À S-YXG50 Ver.3.0

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¥ All the screens included in this Help file are for the purpose of explaining operation, and may differ from the actual screen.

YAMAHA CORPORATION
Nov. 1998

Features

Yamaha SoftSynthesizer is a virtual instrument which can play MIDI music on a personal computer through software alone without using a hardware sound source such as a sound card.

¥ YAMAHA XG format compatible.

¥ CODEC Independent.

¥ Simultaneous Playback of Wave and MIDI data.

¥ DirectSound Support.

¥ For MMX technology.

¥ Professional Sound Quality (44 kHz sampling rate).

¥ Maximum Polyphony Is 128 Voices.

¥ Minimum voice processing time - 80ms (when operating direct sound)

¥ Variety of controllable effects.

Specifications

Sound Engines
Format	Wave table synthesis
Waveform size	2 MB
Maximum Polyphony	128 voices
Instruments	676 instruments + 21 drum kits/SFX kits
	(XG mode : 480 voices + 9 drum kits + 2 SFX kits)
Playback frequencies	44.1 kHz / 22.05 kHz / 11.025 kHz
Output	Stereo

Dynamic Filters
Filter	Time difference filter for each sound

Effects
Effects Set	3 systems (Reverb, chorus, variation)
	Type Reverb 11 types
	Chorus 11 types
	Variations 43 types

Midi (Input Drivers)
Compatible MIDI Message	GM System Level 1
	XG
	TG300B Mode

Cautions
1. A sound production processing time of approximately 80~400 ms (1 sec. = 1000 ms) is required
   from reception of MIDI data to sound production.
   * In a DirectSound environment.
2. Can not be operated from the DOS and MS-DOS prompt.
3. Tow more MIDI applications cannot be used simultaneously.

Operating Environment

CPU	INTEL **Pentium 166** MHz or higher
OS	Windows95 / Windows 98
Main Memory	16MB or more
Sound Function	16 bit Stereo/Monaural playback

 * DirectSound Ver.5.2 is recommended.

- In some cases when a notebook PC is used, the number of simultaneous notes cannot be assured.
- CPU conditions may vary depending on the selected playback quality. For example, When S-YXG100 is used alone, CD quality playback is possible using an MMX Pentium 166 MHz or higher CPU.

Installation

A: Installing the S-YXG50

It is not possible to install 2 versions of the SoftSynthsizer simultaneously.

Double-clicking Setup.exe file in the S-YXG50 folder and following the on screen instructions starts the installation process automatically. However, if there is an existing version of the SoftSynthesizer (S-YG20 or S-YXG100) already installed on your system, the S-YXG50 installation is halted . If that is the case, you should proceed with uninstalling the present version of the software as described below.

Uninstall Process:
1.Select the items <Start - Programs - Yamaha SoftSynthesizer S-YXG50 - Uninstall S-YXG50>.
2. After removal of the old version of the software, you will be prompted to re-install your computer.
3.Complete the uninstallation process by restarting your computer.

Caution
If the YAMAHA folder or the SYXG50 folder is to be deleted, follow the above procedure to uninstall !

B: Installation Steps and Content of Operations

The default installation of S-YXG50 will create the following folder and data file structure. In addition, commands necessary for starting up S-YXG50 will be added to the system.ini file.

Folder and file structure
* C:\YAMAHA (the S-YXG100 folder within this folder) .
* The following files are created in the C:\windows\system folder.

sxgma.drv
sxgapi.dll
sxgapi32.dll
sxgcpu.dll
sxgma32.dll
sxgmasys.dll
sxgmacpl.cpl
sxgmx.dll
sxgmx32.dll
sxgxg.dll
sxgxgknl.vxd
sxgwave2.tbl
sxgtkbar.exe

* Additions to the system.ini file:
Appended to the [drivers] section
midi# =sxgma.drv
wave# =sxgma.drv
mixer# =sxgma.drv
(# signifies a number. This may not be displayed depending on the PC.
)

C: Multimedia Driver Settings

During installation, S-YXG50 is automatically set as the default MIDI driver.

<In the Audio Tab>
Audio Playback: The **Hardware devise CODEC Driver** is selected as the default.
<In the MIDI tab>
MIDI Output: The **YAMAHA SXG Driver** is selected as the default.

D: Adding a MIXER

During installation, the " **YAMAHA SXG Driver" MIXER** is added as the hardware device MIXER.

To display the S-YXG50 Mixer, double-clicking the speaker icon in the task bar (clock display area).

You can adjust the S-YXG50's audio volume level by adjusting the [SXG] slider. The [MIDI] slider controls the volume level of the sound card's sound engine.

Within the multimedia audio tab, if a driver other than the YAMAHA SXG Driver is selected as the " Default device" for audio playback, the mixer included in your personal computer' s sound function will start up. In that case, please use the [WAVE] slider to control the volume level.

