

VOICEPRO2

With AR204 Add-On Board

Version 1.4

User's Manual

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Introduction

Thank you for choosing the **VOICEPRO2** and **AR204** Sound Editing Tool.

The **VOICEPRO2** inherits its primary design concept, "Simple yet Powerful Editing" from its predecessors, ONSAKU and VOICEPRO, and is further enhanced to provides more advanced and sophisticated sound editing environment on Windows95 platform.

This manual has been prepared so that even a first-timer in digital sound editing can readily pick up the **VOICEPRO2**'s operations with a fast learning curve.

To get the most out of the **VOICEPRO2** and its rich features, our users are encouraged to read this manual thoroughly before using the software.

If you have any questions or comments on this product, please contact your distributor.

Notice to our Users

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Other product names appeared in this manual are trademarks or registered trademarks of their respective owners.

Conventions

Times New Roman typeface represents commands, dialog boxes, buttons, and other UI (User Interface) components of the software. When commands appear in full (the name of the command preceded by the "path" used to get to it), the individual commands in the path are separated by a vertical bar (|). For example, "**Options | Setup**" refers to the command you choose by opening **Options** menu, and then choosing **Setup**.

Window Screen Shots

This software program has been developed under Windows95 Japanese version. Screen shots quoted in this manual (explanatory figures) are taken on the program running under Windows95 Japanese version. For this reason, screen shots of some dialog boxes include Japanese characters in part.

Chapter 1: Getting Started

System Requirements

PC	IBM PC/AT Compatibles with CPU Min. Pentium 75 MHz (Pentium 133 MHz or above recommended)
OS	Windows 95 (Windows 3.x and Windows NT not supported)
Memory	Min. 64 MB (96MB or above recommended)
FDD	3.5" Floppy Disk Drive for installation
HDD	No specific size requirement, but reasonably ample size HDD recommended for saving and storing recorded data.
Display	Analog CRT supporting min. 640 X 480 resolution
Others	Tape Deck, Microphone, etc. required as analog input source Speaker or/and amplifier required for monitoring purpose

Installation

Setting Up I/O Address

Depending on your system's I/O address availability, you need to set up an appropriate value with the on-board rotary switch (SW1). The following table shows the corresponding **I/O address** to the **Rotary SW** value you set up.

Value set with Rotary SW	I/O Address used by VOICEPRO2
0	X20EH
1	X21EH
2	X22EH
3	X23EH
4	X24EH
5	X25EH
6	X26EH
7	X27EH
8	X30EH
9	X31EH
A	X32EH
B	X33EH
C	X34EH
D	X35EH
E	X36EH
F	X37EH

Note : "X" can be 0, 1, 2 or 3.

For example, when the value of **Rotary SW** is "2", the **AR204** may use the following 4 I/O addresses;

022EH
122EH
222EH
322EH

Set up the matching value in the **Rotary SW** field for each program with the value you set here with the on-board Rotary SW. For further details, refer to “**Initial Setup**” section in each chapter.

If any of recording, playback, generating ROM files or ROM Writer control function does not work properly in the **VOICEPRO2**, there may be I/O address conflict with such other devices as add-on boards, HDD and etc. In that case, try to change I/O address by setting up a different value with the on-board rotary switch.

Setting Up Output Selector Jumper

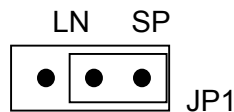


Figure 1-1: Output Selector Jumper Setup (JP1)

The **AR204** has two output options for monitoring purposes, Line Out and Speaker Output. When JP1 is set to “**LN**” side, output is **Line Out** to your amplifier, while when JP1 is set to “**SP**” side, output is **Speaker Out** directly to your speaker.

Connecting Cables

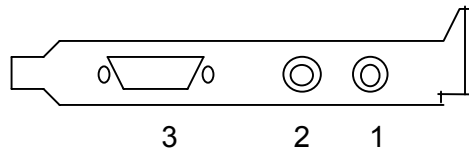


Figure 1-2: Connecting Terminals on the Rear End of the AR204 Board

You will find 3 connectors on the rear end of the **AR204** board as shown in **Figure 1-2**.

1. Analog Line In (RCA terminal) for analog source input. If you use a microphone, use a Dynamic microphone.
2. Analog Output (RCA terminal) for monitoring. Line Out or Speaker Out selectable by the Jumper 1 setting. Use an 8Ω / 1W speaker when Speaker Out selected.
3. Connector for cable to the ROM Writer. Be sure to use the attached ROM Writer cable.

Installing the Software

You have Windows 95 up and running. To run the setup program, double-click **Setup.exe** on **Drive A** or **B** (Floppy Disk Drive where the Installation disk is inserted). Then, follow the instructions displayed on setup screens to install the software.

Your VOICEPRO2 Programs

The **VOICEPRO2** consists of the following programs:

VpComb.exe	Composite Playback Editor
VpMain.exe	Waveform Editor
VpRomf.exe	ROM File Editor
VpRomw.exe	ROM Writer Controller
Vp9810.exe	ROM File Editor for MSM9810

VpComb.exe is the top-level window and any other programs' window can be started from within the VpComb.exe window.

However, each program module can run independently. Therefore, if you so want, you can start each program separately from the folder where the programs are installed.

Starting the VOICEPRO2

To start the program, double-click the VpComb.exe icon in the **VOICEPRO2** folder where you installed the program.

The program starts to open the Composite Playback Editor window and a Wave-form Editor window.

Chapter 2: WAVE-FORM EDITOR (VpMain.exe)

Section 1: Initial Setup

When you start up the **VOICEPRO2** for the first time (or whenever you have changed the on-board **Rotary SW** value), you need to set up the matching value (identical to the **Rotary SW** value) in the **Setup** dialog box that can be opened by selecting the **Options | Setup** menu command.

Section 2: Wave-form Editor Window



Figure 2-1: The Wave-form Editor Window

Wave-form Display Area

In this area you can view wave-form of recorded data.

Vertical lines appear on every 100 dots of horizontal screen resolution, while horizontal lines represent 1/4, 2/4 and 3/4 position of the wave-form window height respectively.

As you change the vertical size of the window, the height of the wave-form is expanded or shrunken accordingly.

To scroll the wave-form left or right you can use one of the following:

Choose the **Operation | Scroll Left / Scroll Right** menu command or click the corresponding button on the **Toolbar**.

Or,

Move the cursor towards the left side end in the area, and the **Left Arrow** appears. With this arrow displayed in the area, click anywhere in the area to scroll left. Move the cursor towards the right side end to have the **Right Arrow** displayed, and do the same to scroll right. When there is any further room to scroll, no arrow is displayed.

Or,

Press **Ctrl** + Left Arrow key to scroll left, or **Ctrl** + Right Arrow key to scroll right.

The far-left gray-colored narrow square in the wave-form display area is called the **Margin Area** where no wave-form is displayed. The Margin Area allows you to readily select the data's starting point (0.0 sec position) when you define a range of the wave-form. The Margin Area also plays a role as an indicator to show the vertical axis's scaling status. When the vertical axis is in 100% scaling (not expanded), the Margin Area is shown in gray, while the area changes into crimson when it is expanded (more than 100% scaling).

Time Scale

Time in seconds is shown above each 100-dot vertical line starting with 0.00 time at the beginning of the wave-form.

You can toggle Show / Hide Time Scale by using the **View | Time Scale** menu command or the corresponding button on the Toolbar. The default setting is Hide.

Wave-form Overview Area

In this area, you can overview the whole length of the wave-form you work on. The **red square** indicates the range of the wave-form currently displayed in the Wave-form Display Area.

To change the range of the wave-form displayed in the Wave-form Display Area, click at any desired point of the wave-form in the Wave-form Overview Area. The Wave-form Display Area is redrawn with the clicked point at the center of the area.

Menu Bar

The **Menu Bar** of the Wave-form Editor window has the following menu items:

File

New	Clear the Wave-form Display Area and the Wave-form Overview Area.
Open	Open a sound data file.
Save	Save the current file under the file name "as is".
Save As	Save the current file under a new file name.
Save Selected Range As	Save the selected range of the wave-form under a new file name.
Exit	Close the window to end the program.

Edit

Undo	Cancel the preceding action to restore the state before the action made.
Amplitude	Increase/decrease the amplitude level of the wave-form.
Fade	Apply Fade-in/Fade-out effect to the wave-form.
Silence	Change the selected range of the wave-form into silence.
Copy	Copy the selected range of the waveform to the buffer memory.
Paste	Insert data in the buffer memory to the wave-form.
Cut	Delete the selected range of the wave-form after copying it to the buffer memory.
Insert Silence	Insert silence to the wave-form.
Insert File	Insert another sound data file to the wave-form.
Mixing	Mix data in the buffer memory with the wave-form.
Change Pitch	Change the pitch of the wave-form.
Change Fs	Change the sampling frequency of the wave-form.
Insert Wave	Insert sine wave, square wave or saw-tooth wave to the wave form.

Options

Setup Setup various options.

Operation

Rec. Start recording operation.

Play Start playback.

Repeat Repeat playback until you select the **Stop** command or click the **Stop** button.

Play Selected Range Playback the selected range of the wave-form.

Repeat Selected Range Repeat playback of the selected range of the wave-form until you select the **Stop** command or click the **Stop** button.

Stop Stop recording or playback.

Expand Time Scale Change the Time Scale setting in the Wave-form Display Area. Each time you select this command, scaling of the time line of the Wave-form Display Area is expanded so that you can examine more details. You can select one of the following seven scaling factors that determines the time length per 500 dots of the horizontal screen resolution;
0.01 / 0.05 / 0.1 / 0.5 / 2.5 / 5.0 / 25 [sec]

Shrink Time Scale Change the Time Scale setting in the Wave-form Display Area. Each time you select this command,

scaling of the time line of the Wave-form Display Area is shrunken so that you can examine wider time range of the wave-form.

Expand Level Scale

This command enables you to better examine lower level wave-form (near 0 level line) by enlarging the selected portion of the wave-form in vertical direction. For example, when you select **5%**, the wave-form up to 5% level only is expanded to full-scale view size, while remaining portion of the wave-form is displayed as one-dot time line at the top of the Wave-form Display Area. Each time you select this command, scaling for vertical axis is expanded so that you can examine finer portion of the wave-form. You can select one of the following seven percentage level that determines the percentage level to be enlarged:

100 / 80 / 50 / 30 / 20 / 10 / 5 [%]

Shrink Level Scale

Change scaling for vertical axis (level) of selected wave-form portion only. Each time you select this command, scaling for vertical axis is shrunken so that you can view wider portion of the wave-form vertically.

Scroll Left

Scroll the wave-form to the left to view the left-hand side of the wave-form.

Scroll Right

Scroll the wave-form to the right to view the right-hand side of the wave-form.

View

Time Scale

Show/Hide the Time Scale.

Toolbar

Show/Hide the Toolbar

Status Bar

Show/Hide the Status Bar

Help

About VpMain

Display the Version and Copyright Information dialog box on VpMain.exe program.

Toolbar

Buttons corresponding to the following menu items are available on the Toolbar in order of listing:

Operation Rec.	/	Operation Play
Operation Repeat	/	Operation Play Selected Range
Operation Repeat Selected Range	/	Operation Stop
Operation Expand Time Scale	/	Operation Shrink Time Scale
Operation Expand Level Scale	/	Operation Shrink Level Scale
Operation Scroll Left	/	Operation Scroll Right

Edit Amplitude	/	Edit Fade
Edit Silence	/	Edit Copy
Edit Paste	/	Edit Cut
Edit Insert Silence	/	View Time Scale

Status Bar

The Status Bar displays the following information:

You can switch Show/Hide the Status Bar by using the **View | Status Bar** command.

- Brief description on a menu command or a Toolbar button.
- Sampling Frequency
- Data Size (or Data Counts)
- Data's Time Length in seconds.
- Current Operation or process status.
- Current percentage level for Vertical Axis

Window Size and Position

The program automatically saves the last window size and position settings. So, whenever you start up VpMain.exe, it automatically opens its window in the same size and at the same position with those in your last session.

