

MA-7

Authoring Tool

User's Manual

(SMAF/SMF-Multi Edition)

Ver.1.6.0

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Yamaha Corporation

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Introduction

MA-7 Authoring Tool is the application software for authoring, correcting, and verifying the contents application programs for mobile phones.

This application provides a conversion from SMF (**Standard MIDI file**) and/or WAVE audio format file into Synthetic Music Mobile Application Format (hereafter called "**SMAF**") of Yamaha's proposal, editing of voices, editing of management information, giving sound effect, and assigning of sound effect parameters and 3D sound effect positioning parameters. Also, creation of SMF with voice information for SMF-Multi format for game applications is available.

Recommended Operating Environments

The recommended operating environment for MA-7 Authoring Tool is followings.

Supported OS	Microsoft® Windows® XP Microsoft® Windows® 2000
CPU/Clock	Pentium® 4, 2.0GHz or faster / other compatible processor
Memory	256MB or more
Necessary Hard Disk Space	300MB or more

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Revision History

Edition	Date of issue	Description
1.6.0	2006/11/09	<ul style="list-style-type: none"> •6.3 Menu Bar Replaced the figures of Window menu and Help menu. <ul style="list-style-type: none"> • Window menu Added 「Layout」 into the corresponding figure and chart. Added explanation of Window Layout Save/Change. • Help menu Replaced the figure •6.10 RAM Size Report Bar Corrected the maximum value for the RAM size. •7.2 Library Window <ul style="list-style-type: none"> • Normal Voice List Modified description about “Voice Name.” • Drum Voice List Modified description about “Voice Name.” •7.3 Contents Window <ul style="list-style-type: none"> • Master Track / 3D Added description about 3D Pattern operation and its figures. • Voice Tab / Voice List / Voice Edit Function To Popup Menu 1, Added “Import from Library/Voice List” and “Export to Library /Voice List.” To Popup Menu 2, Modified “Import from Library/Voice List...” and “Export to Library/Voice List...” • Effect Tab / Effect Edit Function Added Popup Menu 2 •7.4 Voice Edit Window Replaced Voice Edit Window figure. <ul style="list-style-type: none"> • Section-C (Keyboard FM/Drum/PCM tone) Added「All Sound Off」 into its corresponding figure and chart. •7.10 Mixer Window Added “Adjustment Mode” and “Slider Movement” into its corresponding figure and chart. •7.11 About Authoring Tool Replaced the figure •9.1 Voice List <ul style="list-style-type: none"> • MA-7 GM Level1 Drum Instrument Normal Voice/Rom Voice Modified the ROM type of “No.30 Castanet.”
1.5.1.1	2006/07/18	<ul style="list-style-type: none"> •5.1 Description of Type Setting dialog was added.
1.5.1	2006/04/25	<ul style="list-style-type: none"> •6.1 Application Window Wide/DRC bar was added. •6.3 Menu bar Wide/DRC Bar was added on View Menu. <ul style="list-style-type: none"> • File Menu: Karaoke was added on Replace SMF dialog. • View Menu: LED/Vib. bar was renamed as Device Control bar, and Wide/DRC bar was added. •6.6 Transport bar: Seek slider was added, and TC/KC was moved to Device Control bar. •6.7 Device Control bar: renamed, and TC/KC functions are added. •7.2.2.1. Normal Voice Tab Corrected the description for Voice Select/Cancel function •7.2.2.2. Drum Voice Tab Corrected the description for Voice Select/Cancel function •7.3 Contents window: Karaoke tab was added, and Track View: Master track was divided, View filter was added, and Karaoke Scoring section was added, and Karaoke tab was added. •7.5.3 3D Pattern Edit window: Corrected icon images of event list and parameter ranges for 3D Position Setting, Time Signature Setting was added to support the meter except 4/4, and Redo/Undo button was added. •7.10 Mixer window: Mute and Clear buttons was added. •Message Insertion Demonstration: subject name was changed, and message entering examples of Karaoke Guide Channel Setup and Karaoke Scoring Section Setup was added on Native Meta Event.
1.0.0	2005/12/27	First Edition

1. What's New in SMAF/MA-7

Function Additions after MA-5

Effectors

Two systems of effectors are added: SFX1 (Reverb system) and SFX2 (Chorus system and variation system).

These two systems of effectors can be used simultaneously for one content. Effect setups are available to change during a song playback.

The volume to go through each effectors and to go through Dry(LR) can be controlled with Control Change messages: "Dry Send Level", "Reverb Send Level" and , "Chorus Send Level."

3D-Effect

3D Effect is supported.

Four virtual sound generators can be used for one content.

Output path can be set for each MIDI channel.

There are three types of output paths: virtual sound generator ID0 to 3, LR (Wide stereo output), and Binaural (no 3D-effect).

The sound position of a channel, which is assigned as a virtual sound generator from ID 0 to 3, can be moved in three-dimensional space by assigning the motion of the virtual sound generator.

Wide stereo effect can be applied to the channels to which is assigned as LR path.

If an audio source that already has been applied a 3D effect is assigned to 3D or LR path, the effect may not operate as expected. Be sure to use an audio which are not pre-applied.

3D or Wide-Stereo effect may not be applied to the channel which is assigned to Binaural. It is recommended to assign the pre-encoded audio to Binaural path. Channels except Audio cannot be assigned to the Binaural. If assigned, the same operation as that in LR is performed.

In addition, output path cannot be set during a song. Be sure to set at the head of the song.

Fine Tune / Coarse Tune

The function of Master Fine Tune, Master Coarse Tune, Fine Tune, and Coarse Tune are supported.

PCM Voice

Multi-Bank

Multi-bank, that can divide a keyboard into up to five blocks and assign separate voices to the block, is made available. Up to eight multi-bank voices can be registered to one content.

Pitch EG

Pitch EG is made available.

Function Changes after MA-5

Tone Generation Mode

Tone generation mode is only the following Normal mode:
Normal contents : 32 (FM) + 32 (PCM) + 2 (Audio) + 1 (HV)

Filter in All Voice

Filter (AL) is made available in all voices.
Simultaneous use in all channels on polyphonic sound generation is also possible.

FM Voice

Frequency-Fix in All Voices

Frequency-fix is made available in all FM voices.

Improvement of Operator EG Resolution

Resolution of operator EG is improved.

PCM Voice

Improvement of Amplitude EG Resolution

Resolution of amplitude EG is improved.

Resolution Improvement on Pitch Bend

Resolution of pitch bend is improved.

Function Deletions after MA-5

Filter-Channel Designation

The message of filter-channel designation is discarded because a filter (AL) is applied to all channels.

Audio Reserve Setting

The message for audio reservation setting is discarded. The playback number of Audio data, that can be performed simultaneously, is limited up to two; same as that of MA-5 or earlier.

2. Notes on Authoring Environment

MIDI Device

In order to use MA-7 emulator from the sequencer software, you need to install Virtual MIDI Driver. Use port "0" of Virtual MIDI Device.

3. Notes on Authoring SMF

SMF Format

Use SMF Format 0 or SMF Format 1. The Authoring Tool holds data in Format 1 configured by 33 tracks. Create a SMF in consideration of distribution operation because tracks are distributed when SMF is imported

MIDI Channel

MA-7 supports MIDI events for 16 channels. And, 16 tracks of Audio are available.

Setup Measure

If the song has a Start Point, the position before them is utilized as a setup measure. If it doesn't have, the position before first note event is utilized. All of the setup messages should be placed before this event message. If the song has a Start Point, the song playback is started from this message, after this event has been examined in advance. If not, the playback starts from the beginning of the song.

Tempo

Only the range of 5BH 8DH 80H (quarter notes of 10) to 00H EAH 60H (quarter notes of 1000) becomes valid by the Set Tempo values.

If tempo is not designated, quarter note is assumed as 120. Tempo change during the song is supported.

Time Base

When converting to SMAF, time base value is fixed to 4 ms.

Channel Attribute

As the Channel attributes, Normal Channel and Drum Channel are provided. These attributes can be changed by Bank Select. When designation with Bank Select is not provided specifically, channel 10 is treated as a Drum Channel, and other channels are treated as Normal Channels. Moreover, when HV is specified by the Preference of Authoring Tool, arbitrary channels can be specified to HV Channels.

4. About MA-7 Authoring Tool

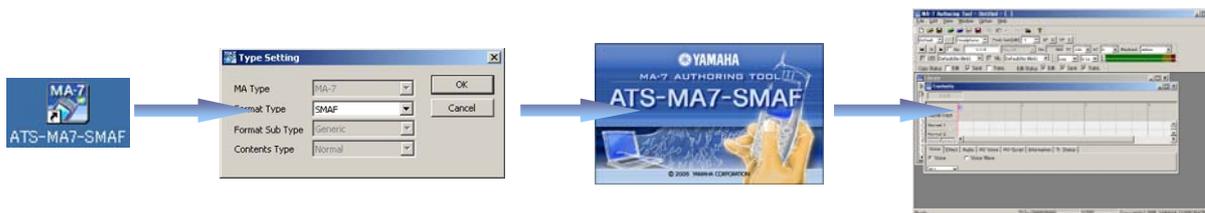
This chapter describes the outline of functions provided by MA-7 Authoring Tool.

Available Functions

Functions	Descriptions
Import / Export SMF (for SMF mode and SMF-Multi)	A SMF (*.mid) file can be imported into MA-7 Authoring Tool, and can be exported as a SMF file. A SMF (*.mid) file for SMF-Multi with Voice data can be created and saved. Note: Under using SMF, some data cannot be saved except Voice, Mixer, and some effect setups.
Create, Playback, and Save of SMAF File	A SMAF file (*.mmf) can be created, performed playback, and saved based on an imported SMF (*.mid). Note: Under SMAF, entire effect setups can be saved together.
FM Voice Editing	FM Voice Parameters can be edited.
PCM Voice Editing	PCM Voice Parameters can be edited.
3D Positioning Setup / Editing	Motion of virtual sound generator can be assigned individually and simultaneously with a three-dimensional perspective, up to four setups.
3D Route Setup / Editing (patch)	Different channels can be assigned onto four virtual sound generators (ID0 to ID3) individually.
Effect Creation / Editing and Parameter Exportation	Any sound effects such as reverb, chorus, can be created / edited. Two effects can be utilized with connecting in serial or parallel; these setup can be changed during playback.
Automatic Audio Note Data Generation	Audio Note data is generated automatically by pasting Audio data on Track view pane. This event note can be moved and be changed the length to playback.
Import / Export Project File	Integrative importing/exporting of data, such as SMF, Voice, 3D-effect setting value and Wave file for PCM, can be performed.
Import / Export Voice File (*.vm7/5)	Legacy Normal voice list file and Drum voice list file can be imported / exported.
HV Voice Editing	HV Voice Parameter can be created / edited.
HV-Script Editing	HV-Script Parameter can be created / edited. The note event for HV-Script can be created on Track view.
Administrative Information Editing	Administrative Information of contents data can be created / edited.

5. Start the MA-7 Authoring Tool

This chapter describes how to start the MA-7 Authoring Tool application software.



1. Double click the short-cut icon on desktop, ATS-MA7-SMAF, which may be created when installation.
2. Select applicable mode on Type Setting dialog and press OK.
 - To create SMAF, choose SMAF.
 - To create SMF (Multi), choose SMF.
3. Main window of MA-7Authoring tool appears.

Figure. 5-1 Start procedure

5.1. Type Setting Dialog

Type setting dialog appears at the starting of MA-7 authoring tool.
 Select a format type of the contents to create, and press OK button. (Only “Format Type” can be changed.)

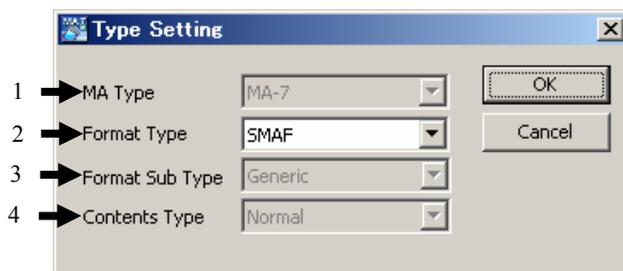


Figure. 5-2 Type Setting Dialog

No.	Function Name	Description
1	MA Type	Displays “MA-7” as the MA type.
2	Format Type	Select a format type of the contents to create. “SMAF” : To create SMAF. “SMF” : To create SMF (Multi).
3	Format Sub Type	Displays “Generic” as the format sub type.
4	Contents Type	Displays “Normal” as the contents type.

6. Reference

This chapter describes the names and functions of each window, bar, and menu provided in MA-7 Authoring Tool.

6.1. Application Window

Multiple projects can be opened simultaneously in MA-7 Tools.

Copy and paste edit can be performed between different projects.

Each edit window is opened on this “Application Window.” Application window provides “Menu Bar”, “Tool Bar”, “Volume Bar”, “Transport Bar”, “LED/Vib. Bar”, “Preference Bar”, “HV Bar”, “RAM Size Report Bar”, “Event Density Report Bar”, “Peak Meter Bar” and “Status Bar” that are commonly used in each editing windows. Any Bar except “Status Bar” can be selected and executed various functions with clicking or dragging. Status Bar mainly shows the present stats. Moreover, these bars can be freely arranged by clicking and dragging so that user may be easy to use. For details of each bar, see the corresponding sections which come later this chapter.

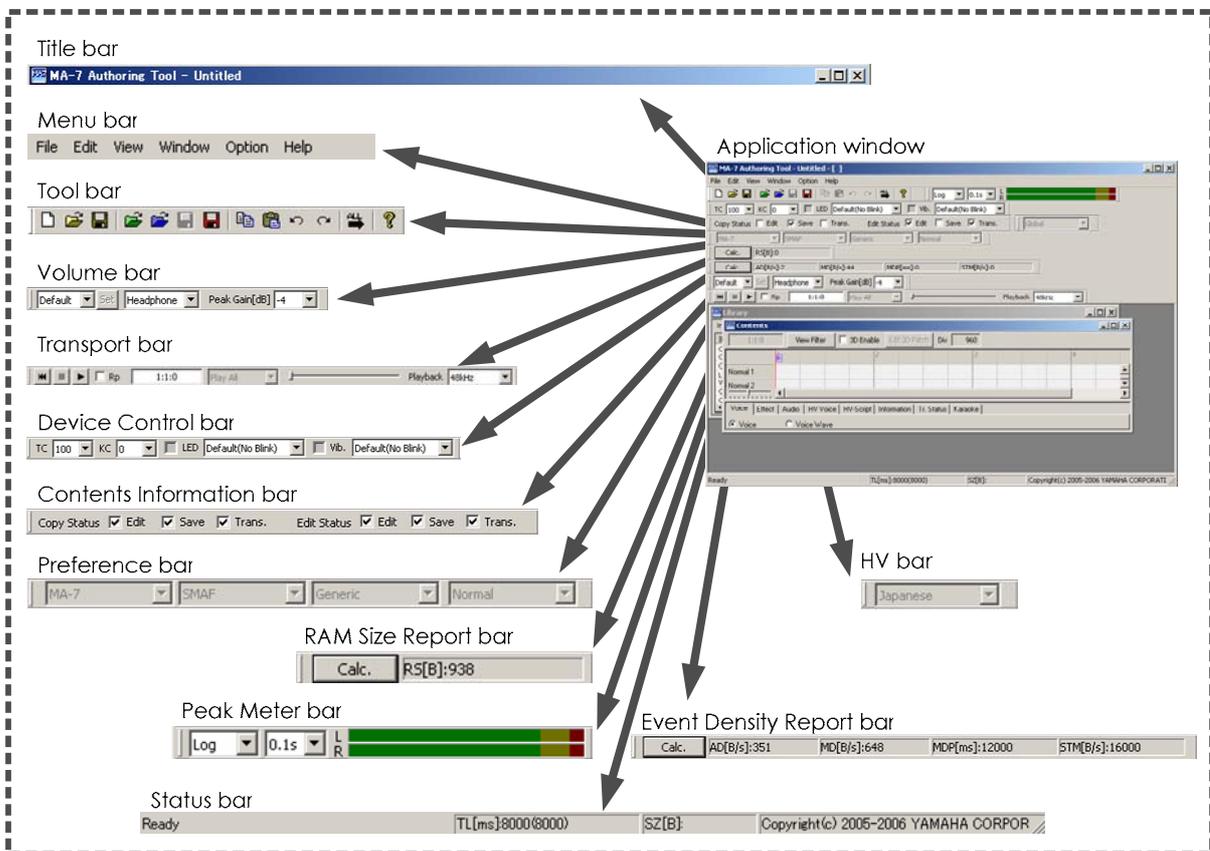


Figure. 6-1 Compositions of Application Window

[Note] Each bar can be displayed or hidden as necessary. For details, see “6.3.3 View Menu”. In addition, any bars except “Status Bar” can be arranged by clicking and dragging a mouse so that user may be easy to use.

6.2. Title Bar

“Title Bar” on “Application Window” displays the name of a file being currently opened in MA-7 Authoring Tool. The “Title Bar” on each “Edit Window” displays the name of each window.



Figure. 6-2 Title Bar

No.	Function Name	Description
1	Application Icon	By clicking this icon, “System Menu” is opened. (For details of System Menu, see “6.2.1 System Menu.”)
2	Minimize button	By clicking this button, a window is minimized (to make it into an icon.)
3	Maximize button/ Undo (Minimize) button	By clicking this button, a window is maximized. Window is restored to the original size by clicking this button once again.
4	Close button	By clicking this button, a window is closed. In case of “Application Window,” each window is closed and application is also ended. In case of “Edit window,” each window is closed one by one.

6.2.1. System Menu

By clicking the “Application Icon” located on the left end on “Title Bar,” this System Menu is opened.

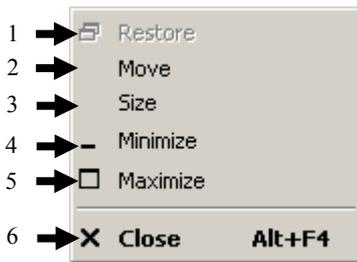


Figure. 6-3 System Menu

No.	Function Name	Description
1	Restore	When the size of window has been changed by size change etc., the window is restored to original size by clicking this function.
2	Move	Mouse pointer is changed to a moving tool by clicking this function. Use the pointer to move the windows by clicking & dragging the Title bar of windows. The maximized windows cannot be moved.
3	Size	Mouse pointer is changed into the size-change tool. Put this pointer on the upper, lower, left and right side lines of the window, and click and drag the line to change the size of the window. The maximized window cannot be changed.
4	Minimize	Windows are minimized (to make it into an icon).
5	Maximize	Windows are maximized. If the window is already maximized, this function is grayed out.
6	Close (Alt+F4) (Ctrl+F4)	Windows are closed by clicking this function. In case of “Application Window”, all windows are closed and application is also ended. In case of “Edit Window”, each window is closed one by one.

6.3. Menu Bar

In Menu Bar, the following menus are provided to execute and control the various functions. For details of each menu, see the relevant menu which comes later in this chapter.

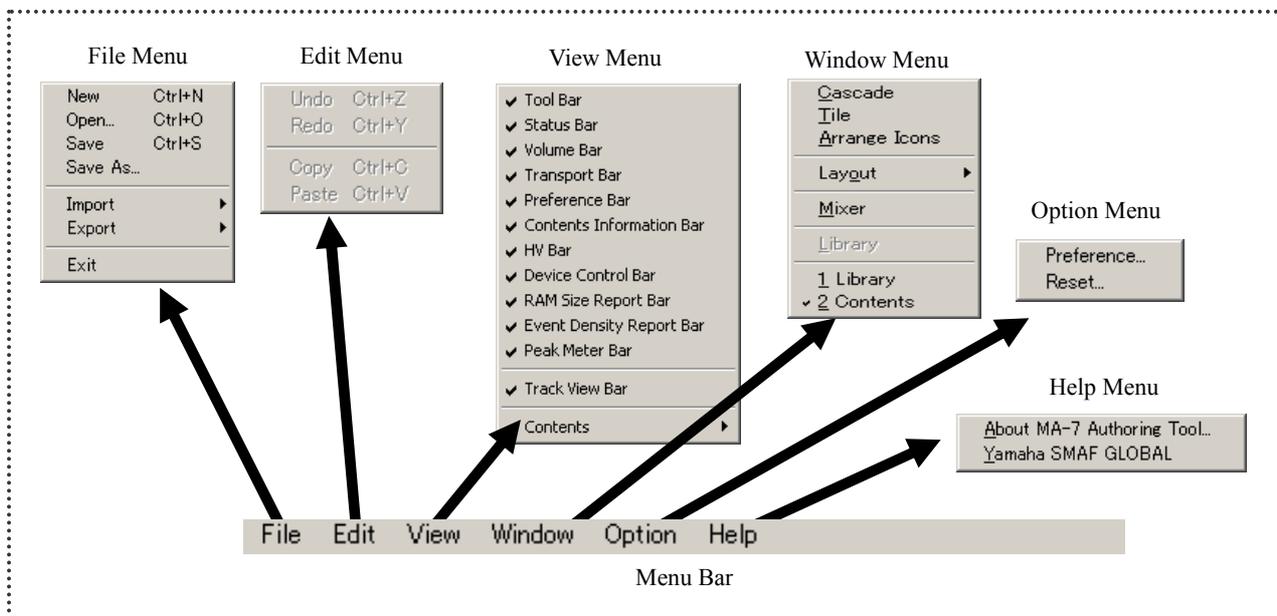


Figure. 6-4 Menu Bar

6.3.1. File Menu

In “File Menu,” functions to perform a series of operations such as “Open,” “Close,” “Save,” and “End” of file is provided. In addition, operations such as opening a default voice and a user-defined voice (*.vm7) can be controlled in this menu.

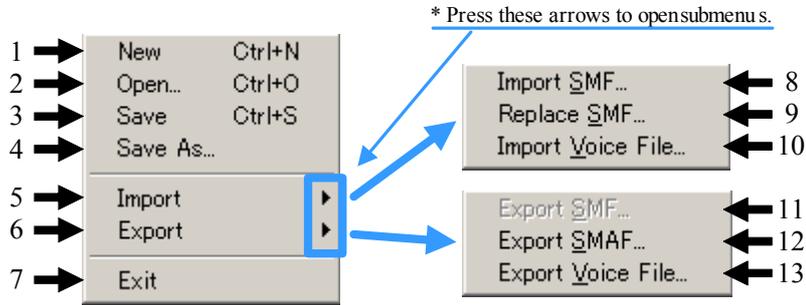
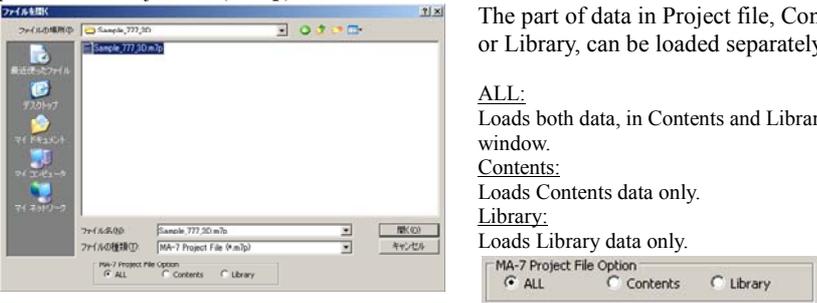
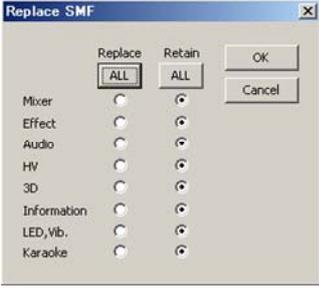


Figure. 6-5 File Menu

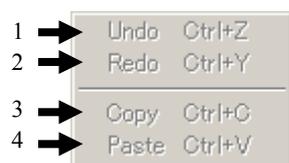
No.	Function Name	Description
1	New	Opens a new MA-7 Project File (*.m7p). Multiple projects can be opened simultaneously in MA-7 Tools. Copy and paste edit can be performed between different projects.
2	Open...	Opens a MA-7 Project File (*.m7p).  The part of data in Project file, Contents or Library, can be loaded separately. <u>ALL</u> : Loads both data, in Contents and Library window. <u>Contents</u> : Loads Contents data only. <u>Library</u> : Loads Library data only.
3	Save	Saves a file as a MA-7 Project File (*.m7p).
4	Save As...	Saves a MA-7 Project File in different name (*.m7p).
5	Import	Imports a SMF (*.mid), SMAF file (*.mmf), and MA-7 voice file (*.vm5/*.vm7).
6	Export	Saves a SMF (*.mid) SMAF file (*.mmf), and MA-7 voice file (*.vm7).
7	Exit	Exists from MA-7 Authoring Tool.
8	Import SMF...	Imports a SMF (*.mid).
9	Replace SMF	 Imports a SMF file (*.mid) with assigning various setups as Replace or Retain . ALL buttons toggles all radio buttons by one clicking.
10	Import Voice File	Imports a Voice File (*.vm5/*.vm7).
11	Export to SMF...	Saves a SMF (*.mid)
12	Export to SMAF...	Saves a SMAF file (*.mmf).
13	Export to Voice File	Saves a file as a voice File (*.vm7).

What is a Project File (.m7p)?

- “Project File Function” is a new function of MA-7 Authoring Tool. The Project File is a group set of file consist with the information, such as each songs’ Voice data, 3D-data, and Effect data, including its directory name.

6.3.2. Edit Menu

Edit Menu is a menu which includes a function to make editing on MA-7 Authoring Tool.



No.	Function Name	Description
1	Undo	Undoes an action.
2	Redo	Redoes an action.
3	Copy	Copies a selected element. When nothing is selected, this function is grayed out.
4	Paste	Pastes a selected element.

Figure. 6-6 Edit Menu

6.3.3. View Menu

By clicking each function name displayed on “View Menu,” each function can be displayed or hidden as necessary. The activated functions are shown with a check mark (see the following figure).

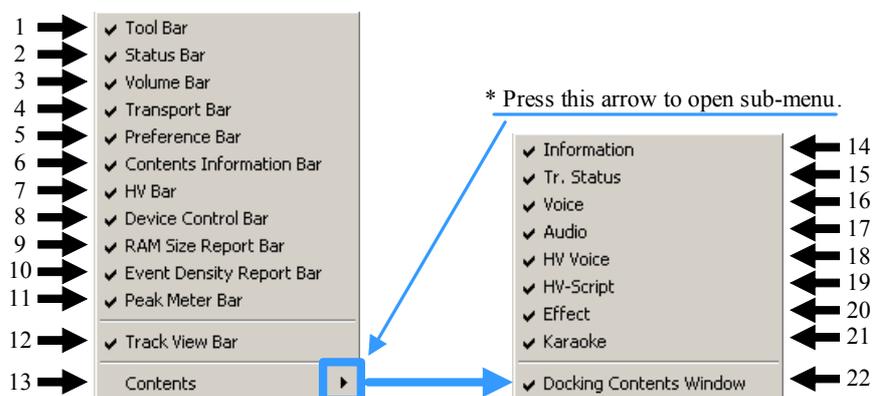


Figure. 6-7 Edit Menu

No.	Function Name	Description	
1	Toolbar	Switches display/non-display of Toolbar.	(See, p.19)
2	Status Bar	Switches display/non-display of Status Bar.	(See, p.24)
3	Volume Bar	Switches display/non-display of Volume Bar.	(See, p.19)
4	Transport Bar	Switches display/non-display of Transport Bar.	(See, p.20)
5	Preference Bar	Switches display/non-display of Preference Bar.	(See, p.21)
6	Contents Information Bar	Switches display/non-display of Contents Information Bar.	(See, p.21)
7	HV Bar	Switches display/non-display of HV Bar.	(See, p.23)
8	Device Control Bar	Switches display/non-display of Device Control Bar.	(See, p.20)
9	RAM Size Report Bar	Switches display/non-display of RAM Size Report Bar.	(See, p.22)
10	Event Density Report Bar	Switches display/non-display of Event Density Report Bar.	(See, p.23)
11	Peak Meter Bar	Switches display/non-display of Peak Meter Bar	(See, p.24)
12	Track View Bar	Switches display/non-display of Track View Bar at the top of Track View.	(See, p.44)
13	Contents	Opens a sub-window. (No.12 to 19 becomes selectable)	-
14	Information	Switches display/non-display of Information Tab.	(See, p.44)
15	Tr. Status	Switches display/non-display of Tr. Status Tab.	(See, p.48)
16	Voice	Switches display/non-display of Voice. Tab.	(See, p.49)
17	Audio	Switches display/non-display of Audio Tab.	(See, p.34)
18	HV Voice	Switches display/non-display of HV Voice Tab.	(See, p.35)
19	HV-Script	Switches display/non-display of HV-Script Tab.	(See, p.53)
20	Effect	Switches display/non-display of Effect Tab.	(See, p.53)
21	Karaoke	Switches display/non-display of Karaoke Tab.	(See, p.54)
22	Docking Contents Window	The tab currently displayed on the forefront side of a contents window is separated from a contents window. Moreover, when the tab separated by the window is active, the window is displayed in Contents window.	-

6.3.4. Window Menu

In “**Window Menu**,” display/non-display of “**Library Window/Contents Window**” and the arrangement of each window can be controlled. By placing a check onto the name of Library/Contents, windows are opened on Application Window. Checks are marked to the menu by which function has been activated. In addition, windows and dialogs displayed on “**Application Window**” can be arranged by selecting “**Cascade**,” “**Tile**,” and/or “**Arrange Icons**.”

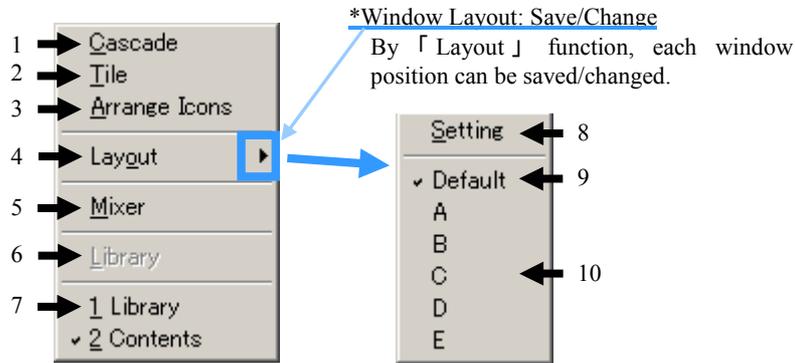
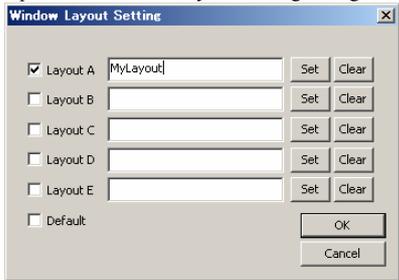
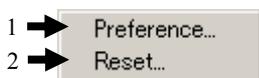


Figure. 6-8 Window Menu

No.	Function Name	Description
1	Cascade	Displays the opened windows in piles.
2	Tile	Displays the opened windows in a line.
3	Arrange	Arranges the minimized windows on the bottom of “ Application Window .”
4	Layout	Saves/Changes window layout.
5	Mixer	Displays the Mixer Dialog. For details, see page.80 .
6	Library/Contents	Switches a display/non-display of “ Library/Contents Window .” For details, see, “ p.26/p.38 .”
7	List of Active Windows	Lists the windows currently opened in Application Window. In addition, a window currently active is shown with checked mark as shown like in figure. Moreover, the selected window will become an active condition if optional windows are chosen from a list.
8	Setting	Opens the Window Layout Setting dialog.  The window position information can be saved (5 patterns at maximum) <ul style="list-style-type: none"> • Select the Layout number (A-E) with the checkbox. • Save the position information by the [Set] button and return its value in default by [Clear] button. • The name of saved information can be set.
9	Default	Changes the window layout value in default.
10	A-E	Changes the window layout position (Layout A~E)

6.3.5. Option Menu

In “**Option Menu**”, basic operation environment for MA-7 Authoring Tool, etc. can be set.