SoftSynthesizer Settings

Performance settings can be set to match your system's performance (playback sound quality priority/ CPU load reduction priority, etc.). There are 4 setting panels, including those for the Plug-in sound engines, which are supplied as standard items. If the Plug-in software is included, the numbers of panels increase automatically. (Each screen is a sample - version information differs depending on the product.)

Starting the Setting Screens
a) Right-click on the XG icon on the taskbar and select " SoftSynthesizer Settings."
b) Double-click on the XG icon on the taskbar and click the started player's [SoftSynthesizer] logo.
c) Select <Start – Settings – Control Panel>, then double click on the XG Synth Driver icon.
d) Select <Start – Programs – YAMAHA SoftSynthesizer S-YXG50 – S-YXG50 setup>.

Panel 1: Simple Settings
Select the use and set the sound source. Sound sources can also be disabled so they won't start. If you are making corrections in the use selection, also go to " Detailed Settings 1/2" and " Detailed Settings 2/2" and make adjustments there.

(Click on the function you would like to know more about.)

Panel 2: Detailed Settings 1/2
Here adjustments are made to match the playback data, software, operating environment of the personal computer you are using, etc.

(Click on the function you would like to know more about.)

Panel 3: Detailed Settings 2/2
If you are selecting an audio playback device, the S-YXG100 sound production response time when DirectSound is being used is adjusted.

(Click on the function you would like to know more about.)

Panel 4: Information
The version is displayed in configuration module units.

(Click on the function you would like to know more about.)

MIDI (XG) Sound File Playback - High Sound Quality
XG/GM song files are played back at CD-quality fidelity (44 kHz).
CPU Requirements: MMX Pentium at 166 MHz ~

MIDI (XG) Sound File Playback - Medium Sound Quality
XG/GM song files are played back at radio-quality fidelity (22 kHz).
CPU Requirements: MMX Pentium at 166 MHz ~

MIDI (XG) Sound File Playback - Low Sound Quality
XG/GM song files are played back at telephone-line-quality fidelity (11 kHz).
CPU Requirements: Pentium at 166 MHz ~

DirectSound compatible games - Medium Sound Quality
Song files are played back at radio-quality fidelity (22 kHz).

DirectSound compatible games - Low Sound Quality
Song files are played back at telephone-line-quality fidelity (11 kHz).

Custom Settings
Select this item when you are not making simple settings and only the necessary items are being set.
It is also possible to change the items on other pages after selecting simple settings.

Show icon on the taskbar.
Adds an icon to the task bar for starting up the Player.
Right-clicking on the icon enables you to select the SoftSynthesizer settings or the help function..

Driver Off
This item disables the S-YXG100.
It is necessary to restart your PC for the ON/OFF selection to take effect.

Default settings.
This is the same as selecting XG (with Plug-in) song file playback (high quality).

OK
Changes made to all selected settings since starting the panel will become effective. It will then close the panel.

Cancel
This will nullify all the settings that have been changed since starting the panel. It will then closes the panel.

Apply
This will temporarily make the changes to the settings that had been changed since starting the panel (for temporary confirmation).

Wavetable SoftSynthesizer Polyphony
This sets the number of simultaneous notes that need to be generated (Polyphony) in playback.
The CPU load increases as you increase the value.
For details, please read " Maximum Number of Simultaneous Sounds" under " Sound Engine Functions."

Maximum CPU Usage
This sets the available CPU capacity (CPU load) that can be used by SoftSynthesizer.
The SoftSynthesizer's performance can be improved by increasing this value.
Please note that even if this value is made smaller, depending on the volume of data in a MIDI file, some sounds may still be omitted.

Receiving Effect
This can be used to turn ON or OFF data related to various kinds of effects.
The default is set at the ON position for all three effects.
In song files, which contain no effect-related data, activation of effects is not indicated.

Reference
The S-YXG100 Player's effects function enables effect results to be added even to song files, which include no effect-related data.

Quality
The playback sound quality (sampling rate) can be set.
A higher quality of sound can be obtained by a larger numerical value set. However, the load imposed on the CPU increases accordingly.
The default setting is for CD-quality fidelity (44 kHz).
  Depending on the MIDI file, there may be circumstances where there is no sound in the file.
  Try reducing the values for the maximum polyphony and for the maximum CPU-usage rate.

DirectSound
Set this ON/OFF when it is necessary to make adjustments in relation to DirectSound.
The default setting is ON.
The S-YXG100 sound production response setting is limited to the ON position.
If DirectSound is not installed, the ON position cannot be selected.

Audio Device Setting (DirectSound ON/OFF)
The device used to play back WAVE files can be set each time DirectSound is turned ON or OFF.
If there are multiple internal sound cards, the desired output destination may be selected.
If there is only one internal sound card, it is not necessary to change the settings.

Response
This adjusts the sound production processing time from the point when the SXG driver receives the MIDI data until the sound is produced.
Sound production processing time is related to <CPU Processing> and <CODEC Processing>.
The setting is made to match the load condition (sounds are cut off, etc.), but when adjustment is not necessary, leave the setting on <Slow>.
CPU processing takes 61~371 ms (1 sec. = 1000 ms) and the CODEC processing time (in the standard, this is within 20 ms) is added to this.
This adjustment is effective only when DirectSound is on.