Section 3: Setting Up Options

You can setup the following system options by choosing the **Options | Setup** command, which opens the **Setup** dialog box shown below:

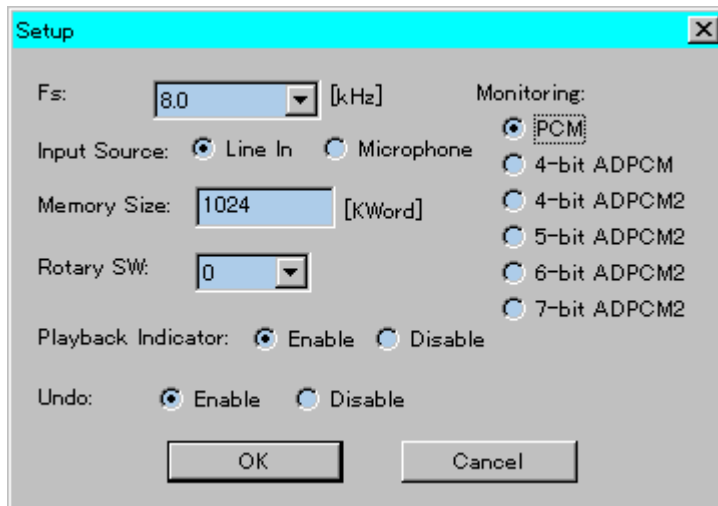


Figure 2-2: Setup Dialog Box

Any changes you make in the **Setup** dialog box is saved automatically, thus such changes will remain intact for the next time when you start up VpMain.exe.

Fs	Choose a sampling frequency from the following: 4.0 / 5.3 / 6.0 / 6.4 / 8.0 / 10.6 / 12.8 / 16.0 / 25.6 / 32.0 / 11.025 / 22.05 / 21.2 [kHz]
Input Source Memory Size	Choose either Line In or Microphone as an input source. Specify the size of memory for the VOICEPRO 2 by unit of Kilo Word [KWord]. If you change the memory size, the change will take effect for the next time when you launch VpMain.exe. For example, the VOICEPRO2 occupies the following amount of memory when you specify "1024" (default value). Wave-form Editor: 1024 X 1024 X 2 [byte] Swappable by MS Windows, allocated for each Wave-form Editor Window opened. For Record / Playback: 1024 X 1024 X 2 [byte] Unswappable by MS Windows, only one memory space allocated regardless of the number of running programs. Once allocated, you cannot change the size during the session. For Data Conversion: 1024 X 1024 / 2 [byte] Unswappable by MS Windows, only one memory space allocated regardless of the number of running programs. Once allocated, you cannot change the size during the session.
Rotary SW	Set the identical value to the one selected with the on-board Rotary SW.
Playback Indicator	Choose " Enable " if you want to show the Playback Indicator that indicates current playback position by a vertical bar. If you don't want it, choose " Disable ". The default setting is " Enable ", but in case this causes your system to slow down in displaying graphics, change the setting to " Disable ".
Undo	Choose " Enable " if you want to have the Undo function enabled. If you don't want it, choose " Disable ". The default setting is " Enable ", but in case that you see any slow down due to the shortage of system resources (memory, available disk space), change this setting to " Disable ". When you change this setting, the change will be valid for the next time you start VpMain.exe.
Monitoring	Choose an algorithm to be used for monitoring purpose while in recording or playback operation. PCM / 4-bit ADPCM / 4-bit ADPCM2 / 5-bit ADPCM2 6-bit ADPCM2 / 7-bit ADPCM2

Section 4: Recording and Playing Back

Recording

Recording is an operation where analog signal input is converted by the A/D Converter into digital code, which is saved to memory or resultantly to other storage medium.

Choose the **Operation | Rec.** command or clicking the corresponding button on the Toolbar to start recording. The **Monitoring** dialog box opens as shown below.

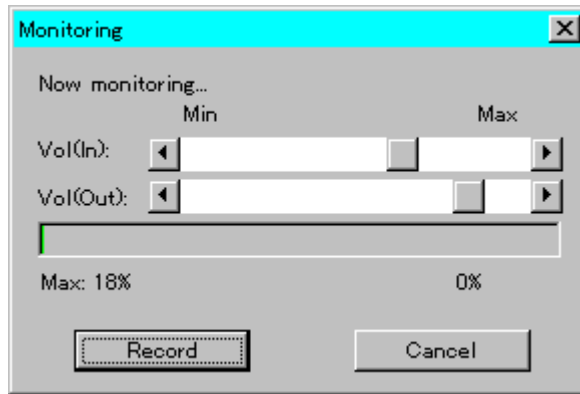


Figure 2-3: Monitoring Dialog Box

This state is called monitoring state and recording is not yet started. The sound level is shown with the bar graph (and represented in % below the bar) so that you can select an appropriate level for each input source by adjusting the slider, **Vol (In)**, or input source volume control. When sound level exceeds 80 % (full scale = 100 %), the bar changes into **RED**.

You can also select an appropriate output level by adjusting the slider, **Vol (Out)**, or output amplifier's volume control.

Note: The program's input and output volume controls are not intended for fine-tuning each level. When you need finer level control, use your external input or output level control.

To start recording, click the **Record** button in the dialog box.

The upper bar shows the sound level on real-time basis as recording proceeds.

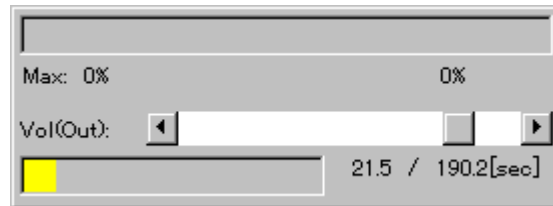


Figure 2-4: Recording Level Display

The Progress Bar shows how far recording goes in proportion to the max. recording time. The current recording time and the maximum recording time (21.5 sec and 190.2 sec respectively in the above figure) appear below the slider.

Recording ends automatically when the memory gets full. Or, you can stop recording by choosing the **Operation | Stop** command or clicking the corresponding button on the Toolbar, or by right-clicking anywhere on the Wave-form Display Area.

The recorded data in wave-form is displayed both in the Wave-form Display Area and the Wave-form Overview Area. In addition, the Status Bar shows Sampling Frequency, data size and recording time in seconds.

Playing Back

Playing back is an operation where PCM data stored in the memory is converted by an A/D Converter to analog signal, which is then output to an appropriate reproducing device.

By choosing the **Operation | Play** command or clicking the corresponding button on the Toolbar, you can start playback.

The upper bar shows the sound level on real-time basis as playback proceeds. You can adjust the output level with the slider, **Vol (Out)**.

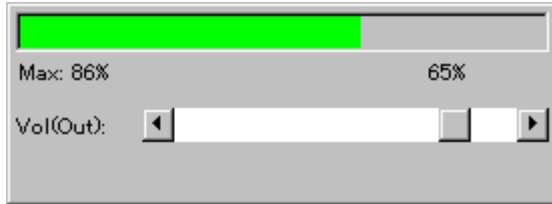


Figure 2-5: Playback Level Display

The **Playback Indicator** (a moving vertical bar) shows the current playback position on real-time basis both in the Wave-form Display Area and the Wave-form Overview Area, if the Playback Indicator option is set to "Enable" in the **Setup** dialog box.

You can stop playback by choosing the **Operation | Stop** command or clicking the corresponding button on the Toolbar. You can also stop playback by right-clicking anywhere in the Wave-form Display Area.

The **Operation | Repeat** command or selecting the corresponding button on the Toolbar allows you to repeat playback.

Further, the **Operation | Play Selected Range** command enables you to playback selected range of the wave-form, while the **Operation | Repeat Selected Range** command allows you to repeat the playback of selected range of the wave-form.

To select the range for playback, do as follows:

1. The blue vertical line appears and moves sideways as you move your mouse. Click at the position where you want to start playback.

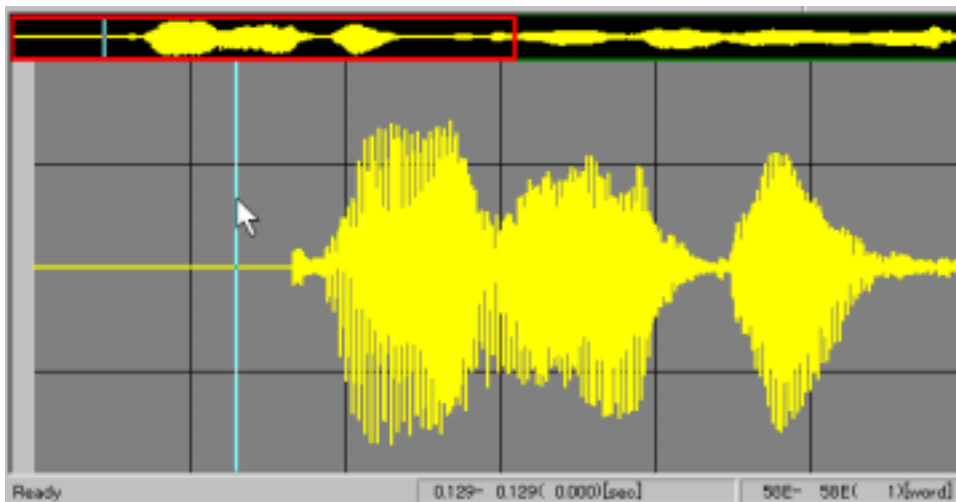


Figure 2-6: Selecting the Starting Point for a Range

2. The rubber-band appears that expands or shrinks as you move your mouse. Click at the position where you want to end playback.

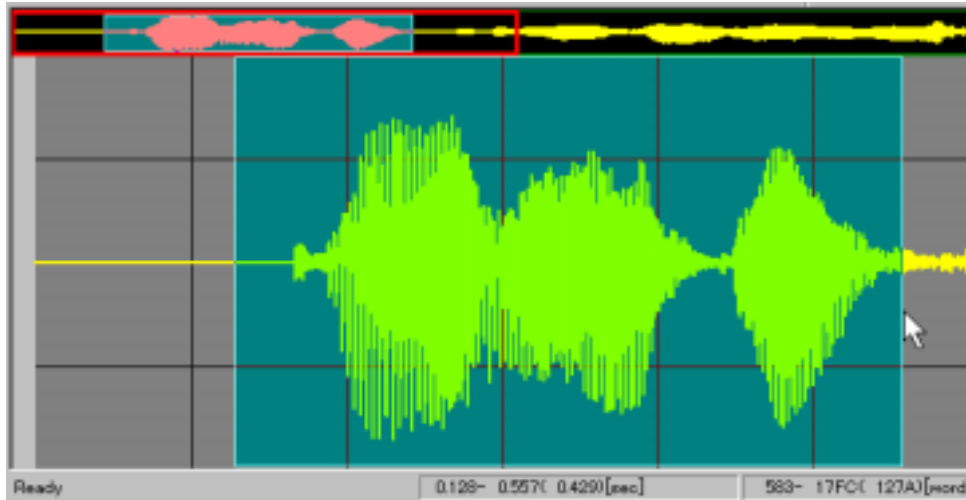


Figure 2-7: Selecting the Ending Point for a Range

The rubber-band is displayed in the Wave-form Overview Area as well. **Tab** key provides very handy function to switch from the starting point to the ending point and vice versa while selecting a range. For example, pushing **Tab** key, when you change the ending point, determines the ending position at the current mouse pointer location and then moves the cursor to the starting point of the range. On the contrary, pushing **Tab** key, when you change the starting point, determines the starting position at the current mouse pointer location and then moves the cursor to the ending point of the range.