No.	Function Name	Description
1	Preference...	Opens the “ Preference Dialog .” For details, see page.78 .
2	Reset	Resets the MA-7 emulator.

Figure. 6-9 Option Menu

6.3.6. Help Menu

In “**Help Menu**”, functions which support user's operations are provided.

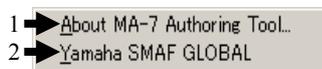


Figure. 6-10 Help Menu

No.	Function Name	Description
1	About MA-7 Authoring Tool...	Displays “ about MA-7 Authoring Tool. ” For details, see page 81 .
2	Yamaha SMAF GLOBAL	Links web browser to Yamaha SMAF Global site.

6.4. Tool Bar

The **Tool Bar** provides easy control for importing/exporting a file, such as MA-7 Project File (*.m7p), or editing a Voice Data.

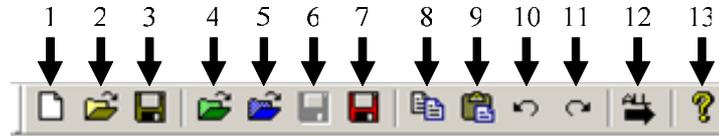


Figure. 6-11 Tool Bar

No.	Function Name	Description
1	New	Open a new MA-7 project file (*.m7p).
2	Open	Open a MA-7 project file (*.m7p).
3	Save	Save a file as MA-7 project file (*.m7p).
4	Import SMF...	Import a SMF (*.mid).
5	Replace SMF	Import a SMF file (*.mid) with assigning various setups as Replace or Retain .
6	Export to SMF...	Export a SMF (*.mid).
7	Export to SMAF...	Export a SMAF (*.mmf).
8	Copy	Copy data items.
9	Paste	Paste data items.
10	Undo	Undo a previous action.
11	Redo	Redo a previous action.
12	SendAll	Send all parameters, which is registered in contents, to the emulator at once.
13	About	Display the version information. For details, see page.81.

6.5. Volume Bar

Volume bar is the function group to set the playback volume, speed, height of key, etc. of musical pieces in MA-7 Authoring Tool.



Figure. 6-12 Volume Bar

No.	Function Name	Description
1	Setting	Loads a saved each setting. (Selectable values: Default·A·B·C·D·E)
2	Set	Saves each setting value into the “ Settings ” being selected.
3	Output Mode	Sets the output device setting. Unless set the output setup correctly, the 3D sound effect may not appears. (Selectable mode: Headphone/Speaker)
4	Peak Gain	Sets the Maximum volume. (Settable value: -12 to 0 dB)

6.6. Transport Bar

This bar controls playback of a song data.



Figure. 6-13 Transport Bar

No.	Function Name	Description
1	Rewind	Moves the playback position to the head of a song.
2	Stop	Playback of a song is stopped.
3	Play	Playback of a song is started.
4	Repeat (Rp)	Repeat is designated when checked.
5	Playback Position Indicator	Displays a playback position with beat format. Playback position can be changed by changing the value.
6	Phrase List (Ph)	When a rehearsal mark is set in the imported SMF file, this function becomes selectable.
7	Seek Slider	Shows and changes the playback position of the song. Available to drug the position, even though during playback
8	Playback Frequency	Determines playback frequency for emulator. Selection: 48kHz/44.1kHz/32kHz/22.05kHz.

6.7. Device Control Bar

The bar displays LED/Vib. and sets LED blinking cycle/Vib. vibration cycle.



Figure. 6-14 Device Control bar

No.	Function Name	Description
1	Tempo Control (TC)	Displays Tempo Control value in percent (%). This value can be changed by selecting the value list in the combo box, from 25 to 400. Value change during playback will be applied immediately. This setup isn't inherited in SMAF.
2	Key Control (KC)	Displays Key Control value as the number of halftones. This value can be changed by selecting the value list in the combo box, from -12 to +12. Value change during playback will be applied immediately. This setup isn't inherited in SMAF.
3	LED Lamp (unsupported)	Brinks as the setup of LED Blinking Cycle. The indicator on the emulator also brinks.
4	LED Blinking Cycle	Changes the LED Blinking Cycle. The selectable values are as follows. (Default (No Blink)/18 Hz/16 Hz/12 Hz/8 Hz/4 Hz)
5	Vib. Lamp (unsupported)	Brinks as the setup of Vib. The indicator on the emulator also brinks.
6	Vib. Vibration Cycle	Changes the Vib. Vibration Cycle. The selectable values are as follows. (Default (No Blink)/2.25 Hz/2.0 Hz/1.5 Hz/1.0 Hz/0.5 Hz)

6.8. Contents Information Bar

The bar controls the permission of Edit/Save/Transform for SMAF file in the mobile phone.

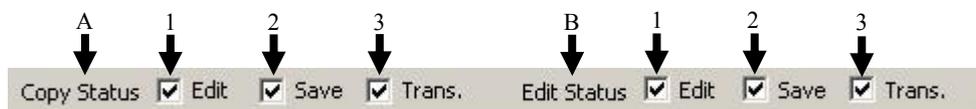


Figure. 6-15 Contents Information Bar

No.	Function Name	Description
A	Copy Status	Edit of Copy Status can be performed.
B	Edit Status	Edit of Edit Status can be performed.
1	Edit	With check “ Editable ”, and without check “ Un-editable .”
2	Save	With check “ Savable ”, and without check “ Un-savable .”
3	Trans.	With check “ Transferable ”, and without check “ Un-transferable .”

6.9. Preference Bar

This is a dialog bar to set the MA-7 Authoring Tool operational environment.



Figure. 6-16 Preference Bar

No.	Function Name	Description
1	MA Type	Displays the operation mode of MA-7 Authoring Tool.
2	Format Type	Displays the format type of MA-7 Authoring Tool.
3	Format Sub Type	Displays the Format Sub Type.
4	Contents Type	Displays the Contents mode of MA-7 Authoring Tool.

6.10. RAM Size Report Bar

This bar displays the total RAM size of a song in “Byte” basis.



Figure. 6-17 RAM Size Report Bar

No.	Function Name	Description
1	Calc.	Re-calculate RAM size when pushed.
2	RS	Displays the RAM size. Required RAM size which has been calculated in SMF/MA level is displayed. The unit is “B.”

When any file is not opened, it displays “RS[B]:.”

RAM size is displayed and updated with the following timing.

RAM Size Check Timing
When “OK” on Voice Edit Dialog is clicked.
When a SMF is imported.
When Voice Paste is performed to Voice List of Contents Window.
When “Import from Voice List” is performed.
When “OK” on Preference Dialog is selected.
When “Calc.” button is pressed.

*About RAM Size...

In MA-7 Authoring Tool, the total of voice data which consumes RAM is calculated according to the following size list. In case of PCM multi-bank voice, one-element is calculated as a voice.

Voice Parameter	Amount of RAM consumed		
Voice Parameter	2op FM	-	22
	2op FM	-	38
	4op FM	-	42
	4op FM	-	58
	PCM	Without PEG	14
	PCM	With PEG	40
	PCM	Without PEG	30
	PCM	With PEG	40
Voice Waveform Registration			Size/waveform of data part (In the case of odd number, one-byte addition)
FM Basic Waveform Registration			2048/Waveform

The total RAM size of MA-7 is 16,382-bytes, and thus, if amount of data exceeds the capacity, data cannot be played back. Authoring Tool calculates the required RAM size for a song; if the size exceeds 16,382-bytes, an error message will be shown. When an error occurred, playback and saving of a file cannot be performed.

Because MA-7 chip can share waveform data between voices, only data size for one waveform is added when the same PCM voice waveform is used by multiple voices.

6.11. HV Bar

Enable/Disable of HV function can be designated.



Figure. 6-18 HV Bar

No.	Function Name	Description
1	HV Type	Displays the language depending on your operating system.

6.12. Event Density Report Bar

This bar shows the event density of content being opened in Authoring Tool. The unit is "byte/sec."



Figure. 6-19 Event Density Report Bar

No.	Function Name	Description
1	Calc.	Re-calculate event density when pushed.
2	AD (Average Density)	Average event density through the loaded song is displayed. The unit is "Byte/sec."
3	MD (Max Density)	Event density per unit time in a place with highest event density through the song is displayed. The unit is "Byte/sec."
4	MDP (Max Density Position)	A position that has highest event density in the song is displayed. The unit is "ms."
5	STM (Stream PCM)	The maximum unit byte number of StreamPCM is displayed. The number of the maximum StreamPCM unit byte is displayed when a file is saved in SMAF file format. The unit is "Byte/sec"; in addition, a sampling frequency of sound file is converted into the StreamPCM unit byte (1Hz=1-Byte/sec). When there is no StreamPCM on the song, the value becomes "0." When "Direct Play" is operated, it is not displayed.

*About the Event Density Restriction...

If "Average Density" exceeds 500 Byte/s or "Max Density" exceeds 1000 Byte/s, MA-7 Authoring Tool warns with blinking the cell on red and forbids saving as the SMAF file.

The Event Density per unit time is calculated by estimating the size as shown below.

Event	Size
Note Event	6-byte
Control Change	3-byte
Program Change	2-byte
Pitch Bend	3-byte
Exclusive Message	Size of Data part + 2(F0.F7)Byte

[Note] By changing "width" of Event Density of Option-Preference, the density measurement unit can be changed.

6.13. Peak Meter Bar

This bar indicates the peak level of digital output during the playback for contents.

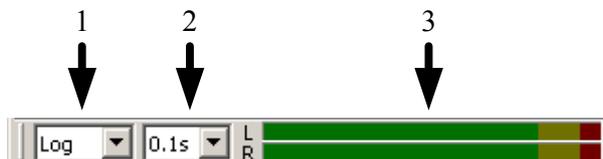


Figure. 6-20 Peak Meter Bar

No.	Function Name	Description
1	Scale View Change	Change the scale of the meter in Log or Liner.
2	Update Period	Set the update interval time of the display.
3	Peak Meter	Displays peak level of digital output.

6.14. Status Bar

Status Bar shows brief description of functions which are selected on “Menu Bar,” “Control Bar,” “Tool Bar”, and so on. And, this bar shows the present status of MA-7 Authoring Tool.



Figure. 6-21 Status Bar

No.	Function Name	Description
1	Message Display Area	Displays various messages.
2	TL (Total Length)	Displays the Total Length (Total Time from a starting point of the imported song data to its end point). The total time is calculated by the following manner: If there is no Start-point on the song, the head of Sequence Data is considered as the start point; on the contrary, if there is no end point on the song, the last of the Sequence Data is considered as an end point. In addition, the total time of Sequence Data (head to end) is put into brackets and displayed.
3	SZ (Size)	Displays the size of SMAF when a file is saved in SMAF format or when a SMAF is imported into this Authoring Tool.
4	Copyright Display Area	Displays the copyright of this Authoring Tool as “Copyright© Yamaha Corporation.”

7. Descriptions of each Window

This chapter describes the windows, tabs, and dialogs provided in MA-7 Authoring Tool.

7.1. Compositions of Windows

There are the following two main windows (**Library Window/Contents Window**) in MA-7 Authoring Tool. Tab control is prepared in each window so that the window can be displayed/un-displayed as necessary.

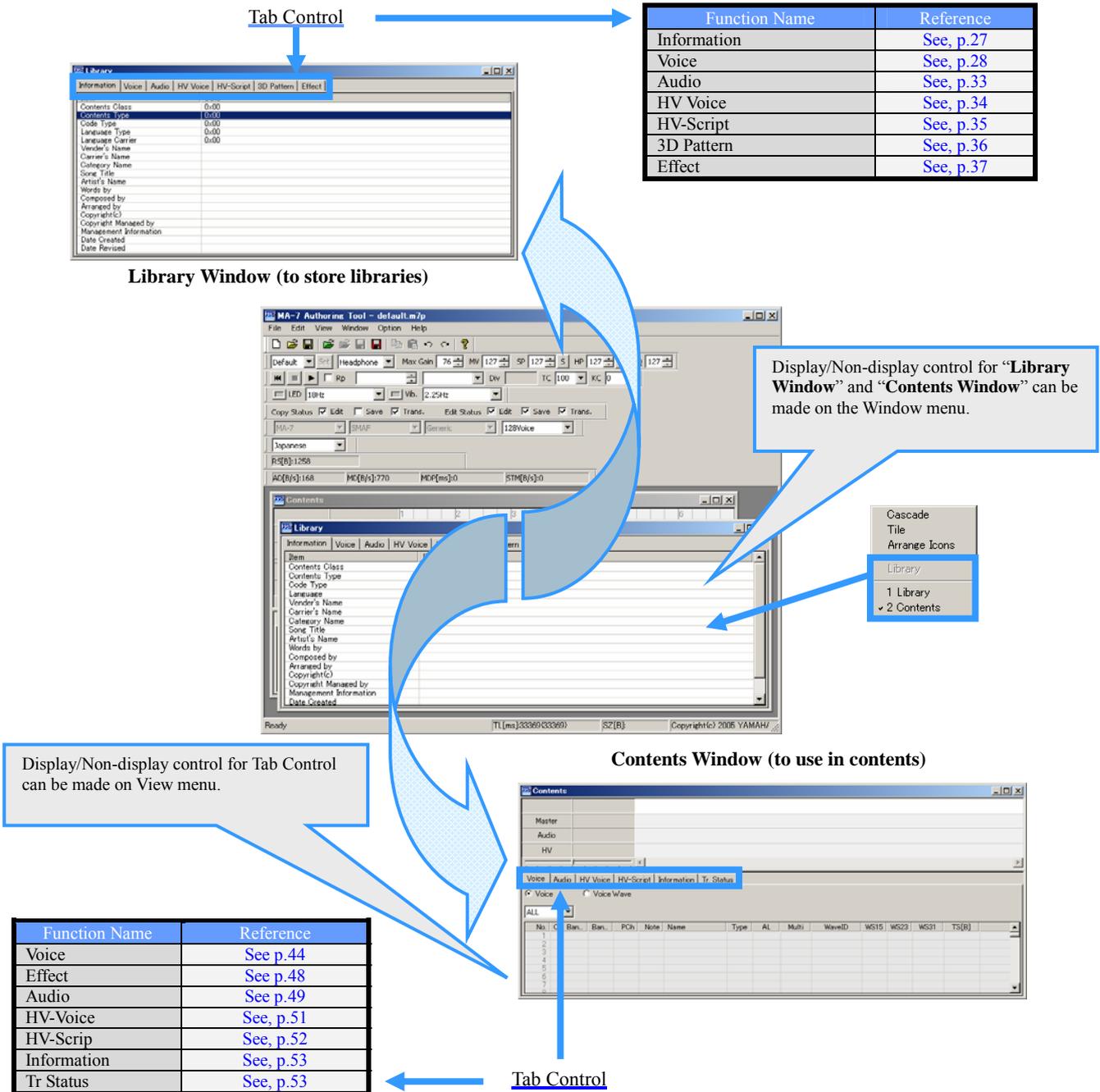


Figure. 7-1 Library Window / Contents Window

7.2. Library Window

The library window manages various libraries, and is composed of the following seven tabs: “Default Information” tab, “Voice” tab, “Audio” tab, “HV Voice” tab, “HV-Script” tab, “3D Pattern” tab, and “Effect” tab. Each tabs provide function of “Contents Information Editing,” “Various Voice Editing,” “Audio Data Editing,” “HV Voice Editing,” “HV-Script Editing,” “3D Positioning Information Pattern Editing,” “Effect Editing.” And, each tab appears on the Library Window when clicked. For functional detail of each tab, see the following page.



Figure. 7-2 Library Window

Function Name	Contents
Default Information Tab	Default information is displayed.
Voice Tab	Normal Voice List/Drum Voice List/Voice Wave List is displayed. Each list is switched by a radio button.
Audio Tab	Audio List is displayed.
HV Voice Tab	HV Voice List is displayed.
HV-Script Tab	HV-Script List is displayed.
3D Pattern Tab	3D Pattern List is displayed.
Effect Tab	Effect List is displayed.

7.2.1. Information Tab

The tab displays the default information.
 Information peculiar to contents can be displayed and registered.

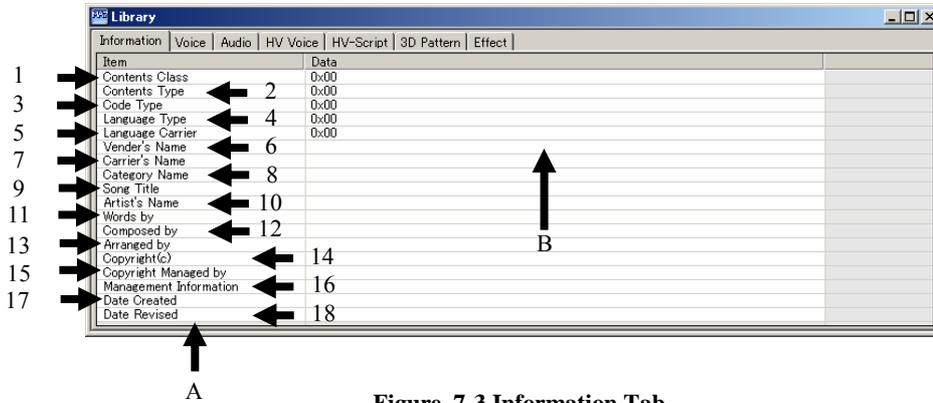
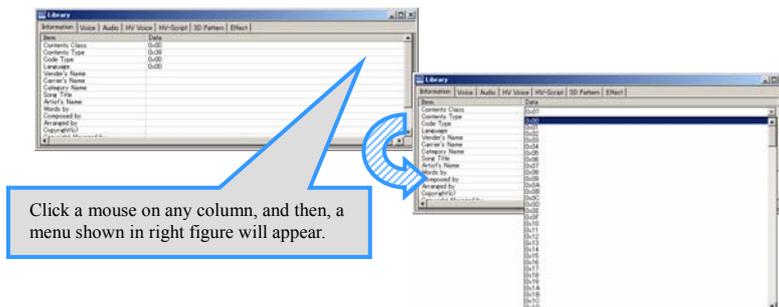


Figure. 7-3 Information Tab

No.	Name	Description
A	Item	Item names are displayed as a list.
1	Contents Class	Contents Class is set and displayed.
2	Contents Type	Contents Type is set and displayed.
3	Code Type	Code Type of Information that is output to SMAF/Optional Data Chunk is set and displayed. When clicking here, a combo box for Code Type is opened and Code Type is possible to change.
4	Language Type	The language of the written character string data can be set and displayed when Unicode is assigned on Code Type.
5	Language Carrier	-
6	Vender's Name	Vender name is input and displayed.
7	Carrier's Name	Carrier name is input and displayed.
8	Category Name	Category name is input and displayed.
9	Song Title	Song title is input and displayed.
10	Artist's Name	Artist name is input and displayed.
11	Words by	Lyricist name is input and displayed.
12	Composed by	Composer name is input and displayed.
13	Arranged by	Arranger name is input and displayed.
14	Copyright©	Copyright© is input and displayed.
15	Copyright Managed by	Manager grope is input and displayed.
16	Management Information	Management information is input and displayed.
17	Data Created	Creation date is input and displayed.
18	Data Revised	Revision information is input and displayed.
B	Data	Contents, which is set and entered, are listed.

I. Editing

- Double Click** By double-clicking a column displays a combo box which depends on each information items, and enables editing the information items.



7.2.2. Voice Tab

Voice names are listed. Double-clicking a voice name (Normal/Drum Voice) to be edited starts the Voice Edit Dialog. For details of Voice Edit Dialog, see p.55. Also, a voice waveform can be saved to **Voice Wave** from this dialog.

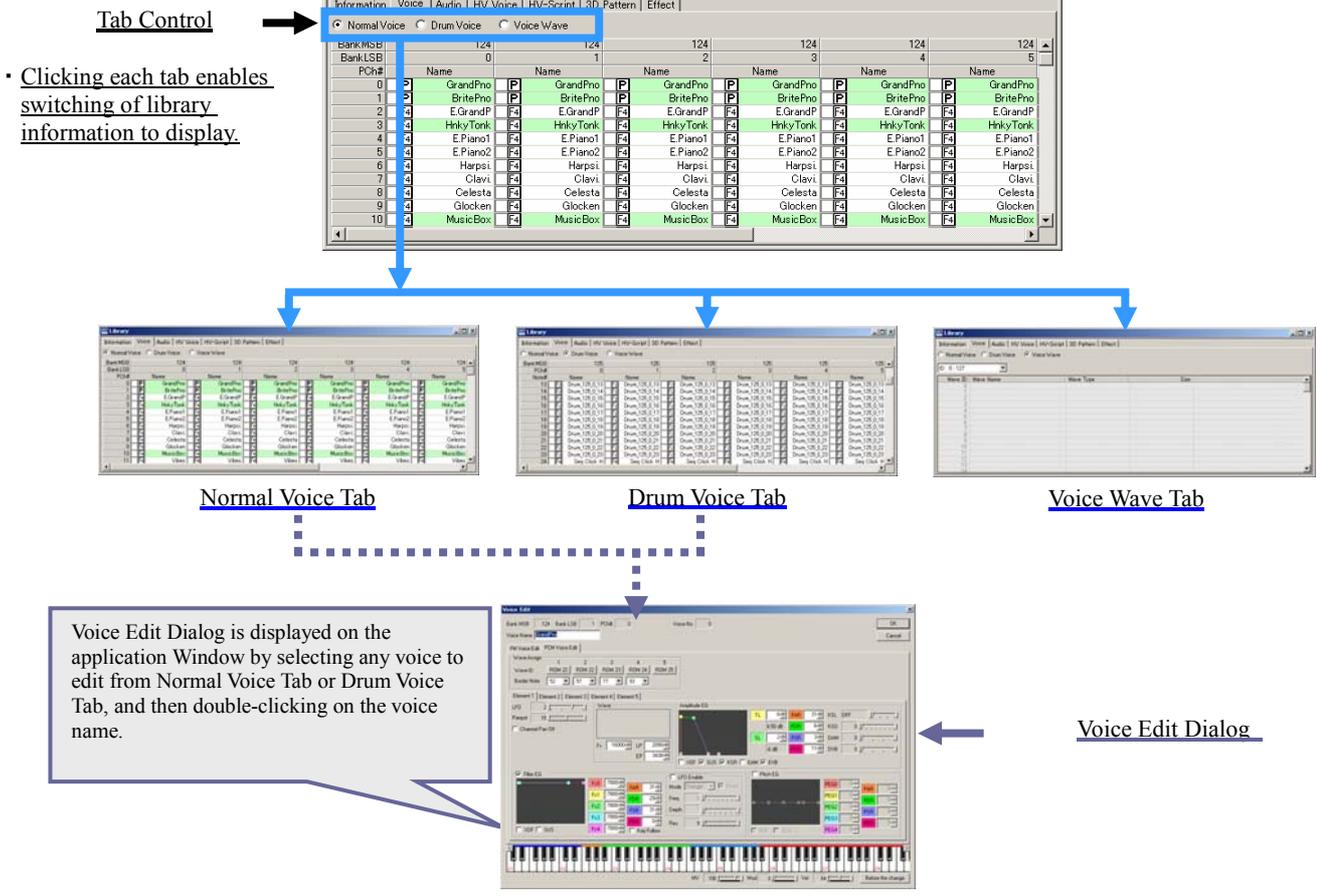


Figure. 7-4 Voice Tab

Function Name	Contents
Normal Voice Tab	When selected, Normal Voice List is displayed.
Drum Voice Tab	When selected, Drum Voice List is displayed.
Voice Wave Tab	When selected, Voice Waveform List registered is displayed.

7.2.2.1. Normal Voice Tab

The tab displays the Normal Voices List. Double-clicking a voice displayed on the tab calls Voice Edit Dialog to edit voices.

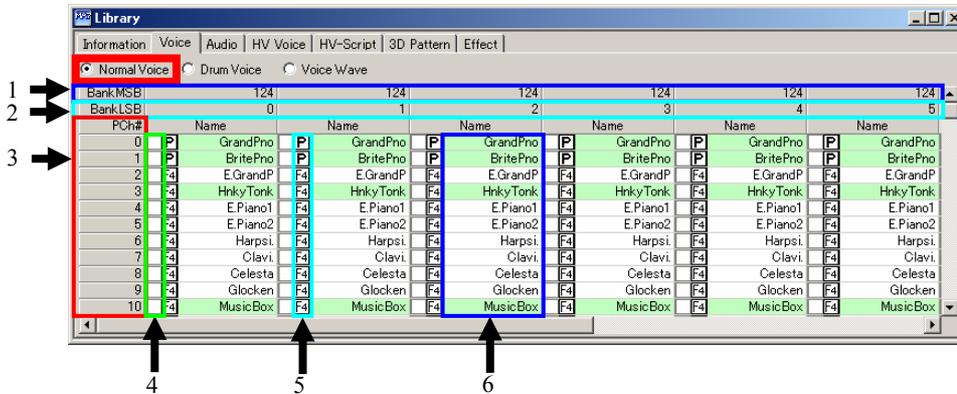


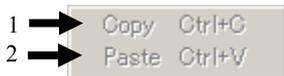
Figure. 7-5 Normal Voice Tab

No.	Function Name	Description
1	BankMSB	The number of Bank Select MSB is displayed. The value is 124 (fixed).
2	BankLSB	The number of Bank Select LSB is displayed. (The value is 0 to 9).
3	PCh#	Program Change Number is displayed. (The value is 0 to 127).
4	On/Off button	This button selects whether to perform transmission in a lump to the emulator. When checked (ON), transmission in a lump is performed. When a SMF has been imported, voices used in the song are automatically checked. When checked, the voice registration is transmitted to the emulator, and when the selection has been cancelled, voice deletion is transmitted to the emulator.
5	Type	Voice type being used is displayed. (e.g. F4:FM4OP/ F2:FM2OP/ P:PCM)
6	Voice Name	Voice name is displayed. When the voice uses FilterEG(AL), background color becomes green. Double-click or press "Enter Key" to activate the Voice Edit dialog.

II. Normal Voice Editing

1 **Double Click** By double-clicking a voice displayed on the Normal Voice tab, "Voice Edit Dialog" is displayed. A voice can be easily edited by adjusting or changing each setting on the Voice Edit Dialog. For details, see ["7.4. Voice Edit Dialog \(p.55\)."](#)

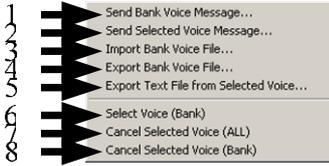
2 **Pop-up Menu1** By right-clicking the letter of each voice or after select it, "Copy/Paste" pop-up menu is displayed. Voice can be easily changed by copying and pasting each voice.



No.	Function Name	Description
1	Copy	The designated voice is copied. This is the same operation as the Copy button on Tool Bar. <u>Drugging enables to select multiple voices to copy them.</u>
2	Paste	A voice is pasted at the designated position. The same operation as the Paste button on Tool Bar is made. When multiple voices have been copied, the copied voices are pasted as it have been, with the designated position in the lead. When outside of the list is designated as the paste destination, the paste operation is not performed.

3 Pop-up Menu 2

By right-clicking on Normal Voice tab, “BankMSB,” “BankLSB,” or “Pch#,” a pop-up menu is displayed on the Voice tab.



No.	Function Name	Description
1	Send Bank Voice Message...	Arbitrary bank voice data is transmitted to the emulator.
2	Send Selected Voice Message...	The selected voices are transmitted in a lump.
3	Import Bank Voice File...	Extended voice is imported in bank basis.
4	Export Bank Voice File	Extended voice bank is saved.(extension becomes “*.vm7”)
5	Export text file from Selected Voice...	Save the Voice parameter and Wave parameter of voices, which are chosen by the check box, as a text file in CSV format. This function declines the case where the size sum total exceeds 4096 bytes, or the FM voice which uses WS15/23/31.
6	Select Voice (Bank)	Marks ON all checkboxes of the voice in the designated Bank at once.
7	Cancel Select Voice (ALL)	Marks OFF all checkboxes of the voices of ALL Banks at once.
8	Cancel Select Voice (Bank)	Marks OFF all checkboxes of the voice in the designated Bank at once.

7.2.2.2. Drum Voice Tab

The tab displays Drum voice list. Double-clicking a voice displayed on the tab calls Voice Edit Dialog to edit voices.

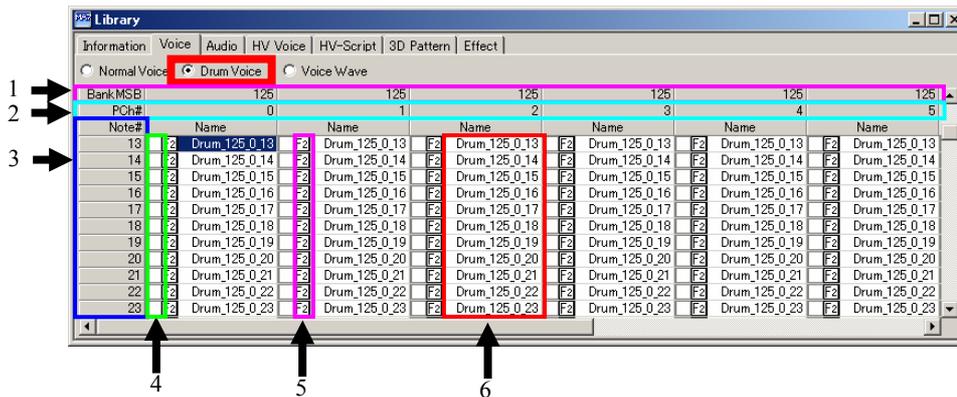


Figure. 7-6 Drum Voice Tab

No.	Function Name	Description
1	BankMSB	The number of Bank Select MSB is displayed. The value is 125 (fixed).
2	PCh#	Program change number is displayed. (The value is 0 to 9).
3	Note#	Note number is displayed. (The value is 0 to 127).
4	On/Off button	This button selects whether to perform transmission in a lump to the emulator. When checked (ON), transmission in a lump is performed. When a SMF has been read, voices used in the song are automatically checked. When checked, the voice registration is transmitted to the emulator, and when the selection has been cancelled, voice deletion is transmitted to the emulator.
5	Type	Voice type being used is displayed. (e.g. F4:FM4OP/ F2:FM2OP/ P:PCM)
6	Voice Name	Voice name is displayed. When the voice uses FilterEG(AL), background color becomes green. Double-click or push “Enter key” to activate the Voice Edit dialog.

