102 Left to Right and Right to Left Delay

Must I explain?

The time between the delays.

L->R from left to right

R->L from right to left

so you can make a asymmetrical swinging of the delays.

1.103 Early Reflection 1 & 2

An effect that only produces only the early reflection of ↔
reverb

Labelname

Realname

ERTyp:

Early Reflection Typ

RoomSize

Room Size

InitDelay

Initial Delay

Diffusion

Diffusion

FeedbLevl

Feedback level

HpfCutoff

High pass frequency cutoff

LpfCutoff

Low pass frequency cutoff

Dry<->Wet

Dry Wet Balance

VarReturn

Variations effect return

VarPan

Variations effect panorama

SndVxtoRv

Send variationseffect to Reverb

```

    SndVxtoCh
        Send variationeffect to Chorus

    Liveness
        Liveness

    Density
        Density

    HighDamp
        High Damp

```

1.104 Early reflections typ

There are 6 red labeled Early Reflections types:

Label	Real name
S-H	Short Hall: the time of the early reflection is "short"
L-H	Large Hall: the time of the early reflection is "large"
Rdm	Random : here you will hear a random early reflection You can't say before what you will hear in the next time.
Rvs	Reverse : the early reflection sounds like when the taperecorder plays it reverse.
Plt	Plate : it is like a hall the generated with the hall-plate, a early method to generate a hall- effect, before there where good computers.
Spr	Spread : the early reflection will be "spreaded"

Like on other places I will say:

Your rule is the sound you want to generate.... :)

1.105 Roomsize

Na, what ?

Right, here you can alter the roomsize. ;)

1.106 Initial Delay

The time between the original and the beginning of the effect.

1.107 Feedback Level

The Feedback to the effect-processor.

In first you can alter the sound color of the effect,
in second is there a possibility to generate many
early reflection up to a standing no ending repetition.

1.108 Liveness

It is just a parameter that is not so easy to explain. You
should try it.

My meanig is it affects to the impression of the effect.
Liveness ...

1.109 Gate Reverb // Reverse Gate

Gate Reverb : a simulation of gated reverb
Reverse Gate: A program that simulates gated reverb played backwards

Label	Realname
Typ	There are two different types of this 2 effects
	RoomSize Room Size
	Diffusion Diffusion
	InitDelay Initial Delay
	FeedbLevl Feedback Level
	HpfCutoff High pass frequency cutoff
	LpfCutoff Low pass frequency cutoff
	Dry<->Wet Balance between the direct and the effect signal
	VarReturn Variations effect return
	VarPan Variations effect panorama

SndVxtoRv
Send variationeffect to reverb

SndVxtoCh
Send variationeffect to chorus

Liveness
Liveness

Density
Density

HighDamp
High Damp

1.110 Karaoke 1 2 3

It is a special form of Delay. It sound farly like a trembling voice.

Label Real name

DelayTime
Delay time

FeedbLevl
Feedback Level

HpfCutoff
High pass frequency cutoff

LpfCutoff
Low pass frequency cutoff

Dry<->Wet
Balance between the direct and the effect signal

VarReturn
Variationeffect Return

VarPan
Variationeffect Panorama

SndVxtoRv
Send Variationeffect to Reverb

SndVxtoCh
Send Variationeffect to Chorus

1.111 Chorus 1 2 3 4

Conventional chorus program that adds natural spaciousness to ↔
the sound

The Chorus effect has the same parameters as in the XG-Chorus-Editor.

Label	Realname
	LFOFreqnc Low Frequency Oscillator Frequency
	LFODepth Low Frequency Oscillator phase modulations Depth
	FeedbLevl Feedback Level
	DelayOffs Delay Offset
	EqLowFreq Equalizer Low Frequency
	EqLowGain Equalizer Low Frequency Gain
	EqHigFreq Equalizer High Frequency
	EqHigGain Equalizer High Frequency Gain
	Dry<->Wet Balance betwenn the direct and the effect signal
	VarReturn Variationseffect Return
	VarPan Variationseffect Panorama
	SndVxtoRv Send Variationseffect to Reverb
	SndVxtoCh Send Variationseffect to Chorus
	Input: Input mono or stereo

1.112 LFO Frequency

There is a LFO (Low Frequency Oscillator), that affects to the speed of the modulation. Here you can alter the frequency.