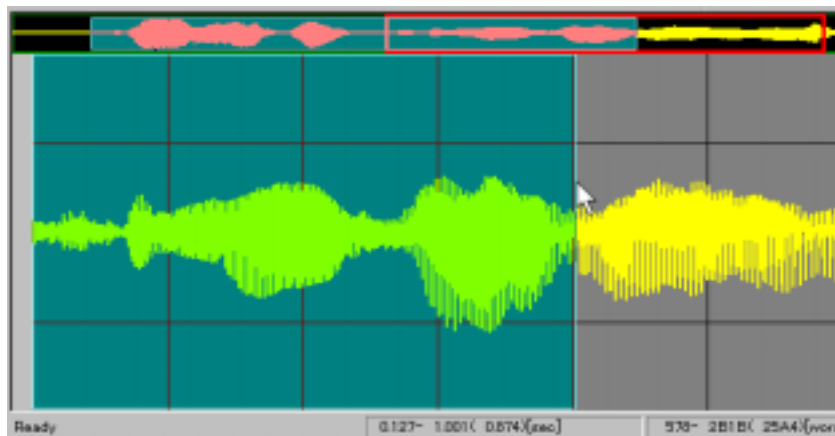


Figure 2-8: Using Tab Key (1)

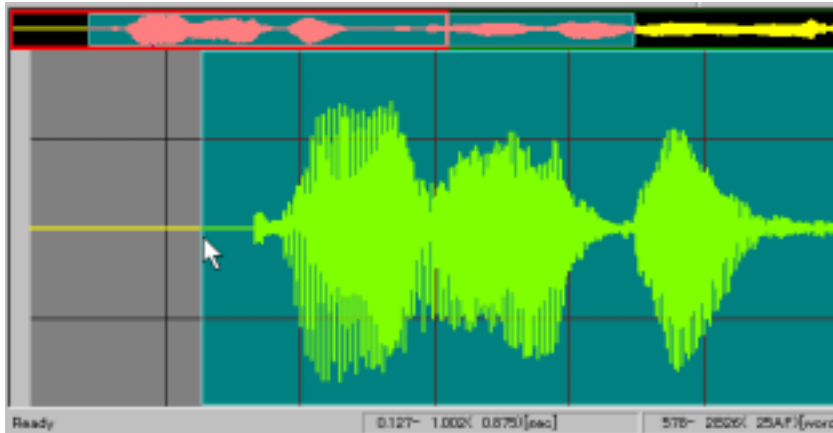


Figure 2-9: Using Tab Key (2)

When you select the **Play Selected Range** or **Repeat Selected Range** command for the second time, the range selected earlier still remains valid. Just click to start playback of the same range, or right-click to redo the selection from the beginning. (Position switch by **Tab** key is also available.)

To end repetitive playback, select the **Operation | Stop** command or click the corresponding button on the Toolbar. Or, right-click anywhere in the Wave-form Display Area.

Section 5: Editing and Manipulating Wave-form

Increasing / Decreasing Amplitude

You can increase or decrease amplitude level of the wave-form by selecting the **Edit | Amplitude** command or clicking the corresponding button on the Toolbar.

To select the range of wave-form you want to change amplitude, do as follows:

1. The blue vertical line appears and moves sideways as you move your mouse. Click at the starting point for the range.
2. The rubber-band appears that expands or shrinks as you move your mouse. Click at the ending point for the range.

(Position switch by **Tab** key is also available.)

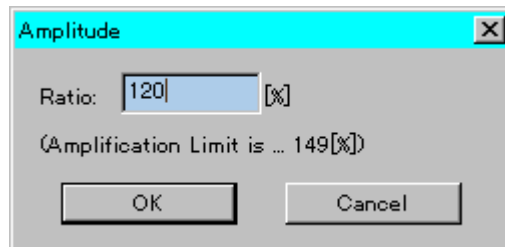


Figure 2-10: Amplitude Dialog Box

The **Amplitude** dialog box opens. Input desired value in percentage to the **Ratio** text box. To increase the amplitude level for the selected range, enter value larger than 100 %. On the contrary, to decrease the amplitude level, enter value smaller than 100 %. Click **OK** to apply change in amplitude level to the selected range.

The **Amplitude** dialog box also shows the limit for amplification (149 [%] in the above figure). You may enter the value exceeding this limit, but the wave-form amplified above full-scale level is clipped.

Applying Fade-in / Fade-out

To apply fading effects to the wave-form, choose the **Edit | Fade** command or click the corresponding button on the Toolbar.

To select the range of the wave-form for applying fading effects, do as follows:

1. The blue vertical line appears and moves sideways as you move your mouse. Click at the starting point for the range.
2. The rubber-band appears that expands or shrinks as you move your mouse. Click at the ending point for the range.

(Position switch by **Tab** key is also available.)

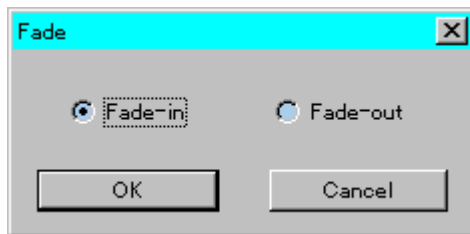


Figure 2-11: Fade Dialog Box

The **Fade** dialog box opens. Click either **Fade-in** or **Fade-out** option button to choose a type of fading. Click **OK** to apply the fading effects to the selected range.

Silencing

To change the wave-form into silence, choose the **Edit | Silence** command or click the corresponding button on the Toolbar.

To select the range of the wave-form for changing, do as follows:

1. The blue vertical line appears and moves sideways as you move your mouse. Click at the starting point for the range.
2. The rubber-band appears that expands or shrinks as you move your mouse. Click at the ending point for the range.

(Position switch by **Tab** key is also available.)

The selected range of the wave-form is changed into silence.

Copying Wave-form

To copy the wave-form, choose the **Edit | Copy** command or click the corresponding button on the Toolbar.

To select the range of the wave-form for copying, do as follows:

1. The blue vertical line appears and moves sideways as you move your mouse. Click at the starting point for the range.
2. The rubber-band appears that expands or shrinks as you move your mouse. Click at the ending point for the range.

(Position switch by **Tab** key is also available.)

Selected range of the wave-form is copied to the buffer memory. The wave-form displayed remains intact.

You can paste the wave-form copied to the buffer by using the **Edit | Paste** command. Since the wave-form copied to the buffer memory is saved as a file when you exit from the program, you can still use the content of the buffer memory when you reboot VpMain.exe later on. When you open multiple Wave-form Editor Windows, you can copy from one window to the other since multiple windows are designed to share one buffer memory. Remember that copying always causes to overwrite the wave-form copied earlier.

Pasting Wave-form

To paste (insert) the wave-form copied to the buffer memory, choose the **Edit | Paste** command or click the corresponding button on the Toolbar.

A blue vertical line appears and moves sideways as you move your mouse. Move the line to the insertion point, then click your mouse. The wave-form in the buffer memory is inserted to the point you selected.

Deleting Wave-form

To delete selected range of the wave-form, choose the **Edit | Cut** command or click the corresponding button on the Toolbar.

To select the range of wave-form for deleting, do as follows:

1. The blue vertical line appears and moves sideways as you move your mouse. Click at the starting point for the range.
2. The rubber-band appears that expands or shrinks as you move your mouse. Click at the ending point for the range.

(Position switch by **Tab** key is also available.)

The selected range of the wave-form is deleted after being copied to the buffer memory. The wave-form right after the deleted portion is brought forward to replace the deleted

range.

Inserting a Silence

To insert silence to the wave-form, choose the **Edit | Insert Silence** command or click the corresponding button on the Toolbar.

A blue vertical line appears and moves sideways as you move your mouse. Move the line to the insertion point, then click your mouse.

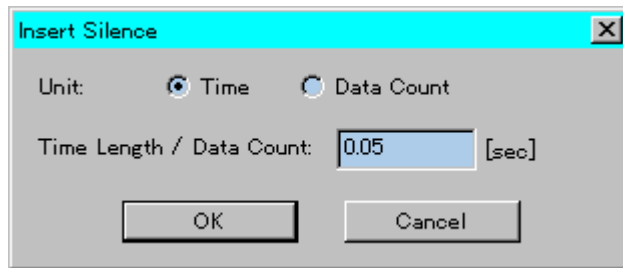


Figure 2-12: Insert Silence Dialog Box

The **Insert Silence** dialog box opens. Choose either **Time** [sec] or **Data Count** (the count of sampling data) as a **Unit** option. Then, type in the time length in seconds or data counts you want to insert to the Quantity text box, depending on the **Unit** option selected. Click **OK** to insert specified silence to the insertion point.

Inserting a File

To insert a file (sound data stored in a file) to the wave-form, choose the **Edit | Insert File** command or click the corresponding button on the Toolbar.

A blue vertical line appears and moves sideways as you move your mouse. Move the line to the insertion point, then click your mouse.

The **File Open** dialog box opens. Select a file to be inserted, then click **OK**. The selected file is inserted to the insertion point of the wave-form.

Mixing

To mix (addition) sound data in the buffer memory with the wave-form, choose the **Edit | Mixing** command or click the corresponding button on the Toolbar.

A blue vertical line appears and moves sideways as you move your mouse. Move the line to the starting point for mixing, then click your mouse.

The sound data in the buffer memory is mixed with the wave-form starting from the selected starting point.

Changing Pitch

To change the pitch for the selected range of the wave-form, choose the **Edit | Change**

Pitch command or click the corresponding button on the Toolbar.

To select the range of wave-form for changing the pitch, do as follows:

1. The blue vertical line appears and moves sideways as you move your mouse. Click at the starting point for the range.
2. The rubber-band appears that expands or shrinks as you move your mouse. Click at the ending point for the range.

(Position switch by **Tab** key is also available.)

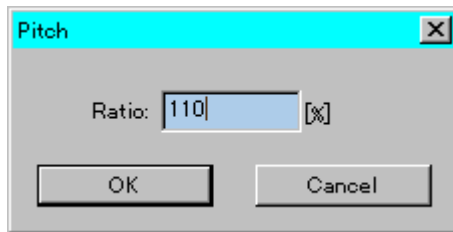


Figure 2-13: Pitch Dialog Box

The **Pitch** dialog box opens. Type in the value in percentage in the **Ratio** text box to specify the new pitch. Entering the value smaller than 100 [%] lowers the pitch, while entering the value larger than 100 [%] heightens the pitch. Click **OK** to change the pitch for the selected range.

Remember that “Changing the pitch” may cause deterioration in sound quality depending on source sound data. If sound quality is your priority, try adjusting the pitch using your playback equipment and then record again by choosing the **Operation | Rec.** command.

Changing Sampling Frequency

To change the sampling frequency for the wave-form, choose the **Edit | Change Fs** command or click the corresponding button on the Toolbar.

This command does not require selecting the range; the change is applied to the whole wave-form instead.

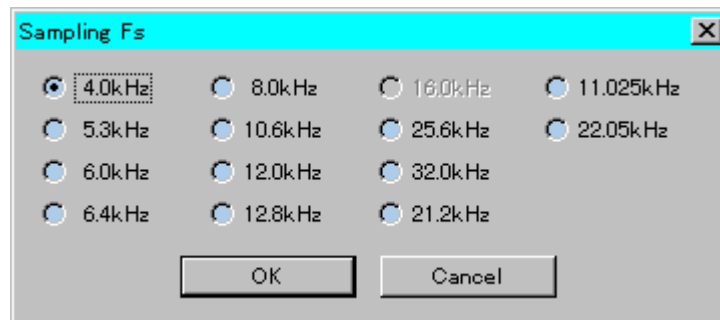


Figure 2-14: Sampling Fs Dialog Box

The **Sampling Fs** dialog box opens. Select a new sampling frequency, then click **OK**. You cannot select the current sampling rate in this dialog box.

Remember that “Changing Sampling Frequency” may cause deterioration in sound quality depending on source sound data. If sound quality is your priority, try to record again by using the **Operation | Rec.** command after changing the sampling frequency by choosing the **Options | Setup** command.

Inserting a Wave

To insert a single-frequency wave to the wave-form, choose the **Edit | Insert Wave** command or click the corresponding button on the Toolbar.

A blue vertical line appears and moves sideways as you move your mouse. Move the line to the insertion point, then click your mouse.

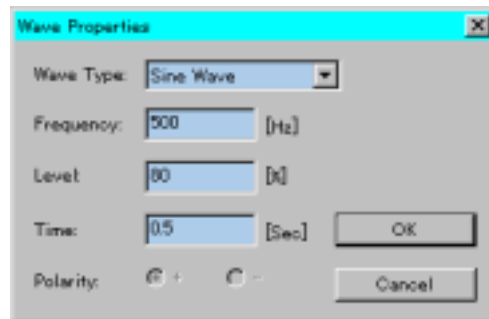


Figure 2-15: Wave Properties Dialog Box

The **Wave Properties** dialog box opens, where you can define the following wave properties for the wave to be inserted:

From the **Wave Type** drop down list, choose a type of wave; Sine Wave, Square Wave or Saw-tooth Wave.

In the **Frequency** text box, specify frequency in [Hz].

In the **Level** text box, specify sound level in [%].

In the **Time** text box, specify time length in [sec].

With the **Polarity** option button, choose either “+” or “-“ (applicable to Saw-tooth wave only).

The following figure shows how the polarity selection affects the wave-form shape generated.