III.Drum Voice Editing

1 Double Click

By double-clicking a voice displayed on the Drum Voice tab, “**Voice Edit Dialog**” is displayed. A voice can be easily edited by adjusting or changing each setting on the Voice Edit Dialog. For details, see “[7.4 Voice Edit Dialog \(p.55\)](#)”

2 Pop-up Menu 1

By right-clicking the letter of each voice or after select it, “**Copy/Paste**” pop-up menu is displayed. Voice can be easily changed by copying and pasting each voice.



No.	Function Name	Description
1	Copy	The designated voice is copied. This is the same operation as the Copy button on Tool Bar. Dragging enables to select multiple voices to copy them.
2	Paste	A voice is pasted at the designated position. The same operation as the Paste button on Tool Bar is made. When multiple voices have been copied, the copied voices are pasted as it has been, with the designated position in the lead. When outside of the list is designated as the paste destination, the paste operation is not performed.

3 Pop-up Menu 2

By right-clicking on Voice tab, “**BankMSB**” or “**Pch#**,” a pop-up menu is displayed on the Voice tab.



No.	Function Name	Description
1	Send Bank Voice Message...	Arbitrary bank voice data is transmitted to the emulator.
2	Send Selected Voice Message...	The selected voices are transmitted in a lump.
3	Import from Bank Voice File...	The extended voice is imported.
4	Export to Bank Voice File	The extended voice bank is exported.
5	Export text file from Selected Voice...	Save the Voice parameter and Wave parameter of voices, which are chosen by the check box, as a text file in CSV format. This function declines the case where the size sum total exceeds 4096 bytes, or the FM voice which uses WS15/23/31.
6	Select Voice (Bank)	Marks ON all checkboxes of the voice in the designated Bank at once.
7	Cancel Select Voice (ALL)	Marks OFF all checkboxes of the voices of ALL Banks at once.
8	Cancel Select Voice (Bank)	Marks OFF all checkboxes of the voice in the designated Bank at once.

7.2.2.3. Voice Wave Tab

The tab displays the list for Wave type voices. [WAVE \(*.wav\)](#) file can be registered as **4bitADPCM / 8bitPCM / 16bitPCM** in this tab. **Wave Type** of the WAVE file is determined by the setup of **Preference** dialog when loading and converting the file.

The Wave ID # greater than or equal to 66 has sample waveforms as an initial setup.

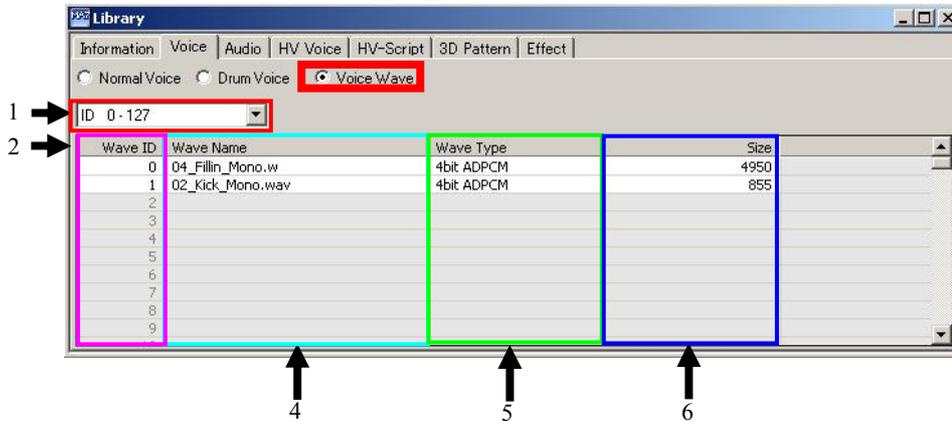


Figure. 7-7 Voice Wave Tab

No.	Function Name	Description
1	Voice Waveform / FM Waveform	The range of Waveform ID of voice waveform and FM basic waveform can be selected. The voice waveform is displayed per 128-voice. "FM Basic Waveform" can be selected out of the following two items: ID: 0-127FM: Basic Wave
2	Wave ID	Wave ID is displayed in the case of voice waveform. For FM Basic Waveform, WS15/WS23/WS31 is displayed. Available range is WT: 0 to 127 FM Basic Waveform: WS15/WS23/WS31
3	Wave Name	A waveform Name is displayed.
4	Wave Type	A waveform type is displayed. Wave Type of the WAVE file is determined by the setup of Preference dialog when loading and converting the file.
5	Size	A waveform size is displayed.

IV. Wave Voice Registration and Editing

1 Pop-up Menu

By right-clicking on the Wave registration column, the following pop-up menu is displayed.



No.	Function Name	Description
1	New	A waveform is registered in a new entry. When clicking here, "Open" dialog is displayed. By selecting the desired sound file and clicking "Open" dialog, the sound file is registered to the relevant Wave ID. Overwriting to the Wave ID column that already includes the sound file is not possible. In that case, delete the file first and then register it.
2	Delete	A waveform is deleted after outputting the confirmation message. When the relevant waveform is used in a voice parameter, an error message is output.
3	Copy (Ctrl+C)	The designated waveform is copied.
4	Paste (Ctrl+V)	A waveform is pasted on the designated position.
5	List of used Voice	Voices that use the relevant waveform are listed.

7.2.3. Audio Tab

The tab displays Audio file information used in contents. [WAVE \(*.wav\) file can be registered as 4bitADPCM / 8bitPCM / 16bitPCM in this tab. Audio Type of the WAVE file is determined by the setup of Preference dialog when loading and converting the file.](#)

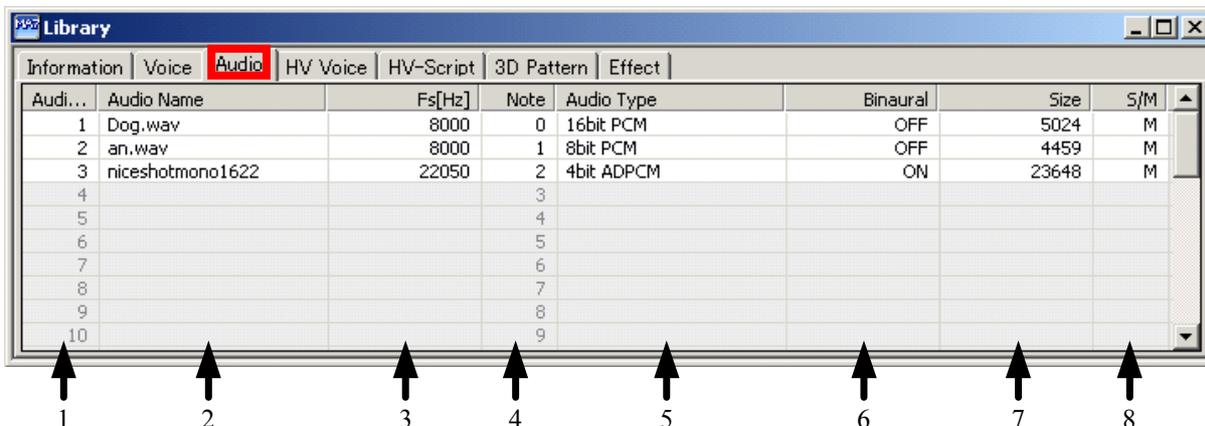


Figure. 7-8 Audio Tab

No.	Function Name	Description
1	Audio ID	Wave ID is displayed. The Wave ID corresponds to the note number. Registration up to 32 waveforms can be made.
2	Audio Name	Waveform name is displayed.
3	Fs[Hz]	Sampling Frequency of the waveform is displayed.
4	Note	Note number is displayed.
5	Audio Type	Waveform type is displayed. (4bit ADPCM, 8bit PCM, or 16bit PCM) Audio Type of the WAVE file is determined by the setup of Preference dialog when loading and converting the file.
6	Binaural	Set ON when using a pre-processed 3D data which shouldn't be suffered any effect and required to be through instead.
7	Size	Waveform size is displayed.
8	S/M (Stereo/Mono)	Whether the relevant waveform is Stereo [S] or Mono [M] is displayed.

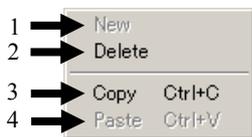
V. Audio Registration and Editing

1 Double Click

When double-clicking on the line where no waveform is registered, "Open" dialog is displayed and waveform is registered in a new entry.

2 Pop-up Menu 1

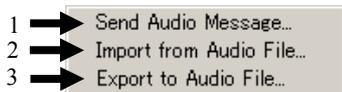
The following pop-up menu is displayed by right-clicking on Wave registration column.



No.	Function Name	Description
1	New	A waveform is registered in a new entry. When clicking here, "Open" dialog is displayed. By selecting the desired sound file and clicking "Open" dialog, the sound file is registered to the relevant Audio ID. Overwriting to the Audio ID column that already includes the sound file is not possible. In that case, delete the file first and then register it.
2	Delete	A waveform is deleted after outputting the confirmation message.
3	Copy (Ctrl+C)	The designated waveform is copied.
4	Paste (Ctrl+V)	A waveform is pasted on the designated position.

3 Pop-up Menu 2

The menu is displayed by right-clicking on any position of the column title.



No.	Function Name	Description
1	Send Audio Message...	All waveform data registered are transmitted to the emulator.
2	Import from Audio File...	By selecting any Audio File (*.sm7/5) and clicking "Open," import can be performed.
3	Export to Audio File...	All waveform data registered on the audio list can be imported into an Audio File (*.sm7).

7.2.4. HV Voice Tab

In the tab, one HV voice can be registered into each cell.

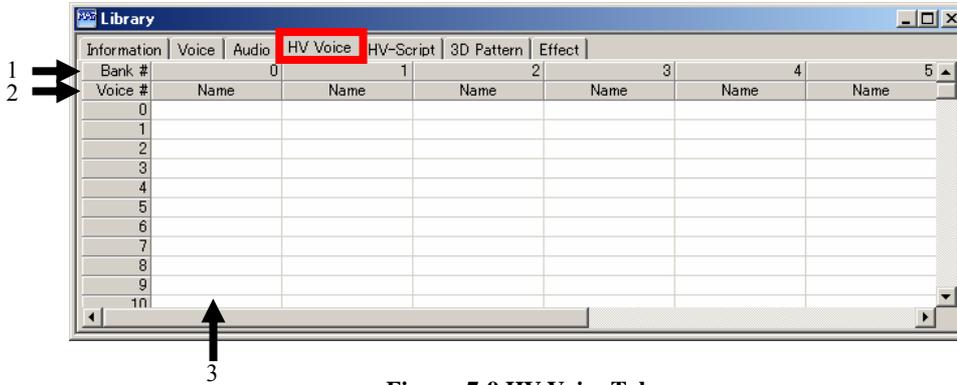


Figure. 7-9 HV Voice Tab

No.	Function Name	Description
1	Bank#	HV voice bank number is displayed. (The value is 0 to 9).
2	Voice#	HV voice number is displayed. (The value is 0 to 9).
3	Name	HV voice name is displayed. The name can be changed only in HV Voice Editing Dialog, so no change is possible here.

VI. HV Voice Editing

1 **Double-click** By double-clicking on any cell, “**HV Voice Edit Dialog**” is activated.

2 **Pop-up Menu 1** The following pop-up menu is displayed by right-clicking on any cell.



No.	Function Name	Description
1	Copy	HV voice of the relevant cell is copied. Drugging enables to select multiple voices to copy them.
2	Paste	HV voice is pasted on the designated position.

3 **Pop-up Menu 2** This pop-up menu appears when right-clicking on any row-title.



No.	Function Name	Description
1	Import Bank HV Voice File...	Loads All HV Voice file (*.hv5) or Bank HV Voice file (*.hvp).
2	Export Bank HV Voice File...	Save All HV Voice file (*.hv5).

7.2.5. HV-Script Tab

In the tab, one HV-Script can be registered into each cell. The maximum of 640 HV-Scripts can be registered.

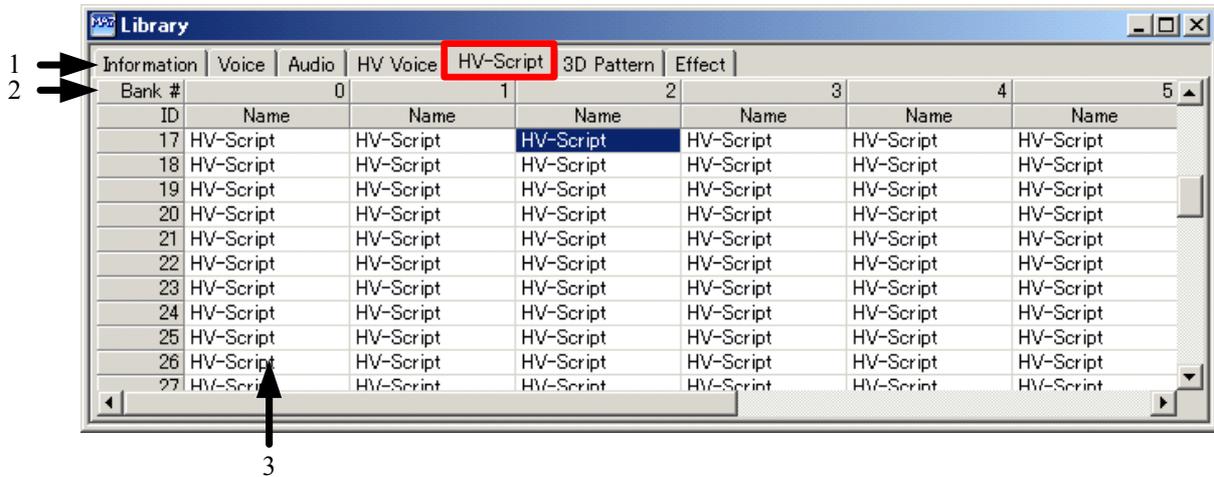


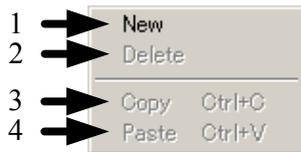
Figure. 7-10 HV Script Tab

No.	Function Name	Description
1	Bank#	HV-Script bank number is displayed. (The value is 0 to 9).
2	ID (HV-Script ID)	HV-Script ID is displayed. HV-Script ID corresponds to note number. (The value is 0 to 63).
3	Name	HV-Script name is displayed. The number of displayable character is 16 one-byte characters.

VII. HV-Script Editing

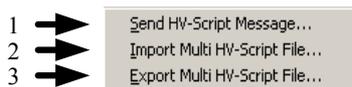
1 Double-click By double-clicking on any cell, “**HV-Script Edit Dialog**” is activated. Script Edit Dialog is not activated during playback.

2 Pop-up Menu 1 The following pop-up menu is displayed by right-clicking on any cell.



No.	Function Name	Description
1	New	Newly register a HV-Script. When it clicked, HV Script Edit dialog will appear.
2	Delete	Sign-off registration of a HV-Script after showing a confirmation message.
3	Copy	HV Script of the relevant cell is copied. Dragging enables to select multiple voices to copy them.
4	Paste	HV Script is pasted on the designated position.

3 Pop-up Menu 2 This pop-up menu appears when right-clicking on any row-title.



No.	Function Name	Description
1	Send HV-Script Message	Clicking this selection shows a confirmation dialog. When click OK, all the registered HV-Scripts will be transferred to the emulator.
2	Import Multi HV-Script File	Load All HV-Scripts from a Multi HV-Script file (*.hs5), which are saved with “Export Multi HV-Script File” menu.
3	Export Multi HV-Script File	Save All HV-Scripts as Multi HV-Script file (*.hs5).

7.2.6. 3D Pattern Tab

3D pattern up to 64 can be registered.
 The pattern # greater than or equal to 38 has sample 3D patterns as an initial setup.

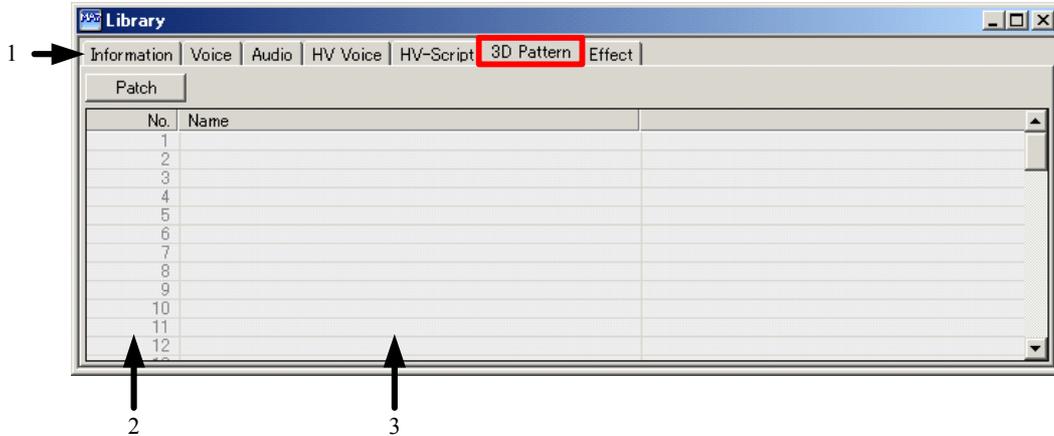


Figure. 7-11 3D Pattern Tab

No.	Function Name	Description
1	Patch	“ Path Edit Dialog ” is displayed by pushing Patch button. For details of Path Edit Dialog, see p.73 . This function works while Real-time Playback is performing.
2	No.	Sequence number of 3D is displayed. (The value is 1 to 64). Preset patterns are registered as default on and after the number 38.
3	Name	3D pattern name is displayed. Editing is not possible on this dialog, however, possible on “ 3D Pattern Edit Dialog. ”

VIII. 3D Pattern Registration and Editing

- Double Click** By double-clicking on voice name on 3D Pattern tab or blank, “**3D Pattern Edit Window**” is displayed. A positioning of voice can be easily edited by adjusting or changing each setting on the 3D Pattern Edit Window. For details, see “[7.5 3D Pattern Edit Dialog\(p.66\)](#)”
- Pop-up Menu** By right-clicking on each 3D pattern, the following menu is displayed.



No.	Function Name	Description
1	New	3D pattern is registered in a new entry.
2	Delete	3D pattern is deleted.
3	Copy	3D pattern is copied.
4	Paste	The 3D pattern copied is pasted.

*What is 3D Pattern?

“**3D function**” is a function to cast virtual sound generators as if they are located in three-dimensional (3D) position. The virtual sound generator (3-dimensional sound generator which moves-like) can move individually during playback, and can be assigned up to four. “**3D Pattern**” is a pattern to move virtual sound generators in 3D, i.e., to move virtual sound generators circling around listener's head, or to cast a sound, like a bullet, going cloth listener's head. We call this system, expressed by a set of one to one correspondence of “**time**” and “**Virtual 3D position,**” as “**3D Pattern.**”

7.2.7. Effect Tab

Effect list is displayed.

Two effectors, SFX1 and SFX2, are prepared, and can be used simultaneously. These effectors can be connected as serial or parallel. Setups of these effectors can be changed during playback. Each channel's level parameters, RevSendLevel (SFX1), ChoSendLevel (SFX2), and DrySendLevel, are set to adjust effect parameters by using D/R/C adjust bar in Mixer Window, and/or Control Change messages (90/Dry, 91/Rev, 93/Cho). Effector setup change during playback can be performed on Master Track in Contents Main Window.

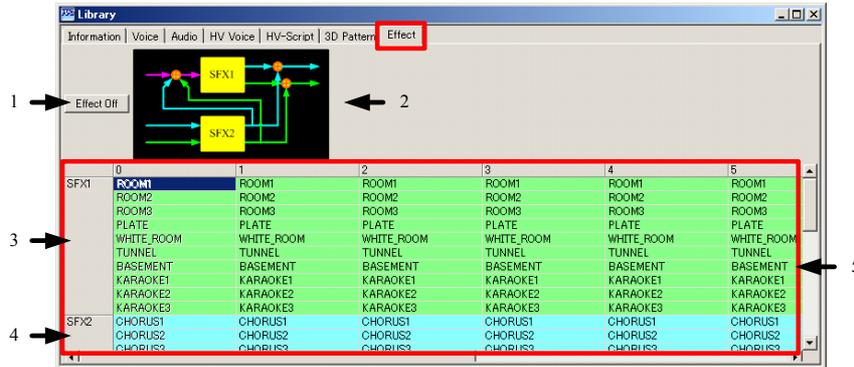


Figure. 7-12 Effect Tab

No.	Function Name	Description
1	Effect Off	Effect Off is transmitted by clicking the button.
2	Effect Block Chart	Effect Block Chart is displayed.
3	SFX1	A button of Effect type SFX1 (reverb type) is displayed on the chart. "Effect Editing Dialog" of the relevant SFX1 is activated by double-clicking the button. For the Effect Editing Dialog, see p.74.
4	SFX2	A button of Effect type SFX2 (chorus type) is displayed on the chart. "Effect Editing Dialog" of the relevant SFX2 is activated by double-clicking the button. For the Effect Editing Dialog, see p.74.
5	Bank	Effect name is displayed. By double-clicking after selecting the displaying object effect name, the "Effect Edit Dialog" can be activated. The preset data is displayed on the leftmost column. The background color of green indicates reverb type, and blue indicates chorus type. The preset data cannot be edited. Editable user area (nine areas) is displayed on the right side of the preset data. The same "Base type" is set in the same row. The user data region in default state displays Preset Effect Information.

IX. Effect Registration and Editing

- Double-click** By double-clicking on any cell, "Effect Edit Dialog" is activated. For details, see p.74.
- Pop-up Menu** By right-clicking on each Effect name, the following menu is displayed.



No.	Function Name	Description
1	Copy	Effect is copied. The same operation as Copy button on Tool bar is performed.
2	Paste	The Effect is pasted on the designated position. The same operation as Paste button on Tool Bar is performed. <u>Paste can be performed only between Effects with the same Base type (in the same row).</u>
3	Send	Parameters of the effect being selected are transmitted.

7.3. Contents Window

The Contents Window show and registers information to assign in Contents data. This window is composed of the following seven tabs: “Voice Tab,” “Audio Tab,” “HV Voice Tab,” “HV-Script Tab,” “Ch. Trans Tab,” “Information Tab” and “Tr.Status Tab”; and “Track View”.

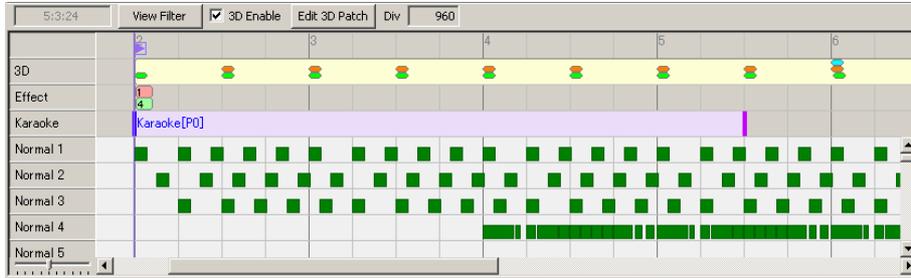
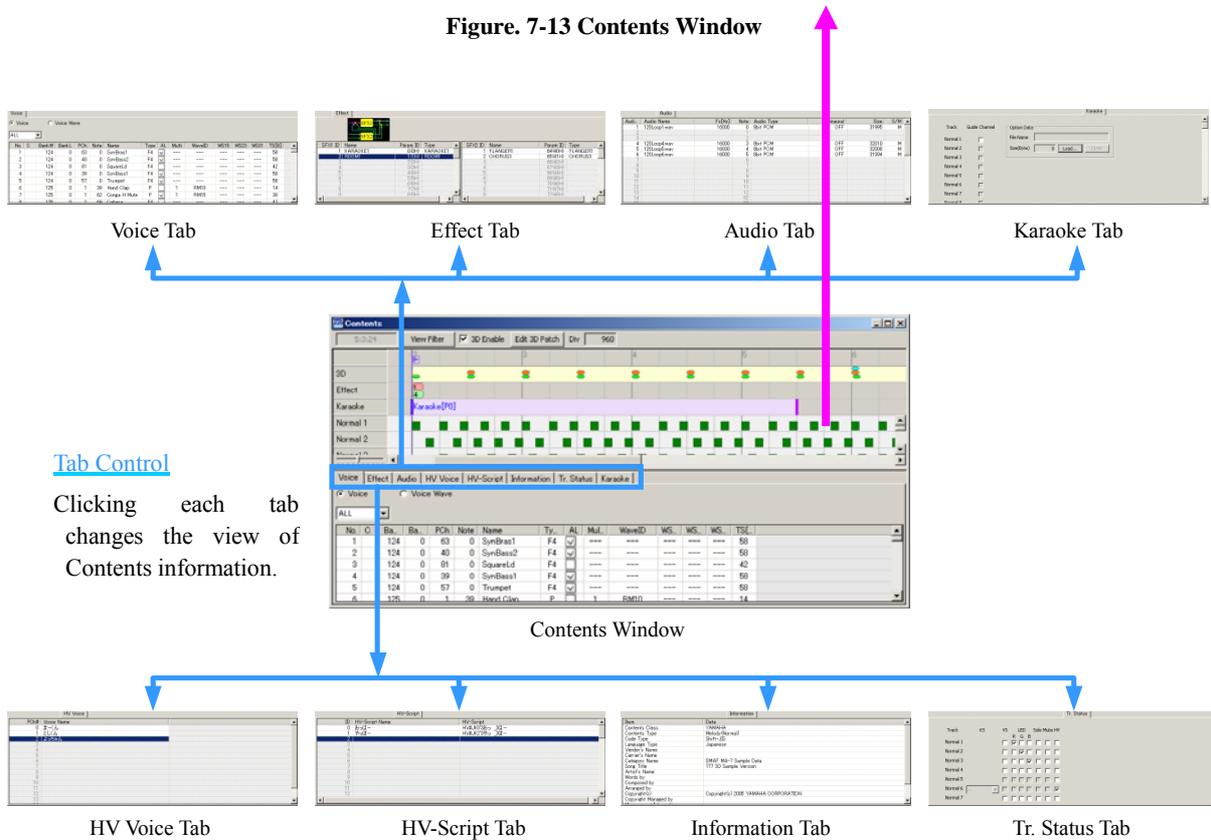


Figure. 7-13 Contents Window



Tab Control

Clicking each tab changes the view of Contents information.

Figure. 7-14 Compositions of Contents Window

Function Name	Description
Voice tab	Voice list/Voice Wave list is displayed.
Effect tab	Effect list is displayed.
Audio tab	Audio list is displayed.
HV Voice Tab	HV voice list is displayed.
HV-Script Tab	HV-Script list is displayed.
Information Tab	Information is displayed.
Tr Status Tab	ON/OFF of KS, VS, LED (three colors), Mute, and HV track assignment per truck can be set.
Karaoke Tab	Setup for Karaoke Guide Channel and its Option Data can be assigned.

7.3.1. Track View

Track View shows **Master Track**, and NoteEvents of each channels.

The setting for 3D and Effect, and editing of movement/deletion can be performed on Master Track.

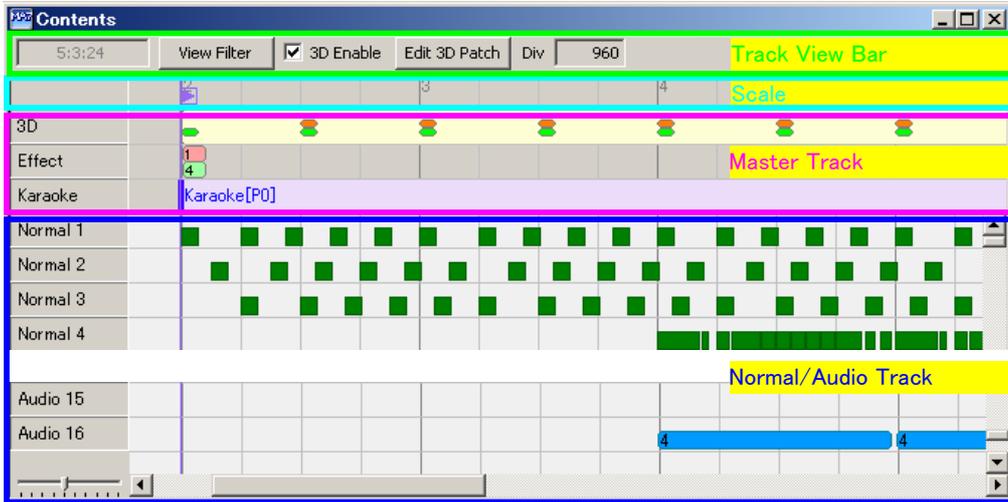


Figure. 7-15 Track View

Track View bar

This bar controls events in Track View. This bar can be hidden according to View setup in the menu bar.

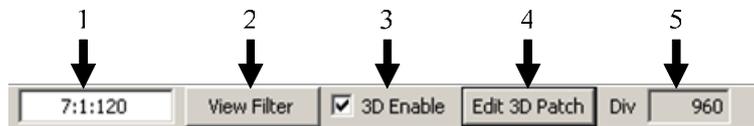
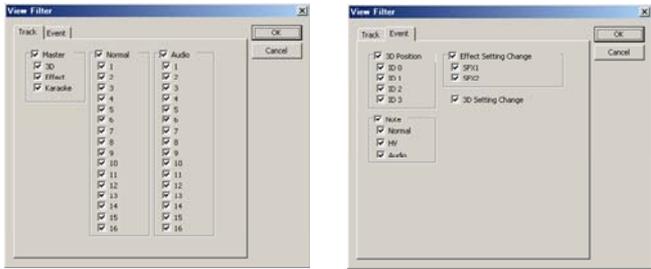


Figure. 7-16 Track View bar

No.	Function Name	Description
1	Event position	Displays the position of selected note event in "Measure: Beat: Tick" format. Also, entering digits designates its position.
2	View Filter button	This button shows View Filter dialog box for View Filter setup. Checking boxes determines which track and/or events to show in Track View. 
3	3D Enable	This checkbox determines the export of 3D related events.
4	Edit 3D Patch button	This button shows Patch Edit dialog for the track assignment and initial position for each 3D pattern. This button will be disabled if 3D Enable is unchecked.
5	Div	This box shows the division of resolution in tick unit, when contents files are loaded.

Scale

This pane shows measure and beat of Track view. Start point and End point can be determined in this view.