Version Information
This shows the version of the modules (files) composing each sound engine.

YAMAHA logo
This button is a link which you can click to connect to the Yamaha Home Page via the Internet.

Sound Engine Function

Performance Mode

S-YXG50 is equipped with two performance modes, **XG** and TG300B, and they start in the XG mode. If you are playing back the song data from a commercially available XG song collection or GM song collection, the performance mode specification signal recorded at the beginning of the data (exclusive message) is read and the XG automatically selects the performance mode to match.

Even if you are creating song data yourself, you can do so in such a way that, when the XG system On and other exclusive messages are included at the top of the data, the performance mode will also be switched automatically.

¥All the settings are initialized when the computer is started up.
¥A period of approximately 0.5 sec. is required to switch the performance mode automatically. It is recommended that a few blank measures be left between the performance mode message and the performance data.

XG Mode
This mode uses multiple sound engine which are compatible with XG.
By playing back commercially available song data with the XG mark, complex functions, from tone production to effects processing, can be utilized fully to enjoy splendid performances easily.
This program also functions as a multi-sound engine which is fully compatible with the **GM system level 1,** so the performance quality of commercially available song data with the GM mark will be excellent.
Number of usable parts: 16 parts
Number of usable voices: 480 normal instruments + 11 drum inststruments (including 2 SFX kits)

TG300B Mode
In this mode, S-YXG50 can be used as an XG compatible multitimbral tone generator.

Voice (Wave)

A voice is a tone program which is basically configured from the elements (basic waveform data) which are the smallest units of a sound engine.
Among S-YXG50 voices, there are two types, the 1-element type and the 2-element type. In particular, voices which are configured from 2 elements are thick voices or voices which change in tone when the keys of a keyboard are being played rapidly (velocity value), and they are used in voices where differing sounds are blended together, such as a piano and strings, that is, for sounds with a feeling of presence.
The maximum number of simultaneous sounds is determined by this number of elements.

Normal Voice and Drum Voice

There are two types of voice, the normal voice and the drum voice.
¥ A normal voice is an instrument sound which expresses musical intervals matching the notes of a keyboard (or effect sounds). When simply expressing a voice, a normal voice is specified.
¥ A drum voice is a special voice which assigns the tone of a drum, percussion instrument or effect sound to each note (of a keyboard). There are many drum voices with a name like <xxx Kit>.
In a normal voice, the musical interval changes according to the rapidity with which the keys are played (the notes received), but with the drum voice, only the tone assigned to that keyboard sounds, and the musical interval information has no relationship to the tone.

Maximum Number of Simultaneous Sounds

S-YXG50 is capable of playing up to 128 sounds simultaneously.
These 128 sounds are calculated in element units. As was explained earlier, there are 1-element voices and 2-element voices.
The number of sound engine that can be used overall is 128 when voices configured from the 1-element voices are used, but when voices configured by blending 2-element voices are used, the total number of voices will be fewer.
If performance information which exceeds the maximum number of simultaneous sounds is received, the they will be forcibly omitted from the sound as it is reproduced and the latest performance information to be sent will given priority when sounds are generated. (latest has priority)

Priority Order in Generating Parts

When the maximum number of sounds that can be played simultaneously is exceeded, sounds are generated in the order of priority shown below.

Channel (Part) Sound Generation Priority Order

10 (Drum Part) • | 1 • | 2 • | 3 • | 4 • | 5 • | 6 • | 7 • | 8 • | 9 • | 11 • | 12 • | 13 • | 14 • | 15 • | 16

By assigning major parts such as the melody and bass to a channel with a high priority level, even if the maximum

number of sounds that can be generated simultaneously is exceeded, the result will not detract from the atmosphere of the song very much.

Element Reserve

This is a function which assures that the number of specified channels (parts) only will be assured even if the maximum number of sounds that can be generated simultaneously is exceeded.
For example, if the element reserve for a given part is set at "10," the number of elements assured for that part is up to 10, without relation to the part generation priority order.
Element Reserve is set by sending an element reserve message through "XG Native Parameter Change."

Voice Selection (Bank Number and Program Number)

S-YXG50 can use 676 normal voices and 21 drum voices.
The program numbers which select voices are 1~128. In order to select voices which exceed 128 types, a bank number and program number are used in combination.
The basic 128 voices, when used without using bank numbers, are compatible with GM system level 1.

Program Change Number and Program Number

The program change number has a range of 0~127, and the program number has a range of 1~128, so depending on the sequencer and sequence software, the set values may differ by one. Please confirm this by reading the user's manual for the sequencer or sequence software which you use.