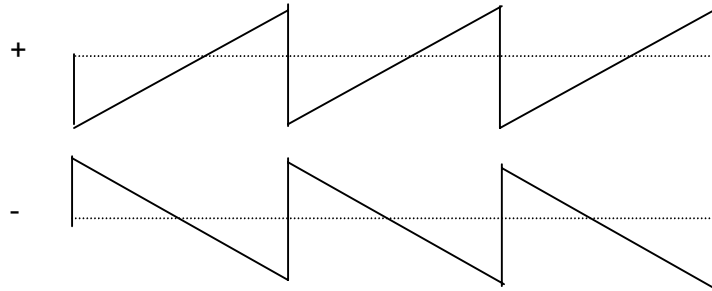


Figure 2-16: Differences in Wave-form Shape by Polarity

When you complete your selection, click **OK**. The selected wave is inserted to the insertion point.

Section 6: Saving and Opening a File

Saving a File

File | Save : Save the wave-form displayed with the file name “as is”.

File | Save As : Save the wave-form displayed with a new file name.

After you select a file save command, the **Save File** dialog box opens. To save the current file, specify a desired drive, directory and file name as required.

In the **Save Files** dialog box, choose one of the following file types from the **File Type** drop down list:

VOICEPRO Files (*.pcm)	...VOICEPRO File Format (default)
ONSAKU Files (*.pcm)	...ONSAKU File Format
WAVE Files (*.wav)	...WAVE File Format

When you select the **WAVE Files**, the **WAVE Data Bit Size** dialog box opens. Choose either 16-bit or 8-bit and click **OK**.

The file extension for VOICEPRO files and ONSAKU files is “**.pcm**”, while “**.wav**” is for WAVE files.

You can use the **File | Save Selected Range As** command to save the selected range of the waveform under a new file name. For details on selecting a range for saving, see “Editing and Manipulating Wave-form” section earlier in this chapter.

Opening a File

To open a sound data file, choose the **File | Open** command. The **File Open** dialog box opens, where you can select a desired drive, directory and file name as required. Choose one of the following file types from the **File Type** drop down list:

PCM Files (*.pcm)	...VOICEPRO/ONSAKU File Format (default)
WAVE Files (*.wav)	...WAVE File Format

The program automatically detects whether the selected PCM file is in VOICEPRO format or ONSAKU format.

You can also open a sound data file by selecting one of up to 4 files shown in the **Recently Used Files** list that appears below the **File** menu command.

Section 7: About the Undo command

You can cancel the preceding action to restore the state before the action by selecting the **Edit | Undo [....-....]** menu command. (where, the action to be cancelled is displayed in [....-....])

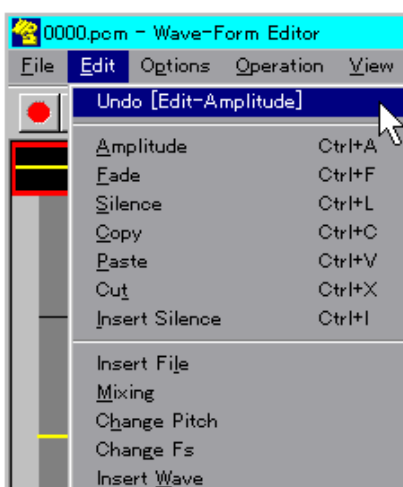


Figure 2-17: The Undo Command

This commands enables you to trace back up to 30 steps (actions). However, the **Undo** command is not almighty, i.e. not all commands or operations can be cancelled.. The following list shows menu commands that can be cancelled by the **Undo** command.

File New	/	File Open
Edit Amplitude	/	Edit Fade
Edit Silence	/	Edit Copy
Edit Paste	/	Edit Cut
Edit Insert Silence	/	Edit Insert File
Edit Mixing	/	Edit Change Pitch
Edit Change Fs	/	Edit Insert Wave
Options Setup	/	Operation Rec.

You cannot undo (cancel) the **Undo** command itself.

When the Wave-form Editor Window is forced to terminate, i.e. not terminated in normal manner, a file named "MxxxUNDO" (xxx indefinite) may be left over in the folder where VpMain.exe exists. If this happens, you may delete such file as long as VpMain.exe is not running.

Section 8: Other Topics

- You can open multiple Wave-form Editor Windows (VpMain.exe).
- While recording, playing back or converting in one window (VpMain.exe, VpComb.exe, VpRomf.exe), you cannot record or playback in other windows.

The following menu commands and corresponding buttons in other windows are dimmed out and disabled during the above period.

**Operation | Rec., Operation | Play, Operation | Repeat,
Operation | Play Selected Range, Operation | Repeat Selected Range**

- During recording or playback operation, clicking the Windows Close button ("X" button on the top right of Windows) is disregarded.

Chapter 3: COMPOSITE PLAYBACK EDITOR (VpComb.exe)

Section1: What is Composite Playback?

To get the most of the limited storage resource of your ROM, it is a good practice trying to keep your working file size as compact as possible. The **Composite Playback Editor** provides a powerful and handy tool that enables you to save a lot of memory space while maintaining desired variety of sound phrases to be reproduced.

Let's find out how the tool can help you. Assume that you have an assignment to create sound files that talk as follows;

"It's fine today."

"It's cloudy today."

"It's rainy today."

"It will be fine tomorrow."

"It will be cloudy tomorrow."

"It will be rainy tomorrow."

These six sentences have some common words or word groups for each other. In short, you only need 7 words or word groups to have your application speak these 6 sentences. Those are; "**It's**", "**It will be**", "**fine**", "**cloudy**", "**rainy**", "**today**" and "**tomorrow**."

You can do your job in conventional way, recording 6 sentences separately to create 6 independent files. But, there is a bit smarter way to work. Rather than creating recording files in sentences, you create files in words (or word groups), and then put necessary pieces of word together to build up a sentence.

This sounds like playing with building blocks, doesn't it? Instead of small pieces of wood or plastic, you collect pieces of digitally recorded word or word group. Then, put them in right places, adjust interval in-between words and sound level to complete a sentence that sounds naturally as if spoken continuously ----this is exactly what **Composite Playback** can do for you.

The **Composite Playback Editor** is the workplace where you can gather multiple pieces of digitally recorded word or word groups, put them in order, adding pause, silence or other effects and adjust sound level, as required. You can perform all these editing works interactively while evaluating the playback in "Try and Review" manner.

Composite Playback enables you to add more flexibility to your application development as well as to save a lot of memory space. Remember even today's most advanced memory chips can have very limited data storage space especially when you want your application to speak as many words or sentences as possible.

Section 2: Initial Setup

When you start up VpComb.exe for the first time (or whenever you have changed the on-board Rotary SW value), you need to set up the matching value (identical to the Rotary SW value) in the **Setup** dialog box that can be opened by choosing the **Operation | Setup** command.

Section 3: Composite Playback Editor Window

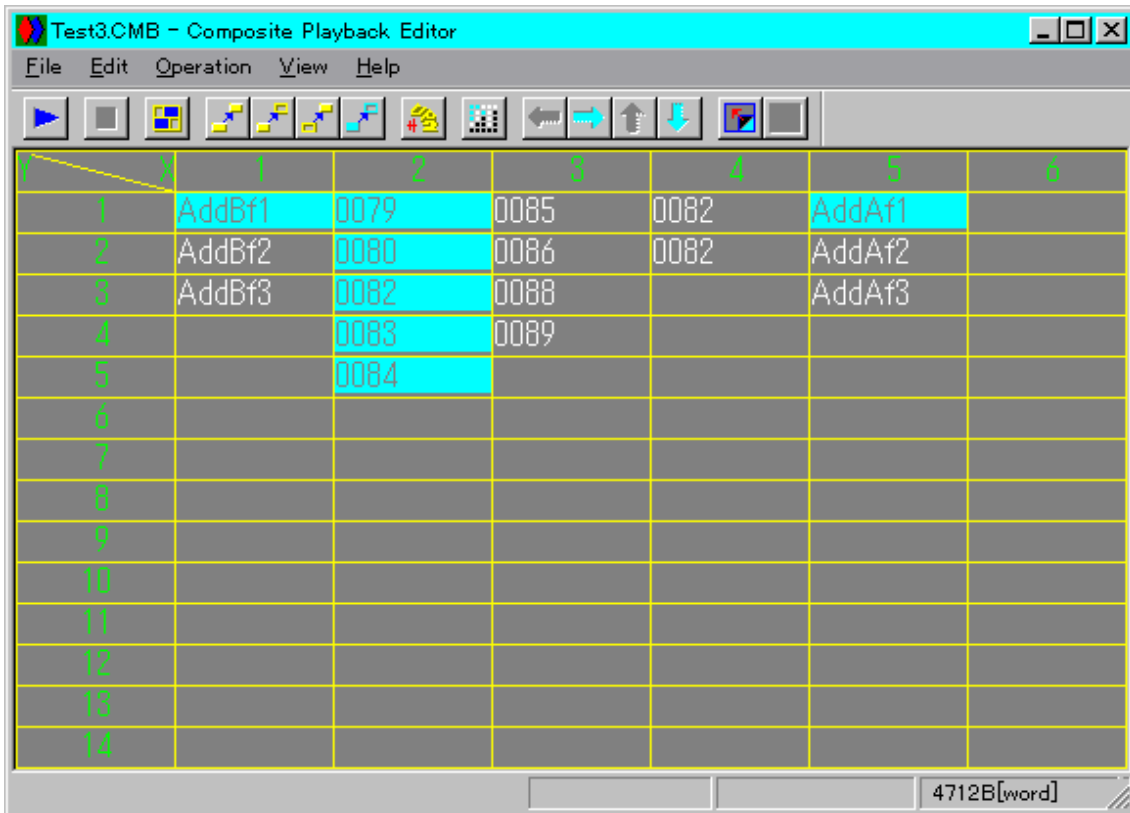


Figure 3-1: Composite Playback Editor Window

The Worksheet

The worksheet comprises 8 pages in total. A page of the worksheet consists of 30 rows and 30 columns, in other words 30 cells both vertically and horizontally. Cells in each row are numbered from 1 to 30 as the **Row No.** Similarly, cells in each column are numbered 1-30 as the **Column No.** **Figure 3-1** shows a part of a worksheet page. You can register each sound data file to a cell. When the file name is displayed in a cell, path and file extension are omitted.

To scroll the worksheet page, select the **Operation | Scroll Left / Scroll Right / Scroll Up / Scroll Down** command or click the corresponding button on the Toolbar.
Or, use arrow keys while pressing down **Ctrl** key.

Menu Bar

The Menu Bar of the Composite Playback Editor has the following menu items;

File

New	Clear the current worksheet.
Open	Open an existing Composite Playback data file.
Save	Save the current Composite Playback data under the file name "as is".
Save As	Save the current Composite Playback data under the new file name.
Register	Register a sound data file to a cell on the worksheet page.
Open Editor	Open a new Wave-form Editor Window (VpMain.exe).
Exit	Close the window to end the program.

Edit

Undo	Cancel the preceding action to restore the state before the action made.
Copy	Copy between cells and between column blocks.
Erase	Erase the content of a cell or column block.
Move	Move a cell or a column block to another location.
Reset	Reset all playback flag entries on the worksheet page.
Page Copy	Copy data on the current page to the buffer memory.
Page Paste	Paste data in the buffer memory to the current page.
Page Clear	Clear all entries on the current worksheet page.

Operation

Play	Playback multiple files specified continuously based on what defined on the current worksheet page.
Stop	Stop playback.
Clear Buffer	Clear the contents of the Playback Buffer memory.
Quick Editor	Open a Wave-form Editor window with the file registered to the selected cell. (VpMain.exe)
Scroll Left	Scroll the worksheet page to the left to view the left-hand side of the page.
Scroll Right	Scroll the worksheet page to the right to view the right-hand side of the worksheet page.

Scroll Up	Scroll the worksheet page upward to view the upper portion of the worksheet page.
Scroll Down	Scroll the worksheet page downward to view the lower portion of the worksheet page.
Page Up	Display the next page.
Page Down	Display the previous page.
Setup	Set up options.
ROM File	Open the ROM File Editor window. (VpRomf.exe)
ROM File [M9810]	Open the ROM File Editor for MSM9810. (Vp9810.exe)
ROM Writer	Open the ROM Writer Control window. (VpRomw.exe)
View	
Map	Display the Page Registration Map of the current worksheet page.
Toolbar	Show/Hide the Toolbar.
Status Bar	Show /Hide the Status Bar.
Help	
About VpComb	Display the Version Information and Copyright dialog box on VpComb.exe .