1.113 LFO phase modulation Depth

Here you alter the phase modulations depth. In this case you alter the effect density with this slider.

1.114 Feedback Level

Like in other effects you can here define how much of the effect level should come back, and will flow another once through the effectprocessor and will be "effected".

1.115 Delay Offset

You can put a little time between the original sound and the beginning of the effect.

1.116 Input Mono Stereo

It has only a small effect and depend on the sound you have choosen.

1.117 Celeste 1 2 3 4

A 3-phase LFO adds modulation and spaciousness to the sound

So shall it sounds in heaven.... ;))
Its like a mono flanger effect.

Label	Real name
	LFOFreqnc Low Frequency Oscillator Frequency
	LFODepth Low frequency Oscillator phase modulations Depth
	FeedbLevl Feedback Level
	DelayOfs Delay Offset
	EqLowFreq Equalizer Low Frequency
	EqLowGain

Equalizer Low Frequency Gain

EqHigFreq
Equalizer High Frequency

EqHigGain
Equalizer High Frequency Gain

Dry<->Wet
Balance between the original an the effect signal

VarReturn
Variationseffect Return

VarPan
Variationseffect Panorama

SndVxtoRv
Send Variationseffect to Reverb

SndVxtoCh
Send Variationseffect to Chorus

Input:
Mono or Stereo

1.118 Flanger 1 2 3

Adds a jet-airplane effect to the sound

Label	Realname
	LFOfreqnc Low Frequency Oscillator Frequency
	LFODepth Low Frequency Oscillator phase modulations Depth
	FeedbLevl Feedback Level
	DelayOffs Delay Offset
	EqLowFreq Equalizer Low Frequency
	EqLowGain Equalizer Low Frequency Gain
	EqHigFreq Equalizer High Frequency
	EqHigGain

Equalizer High Frequency Gain

Dry<->Wet
Balance between the direct and the effect signal

VarReturn
Variationseffect Return

VarPan
Variationseffect Panorama

SndVxtoRv
Send Variationseffect to Reverb

SndVxtoCh
Send Variationseffect to Chorus

LFOPhDiff
Low Frequency Oscillator Phase Difference

1.119 LFO Phase Difference

Hear exactly !
That has only a effect in the speed of the swinging
in the upper-tones. The variance is small.

1.120 Symphonic, Rotary Speaker, Tremolo, AutoPan

The effects:

Symphonic : a multi-phase version of celeste
Rotary Speaker: simulation of rotary speakers
Tremolo : cyclical modulation (frequency & amplitude) of volume
Auto Pan : auto cyclical moving the sound image left<>right and/or
front<>back

I will explain in alphabetical order, because there are some
differences between the labelorder in the different effects:

Label Real name

AM Depth Amplitude Modulation Depth

DelayOffs
Delay Offset

Dry<->Wet
Balance between the original and the effect signal

EqLowFreq
Equalizer Low Frequency

```

EqLowGain
    Equalizer Low Frequency Gain

EqHigFreq
    Equalizer Low Frequency

EqHigGain
    Equalizer Low Frequency Gain
F/R Depth Front to Rear distance (Depth)

LFOFreqnc
    Low Frequency Oscillator Frequency

LFODepth
    Low Frequency Oscillator phase modulations Depth

LFOPhDiff
    Low Frequency Oscillator Phase Difference
L/R Depth Left to Right distance (Depth)

PDir:
    Panorama Direction

PM Depth
    Frequency Modulation Depth (P ?? ... )

SndVxtoRv
    Send Variationseffect to Reverb

SndVxtoCh
    Send Variationseffect to Chorus

VarPan
    Variationseffect Panorama

VarReturn
    Variationseffect Return

```

1.121 Front to Rear depth (distance)

1.122 Left to Right Depth (distance)

1.123 Panorama Direction

There are 6 possibilitys:

The red names:

L<>R in the same time to left and right
like a swinging mono-stereo

L>R in beginns to swing to left and then to right

try it with a low LFO speed

R>L the same in the other direction

Ltrn Left turn - begins left and swing

Rtrn Right turn - begins right and swing

L.R it does not swing between left and right
it's like switching between left and right

1.124 Phase Modulation Depth

The label PM Depth is not correct.
This is the Frequency Modulations Depth, you can alter.