Effects

S-YXG50 includes 2 systems of system effects, **reverb effects** (11) and **chorus effects** (11), and also a system of **variation effects** (43) which can be set for either the system for inserted, for a total of 3 systems of effects.
System Effects: A type of effect which acts through signals sent to and received from all the parts.
Insertion Effects: Effects which can be used by 1 specified part.
Setting of the type of effect can be set and changed through "XG Native Parameter Change."

XG Player

Major Functions
*MIDI File Continuous Playback Function (Max. 100 songs)
*Tempo Change Function

(Click on the function you would like to know more about.)

YAMAHA logo (Version Information Display)
This displays this Player's version information.
The [Information] button in this display is a link which you can click to connect to the Yamaha Home Page via the Internet.

POWER (End)
This ends the S-YXG50 Player.
Shortcut Keys: [Alt] + [F4]

Minimize Display
This minimizes the S-YXG50 Player (stores it on the Task Bar).

Help
This displays helps. This does not function during performance.
Shortcut Key: [F1]

Playback
Reads the MIDI file for the song that currently has its name displayed
in the display panel and begins performing it.
When the performance ends, performance of the next song begins.
When performance of all the MIDI files on the song list is ended,
the Player stops and the name of the song at the top of the song list is
displayed in the display panel.
The Playback button does not function if no song list has been created.

Select Top Song
This selects the song that is at the top of the song list (P).

Pause
This stops a song that is being played temporarily.
Clicking on the pause button again or on the Play button causes the interrupted song
to continue playing from the point where it was stopped.

Select PreviousSong
Selects the song that is registered just before the currently selected
song (the song that currently has its name displayed in the display panel).

Stop
This stops playing and returns the player to the top position of the song, where playing begins.

Select Next Song
Selects the song that is registered just after the currently selected
song (the song that currently has its name displayed in the display panel).

Select Final Song
This selects the song that is at the end of the song list (P).

Song Name display box
By clicking in this window, you can switch between the song name display and the level meter display.

Tempo Control
The enables adjustment of the tempo (speed) of a performance.
The tempo can be changed during a performance or when it is stopped.
It is reset when playback changes to another song.
  Up Button   : The tempo is increased each time it is clicked.
  Down Button : The tempo is decreased each time it is clicked.

Volume Control

This adjusts the playback volume.

As long as it is not changed (until you stop), the adjustment remains effective.

  Up Button : The volume is raised each time it is clicked.

  Down Button : The volume is lowered each time it is clicked.

Reference

Clicking the speaker mark on the task bar enables the personal computer's overall volume to be adjusted, but if you double click on it, individual volume adjustments can be made.

Song Selection
This creates a list of songs to be performed automatically in the <u>Song List Setting Dialog</u>.
Shortcut Keys: [Ctrl] + [O]
* A maximum of 100 songs can be registered and played back continuously.

Sound Engine Settings
Clicking on this opens the Sound engine Settings Dialog box.
It does not function during a performance or during a pause.
<MIDI Output Port>
Sound sources other than the SoftSynthesizer can be used.
Select a MIDI driver corresponding to the sound source you desire to use.
Please see the operation manual for each respective MIDI sound source or
sound card concerning the MIDI driver.

Files of type: [MIDI Files (*.mid)] ▼

Song Name: [   ]

| Add | Add All | Delete | Clear |

Up to 100 song files can be recorded and erased.

Playlist
Bounce.mid
Cooljivb.mid
Dance.mid
Dogroova.mid
Freude.mid
Gymnoped.mid
Kavaller.mid
Marche.mid
Osolemio.mid

OK

Cancel

Procedure for Creating a Song List

 1 Select the directory where the MIDI file is located in "File Location."
 2 Select the MIDI file by the file name. (Or click on the file name.)
 3 Click the Add (A) button and the selected MIDI file will be added to Song List (P).
    Clicking on the Add All (L) button causes all the MIDI files to be added to the "Song List (P)."
    -------------------------- Erasing Recorded Files ---
    A: Click on an unneeded file in the "Song List (P)", then click Erase (E) to erase the song.
    B: Clicking the Clear (C) button erases all the MIDI files.
    ----
 4 Clicking the OK button sets the contents of the Song List (P) and closes the list creation operation.

    Clicking the Cancel button causes the program to disregard any changes made to the list by
    being recorded or erased and closes the list creation operation.

MIDI files that can be used are standard MIDI files (the format is 0/1).