Toolbar

Buttons corresponding to the following menu items are available on the Toolbar in order of listing;

Operation Play	/	Operation Stop
File Register	/	Edit Copy
Edit Erase	/	Edit Move
Edit Reset	/	Operation Quick Editor
View Map	/	Operation Scroll Left
Operation Scroll Right	/	Operation Scroll Up
Operation Scroll Down	/	Operation Page Up
Operation Page Down		

Status Bar

The Status Bar displays the following information:

You can switch Show/Hide the Status Bar by using the **View | Status Bar** command.

- Brief description on a menu command or a Toolbar button.
- Sampling frequency of the file currently pointed by the mouse cursor.
- Data size of the file currently pointed by the mouse cursor.
- Total data size of files with playback flag.

- Current operation or process status.
- The page number of the page currently displayed.

Window Size and Position

The program automatically saves the last window size and position settings. So, whenever you start up VpComb.exe, it automatically opens its window in the same size and at the same position with those in your last session.

Section 4: Registering a File to a Cell

To register a sound data file to a cell on the worksheet page, do as follows;

1. Choose the **File | Register** command or click the corresponding button on the Toolbar to enter Register mode. (The Status Bar displays “**Register**” while in Register mode.)
2. Click a Column number (1 - 30) to select a column on the page where you want to register a file(s). The selected column number is now displayed in yellow.

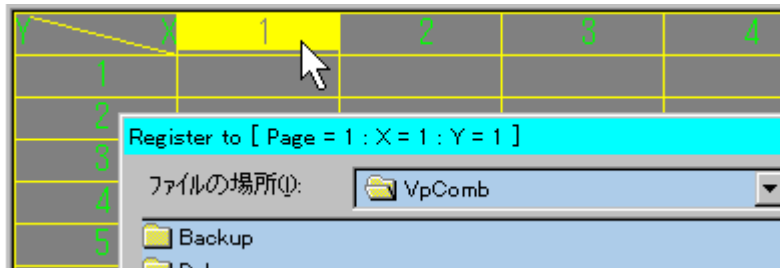


Figure 3-2: Selecting a Column

3. The **Register To** dialog box opens. Choose a sound data file to be registered. Note that the dialog's Title Bar indicates page number, column number and row number.
4. Choose as many files as you need to register. Files are registered in order of selection.
5. If you want to register in another column, close the **Register To** dialog box by clicking the **Cancel** button then click on a new column number.
6. When you complete file registration, right-click anywhere on the page to end Register mode.
7. You can register files on another page of the worksheet by switching to another page.

Note: Some basic rules when registering files to the worksheet

1. First, you need to select a column number where you want to register a file or files. You can select any column number you want.

2. You need not select a row number because a file, in order of selection, is automatically assigned and registered to the cell with the smallest row number available in the selected column.

You can view registered sound data file information (full path, sampling frequency and data size) by pointing (place your mouse cursor on a cell) a cell having a registered file.



Figure 3-3: Viewing Registered File Information

Section 5: Composite Playback

Before you can start composite playback, you need to select cells (i.e. sound data files registered) you want to playback. Selected cells are called “**flagged cells**”.

To select a cell for composite playback, click a cell with a registered file. Now the selected cell is displayed in blue, indicating the cell is flagged.

Clicking the cell once again cancels your selection and the cell color turns back to white. The Status Bar displays the total data size of selected files, i.e. flagged cells.

When you complete your selection of files for playback, you are ready to start composite playback. To start composite playback, choose the **Operation | Play** command, or click the corresponding button on the Toolbar.

The **Level Meter** dialog box appears and the bar displays real-time sound level as playback goes on. You can adjust sound level by moving the **Vol (Out)** slider. Sound level exceeding 80 % of the full scale is displayed in red.

Note: The program’s output volume control is not intended for fine-tuning the output level. When you need finer level control, use your external output level control.

The dialog box can be moved around by dragging on the title bar of the dialog box.

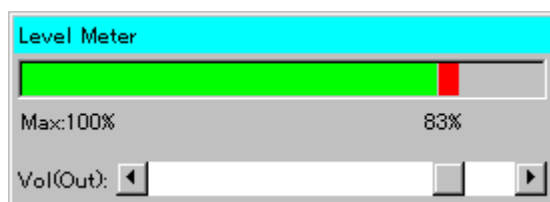


Figure 3-4: Level Meter Dialog Box

When the cell containing the file currently played back is displayed on the screen, the cell is displayed in yellow.

Once composite playback starts, playback repeats automatically until you do one of the following:

To stop composite playback,

1. Choose the **Operation** | **Stop** command, or
2. Click the corresponding button on the Toolbar, or
3. Right-click anywhere on the worksheet.

In a **"Multiple Composite Playback"** session (where you select more than one files for playback across multiple columns), a file registered to the cell with a smaller column number comes first within repeated playback cycles. For example, when you select files for playback as shown in Figure 3-5, files are played back in the following cyclic order:

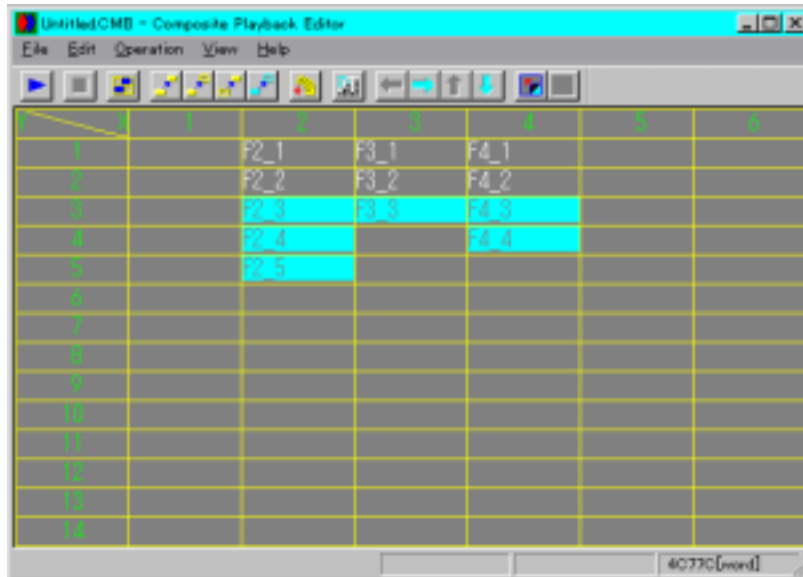


Figure 3-5: Multiple Composite Playback Example

F2_3 →	F3_3 →	F4_3 →	(Interval) →
F2_3 →	F3_3 →	F4_4 →	(Interval) →
F2_4 →	F3_3 →	F4_3 →	(Interval) →
F2_4 →	F3_3 →	F4_4 →	(Interval) →
F2_5 →	F3_3 →	F4_3 →	(Interval) →
F2_5 →	F3_3 →	F4_4 →	(Interval) →

F2_3 (return to the beginning)

The (Interval) represents the place where a given time lag is inserted. To define this lag time, choose the **Operation** | **Setup** command to open the **Setup** dialog box, then type desired value in the **Interval** text box.

Remember that only files registered to cells on the current page can be played back, even if you put flags onto multiple files across multiple pages.

Section 6: Saving and Opening a Composite Playback Data File

Saving a File

File | Save : Save the current worksheet data under the file name “as is”.

File | Save As : Save the current worksheet data under the new file name.

When you select a file save command, the **Save File** dialog box opens. To save a file, specify a desired drive, directory and file name as required, then click the **Save** button. (File Extension: **.cmb**)

Data on all pages of the worksheet is saved.

Opening a File

To open a worksheet data file (**.cmb**), choose the **File | Open** command. The **Open File** dialog box opens, where you can select a desired drive, directory and file name as required. You can also open a worksheet data file by selecting one of up to 4 files listed in the **Recently Used Files** list that appears below **File** Menu.

Note: A flagged cell contains information on the folder where the registered file exists. If you moved the sound data file to another folder after the file being registered, the program can't locate such file when attempting to open the file.

If this happened, a dialog box appears to display the following message.

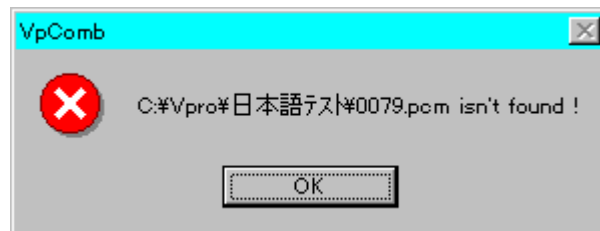


Figure 3-6: “File Not Found” Message Dialog Box

Click **OK** to close the dialog box. The **Open File** dialog box opens. Select the file located in the new folder and click the **Open** button.

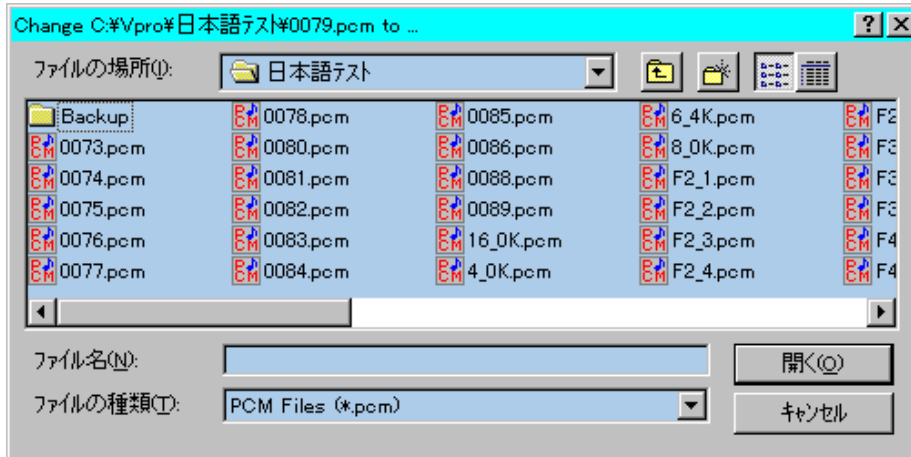


Figure 3-7: File Open Dialog Box

The path selected in this dialog box is referenced whenever the program encounters difficulties in locating a file. If a file could not be found at the referenced path, then the **Open File** dialog box opens again. In this way, path to be referenced can be added. Such path references remains valid until you end VpComb.exe.

Section 7: Other Functions and Commands

Copying a Cell(s)

By choosing the **Edit | Copy** command or clicking the corresponding button on the Toolbar, Copy mode starts. (While in Copy mode, the Status Bar displays “Copy” on its right end.)

First, click the source cell (a cell to be copied), and then click the destination cell (a cell to be pasted). The source and destination can be either a cell or a Column No.

The selected source (cell or Column No.) is now displayed in blue. This coloring state continues until you finish with copy operation by selecting the destination or redo the selection of the source by right-clicking your mouse.

Copying between Cells

The source cell copied is pasted to the destination cell, and the original destination cell, if not blank, and any non-blank cell thereafter in the column are moved downward to the next cell respectively.



Figure 3-8: Copying between Cells

Copying from a Cell to a Column

The source cell copied is pasted to the cell after the last non-blank cell of the destination column.

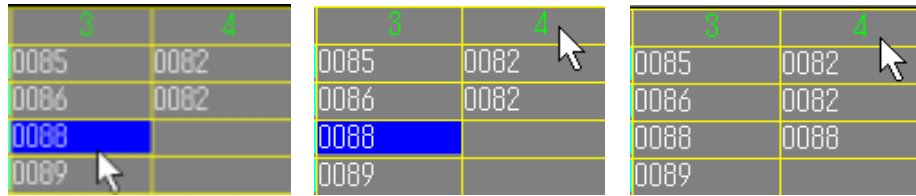


Figure 3-9: Copying from a Cell to a Column

Copying from a Column to a Cell

All non-blank cells (cells with registered file) of the source column are copied and pasted to cells before the destination cell.