1.125 The Chorus Editor

The XG-Chorus-Editor picture

Here you can alter or finetune the different
chorus-effects

.

Here are the explanation of the sliders:

Label	Realname
	LFO Freq Low Frequency Oscillator Frequency
	LFOpmDpth Low Frequency Oscillator phase modulation Depth
	FeedbkLvl Feedback Level
	DelayOffs Delay Offset
	EqLowFreq Equalizer Low Frequency
	EqLowGain Equalizer Low Frequency Gain
	EqHiFreq Equalizer High Frequency
	EqHiGain

Equalizer High Frequency Gain

Dry<->We
the level of the original signal

ChrReturn
Chorus Return

ChorusPan
Chorus Panorama

SndCh>Rev
Send Chorus to Reverb

Input
Input

LFOPhDiff
Low Frequency Oscillator Phase Difference

1.126 Chorus Return

Here you can alter the global level of the choosen effect.

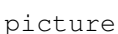
1.127 Send Chorus to Reverb

You can send the signal to the reverb effectprocessor. So you can use, if you want, the reverbeffect you have choosen in the XG-Reverb-Editor twice.

1.128 The Chorus effects

Chorus : Conventional chorus program that adds natural spaciousness
 Celeste : A 3-phase LFO adds modulation and spaciousness to the sound
 Flanger : adds a jet-airplane effect to the sound

1.129 Xg-Drum-Editor

The XG-Drum-Editor 

This is the editor for the drummers or drumfreaks.
 Here you can choose the DrumKit you will work with.
 Here you can work on every sound of every drumvoice that is
 stored in the ROM of the YAMAHA-soundcard DB-50XG.

!!!! First off all !!!!
 The Homeplace of this tool is track 10 - the drumtrack.
 In a other track that tool will not work !!!

CAUTION !!!

This tool works, like other tools (except the XG-Main-Editor), with SysEx-commands. All action you do results a SysEx-command, that will be written in the track (if you write to track). That means there will be very much SysEx-commands written to track(theoretical more then 2600 different).

You MUST at

first :choose the instrument
second :choose the Kit

The order you work away is free. But in the beginning the tool MUST now on wich Instrument on wich Kit you will work. My suggestion is as third to choose if you want use the Variationseffect and switch

VarFX on or off
. By default the effect is switched on.

The sliders:

I have written here the realname not the labelname

DrumSet

Name

.

Instrument number

.

(Drum) Kit

.

Pitch Course

Key On Assign

Pitch Fine

Receive Note Off

Volume

Receive Note On

Alternate

Panpot


Reverb

Chorus

Variations effect

VFX:
 Filter Cutoff
 Default
 Filter Resonance
 Write
 Attack
 Decay 1
 Decay 2

1.130 Variations effect

Here you can adjust the variable effect that added to the  instrument you had chosen.

The little button left of the slider must be selected. Otherwise you can't hear anything.

The default of the slider is 0.

The default effect is "Delay LCR". The explanation of all the effects of the XG-Device you will find in the XG-Variation-FX-Editor section of this guide.

There you can choose the third effect, that you will use at this time.

CAUTION !

When you use the Reverb-,
 ,
 Chorus-
 or
 VarFX-Editor
 , the effect you choose
 is for the whole device.

That means: ALL reverb-, chorus-, or varfx-sliders in other tools use the effect you had chosen in the Reverb-, Chorus- or VarFX-Editor.

You can only use one reverbeffect and only one choruseffect and only one variationeffect at the same time.

1.131 Alternate

SORRY :(

This is such a slider that have no effect on my DB-50XG.

I have insert it, because there is a sysex-command. And it is possible that on other devices it will have a effect.

1.132 Receive Note off

In some cases a instrument needs a note off command.
(Example: Snare Roll)

The most drum voices are pulse code modulated sounds.
That means there is a whole sample that will be played, when you push a key. You can't stop it, because it is to short.
Example a Bass Drum Beat.