MIDI Implementation Chart

YAMAHA [SoftSynthesizer Driver] Date:21-JUL-1998
 MODEL SXG Driver   MIDI Implementation Chart   Version : 1.0

```
+-------------------------------------------------------------+
:   : Transmitted : Recognized :  Remarks:
: Function ... : : : :
:-----------------+--------------+--------------+---------------:
:Basic   Default  : x   : 1 - 16  : :
:Channel  Changed  : x   : 1 - 16  : :
:-----------------+--------------+--------------+---------------:
:   Default  : x   : 3  : :
: Mode   Messages : x   : 3,4(m = 1)  *2 : :
:   Altered  : ************* : x   : :
:-----------------+--------------+--------------+---------------:
:Note: x    : 0 - 127  : :
:Number : True voice: ************* : 0 - 127  : :
:-----------------+--------------+--------------+---------------:
:Velocity Note ON   : x    : o  9nH,v=1-127 : :
:   Note OFF  : x   : x   : :
:-----------------+--------------+--------------+---------------:
:After    Key's: x   : o *1 : :
:Touch   Ch's : x   : o *1 : :
:-----------------+--------------+--------------+---------------:
:Pitch Bender  : x   : o  0-24semi *1 : :
:-----------------+--------------+--------------+---------------:
:0,32: x    : o *1 :Bank Select:
:  1,5,7,10,11: x    : o *1 : :
:6,38: x    : o    :Data Entry :
:   64-67: x    : o *1 : :
: Control 71-74: x    : o    :Sound Controller:
: Change84: x    : o    :Portamento Cntrl:
: 91,93,94: x    : o    :Effect Depth    :
:   96-97: x    : o *1 :RPN Inc,Dec:
:   98-99: x    : o *1 :NRPN LSB,MSB    :
: 100-101: x    : o *1 :RPN LSB,MSB:
: 120: x    : o    :All Sound Off   :
: 121: x    : o    :Reset All Cntrls:
:   : : : :
:-----------------+--------------+--------------+---------------:
:Prog: x    : o 0-127  : :
:Change : True #    : ************* : : :
:-----------------+--------------+--------------+---------------:
:System Exclusive   : x    : o *3 : :
:-----------------+--------------+--------------+---------------:
:System : Song Pos. : x    : x   : :
: : Song Sel. : x    : x   : :
:Common : Tune : x    : x   : :
:-----------------+--------------+--------------+---------------:
:System   :Clock  : x   : x   : :
:Real Time :Commands: x    : x   : :
:-----------------+--------------+--------------+---------------:
:Aux  :Local ON/OFF : x    : x   : :
::All Notes OFF: x    : o (123-127)   : :
:Mes- :Active Sense : x    : x   : :
:sages:Reset   : x   : x   : :
:-----------------+--------------+--------------+---------------:
:Notes: *1   receive if switch is on.   :
: *2   m is always treated as "1" regardless of its value. :
: *3   transmit/receive if exclusive switch is on.   :
::
::
+-----------------+--------------+--------------+---------------+
    Mode 1 : OMNI ON,  POLYMode 2 : OMNI ON,  MONO o : Yes
    Mode 3 : OMNI OFF, POLYMode 4 : OMNI OFF, MONO x : No
```

Glossary

CODEC

CPU Load

DirectSound

Effect
  (Reverb/Chorus/Variation)

Filter

GM

MIDI

MMX Technology

Multi Sound engine

Polyphony

Sampling Rate

SoftSynthesizer

Standard MIDI File format

Voice Processing Time

XG format

Chorus

An effect which adds depth and thickness to musical sound. This is a system effect (it applies to the overall sound).

CODEC
A hardware system consisting of A/D (Analog/Digital) converter, D/A (Digital/Analog) converter, and analog mixer which is indispensable in multimedia computers. Converts the digital data generated by the soft synthesizer to analog signals for output as sound.

CPU Load

A parameter which determines how much processing load the SoftSynthesizer places on the your PC's CPU. Reducing the value of this parameter reduces the amount of processing power the computer assigns to the SoftSynthesizer, thereby reducing the number of simultaneous notes that can be produced.

DirectSound
This is one of the DirectX components offered by Microsoft Corporation
(DirectX is a technology for high speed processing of drawings and sounds, etc.
in the Windows environment).

Utilization by S-YXG50
DirectSound is used in shortening the MIDI sound production voice processing time
and in voice (WAV file) multi-processing.

Voice Multi-processing
In order to play a WAV file, ordinarily, a single wave device driver is used.
For that reason, simultaneous playback of multiple files cannot be done and
there is no way to play them except one at a time in sequence.
If the DirectSound driver is installed, it operates in DirectSound compatible software
as if multiple drivers existed and it becomes possible to play multiple files
simultaneously (even though the sampling rates may be different).

Using DirectSound with the S-YXG50 requires that DirectX5 be installed and
that the sound function (CODEC) supports DirectSound.
When operating on DirectSound, use multimedia programming to specify the

SXG driver in MIDI device and specify the sound function device in audio device.

*DirectSound Ver. 5.2 is recommended.

Effect
This is a device which generates effects that alter sounds.
Roughly divided, there are three types of effect, Reverb, Chorus and Variation.
   Reverb and Echo are **system effect**.
   Variation can be used both as a system effect and as an **insertion effect**.

System Effect
This is an effect that is so constructed that the effect is obtained for all the parts in common.
(The amount of the effect can be adjusted part by part.)

Insertion Effect
This is an effect that is so constructed that the effect is obtained for specific parts only.

> **Reverb**
> This effect adds reverberation to the sound.
> The reverb system is an exclusive system effect.