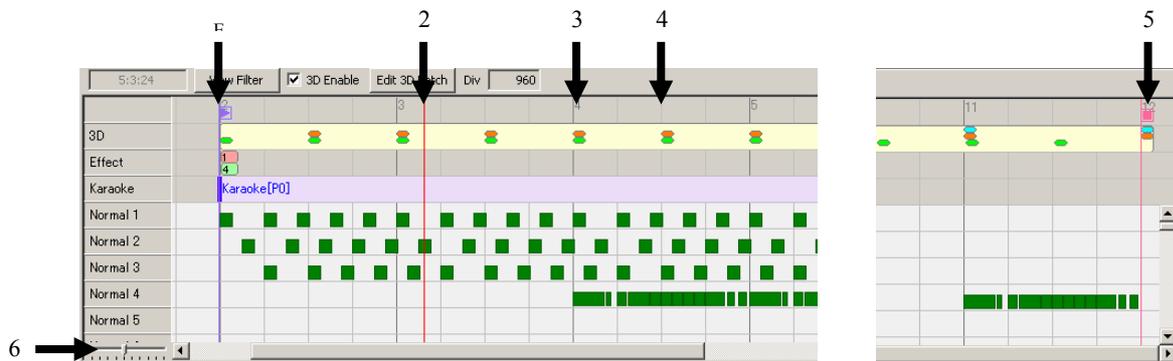


Figure. 7-17 Scale

No.	Function Name	Description
1	Start point	Playback starts from start point. Drugging this point changes start point for playback. The measure before start point is usually used for setup measure, which designates playback setups such as pan, volume, program change, etc. Those events should be set before playback starts.
2	Cursor	Shows current playback position with a red line.
3	Measure scale	Shows measure number as a figure and line.
4	Beat scale	Shows a beat as a line.
5	End point	Playback ends at end point. Drugging this point designates end point for playback.
6	Zoom	Scales the time axis.

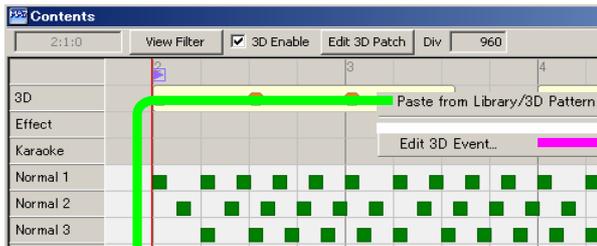
Master Track

Master Track consists with three tracks; 3D, Effect, and Karaoke track. Supported events for each track can be automatically prepared in context menu, and can be pasted by using the menu. This bar controls events in Track View. This bar can be hidden according to View setup in the menu bar.

3D

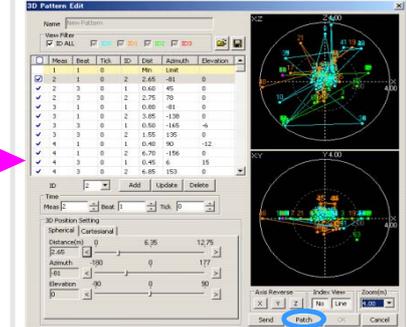
This track is for 3D positioning events. Each event shall be sorted as from ID0 to ID3.

Right-click a designation timeline on 3D Track

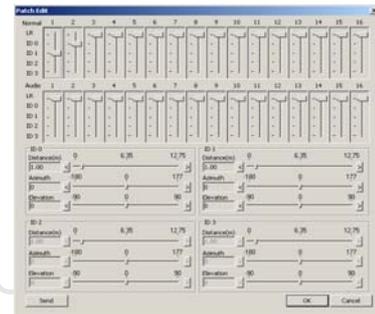


[Added 3D Event selection to the selecting point from 3D Pattern Library]

[Add 3D Events directly]



[3D Path Setups for each channels by a patch.]



Select a 3D Pattern assigned in Library

- No.38 : Clockwise 1
- No.39 : Clockwise 2
- No.40 : CounterClockwis1
- No.41 : CounterClockwis2
- No.42 : Forward Turn
- No.43 : Backward Turn

3D ID Reassign

Library	Contents
ID0	ID0
ID1	ID1
ID2	ID2
ID3	ID3

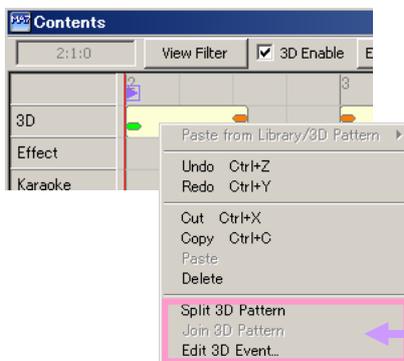
Left row (IDs in Library)
→ Right row (IDs in Library)

Reassign the pattern to be used from pattern IDs.

Each Event is displayed by its ID, as in the order of ID0 ~ ID3 from the beginning

※Operating for the 3D Pattern

Multiple 3D Events can be added, modified, transferred, and deleted as a whole chunk. The operation menu is displayed by right-clicking on the 3D track.



Event Cut/Copy/Paste/Delete and Undo/Redo of its operation can be performed. Also, split/join/edit of the 3D Pattern can be also done.

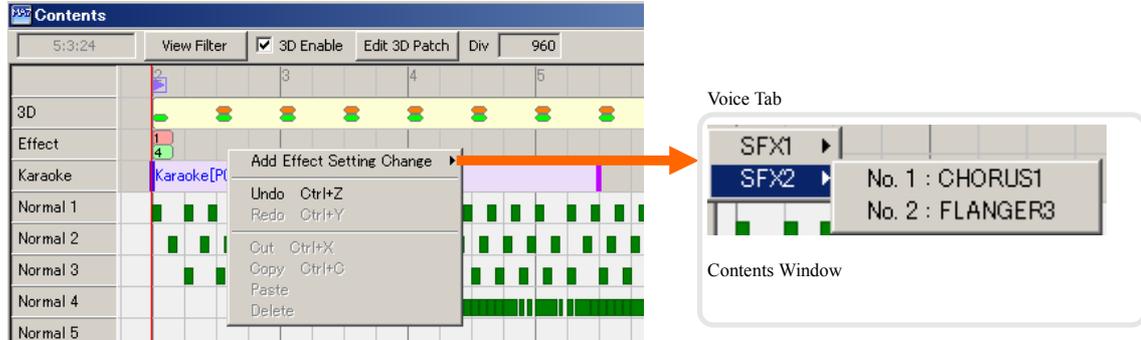
Function Name	Descriptions
Split 3D Pattern	3D Pattern is split at the click position.
Joint 3D Pattern	2 selected 3D Patterns are joined together.
Edit 3D Pattern	The 3D Pattern Edit Dialog is displayed and the selected 3D Event is newly added or edited.

Effect

This track is for SFX setup events. The event is shown with ID number, for SFX1 on upper side of the track, or, for SFX2 on lower side.

Tab Control

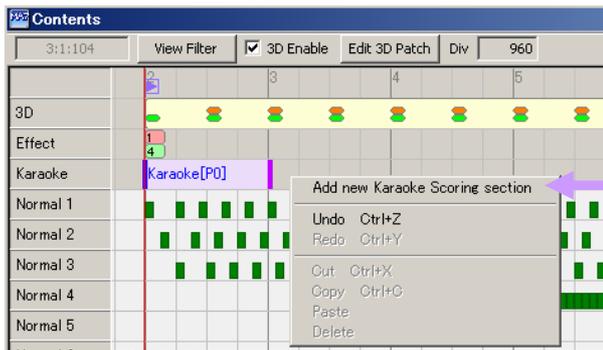
The contents information to be displayed will be switched by clicking each tab.



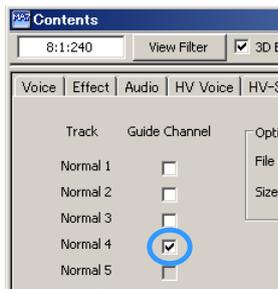
Karaoke

This track is for specifying Karaoke scoring section. After assigned the melody track for scoring by Karaoke tab, designate the melody period for scoring. Karaoke scoring sections can be specified in 16 periods, as form Karaoke[P0] to Karaoke[PF].

Right-click a designation timeline on Karaoke Track

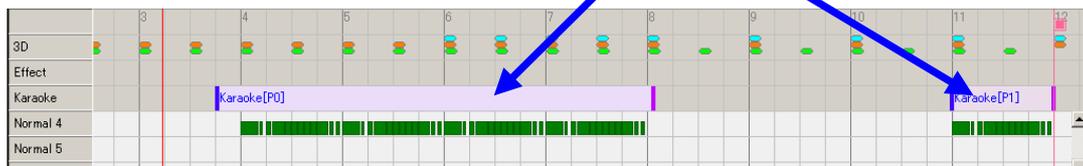


This event determines Karaoke Scoring section. Right-click and select *Add new Karaoke Scoring section* from the context menu shows a ribbon for a section designation. The length of the section can be changed by dragging each end of the ribbon.



For example, after designated Normal 4 Track as a reference of Karaoke Scoring melody...

the period used to for scoring points (excluding any breaks) from Karaoke track



Musical breaks should be removed from the scoring section to prohibit any speech sound or other noise from a scoring target.

Normal Track

This track shows Normal track events. Normal note events are colored with green, or note events designated as HV are colored with lime. Normal note event cannot revise over Authoring Tool. HV event note can be edited by drugging its position. HV-Script ID# is shown on the event. If a HV-Script is registered in HV-Script tab of Contents window, new HV event can be added by selecting "Add Note Event" from the context menu, which appears when click-right over HV track. If you select "Add 3D Setting Change" by the context menu, "3D Setting Change" will be added on the mouse designated position.

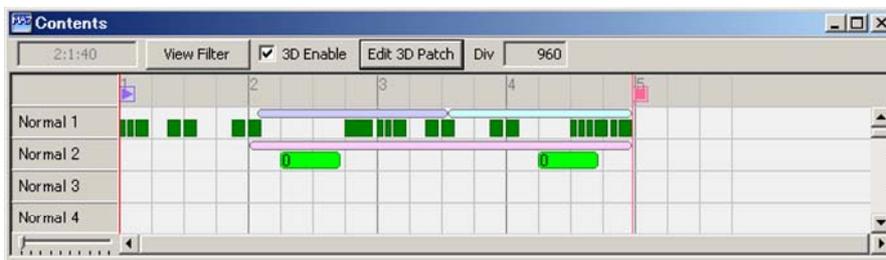


Figure. 7-18 Normal Track

Audio Track

This track shows Audio track events. Audio events are colored with blue. Audio ID# is shown on the event. Audio event note can be edited by drugging its position. If an Audio event is registered in Audio tab of Contents window, new Audio event can be added by selecting "Add Note Event" from the context menu, which appears when click-right over Audio track. If you select "Add 3D Setting Change" by the context menu, "3D Setting Change" will be added on the mouse designated position.

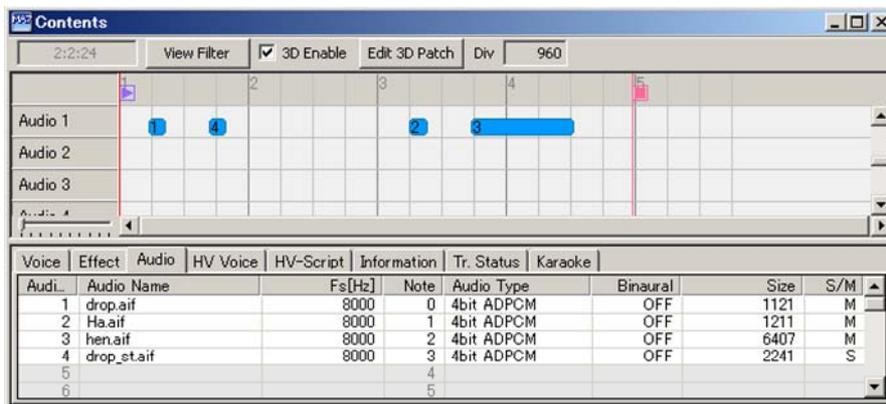
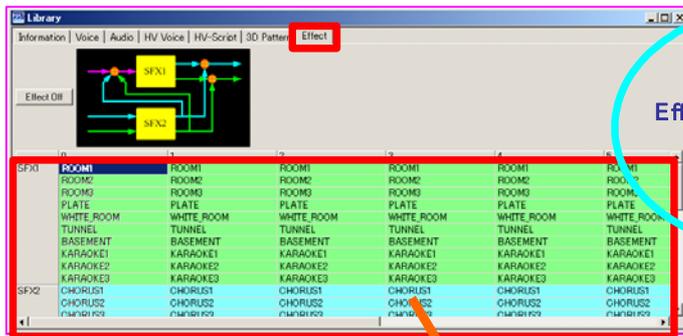


Figure. 7-19 Audio Track

7.3.2. Usage of Effector

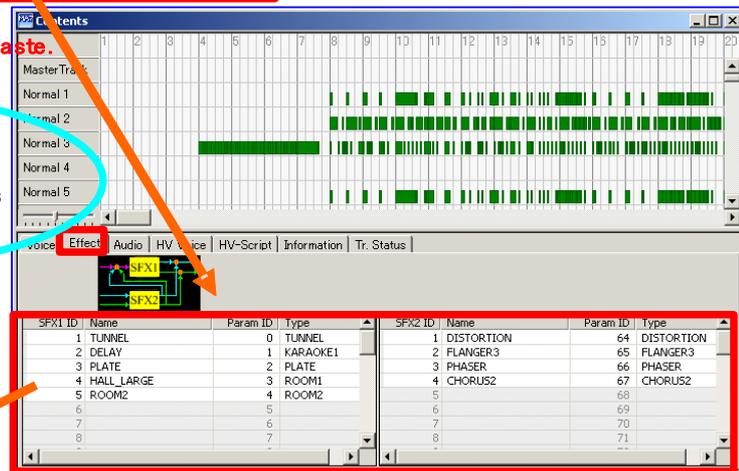
- Two effectors, SFX1 and SFX2, are prepared, and can be used simultaneously. These effectors can be connected as serial or parallel.
- Each channel's level parameters, RevSendLevel (SFX1), ChoSendLevel (SFX2), and DrySendLevel, are set to adjust effect parameters with using D/R/C adjust bar in Mixer Window, and/or Control Change messages (90/Dry, 91/Rev, 93/Cho).
- Effector setup change during playback can perform by Master Track in Contents Main Window.



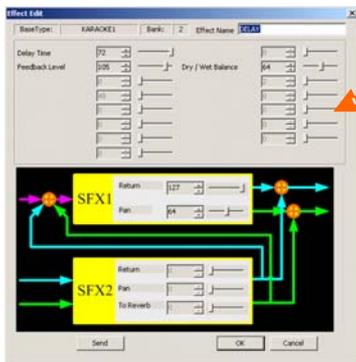
Effect : Library Window
Effect Library

Copy and Paste.

Effect : Contents Window
Assign Effect used in Contents

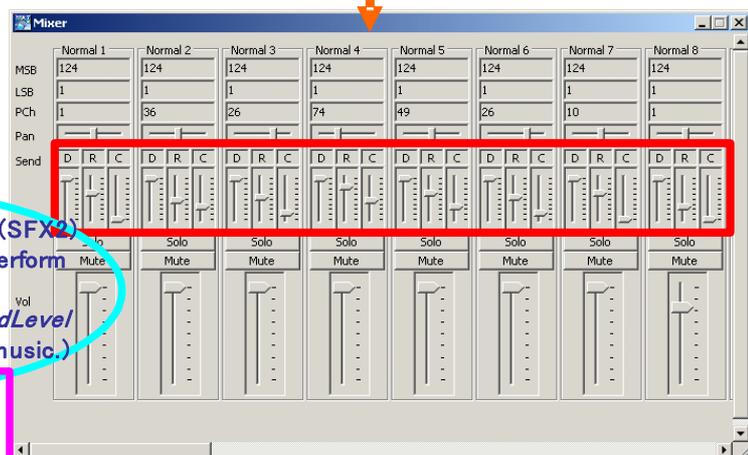


Parameter Adjust



Mixer: Assign Dry / Rev(SFX1) / Cho(SFX2) SendLevel/for each Channels to perform Effects.
(Effect via Mixer window puts SendLevel message on the beginning of the music.)

SMF: ControlChange via SMF commands SendLevel/message in the music;
90:Dry, 91:Rev, 93:Cho SendLevel.



Effect change during the music should be command within aforementioned Master Track.

7.3.3. Voice Tab

Voice Tab displays a Voice List and Voice Wave List dialog.

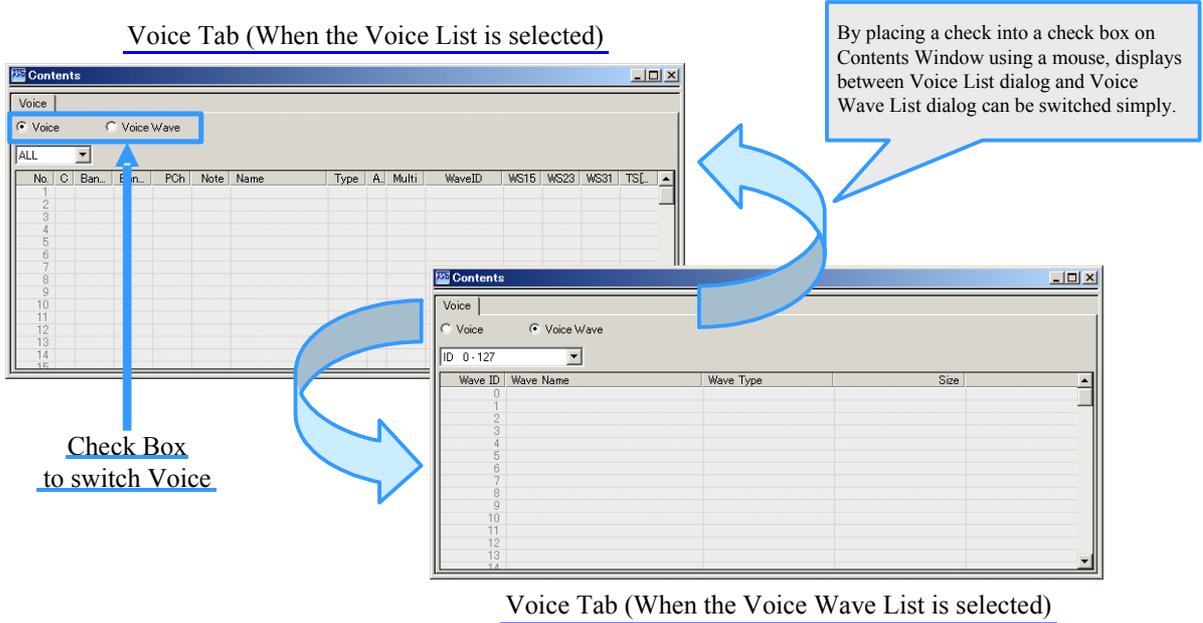


Figure. 7-20 Compositions of Voice Tab

7.3.3.1. Voice Tab (Voice Wave)

The voice list information (Waveform voices) used in an imported contents are displayed in this tab.

Wave file (*.wav) can be registered as 4bitADPCM / 8bitPCM / 16bitPCM.

Wave Type of the WAVE file is determined by the setup of Preference dialog when loading and converting the file.

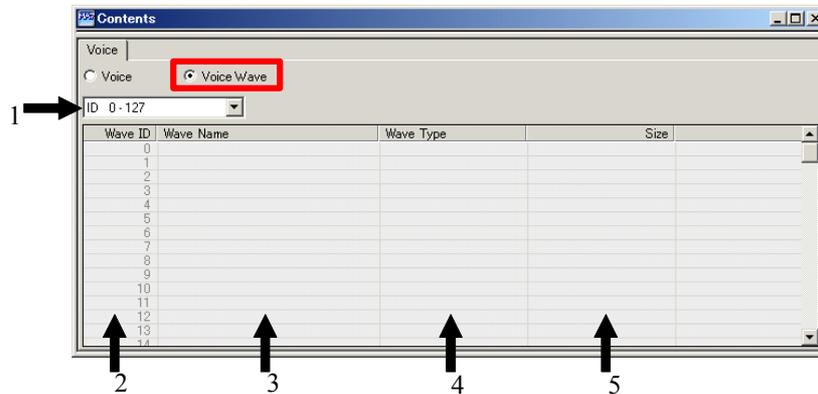


Figure. 7-21 Voice Wave List

No.	Function Name	Description
1	Voice Waveform/FM Basic Waveform	Switches the display of between Voice Waveform and FM Basic Waveform. The selectable item on this combo box is as follows (ID 0-127/FM Basic Wave).
2	Wave ID	Displays the Waveform ID when Voice Waveform is selected on combo box. Conversely, displays the WS15/WS23/WS31 when FM Basic Waveform is selected on combo box.
3	Wave Name	Displays the waveform names.
4	Wave Type	Displays the waveform types. <u>Wave Type of the WAVE file is determined by the setup of Preference dialog when loading and converting the file.</u> FM Basic Waveform shows "16bit PCM."
5	Size	Displays the waveform size.

- 1 **Double-click** By double-clicking on a waveform unregistered columns, “Open” dialog is displayed and then waveforms can be registered newly.
- 2 **Pop-up Menu** By right-clicking on any columns, the following pop-up menu is displayed.



No.	Function Name	Description
1	New	A waveform is registered in a new entry. When clicking here, “Open” dialog is displayed. By selecting the desired sound file and clicking “Open” dialog, the sound file is registered to the relevant Wave ID (At this time, the setup of “16bit PCM Audio File Conversion” in “Preference” dialog box may affect.) Overwriting to the Wave ID column that already includes the sound file is not possible. In that case, delete the file first and then register it.
2	Delete	A waveform is deleted after outputting the confirmation message. When a relevant waveform is used in voice parameter, an error is output.
3	Copy	The designated waveform is copied.
4	Paste	A waveform is pasted on the designated position.
5	List of used Voice	Displays a list of voice which uses a relevant waveform.

7.3.3.2. Voice Tab (Voice)

Voice Information List (Normal/Drum voice) used in an imported content is displayed.

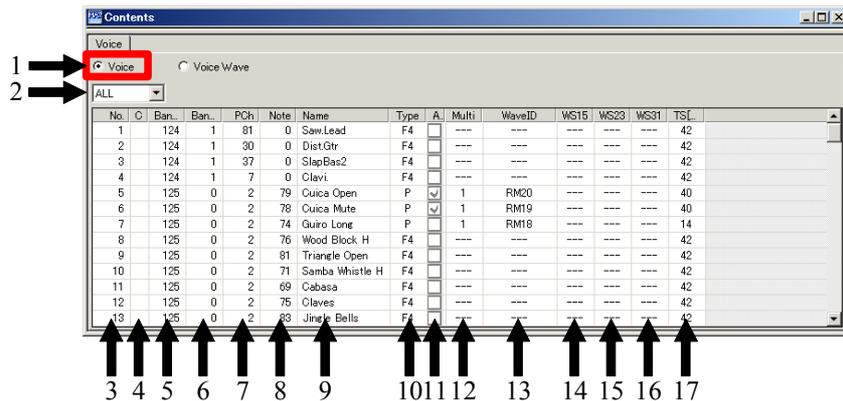


Figure. 7-22 Voice Tab (Voice)

No.	Function Name	Description
1	Switch (Voice/Voice Wave)	Switches the mode between “Voice” and “Voice Wave.”
2	Channel	Switches voice names used in each channel. By selecting “ALL,” all voice in use is displayed. By selecting one of “Ch1 to Ch32,” voice used in each channel is displayed per channels. When any channel except “ALL” is chosen, only the voices in use is displayed and others are masked.
3	No.	Displays the number of used voices. Up to 128 voices can be displayed.
4	C (Change Flag)	Compares the voice number held by voice and a same bank number in the library voice list; if it differ, a blue circle mark is displayed.
5	Bank M (Bank MSB)	The number of Bank select MSB is displayed.
6	Bank L (Bank LSB)	The number of Bank select LSB is displayed.
7	Pch (Program Change)	Program Change Number is displayed.
8	Note Number	Note number is displayed.
9	Name	Voice Name is displayed. By double-clicking this column, “Voice Edit Dialog” is displayed. For details of Voice Edit Dialog, see “7.4 Voice Edit Dialog (p.55).”

No.	Function Name	Description
10	Type	The used voice type is displayed. F4 : 4-operator voice F2 : 2-operator voice P : PCM voice
11	AL [Filter EG]	This box indicates AL check, when be checked to the "Filter EG" check-box in "Voice Edit" and it become effective.
12	Multi	The busy condition of multi-bank is displayed. 1 to 5 : Number of used multi bank --- : Unused In case of FM voice, displays as "Unused."
13	Wave ID	The busy condition of Wave ID is displayed. User Waveform : 0 to 127 ROM Waveform : RM 0 to RM 28 Unused : --- In case of Multi-bank, Wave ID of all used waveform is separated by comma and is displayed.
14	WS 15	When a used voice is WS15 in FM Voice, "Used" is displayed.
15	WS 23	When a used voice is WS23 in FM Voice, "Used" is displayed.
16	WS 31	When a used voice is WS31 in FM Voice, "Used" is displayed.
17	TS [B]	RAM size consumed by relevant voice is displayed. Unit is "Byte" Duplication utilization of FM Basic Waveform and PCM Waveform between voices is not considered to the calculated RAM size. Therefore, the total size may differ to the size displayed on "Report Bar."

X. Voice Editing

1 Double Click

By double-clicking a voice displayed on the Voice tab, "Voice Edit Dialog" is displayed.

2 Pop-up Menu 1

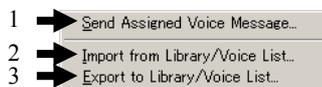
By right-clicking on any lines in which a voice is registered, the following menu is displayed.



No.	Function Name	Description
1	Copy	The designated voice data is copied.
2	Paste	A voice data is pasted on the designated position.
3	Import from Library/ Voice List	The parameter information is reflected from the tone of a voice list in Voice Library to the current selected tone.
4	Export to Library/ Voice List	The parameter information for the current tone is reflected to the tone of a voice list in Voice Library.
5	Paste from Library/ Voice List	An entire voice list in Voice Library is displayed, and the selected tone is reflected.

3 Pop-up Menu 2

By right-clicking on a line title, the following menu is displayed.



No.	Function Name	Description
1	Send Assign Voice Message...	By clicking this function, a confirmation message will be displayed; and by clicking "OK," all registered voice parameter will be transmitted to MA-7 emulator.
2	Import from Library/Voice List...	By selecting this function, a confirmation message will be displayed; and by clicking "OK," the entire parameter information will be reflected from the tone in Voice List to the tone of Voice Assign Map at a time.
3	Export to Library/Voice List...	By selecting this function, a confirmation message is displayed; and by clicking "OK," the entire parameter information will be reflected from the tone in Voice List to the tone of Voice Assign Map at a time.

7.3.4. Effect Tab

This tab displays, the effect information used in contents.

Two effectors, SFX1 and SFX2, are prepared, and can be used simultaneously. These effectors can be connected as serial or parallel. Setups of these effectors can be changed during performing playback. Each channel's level parameters, RevSendLevel (SFX1), ChoSendLevel (SFX2), and DrySendLevel, are set to adjust effect parameters with using D/R/C adjust bar in Mixer Window, and/or Control Change messages (90/Dry, 91/Rev, 93/Cho). **Effector setup change during playback can be performed by Master Track in Contents Main Window.**

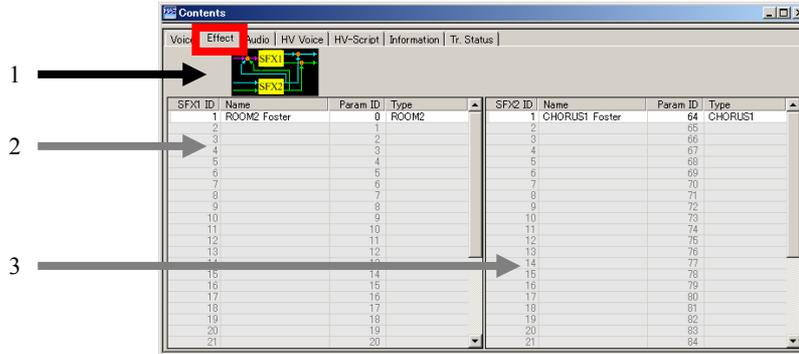


Figure. 7-23 Effect Tab

No.	Function Name	Description
1	Effect Block Diagram	Displays the effect block diagram.
2	SFX1 (reverb type)	Assigns and edits Effect setup of SFX1. Displayed in order as "ID", "Name", "ParamID", and "Type". By clicking this section which assigned, the "Effect Edit Dialog" of relevant SFX1 is opened.
3	SFX2 (chorus type)	Assigns and edits Effect setup of SFX2. Displayed in order as "ID", "Name", "ParamID", and "Type". By clicking this section which assigned, the "Effect Edit Dialog" of relevant SFX2 is opened.

XI. Effect Editing

- Double-click** In Effect Block Diagram, by double-clicking the column of SFX1 or SMX2, "Effect Edit Dialog" is displayed on Application Window. For details, see [p.74](#).
- Popup Menu 1** By right-clicking on any row displays this menu.

No.	Function Name	Description
1	Delete	Clears the registration of "Effect".
2	Copy	Copies the "Effect" data which assigned.
3	Paste	Pastes the "Effect" data on the assigned position.
4	Paste from Library/Effect List	Displays the "Effect" list in a library, and assigns the "Effect" value in it.

- Popup Menu 2** It is displayed by right-clicking the mouse with the row title.

No.	Function Name	Description
1	Send Effect Message..	Sends the effect parameter to the board.
2	Import Effect Parameter file(ALL)...	Reads the effect parameter file (*.sf7) to the SFX1 and SFX2 lists.
3	Import Effect Parameter file(SFX1)...	Reads the effect parameter file (*.sf7) to the SFX1 (SFX2) list.
4	Export Effect Parameter file(ALL)...	Saves the effect parameter file (*.sf7) to the SFX1 and SFX2 lists.
5	Export Effect Parameter file(SFX1(SFX2))...	Saves the effect parameter file (*.sf7) to the SFX1 (SFX2) list.

7.3.5. Audio List Tab

Audio List dialog is displayed in this tab.

Wave file (*.wav) can be registered as 4bitADPCM / 8bitPCM / 16bitPCM.

Audio Type of the WAVE file is determined by the setup of Preference dialog when loading and converting the file.

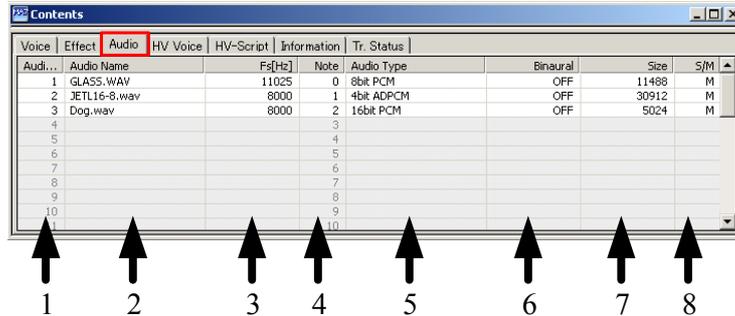


Figure. 7-24 Audio List Tab

No.	Function Name	Description
1	Audio ID	The waveform ID is displayed. Waveform ID corresponds to Note number. Up to 32 waveforms can be registered.
2	Audio Name	The waveform is displayed. The selectable value is as follows.
3	Fs [Hz]	Frequency of waveform is displayed.
4	Note	Note number is displayed. Also when any waveform is not registered, it always displays. The selectable values as follows. (0 to 12, 92 to 110)
5	Audio Type	The waveform type is displayed. (4bit ADPCM, 8bit PCM, 16bit PCM) Audio Type of the WAVE file is determined by the setup of Preference dialog when loading and converting the file.
6	Binaural	Set ON when using a pre-processed 3D data which shouldn't be suffered any effect and required to be through instead.
7	Size	Waveform size is displayed.
8	S/M (Stereo/Mono)	Whether the relevant waveform is Stereo [S] or Mono [M] is displayed.