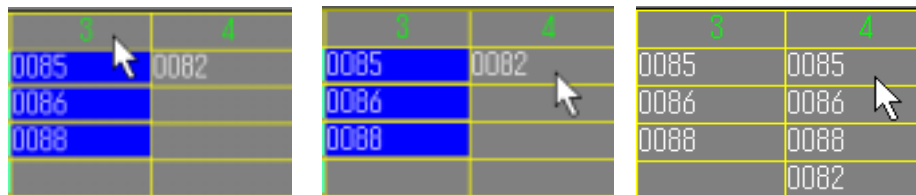


Figure 3-10: Copying from a Column to a Cell

Copying between Columns

All non-blank cells (cells with registered file) of the source column are copied and pasted to cells right after the last non-blank cell of the destination column.

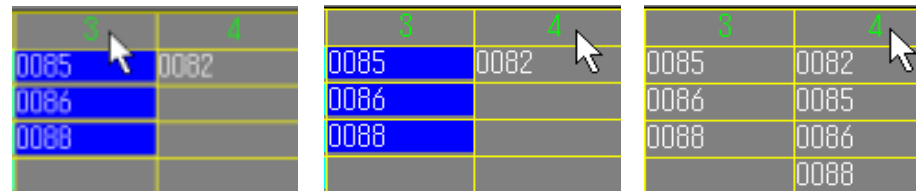


Figure 3-11: Copying between Columns

To end Copy mode, right-click anywhere on the worksheet.

You also can do 'Copy and Paste' between pages.

Erasing a Cell(s)

By choosing the **Edit | Erase** command or clicking the corresponding button on the Toolbar, Erase mode starts. (While in Erase mode, the Status Bar displays "Erase" on its right end.) The **Erase** command erases entry (i.e. the sound data file registered) in the selected cell or column, but leaves the sound data file itself intact.

Click a cell or a Column No. you want to erase.

Erasing a Cell

Erase the selected cell and non-blank cells after the selected cell, if any, moves upward to replace.

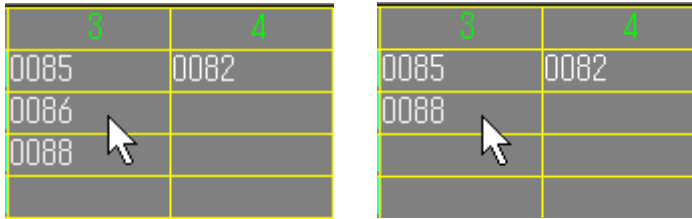


Figure 3-12: Erasing a Cell

Erasing a Column

Erase all non-blank cells of the selected column.

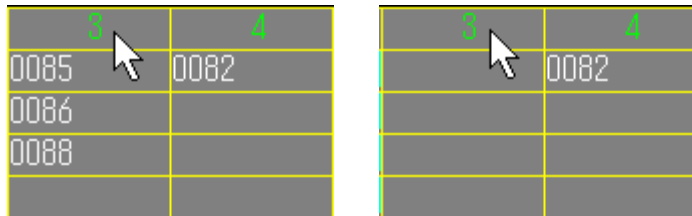


Figure 3-13: Erasing a Column

To end Erase mode, right-click anywhere on the worksheet.

Moving a Cell(s)

By choosing the **Edit | Move** command or clicking the corresponding button on the Toolbar, Move mode starts. (While in Move mode, the Status Bar displays “Move” on its right end.) First, click the source cell or Column No. (a cell or column to be moved), and then click the destination cell or Column No.

The selected source (cell or Column No.) is now displayed in blue. This coloring state continues until you finish with ‘move’ operation by selecting the destination or redo the selection of the source by right-clicking your mouse.

Moving a Cell to another Cell

The source cell is moved to the destination cell, and the original destination cell, if not blank, and any non-blank cell thereafter in the column are moved downward to the next cell respectively.

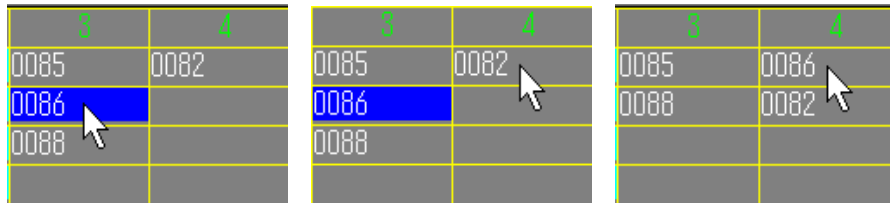


Figure 3-14: Moving a Cell to Another Cell

Moving a Cell to a Column

The source cell is moved to the cell after the last non-blank cell of the destination column.



Figure 3-15: Moving a Cell to a Column

Moving a Column to a Cell

All non-blank cells (cells with registered file) of the source column are moved to cells before the destination cell.

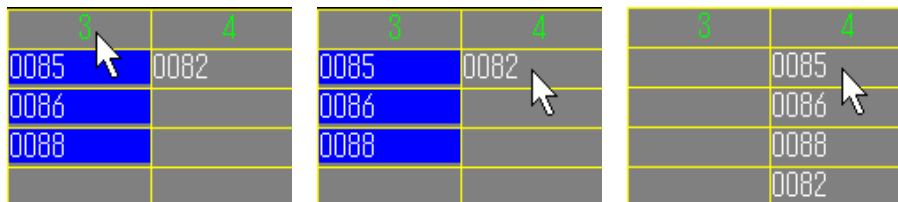


Figure 3-16: Moving a Column to a Cell

Moving a Column to another Column

All non-blank cells (cells with registered file) of the source column are moved to cells right after the last non-blank cell of the destination column.

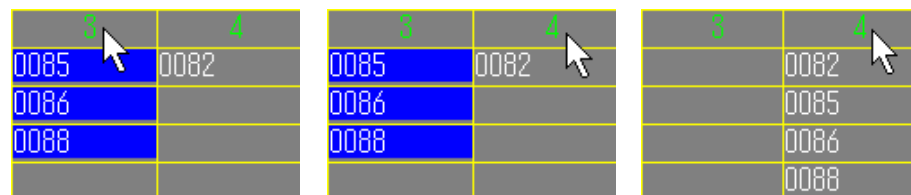


Figure 3-17: Moving a column to Another column

To end Move mode, right-click anywhere on the worksheet.
You also can do 'Move' between pages.

Resetting All Playback Flags

To reset all the flags for playback, choose the **Edit | Reset** command or the corresponding button on the Toolbar.

This command resets flags on the page currently displayed only.

Copying and Pasting Entire Page

By choosing the **Edit | Page Copy** command, you can copy the contents of entire page currently displayed to the page-buffer memory.

To paste the contents of the page-buffer memory to a new page of the worksheet, select a new page first to make it the current page, and then choose the **Edit | Page Paste** command. If the new current page already contains data, you'll overwrite it when you choose the **Edit | Page Paste** command.

You can paste the contents of the page-buffer memory to multiple pages as the contents remain intact until you choose the **Edit | Page Copy** command for the next time.

Clearing Entire Page

By choosing the **Edit | Page Clear** command, you can clear entire registration data on the page currently displayed. This command is handier than the **Edit | Erase** command if you want to erase the whole page.

Page Registration Map

You can overview file registration status of entire page by opening the **Page Map** dialog box.

To open the **Page Map** dialog box, choose the **View | Map** command or click the corresponding button on the Toolbar.

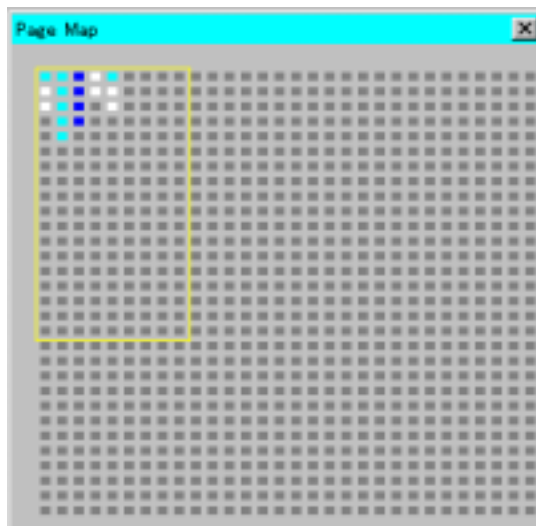


Figure 3-18: Page Map Dialog Box

The **Page Map** dialog box displays 30 rows by 30 columns miniature worksheet page, and each small square box represents each cell.

A **white** square box represents a cell with registered sound file, a **sky blue** box represents a cell with playback flag, and a **gray** one represents a blank cell. Further, a **blue** box indicates currently selected cell as the source for copying or moving.

The yellow-colored rectangle shows the range displayed on the current worksheet page. This yellow rectangle moves as you move your mouse. Move the yellow rectangle to the desired position on the map and click there, the **Page Map** dialog box is closed and the selected portion of the worksheet page is displayed.

To close the **Page Map** dialog box without changing the area displayed, right-click anywhere on the **Page Map** dialog box.

Quick Editor

Choose the **Operation | Quick Editor** command or click the corresponding button on the Toolbar, then select a desired cell with the registered file on the worksheet page. The Wave-form Editor window opens with the sound data file registered to the cell you selected.

If you modify or edit the wave-form in the Wave-form Editor window, you need to save the file in the window and clear the contents of Playback Buffer memory by choosing the **Operation | Clear Buffer** before you can playback the modified file for evaluation. (If you don't clear Playback Buffer memory, playback the file as it was before being modified.)

Opening the Wave-form Editor Window

To open the Wave-form Editor window (VpMain.exe), choose the **File | Open Editor** command. You can open as many windows as your system's memory allows you.

Choose the **File | Exit** command from the Wave-form Editor's Menu Bar to close the Wave-form Editor window.

Opening the ROM File Editor Window

Choose the **Operation | ROM File** command to open the ROM File Editor window (VpRomf.exe).

To close the ROM File Editor window, use the **File | Exit** command from the ROM File Editor window Menu Bar.

Opening the ROM File Editor for MSM9810 Window

Choose the **Operation | ROM File [M9810]** command to open the ROM File Editor for MSM9810 (Vp9810.exe).

To close the ROM File Editor for MSM 9810, use the **File | Exit** command from the Menu Bar of the ROM File Editor for MSM9810.

Opening the ROM Writer Control Window

Choose the **Operation | ROM Writer** command to open the ROM Writer Control window (VpRomw.exe).

To close the ROM Writer Control window, click the **Quit** button from the ROM Writer Control dialog box.

Section 8: Setting Up Options

To setup options, choose the **Operation | Setup** command. The **Setup** dialog box opens as shown in Figure 3-19.

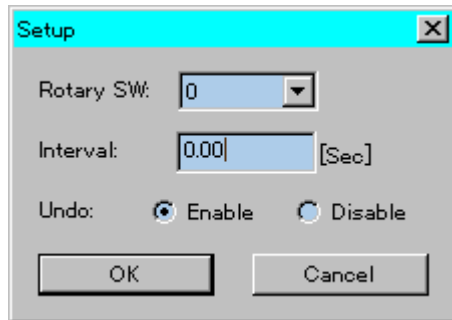


Figure 3-19: Setup Dialog Box

Rotary SW

Setup the matching value to the on-board Rotary switch setting.

Interval

Setup time length of interval to be inserted during composite playback. (See Section 5 “Composite Playback” earlier in this chapter.)

Undo

Choose “**Enable**” if you want to have the Undo function enabled. If you don’t want it, choose “**Disable**”. The default setting is “**Enable**”, but in case that you see any slow down due to the shortage of system resources (memory, available disk space), change this setting to “Disable”.

When you change this setting, the change will be valid for the next time you start VpMain.exe.

Any changes you make in the **Setup** dialog box is saved automatically, thus such changes will remain intact when you start up VpComb.exe for the next time.

Section 9: About the Undo command

You can cancel the preceding action to restore the state before the action by choosing the **Edit | Undo [....-....]** menu command. (where, the action to be cancelled is displayed in [....-....]).

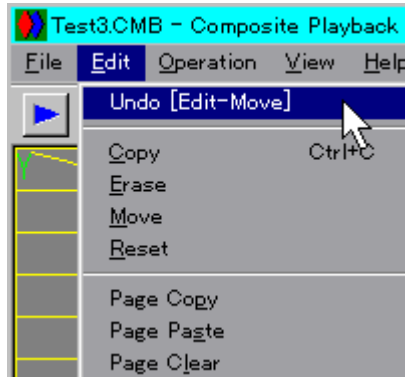


Figure 3-20: The Undo Command

This command enables you to trace back up to 30 steps (actions). However, the **Undo** command is not almighty, i.e. not all commands or operations can be cancelled. The following list shows menu commands that can be cancelled by the **Undo** command.