> **Chorus**
> This effect adds depth and richness to the sound (the sound is felt to undulate).
> The chorus system is an exclusive system effect.

> **Variation**
> These are effects such as reverb, chorus, delay and distortion which have various results.
> They can be used either as system effects or insertion effects.

Filter
This is a device which erases specific frequency components from sounds to change the tone.
In <XG>, filters are incorporated which can control the frequency components to be erased over the passage of time.

GM System Level 1
This is a formal name for " Voice standardization standards related to voice arrangement and MIDI control functions." It is also called GM (using the first letters of General MIDI) for short.
By creating MIDI data in accordance with GM, even if the type of sound engine is different, the data can be reproduced with virtually the same nuance.
(If this standard did not exist, it would have been necessary to create MIDI data for every type of sound engine.)
The XG format is an expansion based on GM.

MIDI
This is a mnemonic for Musical Instrument Digital Interface. It is a standard for mutual connections
between electronic devices related to music, and in reality is a unified standard that is recognized
worldwide.
The instruments and related devices and computers from different makers can be connected together,
and
performance information, tone information and control information, etc. can be exchanged between
them.
With MIDI, other than information related to performance, such as keyboard rebound and tone
selection,
various types of information, such as switching of settings and control of tempo are specified.
If these standards are utilized fully, not only can performances be done using the basic tones in S-
YXG50, but
tones can be processed, pan, effect and other settings can be changed, and genuine as well as intricate
musical
expression can be achieved.

MMX Technology
This is a newly added technology for speeding up the processing related to multimedia.
Through MMX technology, a computer's processing speed is dramatically improved and
it has become possible to accomplish through software the processing that used to be performed by
hardware.
MMX technology made realization of full compatibility with S-YXG50 possible.

MMX Technology Pentium Processor
This is the product name of a CPU which has the Intel MMX technology incorporated into it.

Multi Sound Engine
This is sound engine in which multiple instrument parts can be played simultaneously.

Polyphony: Maximum Polyphony
This is the maximum value for the number of sounds that can be generated simultaneously.
The maximum polyphony of S-YXG50 is 128 notes.
For details, please see Sound Engine Functions.

Reverb
This effect adds reverberation to the sound.
The reverb system is an exclusive system effect.
(The Echo effect is called Delay and is a variation effect.)

Sampling Rate
This is the digital processing density of original (analog) sounds.
The number of times analog information is processed to convert it to data in a period of
one second when original sounds are undergoing digital processing.
The higher the number, the more linearly the data are processed and the higher the sound quality that
results.
    44K = Sound quality corresponding to the CD level.
    22K = Sound quality corresponding to the FM radio level.
    11K = Sound quality corresponding to the telephone level.

SoftSynthesizer(TM)
MIDI tone generation software is prepared in a program for the data processing structure of MIDI instruments on a computer.
Receiving MIDI data outputs sound processing data and the sound function (CODE C) converts digital sound to analog (so that the sound can be heard) for listening from audio output.

" SoftSynthesizer" is a Yamaha trademark and it is commonly called
" software-based synthesizer" and " MIDI tone generation software "

Variation
These are effects such as reverb, chorus, delay and distortion which have various results.
They can be used either as system effects or insertion effects.

Voice Processing Time
In CPU processing, this is 61~371 ms (1 sec. = 1000 ms), then CODEC processing time
(in the standard, less than 20 ms) is added to this value.
Adjustment is carried out in the SoftSynthesizer setting screen.
The adjustment is effective only when DirectSound is on.

XG format
This is a next generation sound source format advocated by Yamaha which expands
on the GM System Level 1, is compatible with the ever increasing complexity
and sophistication of the computer peripheral environment in this age, and makes
possible a rich power of expression and data continuity.
An XG mark is attached to sound source devices and song data which are compatible with XG.

Standard MIDI File (SMF)
This is a unified standard for the format in which performance data from various computer music programs or digital instruments can be saved in common.
The performance data compatible with the standard MIDI file can be played back easily using music software or electronic instruments which are compatible with standard MIDI files. Performance data can also be transferred between different music programs and electronic instruments. It is also called simply SMF or MIDI File.

Drag
This is moving the mouse pointer's position while holding down the left button on the mouse.

Drop
This is releasing the mouse button after dragging an object with the mouse.

Troubleshooting

Q 1:Trouble occurred during Installation or Uninstallation.

Q 2:The massage "Use limit was exceeded" or " Already installed" is output.

Q 3:It cannot be installed.

Q 4:It will not start.

Q 5:The sound cannot be heard, or is not output.

Q 6:The performance tempo is distorted, or the sound is choppy. Mouse reaction becomes slow.

Q 7:No sound can be heard in MIDI compatible games, or it is not output.

Q 8:The result sounds in MIDI compatible games are generated late.

Q 9:Noise gets mixed in with the playback sound.

Q10:What is volume adjustment?

Q11:The recording volume control cannot be used.