XII. List Editing

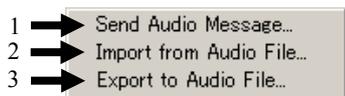
- Double Click** By double-clicking on a waveform unregistered columns, "Open" dialog is displayed and then waveforms can be registered newly.
- Pop-up Menu 1** By right-clicking on any columns, the following pop-up menu is displayed.



No.	Function Name	Description
1	New	A waveform is newly registered. By clicking, "Open" dialog is displayed. By selecting a sound file which you want to register, sound files can be registered into a relevant Audio ID. In addition, a stereo sound can be registered. Note that overwriting to a registered Audio ID column is not allowed. In that case, be sure to delete an item once, and then register a file.
2	Delete	A waveform is made to unregistered state after a confirmation message is output.
3	Copy	The designated waveform is copied.
4	Paste	A waveform is pasted on the designated position.

3 Pop-up Menu 2

By right-clicking on a line-title, the following is displayed.



No.	Function Name	Description
1	Send Audio Message...	By clicking, a confirmation message is displayed; then All registered waveform data are transmitted to the emulator by pressing "OK."
2	Import from Audio File...	By choosing arbitrary Audio File (*. sm 7/5) and clicks "Open", it imports the data.
3	Export to Audio File...	All the waveform data registered into the audio list can be saved at Audio File (*. sm7).

*About the Fs Restrictions on Audio Registration...

The Fs Restriction for MA-7 Authoring Tool is a maximum of 24kByte per seconds. Audio file out of the range on following table is treated as an error and unplayable, and be disabled for registration.

Type	Fs [Hz]
4bit ADPCM Monaural	4000 to 48000Hz
8bit PCM Monaural	4000 to 24000Hz
16bit PCM Monaural	4000 to 12000Hz
4bit ADPCM Stereo	4000 to 24000Hz
8bit PCM Stereo	4000 to 12000Hz
16bit PCM Stereo	4000 to 6000Hz

7.3.6. HV Voice Tab

In the tab, HV Voice List dialog is displayed.

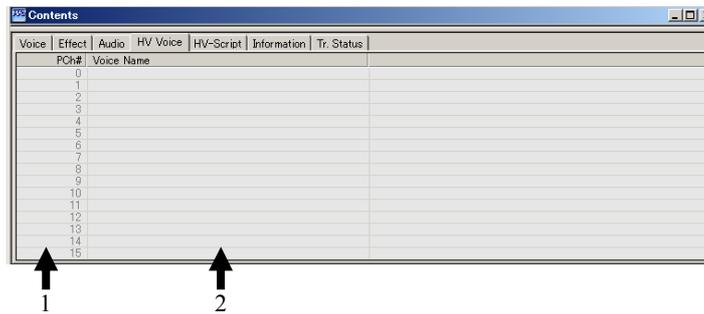


Figure. 7-25 HV Voice Tab

No.	Function Name	Description
1	PCh#	Displays the Program Change number in order of 0 to 15.
2	Voice Name	Displays the list of HV Voice name which has been imported or created on tool.

XIII. HV Voice List Editing

1 Double Click

By double-clicking on any "Voice Name" columns, "HV Voice Edit Dialog" dialog is displayed and then a HV Voice can be registered newly. For details of "HV Voice Edit Dialog," see "[7.7 HV Voice Edit Dialog \(p.75\)](#)."

2 Pop-up Menu 1

By right-clicking on a line-title, the following menu is displayed.



No.	Function Name	Description
1	New	HV voice newly can be registered. By selecting this function, "HV Voice Edit Dialog" is opened.
2	Delete	Registered HV Voice is made to un-registered states after a confirmation message is output.
3	Copy	A designated HV Voice is copied.
4	Paste	HV Voice is pasted onto a designated position.

3 Pop-up Menu 2

By right-clicking on a column-title, the following menu is displayed.



No.	Function Name	Description
1	Send HV Voice Message...	Send Voice data to the emulator.
2	Import Bank HV Voice File...	Load "Bank HV Voice File (*.hvp)".
3	Export Bank HV Voice File...	Save "Bank HV Voice File (*.hvp)".

7.3.7. HV Script Tab

In the tab, HV-Script List dialog is displayed.

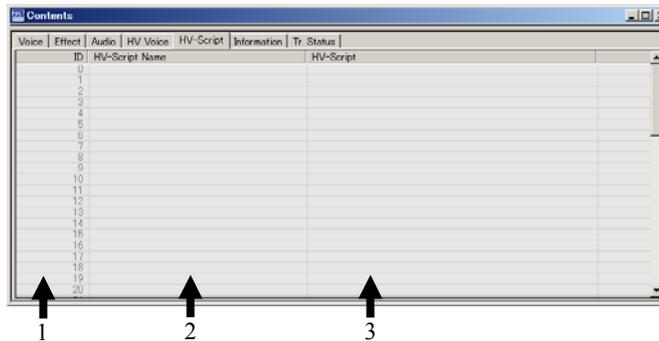


Figure. 7-26 HV-Script Tab

No.	Function Name	Description
1	ID	Displays the HV-Script ID. Up to 64 HV-Scripts can be registered in this list.
2	HV-Script Name	Displays the name of HV-Scripts.
3	HV-Script	Displays the contents of HV-Scripts.

XIV. HV-Script List Editing

- 1 Double Click By double-clicking on any un-registered columns, “**HV-Script Edit Dialog**” dialog is displayed and then a HV-Script can be registered newly.
- 2 Pop-up Menu 1 By right-clicking on a line-title, the following menu is displayed.



No.	Function Name	Description
1	New	HV-Script newly can be registered. By selecting this function, “ HV-Script Edit Dialog ” is opened.
2	Delete	Registered HV-Script is made to un-registered states after a confirmation message is output.
3	Copy	A designated HV-Script is copied.
4	Paste	HV-Script is pasted onto a designated position.

- 3 Pop-up Menu 2 By right-clicking on a line-title, the following is displayed.



No.	Function Name	Description
1	Send HV-Script Message	By selecting this function, a confirmation message is displayed. Presses “ OK ,” then all registered HV-Script data is send to MA-7 emulator.
2	Import Multi HV-Script File	Multi-HV-Script data is loaded from a Multi-HV-Script file which is saved with the function “ Export to Multi HV-Script File. ”
3	Export Multi HV-Script File	All HV-Script Files are saved as Multi HV-Script Files (*.hs5).

7.3.8. Information Tab

In the tab, Contents Information dialog is displayed.

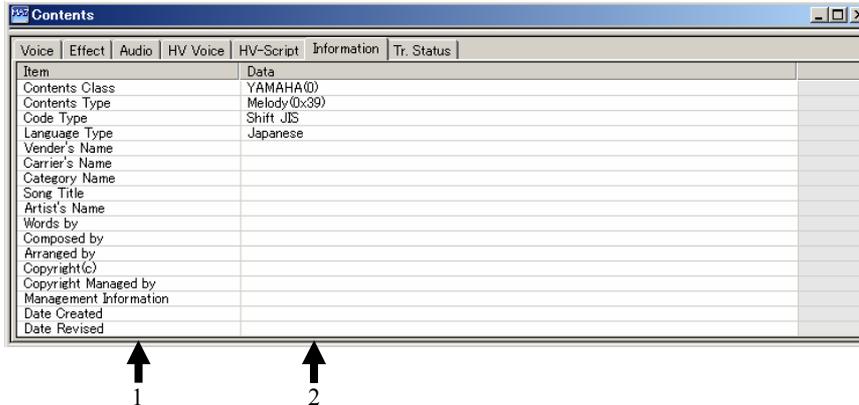


Figure. 7-27 Information Tab

No.	Function Name	Description
1	Item	Displays the each content information item.
2	Data	Displays the contents of each content information item, and it can be edited on this list.

7.3.9. Track Status Tab

In the tab, ON/OFF settings of “KS”, “VS”, “LED”(tri-color), “Mute”, and “HV” are possible per tracks.

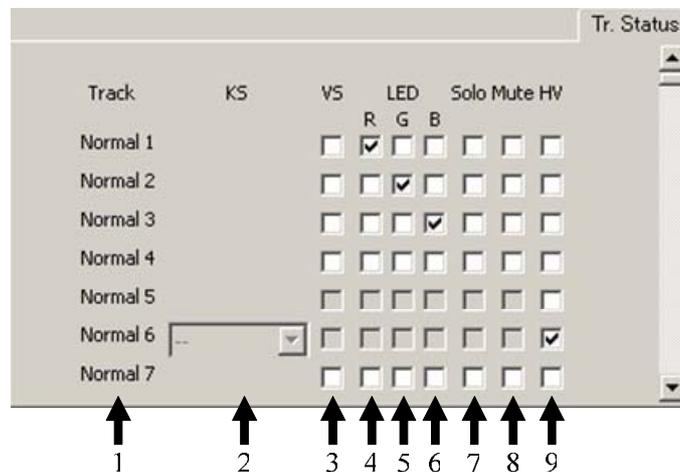


Figure. 7-28 Track Status Tab

No.	Function Name	Description
1	Track	Displays the track number 1 to 32.
2	KS	Sets the enable/disable of Key-control to an applicable channel.
3	VS	Designates that the vibration control synchronizing with an applicable channel is enable/disable.
4	LED-R	Designates whether control or not control the LED-R by synchronizing with an applicable channel.
5	LED-G	Designates whether control or not control the LED-R by synchronizing with an applicable channel.
6	LED-B	Designates whether control or not control the LED-R by synchronizing with an applicable channel.
7	Solo	Play the channel which has been checked.
8	Mute	Muffles the channel which has been checked.
9	HV	Designates the applicable channel as a HV channel.

7.3.10. Karaoke Tab

This tab is used for assigning Karaoke Guide Channel and Karaoke Option Data. The track specified in this tab is used for scoring reference melody. Scoring section is assigned on **Karaoke** track in Contents window.

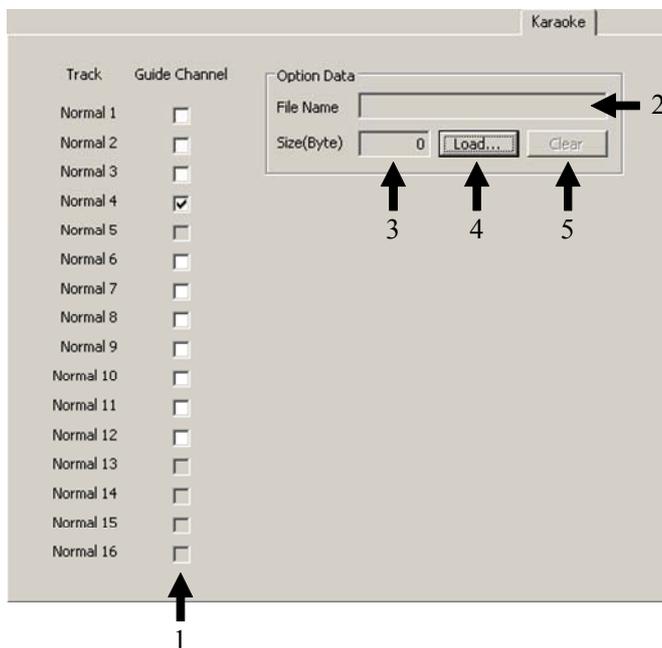


Figure. 7-29 Karaoke Tab

No.	Function Name	Description
1	Guide Channel	Assigns the track for Karaoke scoring by checking the checkbox.
Option Data		
2	File Name	Shows the File Name of Karaoke Option Data that is loaded.
3	File Size	Shows the File Size of Karaoke Option Data that is loaded.
4	File Load button	Loads Karaoke Option Data. Shows a dialog to choose a file after pressing this button. The size of Karaoke Option Data, available for this Authoring Tool, is from 1 to 65533 byte. Any file format can be used for Karaoke Option Data.
5	File Clear button	Releases Karaoke Option Data.

7.4. Voice Edit Dialog

In this chapter, the function details about “Voice Edit Dialog” are described. By using the function in Voice Edit Dialog, voice information selected in Library Window can be edited at ease. The functional explanation of Voice Edit Dialog is divided in three sections.

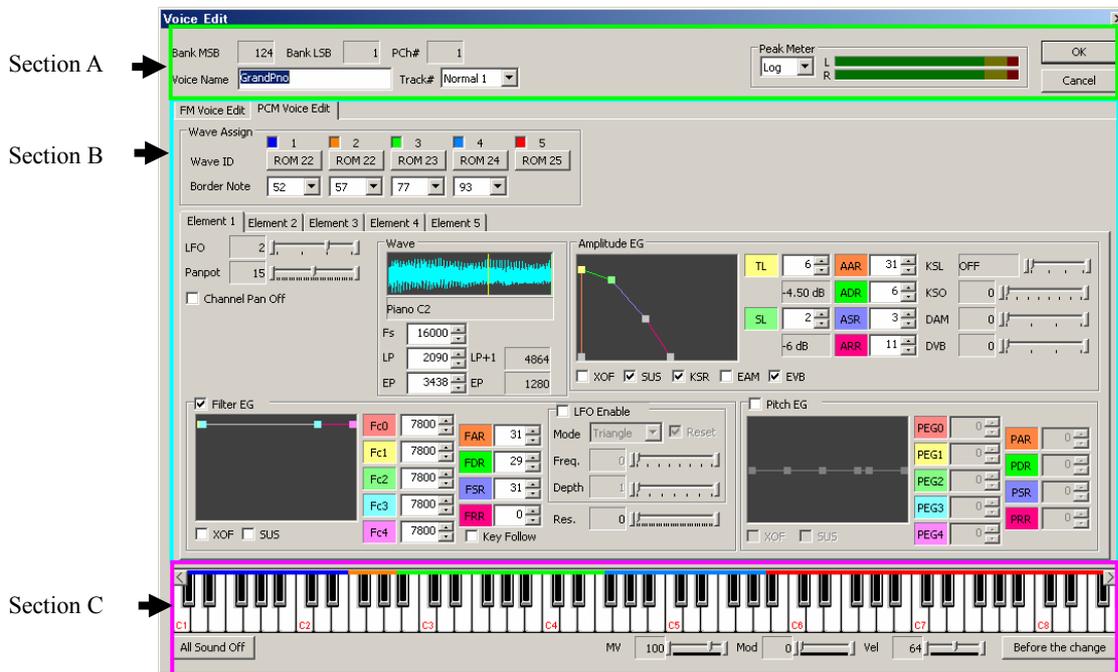
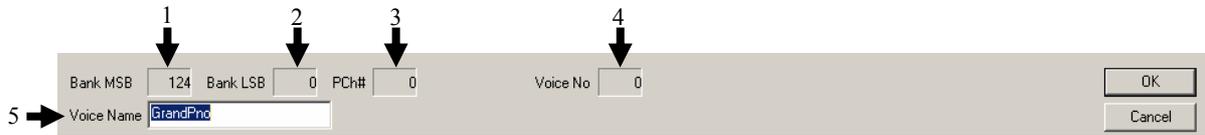


Figure. 7-30 Voice Edit Dialog

7.4.1. Voice Edit Dialog – Section A (Common to FM Voice and PCM Voice)

The following display in Voice Edit Dialog is common to the FM Voice Settings and PCM Voice Settings.



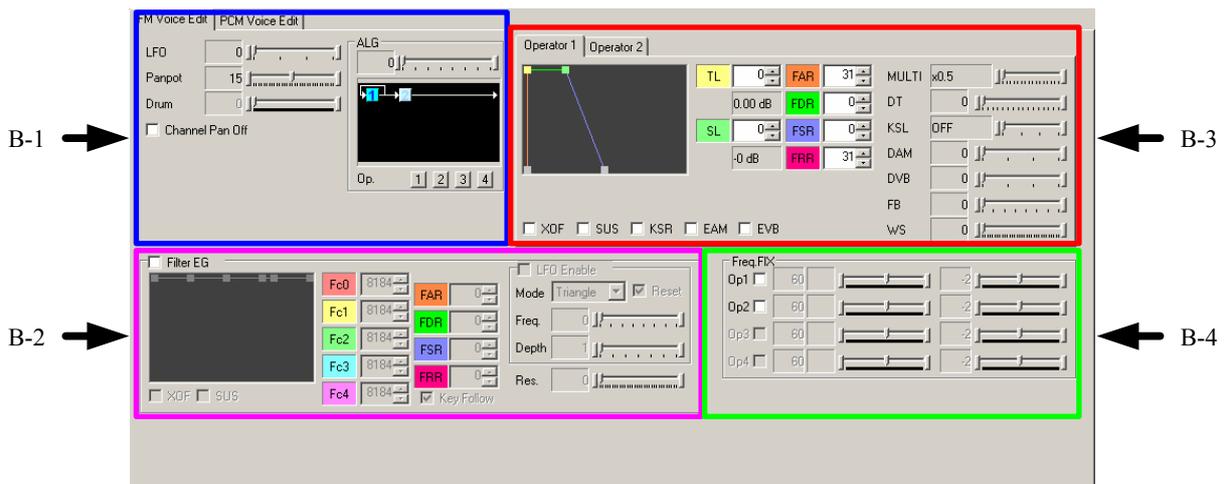
No.	Function Name	Description
1	Bank MSB	Bank Select MSB of a voice under edit is displayed. Settings can not be changed here.
2	Bank LSB	Bank Select LSB of a voice under edit is displayed. Settings can not be changed here. In addition, in case of "Drum voice settings," it is not displayed.
3	Pch#	Program Change Number of a voice under edit is displayed. If a voice under edit is a "Normal Voice," and if Pch Origin in "Preference" is set as "0," any one of "0" to "127" is displayed. Moreover, if Pch Origin in "Preference" is set as "1," any one of "0" to "128" is displayed.
4	Voice No.	The Voice Number is displayed.
5	Voice Name	Name of a voice under edit can be entered.

7.4.2. Voice Edit Dialog – Section B (FM/PCM)

"Section B" has two interfaces which are switched according to the conditions (FM Voice Setting/PCM Voice Setting). In order to edit voices, voice can be easily modified by giving a change using the following functions.

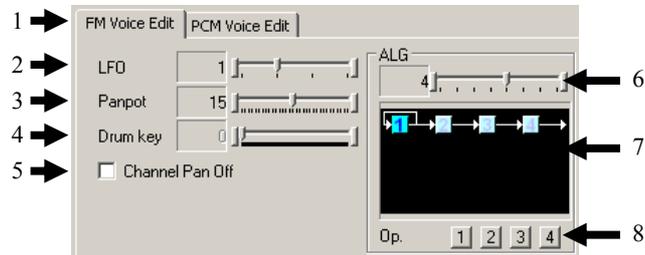
7.4.2.1. Voice Edit Dialog (FM Voice Setting)

The following is a display when "FM Voice" has been set up. In this section, the following interface is classified to four sections (B-1, B-2, B-3, and B-4) and explained.



Section B-1 LFO, Panpot, Drum, ALG (No.1 to 8)

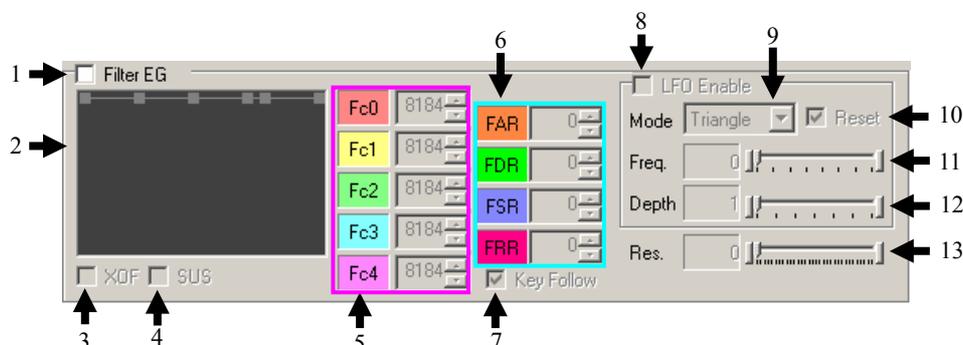
LFO, Panpot and ALG can be set up and edited in “Section B-1.”



No.	Function Name	Description
1	FM Voice Edit Tab	FM Voice Parameter is displayed and edited.
2	LFO	LFO Frequency used per voice is set up. By moving a slider by dragging or clicking a button between two sides, the setting value of LFO Frequency can be changed simply.
3	Panpot	Either side of balance can be set up per voice. By moving a slider by dragging or clicking a button between two sides, the setting value of Panpot can be changed simply.
4	Drum Key	This is a parameter which only operates during a “ Drum Voice Editing .” An actual key which generates a voice which is currently under editing can be changed. By moving a slider by dragging or clicking a button between two sides, the setting value of LFO Frequency can be changed simply.
5	Channel Pan Off	By placing a check into this box, the “ Pan Setting ” of “ Control Change ” becomes invalid, and “ Panpot value ” of voice becomes valid.
-	ALG (Algorism)	Algorism can be set up. There are eight different ALG types (0 to 7). “0” and “1” are two-operator; in addition, “2” to “7” is four-operator.
6	Algorism Settings	Algorism pattern is assigned. Change is available by moving, dragging a slider or clicking the button of left or right. Since it links with the algorism display, an algorism display will also change when a setup is changed here.
7	Algorism Display	This display is linked to “ Algorism Setting .” In this display, an algorism pattern which has been set up is displayed. Moreover, the display is switched depending on the algorism types (2-operator/4-operator). Also, this function links to the “ Operator Tab ,” and an operator which has selected is shown in light-blue.
8	Op.OFF (Operator Tab)	“1” to “4” button is put in position from left side. Operators can mute with pressing the buttons.

Section B-2 Filter EG, LFO (No.1 to 13)

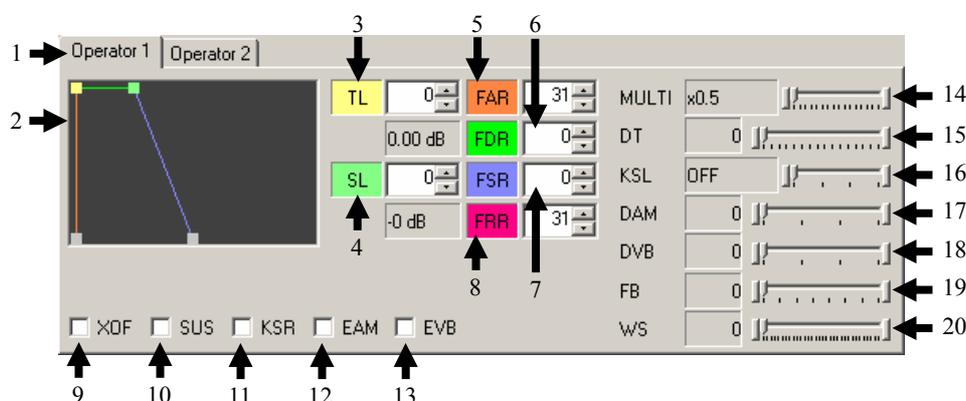
Filter EG and LFO can be set up and edited in “Section B-2.”



No.	Function Name		Description
-	Filter EG		Time fluctuation Filter can be set up and edited in this section. Former, “AL”
1	Filter EG Enable Setting Check Box		ON/OFF of Filter EG function can be designated.
2	Filter setting graph		Fc0 to Fc4, FAR, FDR, FSR, and FRR on Filter EG function is displayed with a line chart. Fc0 to Fc4 can be edited directly by clicking and dragging; in addition, the values of FAR, FDR, FSR, and FRR are changed according to those changes.
3	XOF	Ignore KeyOff	Whether responds or does not respond to Note Off can be set up. “with check” (Not Respond) / “without check” (Respond)
4	SUS	Sustain	Whether valid or invalid to “Hold 1” can be set up. “with check” (Valid) / “without check” (Invalid)
5	Fc0	Key-on Cutoff Frequency	The cut-off frequency at the time of the “KeyOn starting” can be designated.
-	Fc1	Attach End Cutoff Frequency	The cut-off frequency at the time of the “Attack End” can be designated.
-	Fc2	Decay End Cutoff Frequency	The cut-off frequency at the time of the “Decay End” can be designated.
-	Fc3	Keyoff Cutoff Frequency	The cut-off frequency at the time of the “Key-Off starting” can be designated.
-	Fc4	Release Cutoff Frequency	The cut-off frequency at the time of the “Release” can be designated.
6	FAR	Attach State Cutoff Frequency	The cut-off frequency change rate in the “Attack condition” can be designated.
-	FDR	Decay State Cutoff Frequency Change Rate	The cut-off frequency change rate in the “Decay condition” can be designated.
-	FSR	Sustain State Cutoff Frequency Change Rate	The cut-off frequency change rate in the “Sustain condition” can be designated.
-	FRR	Release State Cutoff Frequency Change Rate	The cut-off frequency change rate in a release condition can be designated.
7	Key Follow (Key follow setting)		Whether the setting of “Key Follow” is valid or invalid to Cutoff-Frequency can be designated. Key Follow raises the Cutoff frequency by going through to high tones. “with check” (Valid) / “without check” (Invalid)
8	LFO Enable (LFO Setting)		Whether LFO is valid or invalid to Cutoff Frequency can be designated. “with check” (Valid) / “without check” (Invalid) When a check is placed into the box, LFO becomes valid and a change of “Freq.,” “Depth,” and “Mode” becomes available. Conversely, if a check is not placed into the box, any parameter can not be changed. At that point, “0” is set into LFO Depth. Moreover, in the condition of which “Freq.,” “Depth” and “Mode” have been set up, if a check is placed into the box after a check has been replaced once, the last settings of “Freq.,” “Depth” and “Mode” are memorized and set up.
9	LFO Mode (LFO Mode Setting)		The mode of LFO can be designated.
10	Reset (LFO Reset Setting)		Whether the initial phase of LFO is reset or not reset can be designated. “with check” (Reset) / “without check” (Un-reset)
11	LFO Freq. (LFO Frequency Setting)		The frequency of LFO can be selected.
12	LFO Depth (LFO Depth Setting)		The depth of the LFO Cutoff frequency can be selected.
13	Res. (Resonance Setting)		Resonance can be designated.

Section B-3 Operator (No.1 to 20)

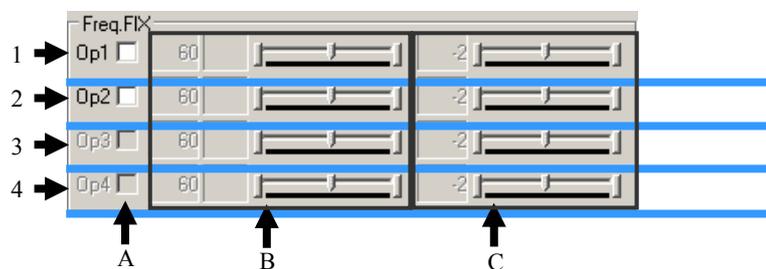
EG and LFO can be set up and edited in "Section B-3."



No.	Function Name	Description
1	Operator Tab	Each operator can be switched. According to the settings of Algorithm, 1-2 display (2-operator) and 1-4 display (4-operator) is switched. Since the tabs are linked to "Algorithm Display," if any operator is changed, an active display (light-blue) which shows the selected operator in present in Algorithm Display is also changed.
2	Filter (Setting Graph Display)	AR, DR, SR, RR, SL, and TL are displayed in line chart.
3	TL (Total Level Setting)	The level of envelope can be set up. Smaller the value is, the total level becomes larger.
4	SL (Sustain Level Setting)	In the case of "Decay Sound," the level which shifts from "Decay Rate" to "Release Rate" is set up. In the case of "Sustain Sound," the volume level under sustentation can be set up. As smaller the value is, the sound volume becomes larger.
5	AR (Attack Rate Setting)	The time interval which reaches to the maximum sound value (0dB) from the starting of sound generation (-96dB) can be set up. The slider moves to more right-side, so that the attack becomes stronger.
6	DR (Decay Rate Setting)	Damping time which reaches to the maximum sound value (0dB) from it becomes the Sustain Level (SL) can be set up. It decreases faster, so that a value is large.
7	SR (Sustain Rate Setting)	Sustain Rate can designate the decay which is after Sustain level has been reached. It decreases faster, so that a value is large.
8	RR (Release Rate Setting)	The time interval to become a silent status after KeyOff or Hold-Off is operated can be set up. It decreases faster, so that a value is large.
9	XOF (Keyoff Ignore Setting)	Valid/Invalid of KeyOff can be set up. By placing a check into this box, KeyOff is ignored and status change by KeyOff will not happen. Drum voice is also generated as long as gate-time length.
10	SUS (Sustain Setting)	Valid/Invalid of "Hold 1" in MIDI message can be set up. When a check is placed into the box, "Hold 1" becomes valid.
11	KSR (Rate Scaling Setting)	Key-Scale ON/OFF of Rate can be set up. By placing a check on the box, Key-Scale of Rate becomes valid.
12	EAM (AM Modulation Setting)	ON/ OFF of "AM modulation" can be set up. By placing a check on the box, the setting of DAM becomes valid.
13	EVB (Vibrato Modulation Setting)	ON/OFF of "Vibrato modulation" can be set up. By placing a check on the box, the setting of DVB becomes valid.
14	MULTI (Frequency Magnification Setting)	Magnification of Frequency can be set up.
15	DT (Detune Setting)	Detune is set up. By setting the value larger, pitch develops into a gap little by little, so that the stronger effect of chorus can be obtained.
16	KSL (Level Scaling Setting)	Since it simulates the value which decreases the tones as becoming higher like a natural instrument, Level Scaling (attenuation amount per octaves) can be set up.
17	DAM (AM Modulation Depth Setting)	The depth of AM Magnification can be set up. The selectable ranges are four levels (0 to 3), and the larger value brings the greater amplitude. DAM=「0」: 1.3dB · DAM=「1」: 2.8dB DAM=「2」: 5.8dB · DAM=「3」: 11.8dB
18	DVB (Vibrato Modulation Depth Setting)	The depth of vibrato modulation can be set up. The selectable ranges are four levels (0 to 3), and the larger value brings the greater amplitude.
19	FB (Amount of feedback)	This is a function of which only valid to operator in Modulator side, and the Feedback modulation can be set up. The larger value brings the greater feedback amount.
20	WS (FM Basic Waveform Selection)	The basic waveform of each operator which are used in FM operation can be set up.