But with
Attack - Decay 1 & 2
you are able to influence the
length of the sound.

1.133 Receive Note on

When do you need "Note on" switched off ??? ...

I think, only when you will switch off a instrument in the Kit.

1.134 Drum Set

There shall be two DrumSets stored on the card, but I can't hear any differences between them.

Do you ????

1.135 Name:

Like in other tools I have insert all Instrument Names.
Because it will be easier to handle in use.

1.136 Instrument number

The red label on right is the key, on that you will hear that instrument.

C3 is the middle of the keyboard and in the most cases there is a marker.

C3 is the note in the middle of the notesystem.
It have one helpline under the violin-system,
it have one helpline upper the bass-system.

1.137 Drum Kit

There are 9 different Drum Kits available and 2 Soundeffect voice kits

Standard Kit
Standard2 Kit
Room Kit
Rock Kit
Electro Kit
Analog Kit
Jazz Kit
Brush Kit
Classic Kit
Sound effect voices 1
Sound effect voices 2

!!! CAUTION !!!

IF YOU CHOOSE A KIT THE XG-DEVICE GET THE STORED DEFAULT VALUES.
ALL WORK YOU HAVE DONE BEFORE WILL BE LOST !!!!
THAT IS ONE REASON YOU HAVE FIRST TO CHOOSE THE INSTRUMENT AND
THE KIT.

1.138 Variationseffect on or off

Here you have the possibility to switch the Variationseffect on or off.

!!! CAUTION !!!

This is the main switch for this effect. That means if you here switch the VarFX off it is general off.

Be warned ;)

1.139 Default

Here you can switch to the default values of the current ↔
 choosen
 instrument.

Not like with the
 Kit-slider
 . There will be ALL values off ALL instruments
 turned to default.

1.140 Write

If you are ready with you work, you can write the values to track.

Before you will be ask: "Are you shure ...".

I had say it before: There is the possibility, that there will be
 written very much data to the track.

1.141 Suggestions for use

The soundcard need a little time to react to all the messages.

So I suggest:

If you are beginning your work, put first the Reset-Tool to track 1
 (to this track I write all sysexcommands except the Drum-Tool-sysex).
 Put the Play-pointer to the beginning (bar 1).
 Write the Reset-sysex to bar 1. In the other way you must always
 first reset the card manually.

Put the play-pointer one bar after the last sysexcommand you have
 written to the track (open the track-editor - doubleklick on track;
 switch on "System Exclusive" in the "show"-menu, and now yo can see
 where is the end of the sysex), than work away in the same way.

It is possible, if you are using all editors, you have at least up to
 4 or 5 bars with sysex-commands.
 Begin the song after all sysex. In the other way you can hear some
 noises you don't want to hear.

You can also make a separate sysex-file for your song, that played before
 you will play your song.

That have the advantage that you can store for example a effectset and/or
 drumset for many songs you will write. (The disadvantage is you have always
 2 files to load.)

1.142 Load and Save Datas of the tools

I've no made the possibility to save the datas of the tools in separate files.

But that doesn't mean, that you can't save the datas. In this version 1.3 I've altered all tools so, that, if you let the tools stay in the pipeline:

- Bars&Pipes stores all slidervalues with the song.
- Bars&Pipes remember all, what you have done.

That means, if you want to break your work on a song or sound or effect (to work away later), let all XGTools, you have used, in the pipeline, write in all tools the data to track (all sysex to this track that is connected to MIDI-channel 1) and save the song. If you in a later time will work away, load the song and work away :-)..

If you want to hear your stored sounds, start the sequencer first up to this point, all sysex-commands have passed the MIDI-Out.

Is easy, isn't it.

So I hadn't to write a save and load routine. That makes my work easier.

The disadvantage of this is, that always some additional data will be stored in the song, but I mean it's not so much. If you use ALL tools I think it will be not more then 3 Kbyte.

If you have the absolute last version of your song, you can (if you want) remove the tools and save up to 3 Kbyte.

!!! IMPORTANT !!!