Q12:The SoftSynthesizer cannot be used even after the driver is turned On.

Q13Why doesn't reaction time change even though the slider for sound reaction programming is on " fast".

Q14:Why is direct sound delayed even though the direct sound response game has turned it on?

Q1:Trouble occurred during Installation or Uninstallation.
A1: It is impossible to determine how far the operation progressed. Please perform the following deletion operations.

> ********** Check the screen display. *******************************
> Depending on the Windows setting state, existing files may not be
> displayed.
> Please check by the following procedure. (There is no effect on the
> computer's operation from this setting.)
> > (1) Right click on Start and select " Explorer."
> > (2) From the top menu, select [View], then [Options].
> > (3) Select " Show all files."
> > (4) Remove the check from the box in front of " Hide MS-
> >   DOS file extensions for file types that are registered."
> ***

1. Select <Start – Find – Files or Folders...>.
2. Type system.ini, then press [Enter].
3. If system.ini is displayed in the search results, press [Enter]. The system.ini file will be
   displayed in Memo Pad.
   ¥ Delete the midi#=sxgma.drv, wave#=sxgma.drv and mixer#=sxgma.drv comments from the
   [drivers] item.
   (The # is a number. This will differ depending on the user's personal computer.)
   (If there are no comments, proceed to the operation in 8.)
4. Save the system.ini file in Memo Pad, overwriting the previous copy.
5. Close Find.
6. Select <Start – Shut down – Restart computer>.
7. Select <Start – Find – Files or Folders...>.
8. Type sxg, then press [Enter].
9. Select the following files from the search results, right click with the mouse and select
   <Delete>.

> sxgma.drv
> sxgapi.dll
> sxgapi32.dll
> sxgcpu.dll
> sxgma32.dll
> sxgmasys.dll
> sxgmacpl.cpl
> sxgmx.dll
> sxgmx32.dll
> sxgxg.dll
> sxgxgknl.vxd
> sxgwave2.tbl
> sxgtkbar.exe

10. Close Find

Q2:The massage "Use limit was exceeded" or " Already installed" is output.

A2: This is a case of not using the Uninstaller included with SoftSynthesizer and the resulting failure
to uninstall. Try deleting the files that still remain of the model that is indicated in the message.

a) In the case of S-YXG50 Ver.3.0/Ver.2.1
Select and run <Start – Programs – YAMAHA SoftSynthesizer S-YXG50 – Uninstall S-YXG50>.
If this does not solve the problem, run the uninstaller according to the procedure in the previous
item, in the case of S-YXG50 Ver.2.1 which follows below.

b) In the case of S-YXG50 Ver.2.1/Ver.2.0

********** Check the screen display. *******************************
Depending on the Windows setting state, existing files may not be
displayed.
Please check by the following procedure. (There is no effect on the
computer's operation from this setting.)
       (1) Right click on Start and select " Explorer."
       (2) From the top menu, select [View], then [Options].
       (3) Select " Show all files."
       (4) Remove the check from the box in front of " Hide MS-
          DOS file extensions for file types that are registered."
****

1. Select <Start – Find – Files or Folders...>.
2. Type system.ini, then press [Enter].
3. When system.ini is displayed in the search results, press [Enter]. The system.ini file will be
    displayed in Memo Pad.
   • Delete the comment device=vswp.vxd from the **[386Enh]** item.
   • Delete the comments midi#=sxgb.drv, wave#=sxgb.drv and mixer#=sxgb.drv from the
[drivers] item.
    (The 3 is a number. This will differ depending on the user's personal computer.)
    (Depending on the version, there are some models which do not have the mixer#=sxgb.drv
comment.)
    (If both of these items have no comments, proceed to the operation in 8.)
4. Save the system.ini file in Memo Pad, overwriting the previous copy.
5. Close Find.
6. Select <Start – Shut down – Restart computer>.
7. Select <Start – Find – Files or Folders...>.
8. Type sxg, then press [Enter].
    (It is premised that all the files found in previous searches are still remaining.)
9. Select the following files from the search results, right click with the mouse and select
<Delete>.
    sxgb.drv   sxg05mx1.dll   sxg05mx3.dll   sxgbcpl.cpl   sxgbsys.
dll   sxgwave2.
tbl
10. Type mmx, then press [Enter].
11. From the search results, select the following files, then right click them with the mouse and
    select <Delete>.
    mmxswp00.dllmmx32x00.dll
12. Type vswp.vxd, then press [Enter].
13. From the search results, select the vswp.vxd file, then right click it with the mouse and select
    <Delete>.
14. Close Find.
15. Right click on Start, then select <Explorer>.
16. Delete the YAMAHA folder in C:, then close Explorer.
17. Select <Start – Settings – Task Bar – (T)>.
18. Click on Delete in the [Start] menu settings.
19. Select YAMAHA SoftSynthesizer S-YXG50, then click on Delete, Close and OK, in order.

c) In the case of S-YG20

********** Check the screen display. *******************************
Depending on the Windows setting state, existing files may not be
displayed.
Please check by the following procedure. (There is no effect on the
computer's operation from this setting.)
       (1) Right click on Start and select " Explorer."
       (2) From the top menu, select [View], then [Options].
       (3) Select " Show all files."
       (4) Remove the check from the box in front of " Hide MS-
          DOS file extensions for file types that are registered."