File New	/	File Open
File Register	/	Edit Copy
Edit Erase	/	Edit Move
Edit Reset	/	Edit Page Copy
Edit Page Paste	/	Edit Page Clear

You can't undo (cancel) the **Undo** command itself.

When the Composite Playback Editor Window is forced to terminate, i.e. not terminated in normal manner, a folder named "CombUNDO" may be left over in the folder where VpComb.exe exists. If this happens, you may delete such file as long as VpComb.exe is not running.

Section 10: Other Topics

- You can open only one Composite Playback Editor window (VpComb.exe) at one time.
- While recording, playing back or converting being performed in other window (VpMain.exe. VpRomf.exe), you can't perform composite playback.

The following menu commands and corresponding buttons in the Composite Playback Editor window are dimmed out and disabled during the above period.

Operation | Play

- During composite playback operation, clicking the Windows Close button ("X" button on the top right of Windows) is disregarded.

Chapter 4: ROM FILE EDITOR (VpRomf.exe)

Section 1: What You Can DO with the ROM FILE EDITOR?

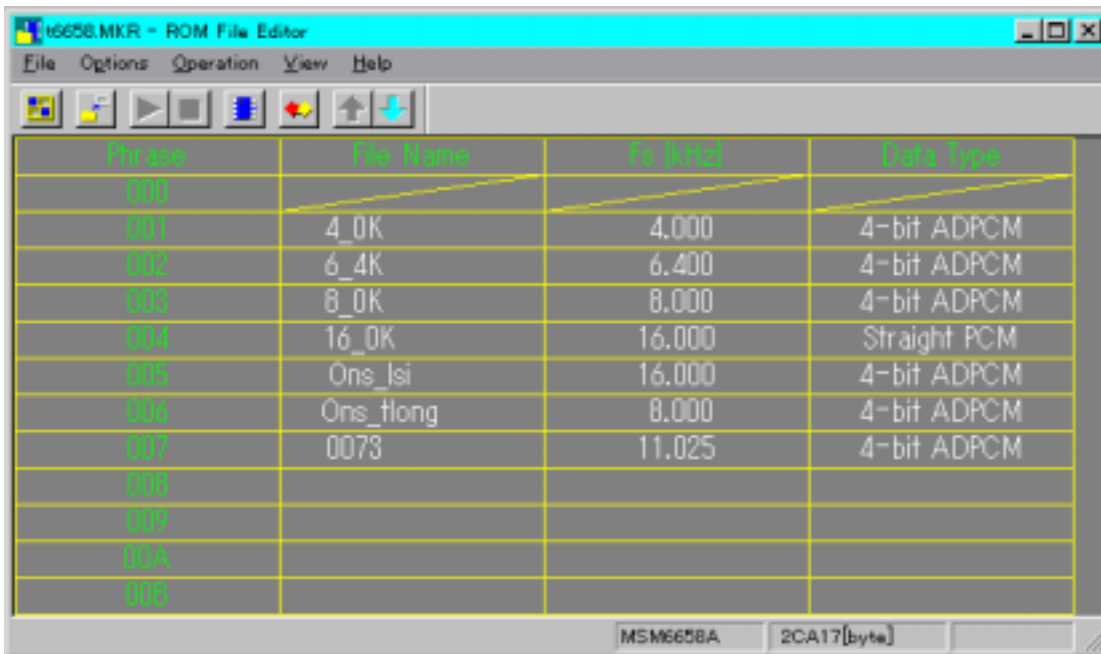
Microchip memory has its own file format different from those used with your computer system. Therefore, sound data files you worked on with the **VOICEPRO2** must be reformatted or converted into ROM file format known as **Intel Hex.** format before being programmed into ROM chip.

The ROM File Editor allows you to generate Intel Hex. format files for ROM from such files as you recorded, edited, manipulated and evaluated by using the Wave-form Editor and the Composite Playback Editor.

Section 2: Initial Setup

When you run VpRomf.exe for the first time (or whenever after you have changed the on-board Rotary SW value), you need to set up the matching value (identical to the Rotary SW value) in the **Setup** dialog box that can be opened by choosing the **Options | Setup** command.

Section 3: The ROM File Editor Window



The screenshot shows the ROM File Editor window with a table of phrases and their corresponding file names, sample rates, and data types. The table is as follows:

Phrase	File Name	Fs (Hz)	Data Type
000			
001	4_0K	4.000	4-bit ADPCM
002	6_4K	6.400	4-bit ADPCM
003	8_0K	8.000	4-bit ADPCM
004	16_0K	16.000	Straight PCM
005	Ons_lsi	16.000	4-bit ADPCM
006	Ons_tlong	8.000	4-bit ADPCM
007	0073	11.025	4-bit ADPCM
008			
009			
00A			
00B			

At the bottom of the window, the status bar shows "MSM6658A" and "2CA17[byte]".

Figure 4-1: File Register Mode (Worksheet)

The additional **Silence** column is displayed in the window only when your target device is one of ML221X or ML633XX family LSIs.

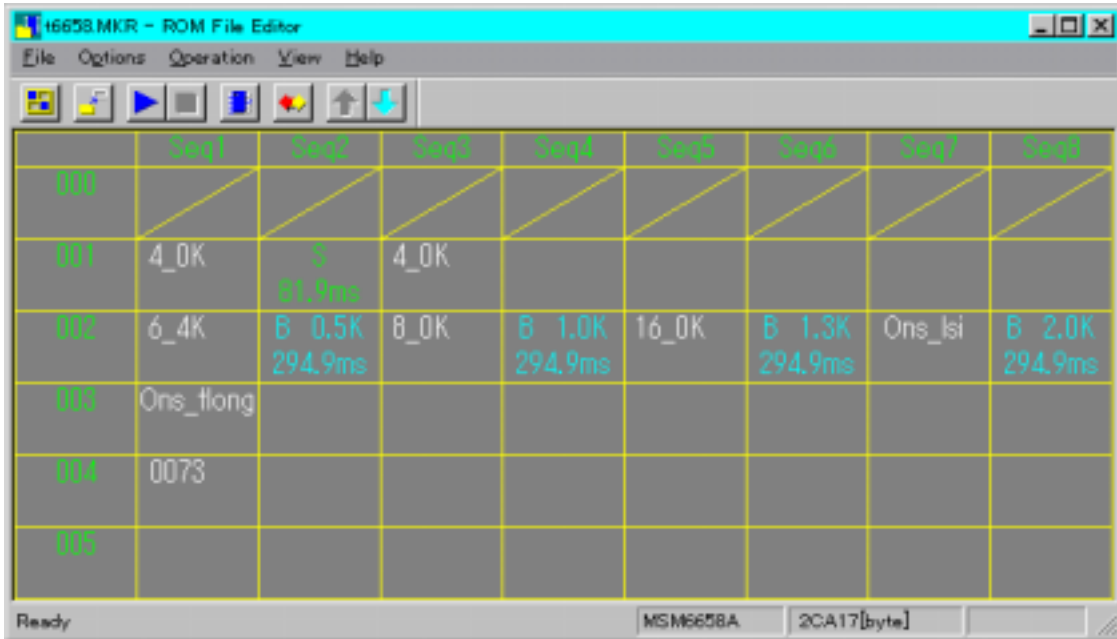


Figure 4-2: Phrase Control Register Mode (Worksheet)

The Worksheet

The ROM File Editor has two worksheet modes, one is **File Register** mode and the other is **Phrase Control Register** mode. However, in case that your target selection (described later in Section 4 in this chapter) is a device without on-chip Phrase Control Table, Phrase Control Register mode is unavailable.

Figure 4-1 and Figure 4-2 show how two worksheet modes differ in their looks.

You can switch from one mode to the other by choosing the **Operation | Worksheet Mode** command or clicking the corresponding button on the Toolbar.

The Worksheet in File Register Mode

The worksheet in File Register mode is where you can define which sound file is assigned to what Phrase Number (No.).

This spreadsheet-like worksheet has predefined rows and columns; the first column (Row Headings) defines the Phrase Number for each row, starting from "00". Adjacent 3 columns on the top have headings, "**File Name**", "**Fs [kHz]**" and "**Data Type**" respectively. File names registered in cells are displayed without directory path and file extension.

The maximum phrase number available can vary depending on the target device selected. The additional **Silence** column is displayed in the window only when your target device is one of ML221X or ML633XX family LSIs.

The Worksheet in Phrase Control Register Mode

The worksheet in Phrase Control Register mode is where you can define what phrase number file (or, in some occasion, how much length of silence, etc.) is assigned to what **Sequence No.** of which **User-defined Word.**

On this worksheet, you can assign only those sound data files already registered or assigned on the File Register mode worksheet.

This spreadsheet-like worksheet has predefined rows and columns; the Row Headings represent User-defined Word No. starting from "00" , while the Column Headings represent Sequence No.

The maximum number of User-defined Words can vary depending on the target device selected.

To scroll up or down the worksheet in each mode, use the **Operation | Scroll Up / Scroll Down** command or click the corresponding buttons on the Toolbar.

You can also use **Ctrl + Down Arrow** or **Up Arrow** key combination to scroll up or down.

Note: Definition

As used in this manual, "**Word**" (Capitalized) does not mean a literal word, but means a minimum data storing unit into ROM. A **Word** consists of one or more **Sequences** that are played back in a single continuous flow.

A **ROM File** has one or more **Words**, a **Word** has one or more **Sequences**, a **Sequence** has one **Phrase**, and a **Phrase** has one registered sound data file.

Menu Bar

The Menu Bar of the ROM File Editor has the following menu items:

File

New	Clear the worksheet, both File Register mode and Phrase Control Register mode worksheet.
Open	Open an existing ROM-file Information file.
Save	Save the current worksheet data in ROM-file Information file under the file name "as is".
Save As	Save the current worksheet data in ROM-file

Register	Information file under a new file name.
Exit	Register files and other data on the worksheet. Close the window to end the program.
Options	
Device	Select and setup a target device.
Setup	Setup system options.
Operation	
Undo	Cancel the preceding action to restore the state before the action made.
Delete	Delete registered data on the worksheet.
Play	Playback the contents of the Phrase Control Register. In File Register mode, this menu item is disabled.
Stop	Stop playback. In File Register mode, this menu item is disabled.
ROM File	Generate ROM files according to the current worksheet data.
Control ROM	Generate a ROM file for Control ROM for MSM6388 / MSM6588.
Worksheet Mode	Switch worksheet mode from File Register mode to Phrase Control Register mode or vice versa. This menu command is disabled when you select a device without on-chip Phrase Control Table.
Scroll Up	Scroll the worksheet upward to view upper portion of the worksheet.
Scroll Down	Scroll the worksheet downward to view lower portion of the worksheet.
View	
Information	Display detailed status of two Registers.
Toolbar	Show/Hide the Toolbar
Status Bar	Show/Hide the Status Bar
Help	
About VpRomf	Display the Version and Copyright Information dialog box on the VpRomf.exe program.

Toolbar

Buttons corresponding to the following menu items are available on the Toolbar in order of listing:

You can show/hide the Toolbar by choosing the **View | Toolbar** command.

File Register	/	Operation Delete
Operation Play	/	Operation Stop
Operation ROM File	/	Operation Worksheet Mode
Operation Scroll Up	/	Operation Scroll Down

Status Bar

The Status Bar displays the following information. You can show/hide the Status Bar by choosing the **View | Status Bar** command.

- Brief description on a menu command or a Toolbar button.
- Name of the device currently selected.
- Total data size in bytes.
- Current operation or process status.

Window Size and Position

The program automatically saves the last window size and position settings when you exit the program. So, whenever you start up VpRomf.exe, it automatically opens its window in the same size and at the same position as in your last session.