Section B-4 Freq. FIX (No.1 to 4)

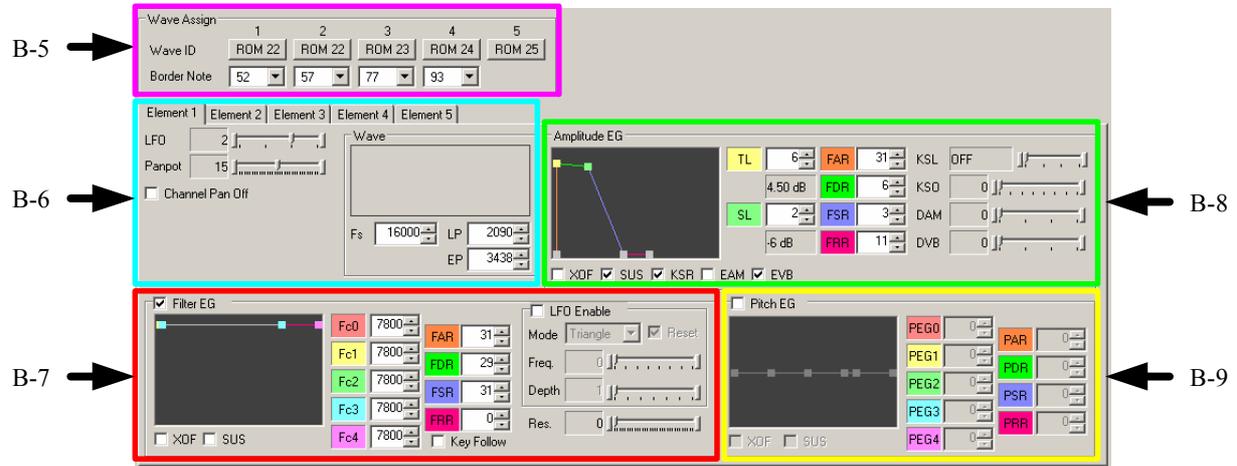
Frequ.FIX can be set up and edited in "Section B-4."



No.	Function Name	Description
1	Op1 (Operator 1)	
A	Freq.FIX 1 Enable (Fixed frequency enabled setting operator 1)	Whether the fixed frequency of "Operator 1" is valid (ON) or invalid (OFF) can be designated. In case of "OFF," both "Key" and "Fine" can not be designated. "with check" (Valid) / "without check" (Invalid)
B	Freq.FIX 1 Key (Fixed frequency key setting operator 2)	The "Key Number" of fixed frequency of "Operator 1" can be designated.
C	Freq.FIX 1 Fine (Fixed frequency fine setting operator 1)	The "Fine Pitch" of fixed frequency of "Operator 1" can be designated.
2	Op2 (Operator 2)	
A	Freq.FIX 2 Enable (Fixed frequency enabled setting operator 2)	Whether the fixed frequency of "Operator 2" is valid (ON) or invalid (OFF) can be designated. In case of "OFF," both "Key" and "Fine" can not be designated. "with check" (Valid) / "without check" (Invalid)
B	Freq.FIX 2 Key (Fixed frequency key setting operator 2)	The "Key Number" of fixed frequency of "Operator 2" can be designated.
C	Freq.FIX 2 Fine (Fixed frequency fine setting operator 2)	The "Fine Pitch" of fixed frequency of "Operator 2" can be designated.
3	Op3 (Operator 3)	
A	Freq.FIX 3 Enable (Fixed frequency enabled setting operator 3)	Whether the fixed frequency of "Operator 3" is valid (ON) or invalid (OFF) can be designated. In case of "OFF," both "Key" and "Fine" can not be designated. "with check" (Valid) / "without check" (Invalid)
B	Freq.FIX 3 Key (Fixed frequency key setting operator 3)	The "Key Number" of fixed frequency of "Operator 3" can be designated.
C	Freq.FIX 3 Fine (Fixed frequency fine setting operator 3)	The "Fine Pitch" of fixed frequency of "Operator 3" can be designated.
4	Op4 (Operator 4)	
A	Freq.FIX 4 Enable (Fixed frequency enabled setting operator 4)	Whether the fixed frequency of "Operator 4" is valid (ON) or invalid (OFF) can be designated. In case of "OFF," both "Key" and "Fine" can not be designated. "with check" (Valid) / "without check" (Invalid)
B	Freq.FIX 4 Key (Fixed frequency key setting operator 4)	The "Key Number" of fixed frequency of "Operator 4" can be designated.
C	Freq.FIX 4 Fine (Fixed frequency fine setting operator 4)	The "Fine Pitch" of fixed frequency of "Operator 4" can be designated.

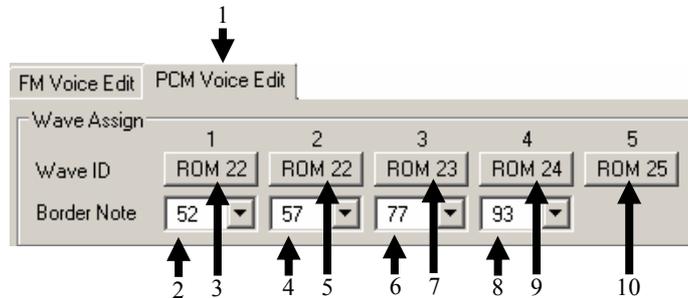
7.4.2.2. Voice Edit Dialog (PCM Voice Setting)

The following is a display when “PCM Voice” has been set up. In this section, the following interface is classified to five sections (B-5, B-6, B-7, B-8 and B-9) and explained.



Section B-5 Wave Assign (No.1 to 10)

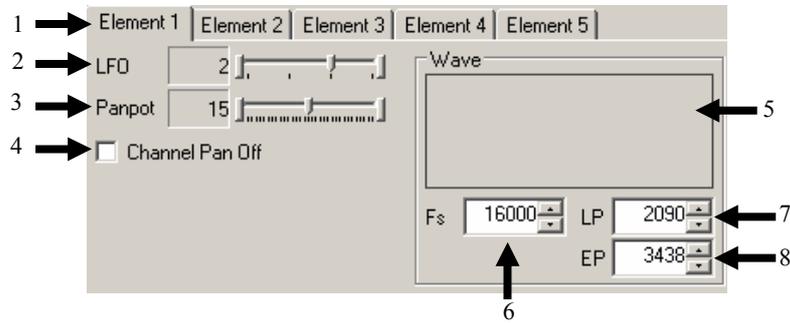
Wave ID and Border Note can be set up and edited in “Section B-5.”



No.	Function Name	Description
1	PCM Voice Edit Tab	PCM Voice Parameter can be displayed and edited.
-	Wave Assign	
2	Bank1 Wave ID (Bank1 Wave ID Setting)	Wave ID to set up can be designated. Any Wave ID can be selected. If there is no WaveID to select, “---” is displayed.
3	Bank1/2 Border Note (Bank1/2 Border Note Setting)	Note Number which becomes a border of Banks can be designated. Note that Note number which is in the range of other Border Note can not be selected. In the combo box, only available Note Numbers are displayed.
4	Bank2Wave ID (Bank2Wave ID Setting)	Same as above (See the function description 2.)
5	Bank2/3 Border Note (Bank2/3 Border Note Setting)	Same as above (See the function description 3.)
6	Bank3 Wave ID (Bank3Wave ID Setting)	Same as above (See the function description 2.)
7	Bank3/4 Border Note (Bank3/4 Border Note Setting)	Same as above (See the function description 3.)
8	Bank4Wave ID (Bank4Wave ID Setting)	Same as above (See the function description 2.)
9	Bank4/5 Border Note (Bank4/5 Border Note Setting)	Same as above (See the function description 3.)
10	Bank5Wave ID (Bank5Wave ID Setting)	Same as above (See the function description 2.)

Section B-6 Element (No.1 to 8)

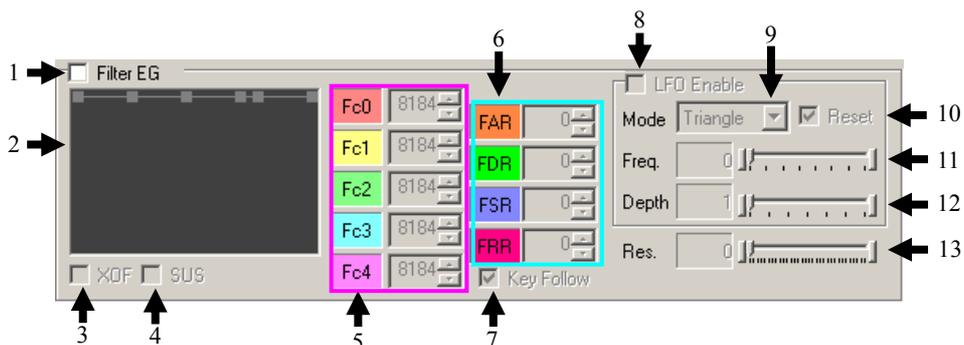
LFO, Panpot, Drum and ALG can be set up and edited in “Section B-6.”



No.	Function Name	Description	
1	Element 1 ~ 5	The “Element #” shows the value of PCM voice which is assigned by “WaveID #.” In addition, by changing the setting value in “Element # tab,” the corresponding PCM voice can be edited.	
2	LFO	LFO Frequency used per voice can be set up. By dragging left-right the slider or by pressing button which locates between the two sides, the value of “LFO” can be changed.	
3	Panpot	Left-right balance set per voice can be set up. By dragging left-right the slider or by pressing button which locates between the two sides, the value of “Panpot” can be changed.	
4	Channel Pan Off	By placing a check on the box, “Pan” setting of “Control Change” becomes invalid, and “Panpot value” for voice becomes valid.	
-	Wave		
5	Waveform Display	Wave Data set in Bank1 WaveID is displayed. If there is not setting, nothing is displayed.	
6	Fs	Frequency Setting	Playback Frequency of loaded waveform is displayed. The value shows the playback frequency when “C (60)” has been generated. If the value has been changed, pitch is also changed.
7	LP	Loop Point Setting	Loop Point at the time of operating a loop playback can be set up. Only when a WaveID has been set up or when RM has been checked, setting becomes available. In addition, in other cases, it is masked and disable.
8	EP	End Point Setting	The End point of playback and Loop End Point of loop playback can be set up. When the value is “0,” sound may not be generated. The setting values are limited as following range. <ul style="list-style-type: none"> In case of 4-bit ADPCM: 1≤EndPoint≤ [Waveform Sample Number] AND more than Loop Point In case of 8-bit PCM: 0≤EndPoint≤ [Waveform Sample Number-1] AND more than Loop Point In case of 16-bit PCM: 0≤EndPoint≤ [Waveform Sample Number-1] AND more than Loop Point Only when a WaveID has been set up or when RM has been checked, setting becomes available. In addition, in other cases, it is masked and disable.

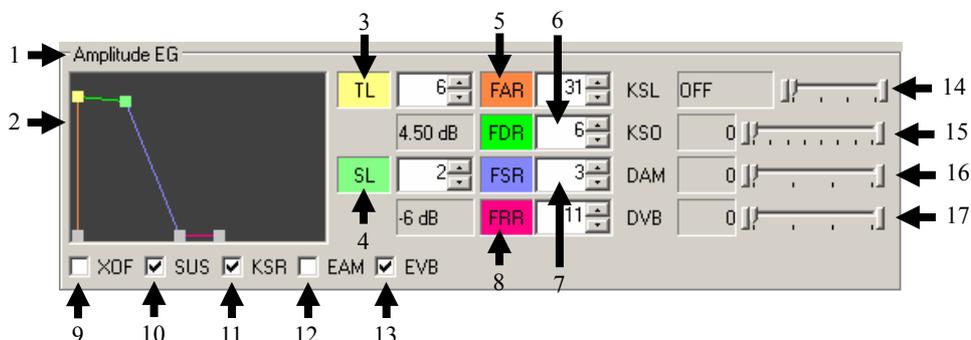
Section B-7 Filter EG (No.1 to 13)

Filter EG can be set up and edited in “Section B-7.”
For details of each function, see “Section B-2 (p.58)”



Section B-8 Amplitude EG (No.1 to 17)

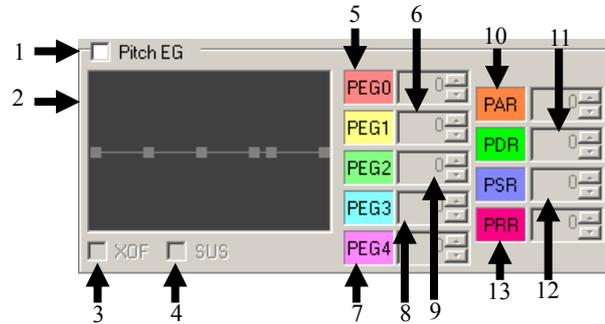
Amplitude EG can be set up and edited in “Section B-8.”



No.	Function Name	Description
1	Amplitude EG	
2	Filter (Setting Graph Display)	AR, DR, SR, RR, SL, and TL are displayed in line chart.
3	TL (Total Level Setting)	The level of envleope can be set up. When this value becomes small, the total level becomes larger.
4	SL (Sustain Level Setting)	In the case of “Decay Sound”, the level which shifts from “Decay Rate” to “Release Rate” is set up. In the case of “Sustain Sound,” the volume level under sustentation can be set up. When the value is small, the sound volume becomes larger.
5	FAR (Attack Rate Setting)	The time interval which reaches to the maximum sound value (0dB) from the starting of sound generation (-96dB) can be set up. The slider moves to more right-side, so that the attack becomes stronger.
6	FDR (Decay Rate Setting)	Damping time which reaches to the maximum sound value (0dB) from it becomes the Sustain Level (SL) can be set up. It decreases faster, so that a value is large.
7	FSR (Sustain Rate Setting)	Sustain Rate can designate the decay which is after Sustain level has been reached. It decreases faster, so that a value is large.
8	FRR (Release Rate Setting)	The time interval to become a silent status after KeyOff or Hold-Off is operated can be set up. It decreases faster, so that a value is large.
9	XOF (Keyoff Ignore Setting)	Valid/Invalid of KeyOff can be set up. By placing a check into this box, KeyOff is ignored and status change by KeyOff will not happen. Drum voice is also generated as long as gate-time length.
10	SUS (Sustain Setting)	Valid/Invalid of “Hold 1” in MIDI message can be set up. When a check is placed into the box, “Hold 1” becomes valid.
11	KSR (Rate Scaling Setting)	ON/OFF of “Key scale rate” can be set up. Chacking this check box enables the use of Key Scall Rate.
12	EAM (Amplitude Modulation Setting)	ON/OFF of “Amplitude Modulation” can be set up. Checking this check box enables DAM setup.
13	EVB (Vibrato Modulation Setting)	ON/OFF of “Vibrato modulation” can be set up. By placing a check on the box, the setup of DVB becomes valid.
14	KSL (Level Scaling Setting)	Since it simulates the volue which decreases the tones as becoming higher like a natural instrument, Level Scaling (attenuation amount per octaves) can be set up.
15	KSO (Level Scaling Offset Setting)	Keyoff Set of Level Scaling can be set up.
16	DAM (AM Modulation Depth Setting)	The depth of AM Magnification can be set up. The selectable ranges are four levels (0 to 3), and the larger value brings the greater amplitude. DAM=「0」: 1.3dB · DAM=「1」: 2.8dB DAM=「2」: 5.8dB · DAM=「3」: 11.8dB
17	DVB (Vibrato Modulation Depth Setting)	The depth of vibrato modulation can be set up. The selectable ranges are four levels (0 to 3), and the larger value brings the greater amplitude.

Section B-9 Pitch EG (No.1 to 12)

Pitch EG can be set up and edited in “Section B-9.”



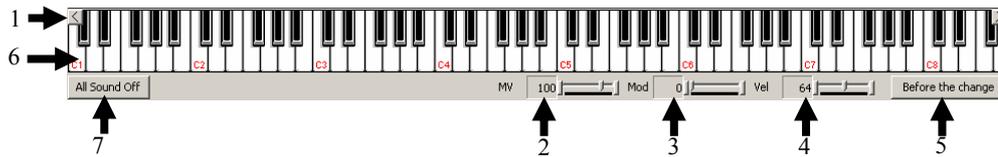
No.	Function Name	Description
1	Pitch EG (PEG Valid Setting)	Whether PEG is valid or invalid can be designated. “with check” (Valid)/ “without check” (Invalid)
2	Pitch EG Setting graph	PEG0 to PEG4, PAR, PDR, PSR, and PRR on Pitch EG function is displayed with a line chart. PEG0 to PEG4 can be edited directly by clicking and dragging; in addition, the values of PAR, PDR, PSR, and PRR are changed according to those changes.
3	XOF (KeyOff ignore)	Whether responds or does not respond to Note Off can be set up. “with check” (Not Respond)/ “without check” (Respond)
4	SUS (Sustain Settings)	Validity or invalid to “Hold 1” can be set up. “with check” (Valid) / “without check” (Invalid)
5	PEG0 (KeyOn Pitch Change Amount)	The pitch change amount at the time of the “KeyOn starting” can be designated.
6	PEG1 (Attach End/Pitch Change Amount Display)	The pitch change amount at the time of the “Attack End” can be designated.
7	PEG2 (Decay End/Pitch Change Amount Display)	The pitch change amount at the time of the “Decay End” can be designated.
8	PEG3 (Keyoff Pitch Change Amount)	The pitch change amount at the time of the “Key-Off starting” can be designated.
9	PEG4 (Release Pitch Change Amount)	The pitch change amount at the time of the “Release” can be designated.
10	PAR (Attach State Pitch Rate Display)	The pitch change rate in the “Attack condition” can be designated.
11	PDR (Decay State Pitch Change Rate Display)	The pitch change rate in the “Decay condition” can be designated.
12	PSR (Sustain State Pitch Change Rate Display)	The pitch change rate in the “Sustain condition” can be designated.
13	PRR (Release State Pitch Change Rate Display)	The cut-off frequency change rate in a “Release condition” can be designated.

7.4.3. Voice Edit Dialog – Section C (Keyboard FM/Drum/PCM)

This section describes the functions of keyboard by dividing five-different section. For details about each function, see each section which depends on a condition.

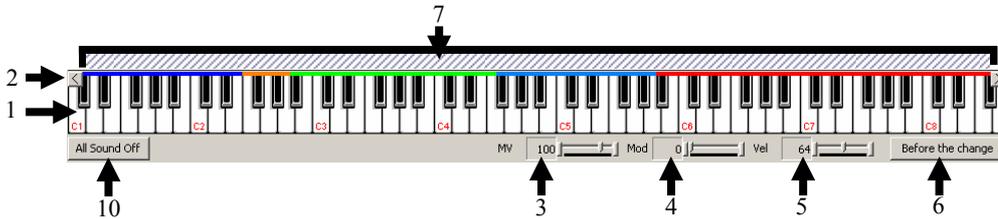
7.4.3.1. FM Voice

This is the display during a FM Voice Editing.



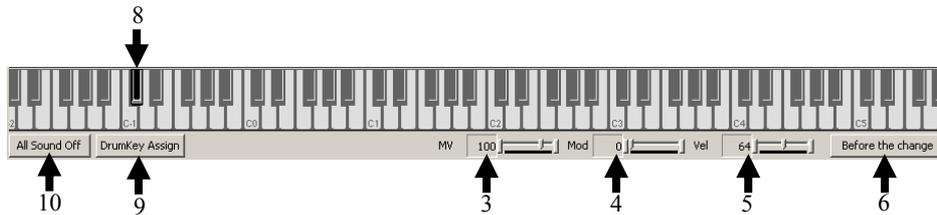
7.4.3.2. PCM Voice

This is the display during a PCM Voice Editing.



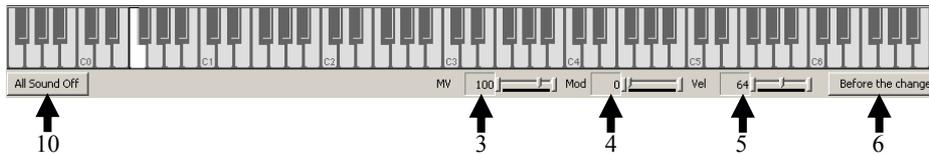
7.4.3.3. Drum Voice

This is the display during a Drum (FM) Voice Editing.



7.4.3.4. Drum Voice (PCM Voice)

This is the display during a Drum (PCM) Voice Editing.



No.	Function Name	Description
1	Key-board	By clicking the keyboard, voice under editing can be monitored. By using a Keyboard scroll button, all tones from “C-1” to “G9” becomes monitorable. In the default condition, “C2” to “D6” is displayed on screen. Here, note number is set as “60” = “C3.”
2	Key-board Scroll Button	By clicking this button, tone display can be changed. By clicking the right-side button, higher tones can be displayed; conversely, by clicking the left-side button, lower tones can be displayed.
3	MV (Master Volume Settings)	The value of Master volume at monitoring on keyboard can be changed.
4	Mod (Modulation Settings)	The modulation value at monitoring on keyboard can be changed.
5	Vel (Velocity Settings)	The value of Velocity volume at monitoring on keyboard can be changed.
6	Before the change ()	By clicking this switch, voice before an edit can be confirmed.
7	Element 1 to 5	For details about this function, see p.62 .
8	Drum Key	Only a drum note number under an edit is displayed.
9	Drum key Assign Key	This is a function which becomes available during a drum voice editing. A tone of Drum Voice can be set up.
10	All Sound Off	Current sound of the track is stopped, which is selected by the Track#.

7.5. 3D Pattern Edit Dialog

This edit window edits 3D pattern positioning information that is selected on the Master Track in the Contents Window or in Library Window. Three-dimensional movements can be registered individually for each virtual sound generator up to four (ID0 to ID3). "Patch Edit Window" assigns virtual sound generators (ID0 to ID3) to each channel. By this window, 3D effects are enabled to each channel. Patch Edit Window also assigns initial position for each virtual sound generator.

【Note】 Three-dimensional pattern is a patternized thing of change information of three-dimensional positioning of the virtual sound generators.
 The pattern # greater than or equal to 38 has sample 3D patterns as an initial setup.

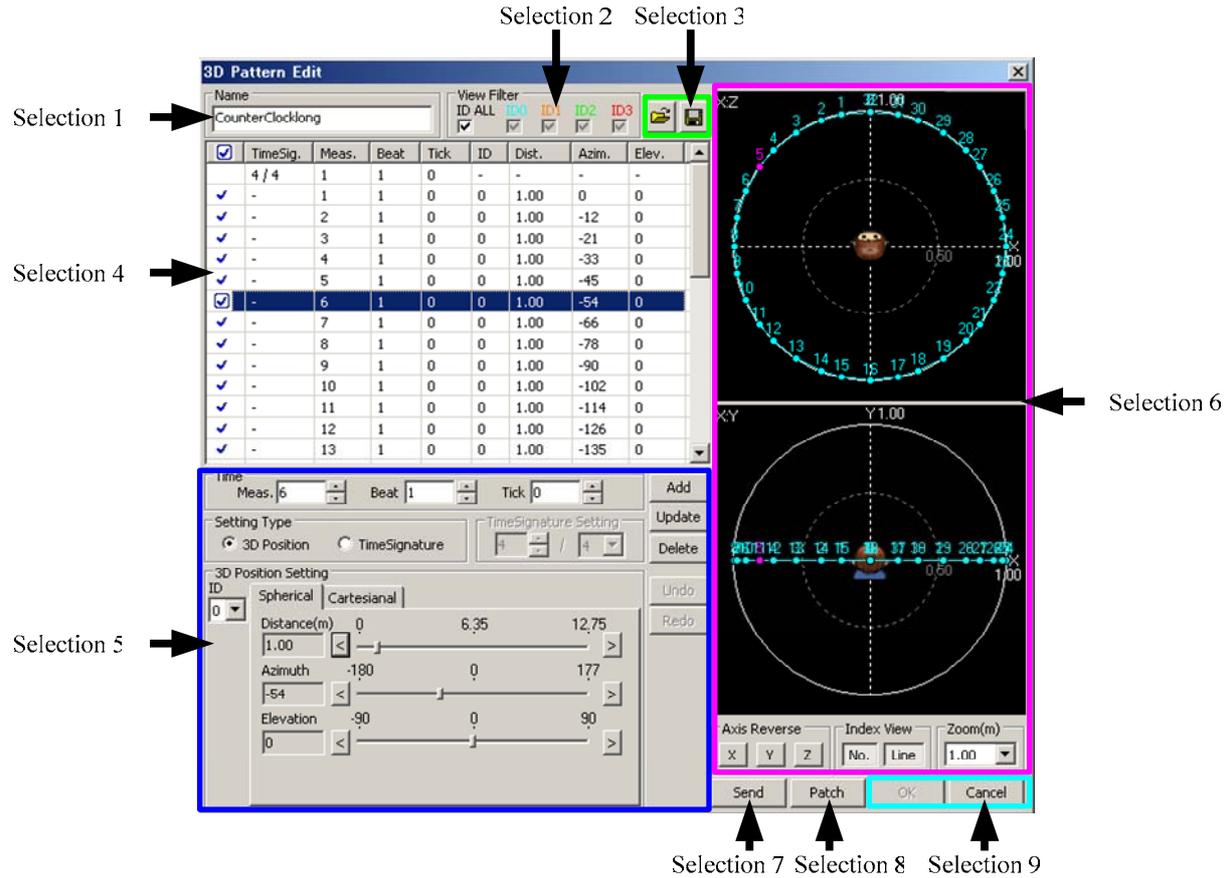


Figure. 7-31 3D Pattern Edit Dialog

Section 1 3D Pattern Name



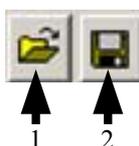
Function name	Description
Name	Displays the 3D pattern name. The name can be changed by entering here directly.

Section 2 View Filter



No.	Function name	Description
-	View Filter	Performs the filtering process for the 3D event list. In the default, all events are displayed.
1	ID ALL	Displays all 3D positioning information (hereinafter called “event”) currently registered on the event list. When this check-box is checked, the following check-boxes of ID0 to ID3 are displayed as gray color and ignored.
2	ID0	Displays the 3D positioning information of ID0 when checked.
3	ID1	Displays the 3D positioning information of ID1 when checked.
4	ID2	Displays the 3D positioning information of ID2 when checked.
5	ID3	Displays the 3D positioning information of ID3 when checked.

Section 3 Open / Save a 3D Pattern File (*.csv)



Function name	Description
Open	Opens the 3D pattern file (3D Event CSV File (*.csv)).
Save	Saves the 3D pattern file (3D Event CSV File (*.csv)).

Section 4 Event List

The events list displays the relevant events to the Filter specification out of the events currently registered. The lower-limit and upper-limit values of M.B.T. (Meas., Beat, and Tick) that has been set by the call side application are also displayed.

(When the lower-limit and upper-limit values of M.B.T. do not exist, these values are not displayed.)

	1	2	3	4	5	6	7	8	9
	TimeSig.	Meas.	Beat	Tick	ID	Dist.	Azim.	Elev.	
	4 / 4	1	1	0	-	-	-	-	
✓	-	1	1	0	0	1.00	0	0	
✓	-	2	1	0	0	1.00	-12	0	
✓	-	3	1	0	0	1.00	-21	0	
✓	-	4	1	0	0	1.00	-33	0	
✓	-	5	1	0	0	1.00	-45	0	
✓	-	6	1	0	0	1.00	-54	0	
✓	-	7	1	0	0	1.00	-66	0	
✓	-	8	1	0	0	1.00	-78	0	
✓	-	9	1	0	0	1.00	-90	0	

No.	Function name	Description
1	Icon Indicator	Refer to the followings for the icon indication.
2	Time Signature	Time Signature is displayed. Time Signature can be designated only in Library window.
3	Meas	Time from the song top of the event can be input on bar basis (Meas).
4	Beat	Time from the song top of the event can be input on bar basis (Beat).
5	Tick	Time from the song top of the event can be input on bar basis (Tick).
6	ID	Virtual sound generator ID can be specified. 0 to 3 are available.
7	Dist	The distance to the Virtual sound generator can be specified.
8	Azimuth	Horizontal direction angle of the virtual sound generator can be set.
9	Elevation	Vertical direction angle of the virtual sound generator can be set.

Icons indicated at the left end of the list means the followings.

No.	Indicator	Description
1	<input checked="" type="checkbox"/>	Current event. It is displayed on XZ and XY view.
2	<input type="checkbox"/>	Current event. It is not displayed on XZ and ZY view.
3	✓	Displayed on XZ and XY view.
4		Not displayed on XZ and XY view.
5	-	
6	↓ ↑	Upper / lower limit of MBT.

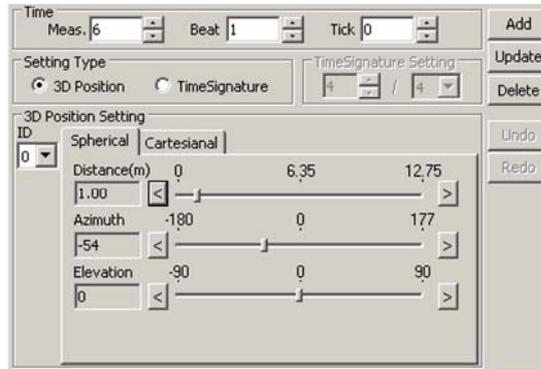
When clicking an event, the relevant line becomes current status, and it is reflected to ID, Time, and 3D Position Setting controls. In the case of the event of which XZ and XY view is ON, the relevant point is displayed in pink.

The XZ and XY view can be switched to ON or OFF by double-clicking on the line of the event or selecting an item from the popup menu displayed by right-clicking on the event. In addition, popup menu is available even when multiple events are selected.

Events are added by [Add] button, deleted by [Delete] button, and updated by [Update] button. The maximum of 256 points can be registered for each ID.

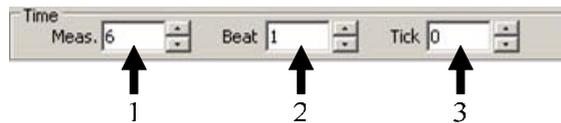
Section 5 3D Pattern Edit Control

This pane is for editing a 3D event selected by Event List.



Time

Time from the song's top of the event can be input on M.B.T. basis. If Time Signature is selected in Setting Type pane (see the next section), Beat and Tick cannot be specified.



No.	Function name	Description
1	Meas	Time from the song top of the event can be input on bar basis (Meas).
2	Beat	Time from the song top of the event can be input on bar basis (Beat).
3	Tick	Time from the song top of the event can be input on bar basis (Tick).

Setting Type

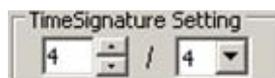
This setup specifies which type of event is under entering. In Contents window, this setup is fixed as 3D Position because TimeSignature cannot be changed on this window.



No.	Function name	Description
1	3D Position	Specify that you are entering 3D Position event in Event List.
2	TimeSignature	Specify that you are entering TimeSignature in Event List.

TimeSignature Setting

This pane is for changing time signature; only works when using Library window.



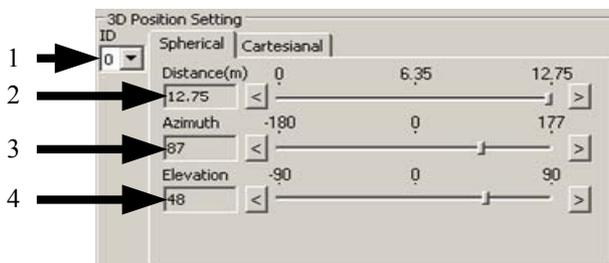
No.	Function name	Description
1	Upper number	Specify how many beats are in a measure.
2	Lower Number	Specify the note value of the beat.

3D Position Setting

This pane is for specifying 3D event ID under entering, and position parameters. Selecting of the tabs switches Spherical input mode (Distance, Azimuth, and Elevation) and Cartesian input mode (X, Y, Z). Spherical input mode is the default.