****

1. Select <Start - Find - Files or Folders>.
2. Type system.ini, then press Enter.
3. When system.ini is displayed in the search results, press Enter. The system.ini file will be displayed in Memo Pad.
   • Delete the comment midi#=sgmpdrv00.dll and wave#=sgmpdrv00.dll from the [drivers]
item.

   (# is a number. This number will differ depending on your computer.)
   (If there are no comments, go to the operation in 8.)
4. Save the system.ini file in Memo Pad, overwriting the file so as to include the changes.
5. Close Find.
6. Select <Start - Shut Down - Restart the Computer>.
7. Select <Start - Find - Files or Folders>
8. Type sgp*.* , then press Enter.
   (It is premised that all the files found in previous searches are still remaining.)
9. Select the following 5 files from the Find results, right click the mouse and select <Delete>.
   sgpctl.exe sgpdrv00.dll sgpmod00.dll sgpswp00.dll sgpwav00.tbl
10. Close Find. (That is the end of file deletion.)
11. Select <Start - Settings - Task Bar (T).
12. Click on " Delete [Start] Menu settings.
13. Select YAMAHA SoftSynthesizer S-YG20, then click on Delete, Close and OK, in that
order.

Q3:It cannot be installed.

A3: Necessary Condition = Is the operating environment saturated? (hard disk capacity, memory capacity, OS, etc.)
If the hard disk's capacity is insufficient, this software cannot be installed. Please delete unneeded files and provide sufficient vacant space on the hard disk for installation.

Q4:It will not start.

A4: Necessary Condition = Is the operating environment saturated? (hard disk capacity, memory capacity, OS, etc.)
Is the correct procedure being following for installation? Uninstall the program, then try installing it again.
Is the driver section of the Softsynthesizer setting screen Control Off?
Is there a SXG Driver being used with some other previously existing MIDI Player?

Q5:The sound cannot be heard, or is not output.

A5: Please check the settings and volume of the computer, amplifier, speakers, etc.
Is the "YAMAHA SXG Driver" set for the computer's MIDI setting? Check the MIDI tab under Multimedia in the Control Panel.
This software cannot be used with a 8-bit or 16-bit monaural sound card.
Is there a SXG Driver being used with some other previously existing MIDI Player?
If a demonstration model' s use period has expired, it can be selected, but no music will be output it cannot be used with an 8-bit sound card.

Q6: The performance tempo is distorted, or the sound is choppy. Mouse reaction becomes slow.

A6: This will happen if you put a load on the CPU during a performance by starting another application, or accessing a floppy disk or CD-ROM driver, etc.

Probably the processing being attempted is exceeding the performance capacity of your CPU. Please reduce the number of sounds generated, reduce the load on the CPU and lower the sound quality setting in the <u>SoftSynthesizer setting screen</u> under Control.

Q7: No sound can be heard in MIDI compatible games, or it is not output.

A7: S-YXG50 cannot be used from DOS or from the MS-DOS prompt.

Q8: The result sounds in MIDI compatible games are generated late.

A8: In games which are not compatible with DirectSound, there are delays in the voice (Wave) data.

Q9:Noise gets mixed in with the playback sound.

A9: Please install DirectX5. Or use it with DirectSound turned Off.
I If the CPU's load is increased, there will be deviations in the timing of data transfer to the CODEC, and noise may be generated. In such a case, open the SoftSynthesizer setting screen and click on OK. The timing discrepancy will be reset.

Q10:What is Volume Control?

A10: Volume can be adjusted using the volume control (mixer). Double-click the speaker icon on the right side of the task bar.
Depending on the device which is selected as the " Default Device" for audio playback under Multimedia in the Control Panel, the mixer that is displayed and the sliders may differ.
In the case of a hardware device: Adjust in the Wave section.
In the case of the SXG Driver: Adjust in the SXG section.

Q11:The recording volume control cannot be used.

A11: Select Hardware Device for the " Default Device" for the Multimedia Audio Playback in Control Panel.
The YAMAHA SXG Driver Mixer does not support recording adjustments.

Q12:The SoftSynthesizer cannot be used even after the driver is turned On.

A12: After switching the On/Off switch, click on OK, then restart the computer. Then this switch will be effective.

Q13:Why doesn't reaction time change even though the slider for sound reaction programming is on "fast"

A13: It doesn't work because direct sound is installed and the sound function (CODEC) does not support direct sound.

Q14:Why is direct sound delayed even though the direct sound response game has turned it on?

A14: The audio device is delayed when the SXG driver is on. Choose the hardware driver.

Connecting to the Yamaha XG Home Page!

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