If you work away with a tool:

Before you write the new values to track, delete the old in the track, because the tools are not overwrite the old values. The new values will be added. So it is possible, that the new and the old values will confuse the XG-Device and/or the Bars&Pipes.

For this case it is good to now what wich values are from. I suggest to write a little note in the Lyrics-line above the sysex it means ("multipart, reverb ...") to find out later, from wich tool the sysex in the track is.

1.143 History

Some small alterations where made since V.1.1:

- in XGMain-Editor: removed writing reset values in each track, use for this the XGReset.ptool
- in the Guidefile: some additions in capture XGMultipart

Since the version 1.2

- removed some small bugs
-

- since this time I (Alfred Faust) write the tools alone, without my son Matthias, he is a student of computer science.

Since the version 1.3

- all slidervalues of ALL XGTools will be stored with the song.
- additions made in the guidefile

Since the version 1.4

- made some alterations in XGChorus, XGReverb & XGVarFX because the save and restore won't work proper, the slidervalues where stored, but the sysex-commands where not stored; now both will be stored, the slidervalues and the SysEx-commands, now you can write to track the SysEx-commands proper after reloading a saved song and worked away;

Since the version 1.5

- I've altered the XG-Multipart-Editor added the missing 4 sliders of the Pitch Envelope Generator
- added a new Tool: "XG-Controller-Panel" now really ALL functions of the DB-50XG-Board (I hope also of other XG-Devices, that base on that board - MU-10, MU-50) are reachable. (like in other Tools data can be written to track and save with the whole song)

1.144 XG-Controller-Panel

This now the last tool I added since Version 1.5.

You can with this tool assign 5 often altered parameters to different control-datas. That is why SystemExclusive-commands are will disturb the datastream flowing throught the pipeline. In the most cases, you will hear some uncontrolled noises, when during a song a SysEx-command is transmitted.

The reason is, the length of a SysEx-command is in the most cases 8 bytes.

The length of controller-datas are only 3 bytes.

So you can assign:

Pitch Control
 Filter (cutoff frequence) control
 Amplitude (Volume)
 LFO Phase Modulation
 LFO Frequence Modulation
 LFO Amplitude Modulation

to:

Pitch Bender
 Modulations Wheel
 Poly Aftertouch
 Channel Aftertouch (Mono Aftertouch)
 Assignable Controller 1
 Assignable Controller 2

In the 2 last cases you can choose a controller number, to wich controller you will the parameter assign.

Now to the tool itself. If you are familiar with the other tools, it is not to hard to understand.

All what you do will be quitted with a control tone, like in the other tools. In the same time the affected SysEx-command will be sendet out.

Picture

The interface with its gadgets:

```

part-slider
      Controlled by  Nr.   Range   (Val)

Pitch-Bend-Contr  |
                  ||
                  ||
                  || 0
                  |
                  s(emi)t(ones)
Filter CutoffFrq  |
                  ||
                  ||
                  || 0
                  |
                  ce(nt)
Amplitude-Volume  |
                  ||
                  ||
                  || 0
                  |
                  .
LFO Phase Modul.  |
                  ||
                  ||
                  || 0
                  |
                  .
LFO FrequenceMod  |
                  ||
                  ||

```

0
|
.
LFO AmplitudeMod |
||
| |
0
|
.

Connect to Part |
0
|
.

VarFX Control |
||
| |
0
|
.

----- Receive -----

*
Program Change
*
Modulation
*
Hold 1

*
Bank Select
*
Portamento
*
Soft Pedal

*
Channel Aftertouch
*
Sostenuto
*
Pitch Bend

*
Poly Aftertouch

*
Control Change

*
Volume

*
Note Message

*
Pan

*
RPN
SysDef.

*
Expression

*
NRPN
Write

Default

1.145 Part-Slider

That is the part of your sound not the MIDI-Channel.
The assigns of the controllers are possible to each of the 16 parts.

Choose at first the part you will work on.
You MUST have choosen before with the
Multipart-Editor
a instrument.

By the other way you can't hear what you do in this tool.

1.146 Controlled by

If you click in this gadget a menu pops up, and you can choose, by what
the parameter shall be controlled.

After that you must choose the control range.