Spherical (Polar Coordinate)

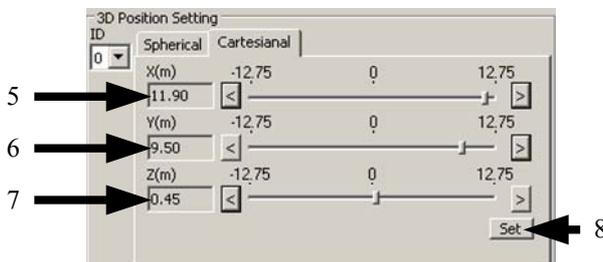
The movement of the virtual sound generators can be set by the combination of three-dimensional positions.



No.	Function name	Description
1	ID	Virtual sound generator ID is specified. 0 to 3 are available.
2	Distance	The distance to the virtual sound generator is set. Value range: 0 to 12.75 m in 0.05 m steps. Default: 1.00 m
3	Azimuth	The azimuth in horizontal direction of the virtual sound generator is set. Value range: -180 ° to 177 ° in 3 ° steps. Default: 0 °
4	Elevation	The angle in vertical direction of the virtual sound generator is set. Value range: -90 ° to 90 ° in 3 ° steps. Default: 0 °.

Cartesian (Rectangular Coordinate)

Three-dimensional position of the virtual sound generators can be set by specifying the coordinates.



No.	Function name	Description
5	X	Assigns the left-and-right offset of the virtual position. Variable range: -12.75 m to 12.75 m in 0.05 m steps. Default: 0.00 m.
6	Y	Assigns the up-and-down offset of the virtual position. Variable range: -12.75 m to 12.75 m in 0.05 m steps. Default: 0.00 m.
7	Z	Assigns the distance of the virtual position. Variable range: -12.75 m to 12.75 m in 0.05 m steps. Default: 1.00 m.
8	Set	Pushing this button enables calculation in order to validate the setting value of X, Y, and Z. When the result is out of the allowable value of Distance, Azimuth, or Elevation, the nearest value to the input value will be automatically calculated. The set data is also automatically reflected to data in Spherical tab after the conversion. Even when switching tabs or inserting events by [Add] button etc, the data of Cartesian can not be valid as long as [Set] button is not clicked beforehand.

Add / Update / Delete

Addition, Update, and Deletion for an event is registered by pressing these buttons after entered parameters in above ID and position.



No.	Function name	Description
1	Add	Parameters, which are currently input, of each control can be added to the event list. When the event of the display candidate ID is added, the list will be updated by sorting it in ascending order of M.B.T.
2	Update	The current event contents are updated. When the event of the display candidate ID is updated, the list will be updated by sorting it in ascending order of M.B.T.
3	Delete	The current event is deleted. When the event of the display candidate ID is deleted, the list will be updated by sorting it in ascending order of M.B.T.

Undo / Redo

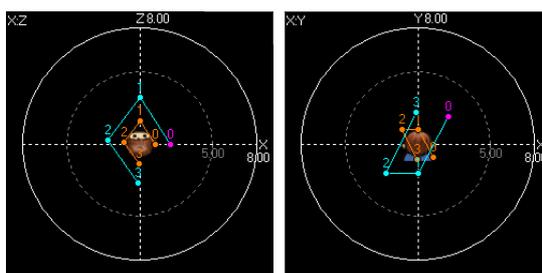
Undo or Redo for an event is registered by pressing these buttons.



No.	Function name	Description
1	Undo	Cancels the last event change (Add, Update, or Delete) and revert it back to the older state.
2	Redo	Reverts the last change that is canceled by Undo button.

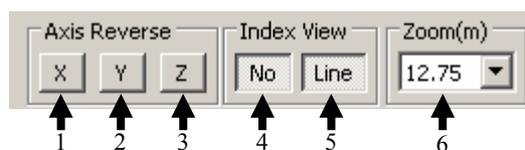
Section 6 3D Position Indication (XZ, XY View)

Position Viewer



Visually displays the position of the virtual sound generators, which are enabled to display in the event list. The sound generator points of the same ID draws its trajectory as a solid-line. The sound generator position corresponding to the current event is displayed in pink. It is displayed in conjunction with the update of the event list by the click of [Add], [Update], and [Delete] buttons. In addition, Distance, Azimuth, and Elevation can change with dragging the sound generator position. The event list is also updated simultaneously. On the sound generator position, consecutive number from 0 can be displayed in ascending order of M.B.T.

Axis Reverse, Index View, Zoom



No.	Function name	Description
-	Axis Reverse	ON/OFF of the axis reverse can be set. Reverse OFF is the default. Indication of the 3D position also switches simultaneously with the status of ON/OFF.
1	X	ON/OFF of the X-axis reverse can be switched.
2	Y	ON/OFF of the Y-axis reverse can be switched.
3	Z	ON/OFF of the Z-axis reverse can be switched.
-	Index View	View for position numbers and trace lines of virtual sound generator position can be switched. Display ON is the default state.
4	NO	ON/OFF to display the "Index Number".
5	Line	ON/OFF to display the trajectory of 3D.
-	Zoom	Display range of the view can be specified.
6	Zoom Combo box	Display range of the view can be set. The default is the range of 12.75m. The range can be selected out of the radius of 0.05, 1, 2, 4, 6, 8, 10, or 12.75m.

Section 7 Send

Function name	Description
Send	The current 3D position information is transferred to the board.

Section 8 Patch

Function name	Description
Patch	Virtual Sound generator ID for each channel is assigned. "Patch Edit Dialog" is opened by clicking the button. For details, refer to "7.5.1 Patch Edit Dialog."

Section 9 OK / Cancel

Function name	Description
OK	Edited contents are returned to the call side application. If the contents are not edited, "Disable" will be given, and when edited one or more times, "Enable" will be given.
Cancel	If contents have been edited one or more times when the Cancel button has been pressed, a confirmation dialog of whether to delete data or not is displayed. And, the dialog will not be closed when the data is not deleted. The uses of [×] button, [Alt]+[F4] keys, or [Esc] key are treated as [Cancel] button.

7.5.1. Patch Edit Dialog

This window opens by clicking “Patch” button in “7.2.6 3D Pattern Tab” or “7.5 3D Pattern Edit Dialog”. By using this window, each channel can be assigned up to four as 3D virtual sound generators or L/R channel. Patch Edit Window also assigns initial position for each virtual sound generator.

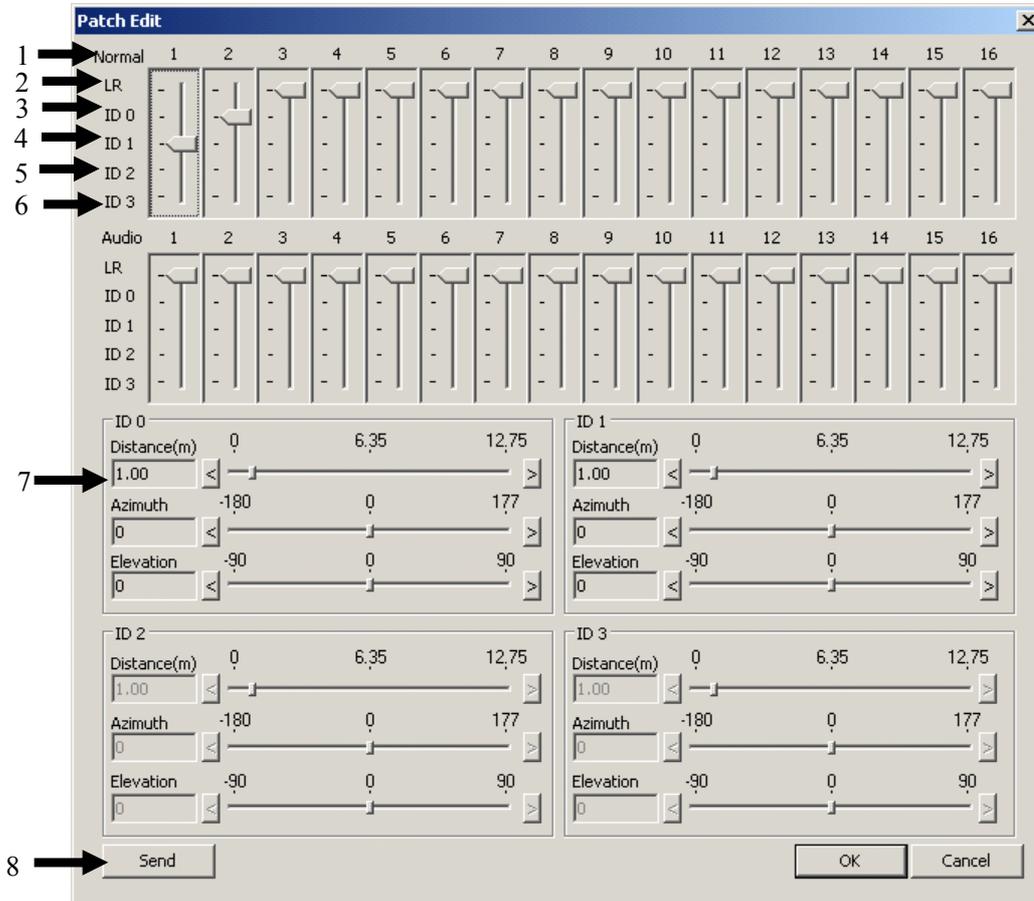


Figure. 7-32 Patch Edit Dialog

No.	Function name	Description
1	CH 1~16	A channel is assigned one from LR, ID0, ID1, ID2, or ID3 for Normal and/or Audio channels.
2	LR	Regular LR output. The latter effect of Wide stereo can be applied.
3	ID0	The 3D path pattern ID0 that is set in “7.5 3D Pattern Edit Dialog.”
4	ID1	The 3D path pattern ID1 that is set in “7.5 3D Pattern Edit Dialog.”
5	ID2	The 3D path pattern ID2 that is set in “7.5 3D Pattern Edit Dialog.”
6	ID3	The 3D path pattern ID3 that is set in “7.5 3D Pattern Edit Dialog.”
7	3D initial position	Sets initial position of each 3D virtual sound generator. As default setup, all virtual sound generators are settled as far as 1 meter in front of a listener.
8	Send	The 3D path information set to each channel is transmitted to the emulator.

7.6. Effect Edit Dialog

Two effectors, SFX1 and SFX2, are prepared, and can be used simultaneously. These effectors can be connected as serial or parallel. Effectors can be changed during performing playback. Each channel's level parameters, RevSendLevel (SFX1), ChoSendLevel (SFX2), and DrySendLevel, are set to adjust effect parameters with using D/R/C adjust bar in Mixer Window, and/or Control Change messages (90/Dry, 91/Rev, 93/Cho). **Effector setting change during playback can be performed on Master Track in Contents Main Window.**

Effectors selected in the list can be edited. The effectors have two types, SFX1 (reverb type) and SFX2 (chorus type), and Effect Edit Dialog that corresponds to each effector is prepared.

7.6.1. Effect Edit Dialog Corresponds to SFX1/SFX2

This chapter explains about the effect edit to support SFX1/SFX2.

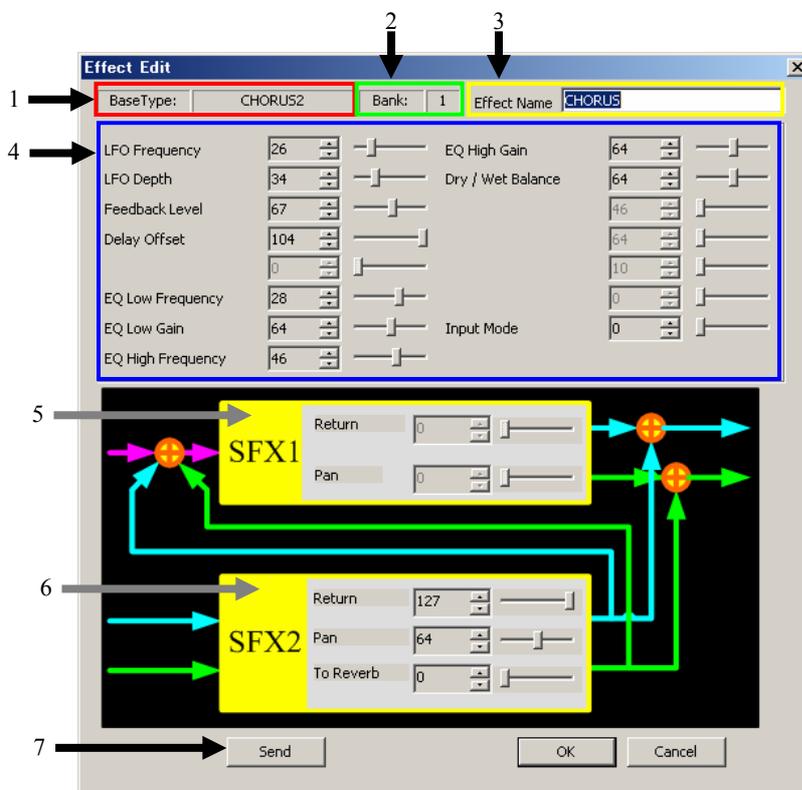


Figure. 7-33 Effect Edit Dialog

No.	Function name	Description	
1	Base Type	Base type of effect is displayed. (Base type: The base of the Effect type)	
2	Bank	Bank number is displayed.	
3	Effect Name	Effect name is displayed.	
4	Parameters	The effect parameter which it has for every base type can be adjusted freely.	
5	SFX1 (reverb type)	Return	Output level of the effect block. Output level becomes higher as the value becomes greater.
		Pan	Output positioning of the effect block.
6	SFX2 (chorus type)	Return	Output level of the effect block. Output level becomes higher as the value becomes greater.
		Pan	Output positioning of the effect block.
		To Reverb	Send level that is transferred from SFX2 to SFX1.
7	Send	Effect parameter is transferred to the emulator.	

7.7. HV Voice Edit Dialog

HV Voice Edit Window is a window to edit / playback HV Extended Voice (*.hvp).

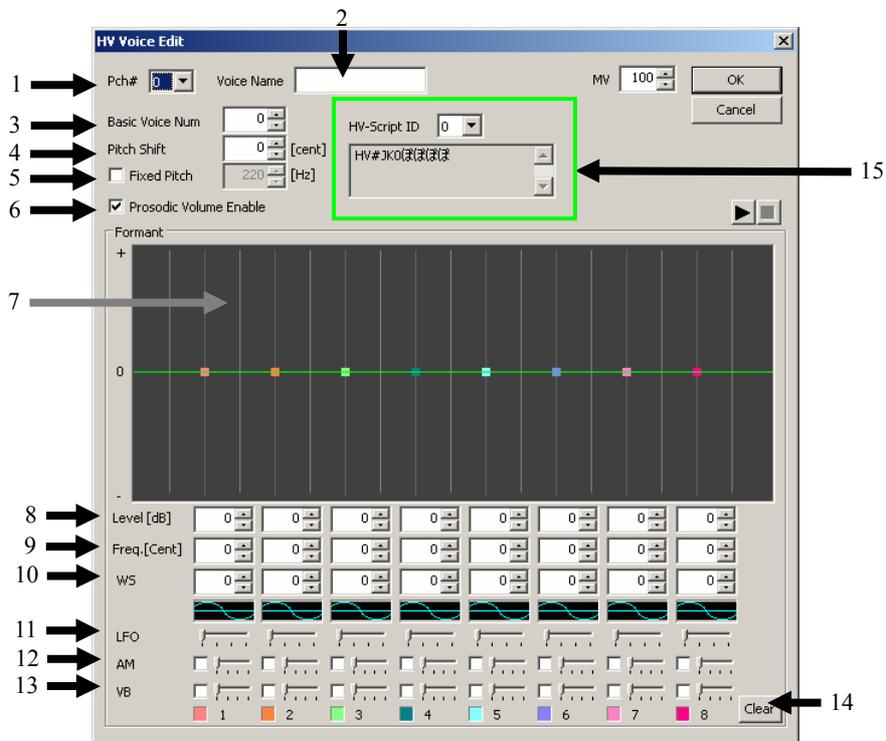
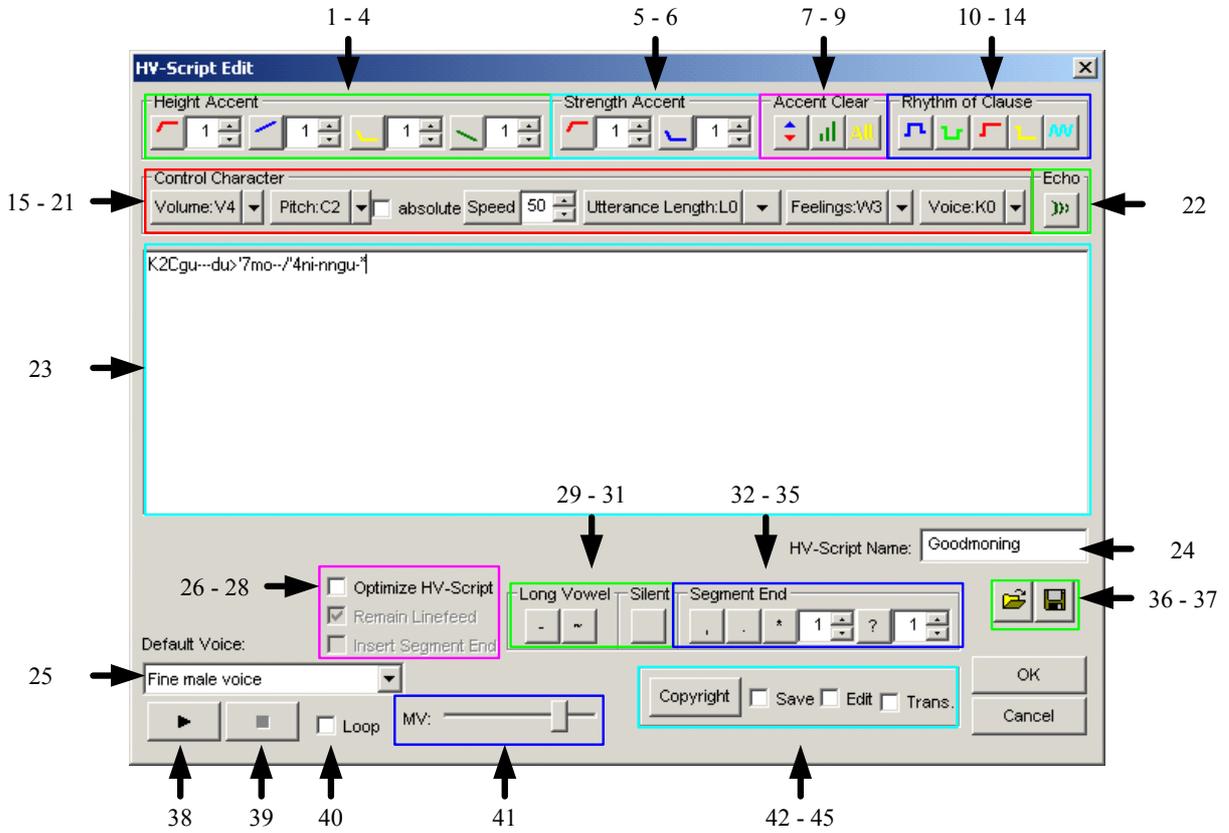


Figure. 7-34 HV Voice Edit Dialog

No.	Function name	Description
1	Pch #	Displays the voice number.
2	Voice Name	Displays the voice name. Editing available.
3	Basic Voice Num	Designates the voice number which becomes a basis of operation.
4	Pitch Shift	Designates the pitch shift amount (Cent) from the basic voice.
5	Fix Pitch	Designates whether the “Voice Pitch” enables or disables. It pronounces in a fixed pitch. The pitch frequency can be assigned in Hz.
6	Prosodic Volume Enable	By turning ON, it pronounces according to the volume change directions in HV script.
Formant		The each value of Formant 1 to 8 can be edited.
7	Formant Setting Graph Area	Freq., Level of each Formant 1 to 8 is shown by line chart.
8	Formant Level Setup	The magnitude of the Formant 1 to 8 level changes (dB) is designated from the basic voice.
9	Formant Freq. Setup	The magnitude of the Formant 1 to 8 frequency changes (cent) is designated from the basic voice.
10	Formant WS setup	The waveform used as the material to form Formant can be assigned.
11	Formant LFO setup	LFO frequency for Formant can be assigned.
12	Formant AM	AM modulation depth for Formant level can be assigned and set ON/OFF.
13	Formant VB	Vibrato modulation depth for a Formant Level can be assigned and set ON/OFF.
14	Clear for Formant Setting Graph Area	All values set in Formant Setting Graph Area are initialized.
15	HV-Script Select / View	Select HV-Script to pronounce for each ID.

7.8. HV-Script Edit Dialog

HV-Script edit window is a window for creation, editing, and saving HV-Script simply.



No.	Function name	Description	No.	Function name	Description
1		Insert the symbol ['] to raise a pitch on onset of a syllable.	2		Insert the symbol [^] to raise a pitch on rhyme of a syllable.
3		Insert the symbol [] to fall a pitch on onset of a syllable.	4		Insert the symbol [\$] to fall a pitch on rhyme of a syllable.
5		Insert the symbol [<] to ascend volume during pronunciation.	6		Insert the symbol [>] to descend volume during pronunciation.
7		Insert the symbol [/] to clear the raise or fall accent in previous pronunciation.	8		Insert the symbol [=] to clear the strong or weak accent in previous pronunciation.
9		Insert the symbol [/] to clear all of the accent in previous pronunciation.	10		Insert the symbol [@] to raise the pronunciation at the second reading symbol and end with descending.
11		Insert the symbol [!] to descend the pronunciation at the second reading symbol and end with accenting.	12		Insert the symbol [;] to raise the pronunciation from the second reading symbol.
13		Insert the symbol [:] to descend the pronunciation from the second reading symbol.	14		Insert the symbol [+] to pronunciation with random pitch.
15		Insert the symbol [v] to assign the volume of pronunciation.	16		Insert the symbol to assign the pitch of pronunciation.
17	<input type="checkbox"/> absolute	Insert the symbol to assign the pronunciation in absolute pitch	18		Insert the symbol to assign the speed of pronunciation.
19		Unify the length of the syllable as "L1".	20		Insert the symbol [W] to assign the pitch gradient.
21		Insert the symbol [K] to assign the voice type.	22		Insert the echo effect to the selected words.
23	Edit Box	Displays the HV-Script to edit.	24	HV-Script Name:	Set the name of HV-Script under edit.
25		Insert the voice type in the head of the script.	26	<input type="checkbox"/> Optimize HV-Script	Optimize the HV-Script.
27	<input checked="" type="checkbox"/> Remain Linefeed	Leave "line feed" code when optimize.	28	<input type="checkbox"/> Insert Segment End	Inserts "S99.S" and optimize the script when it reaches to the 100 Byte limitation for each paragraph.
29		Insert the symbol [-] to pronounce the previous letter with flatting.	30		Insert the symbol [-] to pronounce the previous letter with wobbling.
31		Insert silence.	32		Insert one space silence.
33		Insert two space silence silences.	34		Insert two space silences with descending the accent and sound volume.
35		Insert two space silences with ascending the accent and sound volume.	36		Open a HV-Script file (*.hvs).
37		Save a HV-Script file (*.hvs).	38		Playback a HV-Script file (*.hvs).
39		Stop the playback of a HV-Script file (*.hvs).	40	<input type="checkbox"/> Loop	Enable looping playback.
41		Adjust the playback volume of HV-Script.	42	<input type="checkbox"/> Copyright	Add copyright information on the head of the script.
43	<input type="checkbox"/> Save	Add the restrict information for saving.	44	<input type="checkbox"/> Edit	Add the restrict information for editing.
45	<input type="checkbox"/> Trans.	Add the restrict information for transferring.			

7.9. Preference Dialog

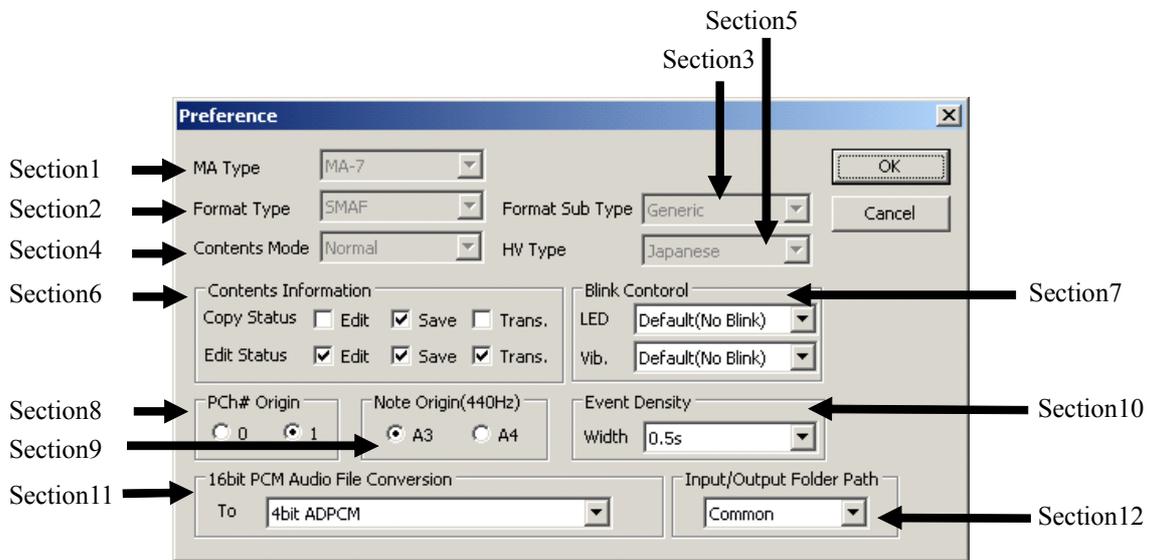


Figure. 7-35 Preference Dialog

Section 1 MA Type

Function name	Description
MA-Type	Select the target MA-Type for use.

Section 2 Format Type

Function name	Description
Format Type	Displays the format type.

Section 3 Format Sub Type

Function name	Description
Format Sub Type	Displays the Format Sub Type. The shown letter depends on the license.

Section 4 Contents Mode

Function name	Description
Contents Mode	Contents mode is displayed, or switched.

Section 5 HV Type

Function name	Description
HV-Type	Displays the language type, according to the operation system.

Section 6 Contents Information

Function name	Description	
Copy Status	Copy Status can be edited.	
	Save	With check " Editable ", and without check " un-editable ."
	Trans.	With check " Savable ", and without check " un-savable ."
	Edit	With check " Transferable ", and without check " un-transferable ."
Edit Status	Edit Status can be edited.	
	Save	With check " Editable ", and without check " un-editable ."
	Trans.	With check " Savable ", and without check " un-savable ."
	Edit	With check " Transferable ", and without check " un-transferable ."

Section 7 Blink Control

Function name	Description	
Blink Control	LED	LED blinking cycle is displayed, or switched.
	Vib.	Vib. vibration cycle is displayed, or switched.

Section 8 Pch# Origin

Function name	Description	
Pch# Origin	Program change number origin is selected.	
	0	0-origin is selected.
	1	1-origin is selected.

Section 9 Note Origin (440Hz)

Function name	Description	
Note Origin (440Hz)	A key to assign as 440Hz is selected.	
	A3	A3 origin is selected.
	A4	A4 origin is selected.

Section 10 Event Density

Function name	Description
Event Density	The unit time that becomes the reference of converting the event density is set. (Selectable items: 0.1s, 0.2s, 0.5s, 1.0s, 1.5s, or 2.0s)

Section 11 16bit PCM Audio File Conversion

Function name	Description
16bit PCM Audio File Conversion	Select the Audio Type conversion mode when loading a 16-bit audio file of Voice or Audio sound. "16bitPCM→4bitADPCM" "16bitPCM→8bitPCM" "16bitPCM→16bitPCM"

Section 12 Input/Output Folder Path

Function name	Description
Input/Output Folder Path	Set import/export folder for each file as Individual or Common. Individual: Tool accesses each folder which used by each function at the last time. Common: Tool accesses the same folder which used by any function at the last time.

7.10. Mixer

In Mixer Window, “Channel Volume”, “Pan”, and “Effect Send Level” of each channel can be changed.

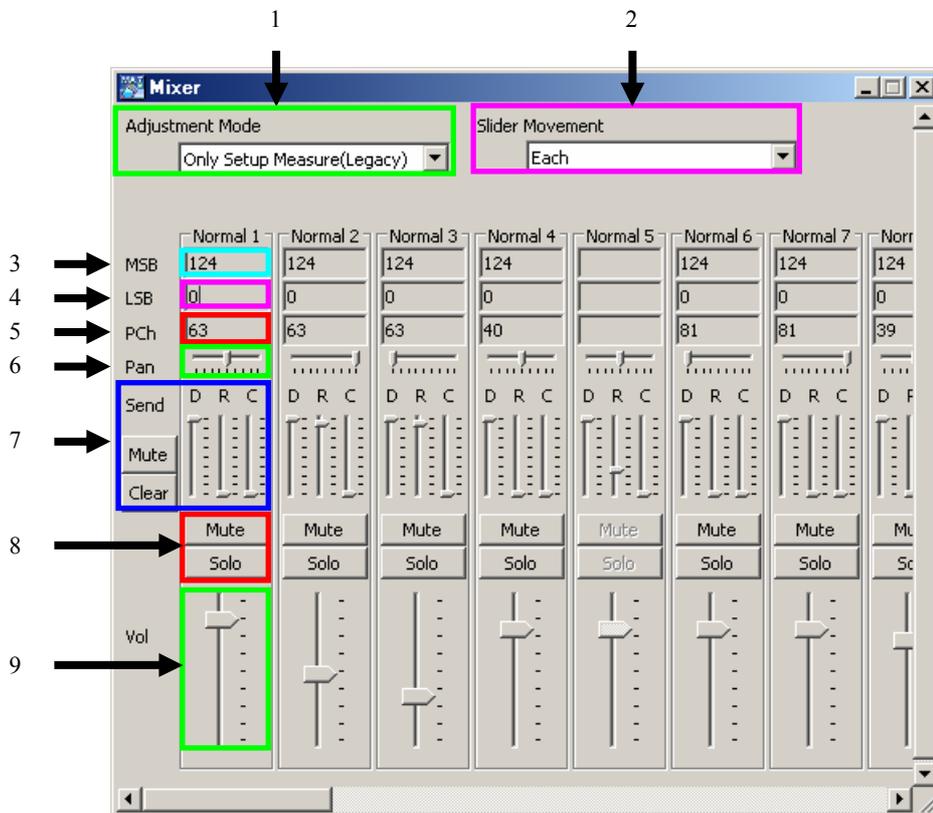


Figure. 7-36 Mixer

No.	Function Name	Description	
1	Adjustment Mode	The Mixer Adjustment Mode is set up.	
		Only Setup Measure (Legacy)	This is the mode that the Event set by Mixer will be reflected in the beginning of music.
		To Last Measure	The is the mode that the adjusted part will be reflected into an entire Event by displaying the maximum value of music.
		No Adjust	No music adujstment will be performed. The slider and its buttons are masked.
2	Slider Movement	The Slider Movement is set up. Each means individual, whereass All means entierly simultaneous.	
3	MSB	Displays the first Bank MSB on each channel.	
4	LSB	Displays the first Bank LSB on each channel.	
5	PCh	Displays the first Program Change Number on each channel.	
6	Pan	Sets Panpot on the beginning of the song.	
7	Send	D “Dry Send Level” on the beginning of the song can be set.	
		R “Reverb (SFX1) Send Level” on the beginning of the song can be set.	
		C “Chorus (SFX2) Send Level” on the beginning of the song can be set.	
		Mute Temporally nullifies effect setup by muting Send Level of all tracks.	
		Clear Nullifies effect setup by setting Send Level as zero for all tracks.	
8	Mute	An objective channel can be muted.	
	Solo	Only an objective channel can be generated by pressing this function.	
9	Volume	Channel Volume can be set up.	