1.147 Assignable Controller number

Here you can choose one of the controllers up to number 95.

You can insert in the track controller-data (for example controller 45)
(Read in your Bars&Pipes-Manual, how to do that)
and assign that the "Assignable Controller1" shall affect to "LFO Phase
Modulation" by this data.

Choose:

```

-----          Controlled by      Nr.
LFO PhaseMod    Assignable Ctrl1   45

```

Easy isn't it ? ;))

CAUTION !!!

You can assign to

Assignable controller1 & 2 only one Controller-Nr. !!

Example:

wrong !

```

Filter Control Assignable Ctrl1   45
.          .          .          .
LFO AmplitMod  Assignable Ctrl1   24

```

right !

```

Filter Control Assignable Ctrl1   45
.          .          .          .
LFO AmplitMod  Assignable Ctrl1   45

```

This is also important for the selection in the "VarFX Control" section !!

But the two different Assignable Controllers can have to different numbers, and it is possible to assign them to different parameters.

Example:

```

Pitch-Bend-Control  Assignable Ctrl1  34
Filter  CutOffFrq   Assignable Ctrl2  36
Amplitude-Volume   Assignable Ctrl2  36
.                  .                  .
LFO AmplitudeMod    Assignable Ctrl1  34

```

1.148 Range

Here you can choose how much the assign shall alter the sound.

For exapmle:

Range of Pitch-Control (in semitones) 2 (controlled by Modulations wheel)

means:

The whole Range of your Modulationswheel on your keyboard alter the pitch of the sound in the range of 2 semitones or one whole tone.

If you are not so familiar with this, I strongly recommend to experiment very much.

Then you will be enjoyed, what you all can do with your XG-Device - Thanks to YAMAHA.

1.149 Value

Here you see the value of your choice of the range
 .

In the first line the value means semitones up or down.
 In the second line the value means cent. Its a big range from -9600 to 9450 but in steps of 150.

The other lines shows values from 0 - 127.

1.150 Receive - control

Here you can switch on or off, what data the XG-Device shall receive in the choosen part
 .

If you have made a sound with the Multipart-Editor, that have 3 parts, so you can here make, that for example the data of the "Assignable Controller 1" Nr. 45 only affect the instrument of the third part. Switch off the "Control Change" in part 1 & 2.

1.151 Write-gadget

Like in the other tools, here you can write all, what you have done to the track, the XG-Controller-Panel is placed.

Move the song pointer before to that place, you will writing to. Then click on the "Write"-gadget. For your security you will be ask "Are you shure ..." before writing.

Like on other places I recommend to put all SysEx-data to track 1.

NB: If you have switched off Receive:"Note Message" in a part, you can't hear the control-tone for this part...

1.152 Default-gadget

If you will fast put all gadgets and sliders (they are also gadgets ...;)) to the default values click on this gadget.

Default at this place means:
 -all what you see will be sended to the XG-Device.

- ALL range values are sended to "0"
- Assignable Controller 1&2 - "Nr." are switched to 0

Click on this Gadget (I recommend), at the begin of your work. By the other way the

System-default-values
are not at 0. (But it is possible,
that this is, what you want)

1.153 System Default gadget

Here you can put all values to that state, like after a Reset, ↔
but it
affects only your choosen
part
.

That are:

- Pitch will be controlled by Pitch-Bender with a range of 2 semitones
- LFO Phase Modulation will be controlled by the Modulations Wheel with a range of 10
- Assignable Controller 1 - Nr. will be set to Controller 16
- Assignable Controller 1 - Nr. will be set to Controller 17

1.154 Connect to Part

In the case you have switched off the VarFX in the
Multipart-Editor
or
in the
Main-Editor
this means in real, that now the Variations-Effect
you have choosen in the
VarFX-Editor
is set to "Insertions"-mode.

Now you can connect the Variations-Effect to exact (only :() one (1) part of the Multipart-Editor. In same cases you will put for example a

flanger-effect
to a guitarsound you have choosen.
So you can now here select the part of that guitarsound.

If you draw the slider to right end, you will see a "--". That means, the connection is off.

1.155 Value of the choosen part

Here you see the number of the part you connect the Variations-Effect to.