7.11. About Authoring Tool

This dialog displays the information about MA-7 Authoring Tool.

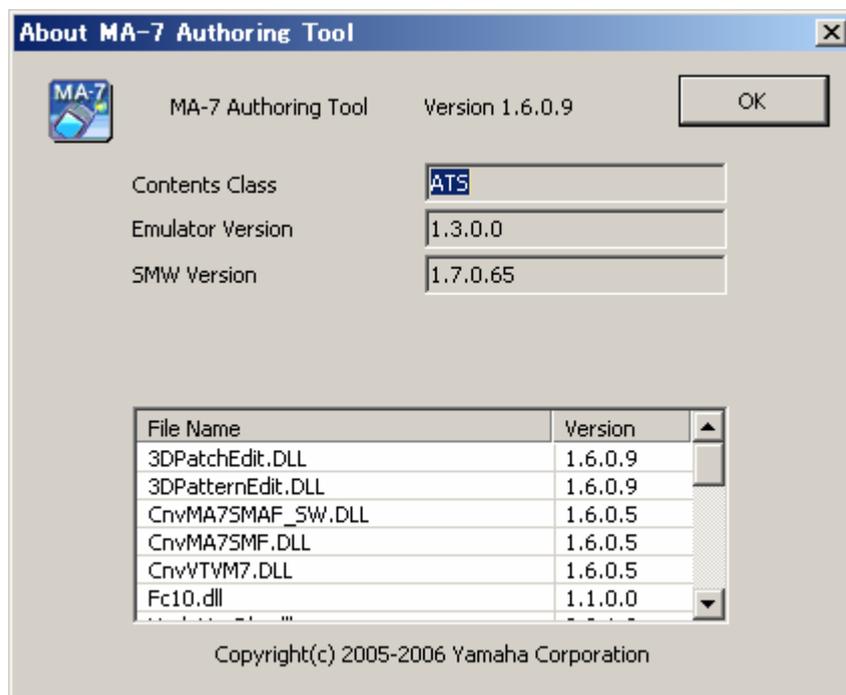


Figure. 7-37 About MA-7 Authoring Tool

8. Operation of Authoring Tool and Work of SMF

The operation of Authoring Tool and the work of SMF in the main authoring work are explained below.

[Note] If you can't find the information you are looking for in this user manual, it may be in the *Contents Authoring Guideline For MA-7 Authoring Tool*.

8.1. Authoring Tool

Authoring Tool has two sub-windows called "Contents Window" and "Library Window."

The Contents Window is a window which displays the actual contents information collectively, and is composed of a track view and some lists. The list can be changed with tabs.

The Library Window is also composed of multiple lists and can be changed with tabs.

On the Track View or each list, it is possible to edit registered events or parameters.

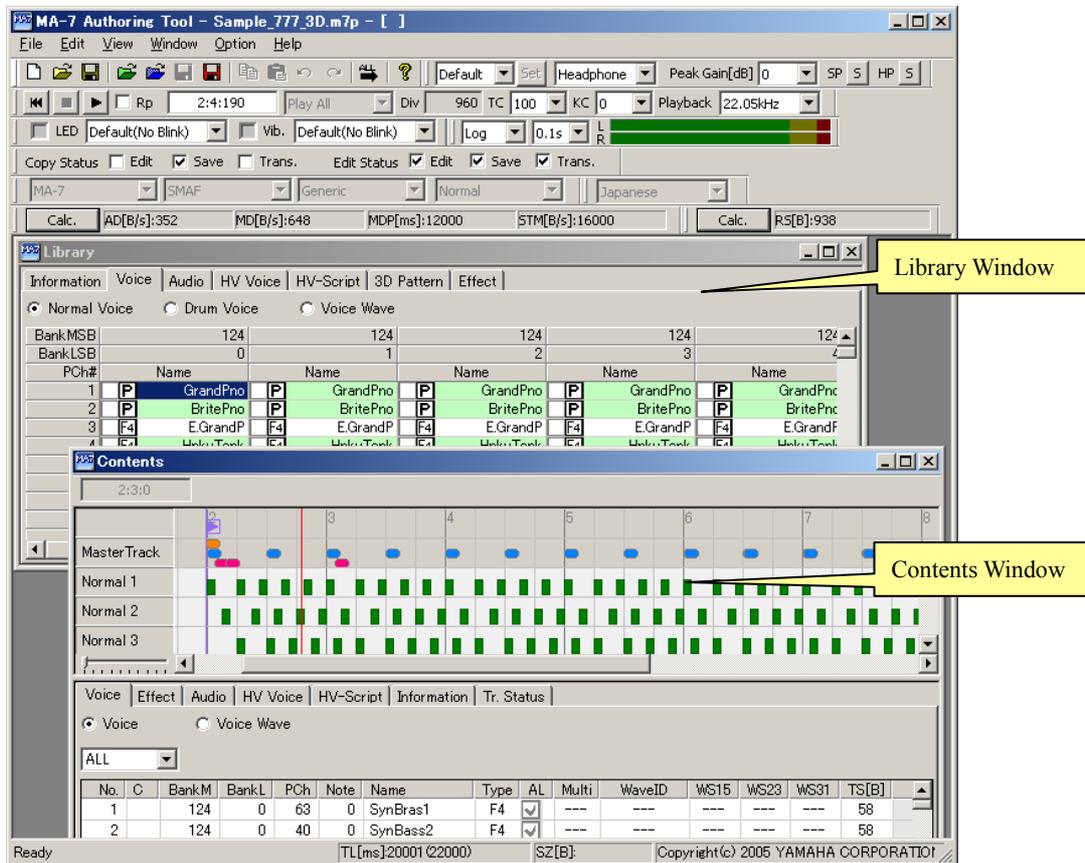


Figure 8-1 Main View of the Authoring Tool

8.2. Voice Registration

Voice Registration to the Contents Window

When loading a SMF file, the Authoring Tool checks Bank Select and Program Change message in the file. If a relevant voice is found in the Library Window, this data is automatically copied to the Contents Window. If the Bank Select or the Program Change is not appropriate, a substitution table is applied, and the Bank Select and the Program Change are added / changed following the substitution table. If a registered voice in the Contents Window is found as no longer be used when reloading a SMF file, the voice will be deleted automatically.

Not only loading both data from two windows in project file, Contents window or Library window, but loading one of their data is available when loading a project file.

Edit the Registered Voice

Parameters of a registered voice can be changed in the Voice Edit dialog by double-clicking the displayed voice name, however, a "Bank Select LSB:0" of a Normal Voice, or a "Program Change:0" of the Drum Voice cannot be edited.

Copy the Voice

By selecting Copy or Paste from the menu which appears when clicking the right button of a mouse, voices can be copied within the Library Window, or between the Library Window and the Contents Window.

8.3. Audio Registration

In order to perform an Audio playback, follow the procedures; assign a Drum and Audio bank by Bank Select MSB and Program Change, enter an Audio Note, then register the corresponding wave data to the Audio tab in the Contents Window.

Load a SMF Format and/or Audio Events

When reading a SMF file of Format 0, note number of 0 to 12 and 92 to 110 of the Drum and the Audio track (a track with Bank Select MSB:125, and Program Change of 0 to 9 are assigned), are moved to the Audio track as note events for Audios. And, the effective event to Audio is also copied to the Audio track among the Control Change events in the original track. Note that Control Change of the original track being shared in the Drum and Audio Track.

When reading a SMF file of Format 1, the event of SMF tracks # of 18 to 33 is set as Audio tracks of 1 to 16. In this case, the Control Change event in tracks of 18 to 33 is used as a Control Event exclusively for the relevant Audio track.

Setup for Audio Panpot

This event influences on only an Audio.

In the case of aforementioned Format 0, it is moved to an Audio track.

8.4. HV

To pronounce HV, after setting arbitrary tracks to HV channels, it is necessary to enter HV Notes and to register HV-Script corresponding to the HV Note into the HV-Script tab in the Contents Window.

In addition, when a HV Extension Voice is used in a HV-Script, it is necessary to register a corresponding HV Extension Voice into the HV Voice tab in the Contents Window.

HV Channel Assignment

It is necessary to include HV Channel Setting into the original SMF.

For the including method, refer the later section of "Message Insertion". Authoring Tool also supports HV Channel designation by Tr.Status tab of Contents Window.

Registration of HV Voices and HV-Scripts

Register HV-Script into the HV-Script tab of the Contents Window after reading SMF which includes "HV Channel Setting". If a HV Extension Voice is used in the copied HV-Script, register the required HV Extension Voice into the HV Voice tab in the Contents Window.

HV-Script and HV Extension Voice can be registered by choosing the New menu displayed by copying from the Library Window or clicking the right button of a mouse on the relevant list.

IN addition, the registered HV-Script can be inserted HV-Script with the "Add Note Event" menu displayed by clicking the right button of a mouse on the HV designated track.

It is also available to include the note for HV pronunciation into SMF. In this case, note number of 0 to 63 corresponds to the ID 0 to 63 of HV-Scripts.

Also in this case, HV-Script and HV extension voice must be registered into the Contents Window also in this case, too. It is not pronounced unless HV-Script is registered. When HV extension voice is not registered, it will be pronounced in the voice of K0.

8.5. Effect

To enable the Effects, Send Level should be included, and Effect Parameters should be registered in the Effect Tab in the Content Window. If you don't need to change the send level during a song, Mixer Window of Authoring Tool provides a comfortable way for setting Dry/Reverb/Chorus send levels of each channel.

Including a Send Level

In order to control the effectiveness condition of an effect, it is necessary to include Send Level into the original SMF. Since the initial value of "Reverb Send Level" is 40, an effect becomes effective without doing anything even if it does nothing; however, since the initial value of ""Chorus Send level"" is 0, the effect of an effect cannot be confirmed as long as if it remains as it is.

In addition, the Send level on the beginning of the song can be included by using Mixer dialog of the Authoring Tool.

Register a Parameter

Copy an Effect Parameter onto the Effect Tab in the Content Window from the Library Window.

Effect Change during a song

When an effect parameter is registered into the Effect tab of the Contents Window, "Add Effect Setting Change" will be displayed on the mouse click-right menu on the Master Track. Choosing this menu on the position where one wants to change the effect enables insertion of the .event which changes the effect setup.

Note that, a noise may occur when changing an effect in a song. Set them up following the note in this document.

8.6. 3D

In order to enable 3D Effect, pasting of 3D patterns onto the Master Track, and setting of 3D path must be made.

Paste a 3D Effect

With the mouse right-click menu "Paste from Library / 3D Pattern" of the Master Track, 3D pattern can be pasted on the Contents Window from the Library Window.

Moreover, by 3D pattern edit dialog displayed by choosing the "Add 3D Event" menu, 3D move event can be inserted newly, or the pasted 3D pattern can be edited.

Enter a 3D Path Setup

By allocating a path to the virtual sound generators of ID0 to 3 for every channel on the 3D path edit dialog, which appears with selecting "Patch" button, realizes the 3-dimensional motion according to its setup patterns.

Also, it is available to change 3D path during performing a song with the mouse right-click menu "Add 3D Setting Change" of the Normal Track or the Audio Track. To change a path in a song, it needs to consider the point mentioned in the *Contents Authoring Guideline For MA-7 Authoring Tool*.

8.7. Track Status

KS,VS,LED,Solo,Mute

With the Tr.Status tab in the Contents window, KS (*1), VS, LED-R/G/B, Solo (*2), and Mute (*2) can be set for each Track. It is also available to include the VS and LED-R/G/B setting information in the original SMF by Channel Status Setting.

*1: Available when designated as a HV channel.

*2: Not reflected on the exported SMAF.

HV

Designate the track to use as HV channel by Tr.Status tab in Contents window.
After designated as a HV channel, HV events can be pasted on the track.

8.8. Information

Various management information related to contents management can be set to Information Tab in the Content Window.

Information Setting to SMF

Using Texts message and including XF Information Header into the original SMF, these items can be taken into Information.

Moreover, the contents can be taken in Copyright (c) when Copyright Notice is included into the original SMF.

SMF	Information	
XF Info	Song Name	Song Title
	Composer	Composed by
	Lyricist	Words by
	Arranger	Arranged by
	Performer	Artist's Name
Copyright Information		Copyright(c)

Message Insertion Demonstration

The example in the case of inputting a meta-event and an exclusive message by a sequencer is explained. Refer them with Template data (all_meta_exclusive.mid).

The following examples of message entry are explained according to the input method in the recommendation sequencer. In the recommendation sequencer, it is unnecessary to input the size of a message because it is set automatically.

Note that there are such cases as a meta-event cannot be input depending on sequencer application and as the exclusive input method differs from the example of an input.

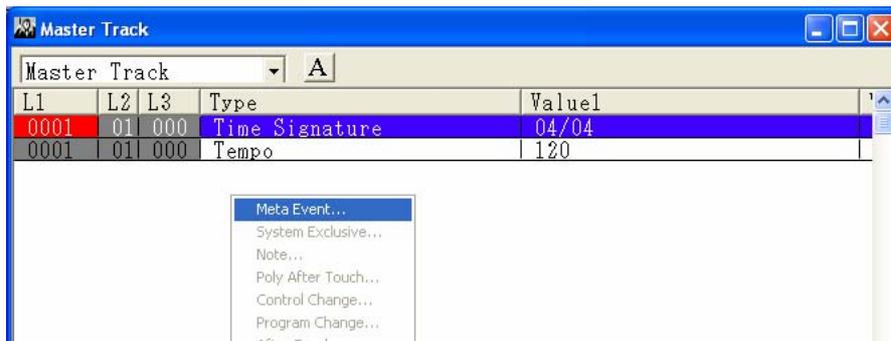
Example of Insertion to the Master Track

Example of insertion of HV channel designation to a Master Track with, using the recommended sequencer, XGworks.

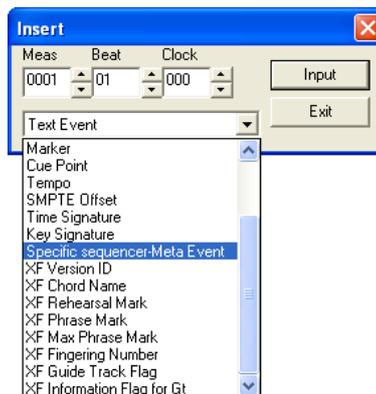
1. Click the Master Track Button () or select [Window] - [Master Track] to show Master Track Window.



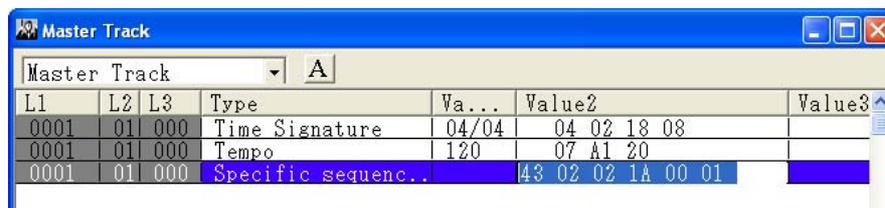
2. Right-click on the blank area in the Master Track Window and select “Meta Event...” from the appeared menu.



3. Choose “Specific sequencer Meta Event” from the appeared dialog.



- Click "Value2" of the Master Track Window, and enter hexadecimal "43 02 02 1A 00 01" separating with space characters.



Insertion to the Arbitrary Track

Selecting a block on the arbitrary track and selecting the list of a menu appeared by right-clicking on it shows the List Window. On this window, Events can be inserted as well as the Master Window.

Meta Events

For details of the Events, see the *Contents Authoring Guideline For MA-7 Authoring Tool*.

MIDI Events Name	Description
Texts	Event Designation Track:
	Master Track
	Event to be added:
	Text Event of Meta Event
	Entry Example of Entry: XFln:JP:Song Title:Composed by:Words by:Arranged by:Artist's Name:
Copyright Notice	Event Designate Track:
	Master Track
	Event to be added:
	Copyright Notice Event of Meta Event
	Example of Entry Example: Yamaha Corporation
Start Point End Point	Event Designation Track:
	Master Track
	Event to be added:
	Cue Point of Meta Event
	Entry Example of Entry: In the case of start point: the case of start point START
Track End Point	Automatically inserted by sequencer.
Tempo	Event Designation Track:
	Master Track
	Event to be added:
	Tempo of Meta Event
	Entry Example: in the case of while 120: 120
Measure	Event Designation Track:
	Master Track
	Event to be added:
	Time Signature of Meta Event
	Entry Example: while 4/4 beat 4/4

Universal System Exclusive

For details of the Events, see the *Contents Authoring Guideline For MA-7 Authoring Tool*.

MIDI Events	Description
Master Volume	Event Designation Track:
	an arbitrarily track
	Additional Event:
	System Exclusive
	Example Entry: case 128
	entry: 7FH 7FH 04H 01H 00H 7FH F7H
Master Fine Tune	Event Designation Track:
	an arbitrarily track
	Additional Event:
	System Exclusive
	Example Entry: case 100
	entry: 7FH 7FH 04H 03H 00H 64H F7H
Master Coarse Tune	Event Designation Track:
	an arbitrarily track
	Additional Event:
	System Exclusive
	Example Entry: case 127
	entry: 7FH 7FH 04H 03H 00H 7FH F7H

Native Exclusive

For details of the Events, see the *Contents Authoring Guideline For MA-7 Authoring Tool*.

MIDI Events	Description
Audio Data / Panpot Settings	Event Designation Track:
	an arbitrarily track
	Additional Event:
	System Exclusive
	Example Entry: case: Wave ID as 0, Panpot as 127
	entry: 43H 79H 08H 7FH 0BH 00H 00H 7FH F7H
User Event	Event Designation Track:
	an arbitrarily track
	Additional Event:
	System Exclusive
	Example Entry: case: assign #0 on the user event.
	entry: 43H 79H 06H 7FH 10H 00H F7H
3D Movement	Event Designation Track:
	an arbitrarily track
	Additional Event:
	System Exclusive
	Example Entry: case: ID as #0, distance as 500mm, azimuth as 0 deg., elevation as 0 deg., movement time as 0
	entry: 43H 79H 08H 7FH 29H 00H 00H 00H 03H 74H 40H 40H 00H 00H 00H 00H F7H
SFX Setup Change	Event Designation Track:
	an arbitrarily track
	Additional Event:
	System Exclusive
	Example Entry: case, assign SFX Param21
	entry: 43H 79H 08H 7FH 2AH 55H F7H

9. Appendix

9.1. Voice List

MA-7 GM Level1 Normal Voice Map / ROM Voice Map

Normal

MSB	124		MSB	124	
LSB	0		LSB	0	
Pch#	Inst	Type	Pch#	Inst	Type
1	GrandPno	ROM	65	SprnoSax	F4
2	BritePno	ROM	66	AltoSax	F4
3	E.GrandP	F4	67	TenorSax	F4
4	HnkyTonk	F4	68	Bari.Sax	F4
5	E.Piano1	F4	69	Oboe	F4
6	E.Piano2	F4	70	Eng.Horn	F4
7	Harpsi	F4	71	Bassoon	F4
8	Clavi	F4	72	Clarinet	F4
9	Celesta	F4	73	Piccolo	F4
10	Glocken	F4	74	Flute	F4
11	MusicBox	F4	75	Recorder	F4
12	Vibes	F4	76	PanFlute	F4
13	Marimba	F4	77	Bottle	F4
14	Xylophon	F4	78	Shakhchi	F4
15	TubulBel	F4	79	Whistle	F4
16	Dulcimer	F4	80	Ocarina	F4
17	DrawOrgn	F4	81	SquareLd	F4
18	PercOrgn	F4	82	Saw.Lead	F4
19	RockOrgn	F4	83	CaliopLd	F4
20	ChrchOrg	F4	84	ChiffLd	F4
21	ReedOrgn	F4	85	CharanLd	F4
22	Acordion	F4	86	Voice Ld	F4
23	Harmnica	F4	87	FifthLd	F4
24	TangoAcD	F4	88	Bass&Ld	F4
25	NylonGtr	F4	89	NewAgePd	F4
26	SteelGtr	F4	90	Warm Pad	F4
27	Jazz Gtr	F4	91	PolySyPd	F4
28	CleanGtr	F4	92	ChoirPad	F4
29	Mute.Gtr	F4	93	BowedPad	F4
30	Ovrdrive	F4	94	MetalPad	F4
31	Dist.Gtr	F4	95	HaloPad	F4
32	GtrHarmo	F4	96	SweepPad	F4
33	Aco.Bass	F4	97	Rain	F4
34	FngrBass	F4	98	SoundTrk	F4
35	PickBass	F4	99	Crystal	F4
36	Fretless	F4	100	Atmosphr	F4
37	SlapBas1	F4	101	Bright	F4
38	SlapBas2	F4	102	Goblins	F4
39	SynBass1	F4	103	Echoes	F4
40	SynBass2	F4	104	Sci-Fi	F4
41	Violin	F4	105	Sitar	F4
42	Viola	F4	106	Banjo	F4
43	Cello	F4	107	Shamisen	F4
44	Contrabs	F4	108	Koto	F4
45	Trem.Str	ROM	109	Kalimba	F4
46	Pizz.Str	RAM	110	Bagpipe	F4
47	Harp	F4	111	Fiddle	F4
48	Timpani	RAM	112	Shanai	F4
49	Strings1	ROM	113	TnklBell	F4
50	Strings2	ROM	114	Agogo	F4
51	Syn.Str1	F4	115	SteelDrm	F4
52	Syn.Str2	F4	116	WoodBlok	RAM
53	ChoirAah	F4	117	TaikoDrm	F4
54	VoiceOoh	F4	118	MelodTom	ROM
55	SynVoice	F4	119	Syn.Drum	RAM
56	Orch.Hit	RAM	120	RevCymb1	F4
57	Trumpet	F4	121	FretNoiz	F4
58	Trombone	F4	122	BrthNoiz	F4
59	Tuba	F4	123	Seashore	Noise
60	Mute.Trp	F4	124	Tweet	F4
61	Fr.Horn	F4	125	Telephone	F4
62	BrasSect	F4	126	Helicptr	Noise
63	SynBras1	F4	127	Applause	Noise
64	SynBras2	F4	128	Gunshot	F4

■ :PCM

Rom

MSB	124		MSB	124	
LSB	10		LSB	10	
Pch#	Inst	Type	Pch#	Inst	Type
1	GrandPno	ROM	65	SprnoSax	F4
2	BritePno	ROM	66	AltoSax	F4
3	E.GrandP	F4	67	TenorSax	F4
4	HnkyTonk	F4	68	Bari.Sax	F4
5	E.Piano1	F4	69	Oboe	F4
6	E.Piano2	F4	70	Eng.Horn	F4
7	Harpsi	F4	71	Bassoon	F4
8	Clavi	F4	72	Clarinet	F4
9	Celesta	F4	73	Piccolo	F4
10	Glocken	F4	74	Flute	F4
11	MusicBox	F4	75	Recorder	F4
12	Vibes	F4	76	PanFlute	F4
13	Marimba	F4	77	Bottle	F4
14	Xylophon	F4	78	Shakhchi	F4
15	TubulBel	F4	79	Whistle	F4
16	Dulcimer	F4	80	Ocarina	F4
17	DrawOrgn	F4	81	SquareLd	F4
18	PercOrgn	F4	82	Saw.Lead	F4
19	RockOrgn	F4	83	CaliopLd	F4
20	ChrchOrg	F4	84	ChiffLd	F4
21	ReedOrgn	F4	85	CharanLd	F4
22	Acordion	F4	86	Voice Ld	F4
23	Harmnica	F4	87	FifthLd	F4
24	TangoAcD	F4	88	Bass&Ld	F4
25	NylonGtr	F4	89	NewAgePd	F4
26	SteelGtr	F4	90	Warm Pad	F4
27	Jazz Gtr	F4	91	PolySyPd	F4
28	CleanGtr	F4	92	ChoirPad	F4
29	Mute.Gtr	F4	93	BowedPad	F4
30	Ovrdrive	F4	94	MetalPad	F4
31	Dist.Gtr	F4	95	HaloPad	F4
32	GtrHarmo	F4	96	SweepPad	F4
33	Aco.Bass	F4	97	Rain	F4
34	FngrBass	F4	98	SoundTrk	F4
35	PickBass	F4	99	Crystal	F4
36	Fretless	F4	100	Atmosphr	F4
37	SlapBas1	F4	101	Bright	F4
38	SlapBas2	F4	102	Goblins	F4
39	SynBass1	F4	103	Echoes	F4
40	SynBass2	F4	104	Sci-Fi	F4
41	Violin	F4	105	Sitar	F4
42	Viola	F4	106	Banjo	F4
43	Cello	F4	107	Shamisen	F4
44	Contrabs	F4	108	Koto	F4
45	Trem.Str	ROM	109	Kalimba	F4
46	Pizz.Str	F4	110	Bagpipe	F4
47	Harp	F4	111	Fiddle	F4
48	Timpani	F4	112	Shanai	F4
49	Strings1	ROM	113	TnklBell	F4
50	Strings2	ROM	114	Agogo	F4
51	Syn.Str1	F4	115	SteelDrm	F4
52	Syn.Str2	F4	116	WoodBlok	F4
53	ChoirAah	F4	117	TaikoDrm	F4
54	VoiceOoh	F4	118	MelodTom	ROM
55	SynVoice	F4	119	Syn.Drum	F4
56	Orch.Hit	F4	120	RevCymb1	F4
57	Trumpet	F4	121	FretNoiz	F4
58	Trombone	F4	122	BrthNoiz	F4
59	Tuba	F4	123	Seashore	Noise
60	Mute.Trp	F4	124	Tweet	F4
61	Fr.Horn	F4	125	Telephone	F4
62	BrasSect	F4	126	Helicptr	Noise
63	SynBras1	F4	127	Applause	Noise
64	SynBras2	F4	128	Gunshot	F4

MA-7 GM Level1 Drum Instrument (Built-in ROM Voice)

Normal

MSB	125	
Pch#	1	
	Standard Kit	
#Note	Inst	Type
24	Seq Click H	F4
25	Brush Tap	F4
26	Brush Swirl	F4
27	Brush Slap	F4
28	BrushTapSwirl	F4
29	Snare Roll	ROM
30	Castanet	RAM
31	Snare L	ROM
32	Sticks	F4
33	Bass Drum L	ROM
34	Open Rim Shot	ROM
35	Bass Drum M	ROM
36	Bass Drum H	ROM
37	ClosedRimShot	ROM
38	Snare M	ROM
39	Hand Clap	ROM
40	Snare H	ROM
41	Floor Tom L	ROM
42	Hi-Hat Closed	ROM
43	Floor Tom H	ROM
44	Hi-Hat Pedal	ROM
45	Low Tom	ROM
46	Hi-Hat Open	ROM
47	Mid Tom L	ROM
48	Mid Tom H	ROM
49	CrashCymbal 1	ROM
50	High Tom	ROM
51	Ride Cymbal 1	ROM
52	Chinese Cymbal	ROM
53	Ride Cymbal Cup	F4
54	Tambourine	ROM
55	Splash Cymbal	ROM
56	Cowbell	ROM
57	CrashCymbal 2	ROM
58	Vibraslap	ROM
59	Ride Cymbal 2	ROM
60	Bongo H	ROM
61	Bongo L	ROM
62	Conga H Mute	ROM
63	Conga H Open	ROM
64	Conga L	ROM
65	Timbale H	ROM
66	Timbale L	ROM
67	Agogo H	F4
68	Agogo L	F4
69	Cabasa	F4
70	Maracas	ROM
71	Samba Whistle H	F4
72	Samba Whistle L	F4
73	Guiro Short	ROM
74	Guiro Long	ROM
75	Claves	F4
76	Wood Block H	RAM
77	Wood Block L	RAM
78	Cuica Mute	ROM
79	Cuica Open	ROM
80	Triangle Mute	F4
81	Triangle Open	F4
82	Shaker	ROM
83	Jingle Bell	F4
84	Bell Tree	F4

 : PCM

Rom

MSB	125	
Pch#	10	
	Standard Kit	
#Note	Inst	Type
24	Seq Click H	F4
25	Brush Tap	F4
26	Brush Swirl	F4
27	Brush Slap	F4
28	BrushTapSwirl	F4
29	Snare Roll	ROM
30	Castanet	WT
31	Snare L	ROM
32	Sticks	F4
33	Bass Drum L	ROM
34	Open Rim Shot	ROM
35	Bass Drum M	ROM
36	Bass Drum H	ROM
37	ClosedRimShot	ROM
38	Snare M	ROM
39	Hand Clap	ROM
40	Snare H	ROM
41	Floor Tom L	ROM
42	Hi-Hat Closed	ROM
43	Floor Tom H	ROM
44	Hi-Hat Pedal	ROM
45	Low Tom	ROM
46	Hi-Hat Open	ROM
47	Mid Tom L	ROM
48	Mid Tom H	ROM
49	CrashCymbal 1	ROM
50	High Tom	ROM
51	Ride Cymbal 1	ROM
52	Chinese Cymbal	ROM
53	Ride Cymbal Cup	F4
54	Tambourine	ROM
55	Splash Cymbal	ROM
56	Cowbell	ROM
57	CrashCymbal 2	ROM
58	Vibraslap	ROM
59	Ride Cymbal 2	ROM
60	Bongo H	ROM
61	Bongo L	ROM
62	Conga H Mute	ROM
63	Conga H Open	ROM
64	Conga L	ROM
65	Timbale H	ROM
66	Timbale L	ROM
67	Agogo H	F4
68	Agogo L	F4
69	Cabasa	F4
70	Maracas	ROM
71	Samba Whistle H	F4
72	Samba Whistle L	F4
73	Guiro Short	ROM
74	Guiro Long	ROM
75	Claves	F4
76	Wood Block H	F4
77	Wood Block L	F4
78	Cuica Mute	ROM
79	Cuica Open	ROM
80	Triangle Mute	F4
81	Triangle Open	F4
82	Shaker	ROM
83	Jingle Bell	F4
84	Bell Tree	F4

MA-7 ROM Wave Map

WaveID	Instrument
0	Kick
1	Snare
2	TOM
3	Hi-Hat Closed
4	Hi-Hat Open
5	Ride
6	Crash
7	Open Rim Shot
8	Closed Rim Shot
9	Snare Roll
10	Hand Clap
11	Tambourine
12	Cowbell
13	Vibraslap
14	Bongo
15	Conga Mute
16	Conga Open
17	Timbale
18	Guiro
19	Cuica Mute
20	Cuica Open
21	Shaker
22	Piano C2
23	Piano E3
24	Piano G4
25	Piano E5
26	Strings G2
27	Strings G4
28	Strings C5