Section 4: Setting Up Options

Selecting a Target Device

By choosing the **Options | Device** command, you can open the **Select Device** dialog box, where you can setup the following options as shown in Figure 3-3;



Figure 4-3: Select Device Dialog Box

Target Device

You can select your target LSI from the following list;

MSM6372 / MSM6373 / MSM6374 / MSM 6375 / MSM6376 / MSM63P74
MSM6295 / MSM5205 / MSM6258 / MSM6585 / MSM6378A / MSM6379
MSM6388 / MSM6588 / MSM6688 / MSM6650 / MSM6652 / MSM6653
MSM6654 / MSM6655 / MSM6656 / MSM6658A / MSM66P54 / MSM66P56
MSM9802 / MSM9803 / MSM9805 / MSM98P05 / MSM9836 / MSM6789A
MSM9841 / MSM9842 / MSM9831 / MSM9800
ML2213 / ML2215 / ML63314 / ML63326/ ML63338 /ML63300

Serial ROM

If your target device is used together with an external **Serial ROM** (e.g. **MSM6388**), you can select a Serial ROM type from the following list;

MSM 6595 / MSM6596 / MSM6597

Osc. Frequency

Enter the oscillation frequency used with your target device in this text box. [kHz] (The Min. and Max. frequency available for the device shown to the right)

Oscillator

If your target device allows you to select a type of oscillator, select one from the following:

X'tal / CR / X'tal (External)

Fs Available

Displays sampling frequencies available for the selected target device at the oscillation frequency. Frequencies shown in () indicates sampling frequencies that the AR204 is unable to record or playback. It is possible to use other sampling frequencies than shown in this list for files used to generate ROM files. However, it is not recommendable because playback should be either faster or slower than the original.

File Layout

If your target device has no on-chip address (phrase) control table, (i.e. MSM5205, etc.), you need to select either one of the following file layout options;

Continuous : Layout all sound data files continuously with no extra space in-between.

Storage Unit : Layout each sound data file in a pre-defined fixed-size storage unit with even space in-between.

When you choose the **Storage Unit** option, you also need to enter storage unit size in the **Storage Unit** text box. The size you enter to the **Storage Unit** text box must be larger than the largest single file size among files to be registered. In case that the other sound data files registered are smaller than the size of storage unit, then the such open space will be filled with Silence data automatically.

When you complete with all setups in the dialog box, click **OK**. Your setups take effects, and then a blank worksheet appears in File Register mode with all previously entered data in the File Register and the Phrase Control Register cleared.

The default value for **Target Device** is **MSM6650**.

Entries in this dialog box are automatically saved, thus setups will remain intact for the next time you launch VpRomf.exe.

Setting Up Options

By choosing the **Options | Setup** command, the **Setup Options** dialog opens.

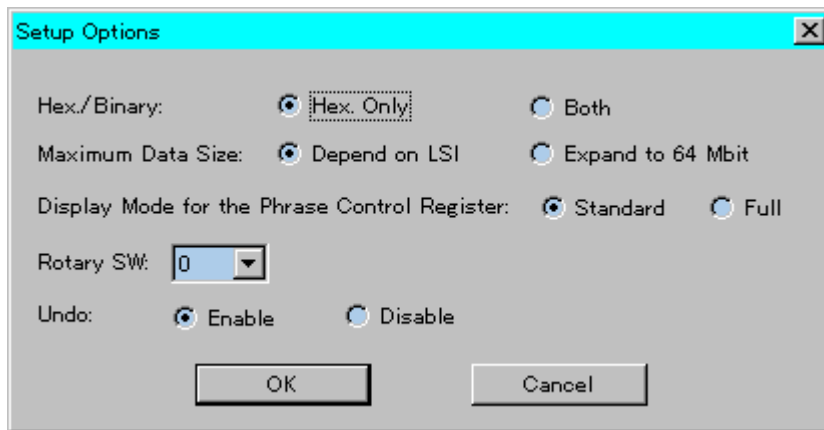


Figure 4-4: Setup Options Dialog Box

In this dialog box you can setup the following options;

Hex. / Binary

You can select either one of the following;

Hex. Only

HEX. file only is generated in generating ROM files process.

Both

Both binary and HEX. files are generated in generating ROM files process.

Maximum Data Size

You can select either one of the following;

Depend on LSI

Limit the maximum size of a sound data file to the size allowed by the selected target device.

Expand to 64 Mbit

Expand the maximum size of a sound data file up to 64 Mbit.

Display Mode for the Phrase Control Register

You can select either one of the following;

Standard

Display simplified worksheet screen (standard) in Phrase Control Register mode.

Full Display full, detailed worksheet screen in Phrase Control Register mode. This detailed worksheet screen mode is available only when one of the **MSM6650** series is selected as the Target Device.

Rotary SW.

Select the identical value to the value set with the on-board Rotary SW.

Undo

Choose **Enable** if you want to have the Undo function enabled. If you don't want, choose **Disable**. The default setting is **Enable**, but in case that you see any slow down due to the shortage of system resources (memory, available disk space), change this setting to **Disable**.

When you change the setting, the change will be valid for the next time you start VpRomf.exe.

When you complete all required setups in the dialog box, click **OK**. Your setups take effects immediately, except the Undo setting.

Entries in this dialog box are automatically saved, so the setups will remain intact for the next time you launch VpRomf.exe.

Section 5: Registering a File -- File Register Mode

You can register sound data files on the File Register by following the procedures described below;

By choosing the **File | Register** command or clicking the corresponding button on the Toolbar, register mode starts. The Status Bar indicates "**Register**" on the right corner to show you are in register mode.

Selecting a Phrase No.

Click to select a Phrase No. that you want to assign a sound data file to. If the phrase number you selected has no registered file yet, you can assign a file as a new entry. If the phrase number you selected has the registered file already, your new entry replace the existing entry. Now the selected phrase number is displayed in sky blue.

You can't assign a file to Phrase No. 00. A diagonal line indicates the phrase number is not user-definable.

Selecting a Sound Data File

The **File Open** dialog box opens. Select a file that is assigned to the phrase number and click the **Open** button.

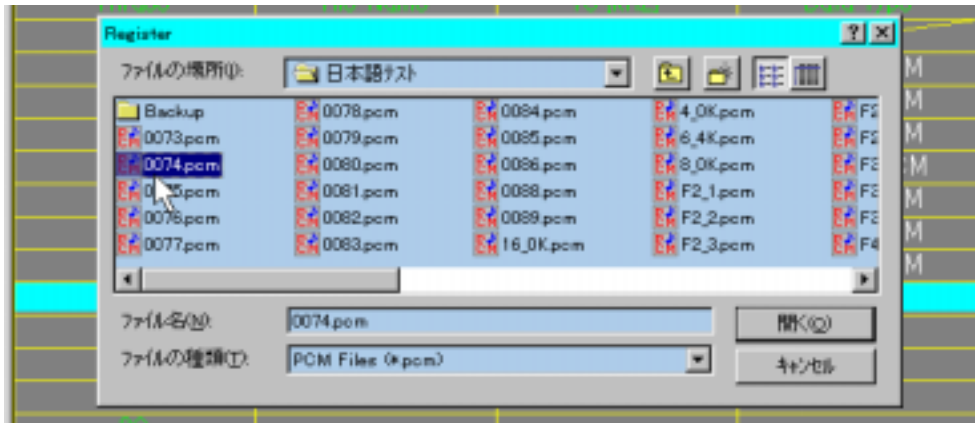


Figure 4-5: Selecting a Sound Data File

Selecting a Data Type

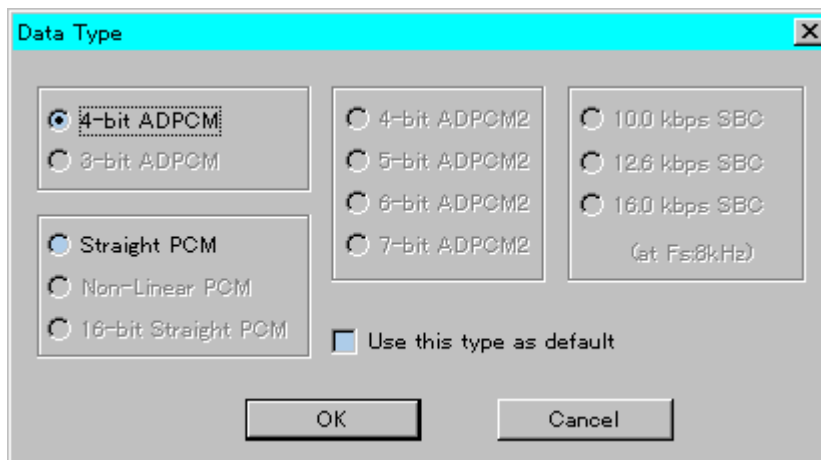


Figure 4-6: Selecting a Data Type

The **Data Type** dialog box opens, where you can select one of the following data types;

- 4-bit ADPCM / Straight PCM / Non-Linear PCM / 16-bit Straight PCM
- 4-bit ADPCM2 / 5-bit ADPCM2 / 6-bit ADPCM2 / 7-bit ADPCM2 /
- 10.0 kbps SBC / 12.6 kbps SBC / 16.0 kbps SBC

Remember that some data types are unavailable depending on the target device selected. Make sure that the data type you select is supported by your target device. If you check the **Use this type as default** check box in this dialog box, the data type selected is used as the default data type for files you will select thereafter. So the **Data Type** dialog box will not appear after each file selection. If you want to change the data type, you can do so after exiting from Register mode by right-clicking anywhere on the worksheet.

When you finish assigning sound data files required, you can end Register mode by right-clicking anywhere on the worksheet before selecting a new phrase number. To view the full path for any registered files, just point the file name (place the mouse cursor on the file name cell). The full path for the file is displayed on the Status Bar.

Registering a File - ML221X or ML633XX Family

If your target device is one of ML221X or ML633XX family LSIs, the file registration procedure after “Selecting a Phrase No.” is different from those for other LSIs described earlier in this section. What follows is a description on the procedure for ML221X or ML633XX family LSIs.

Selecting a Sound Type

The **Sound Type** dialog box opens as shown in Figure 4-7. Check either **Voice** or **Buzzer** (**Melody** is currently unavailable).

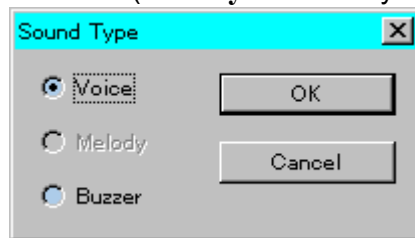


Figure 4-7: Selecting a Sound Type

Selecting a Sound Data File (When Voice selected in the Sound Type dialog box)

The **File Open** dialog box opens as in the following figure. Select a file that is assigned to the phrase number and click the **Open** button.

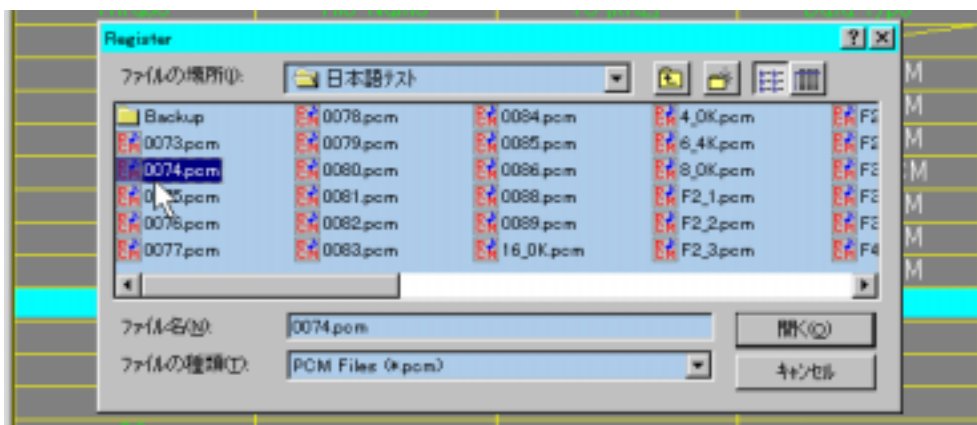


Figure 4-8: Selecting a Sound Data File

Entering Time Length for Silence (When Voice selected in the Sound Type dialog box)

The **Add Silence** dialog box appears as shown in Figure 4-9. Enter a value for time length of the silence to be added. (Min.: 1.5ms - Max.:3072ms)

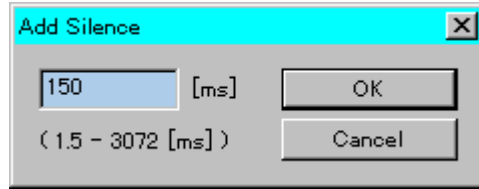


Figure 4-9: Entering Time Length for Silence

Selecting a Data Type (When Voice selected in the Sound Type dialog box)

The **Data Type** dialog box appears as shown in Figure 4-10. Select appropriate data type options and click **OK**.

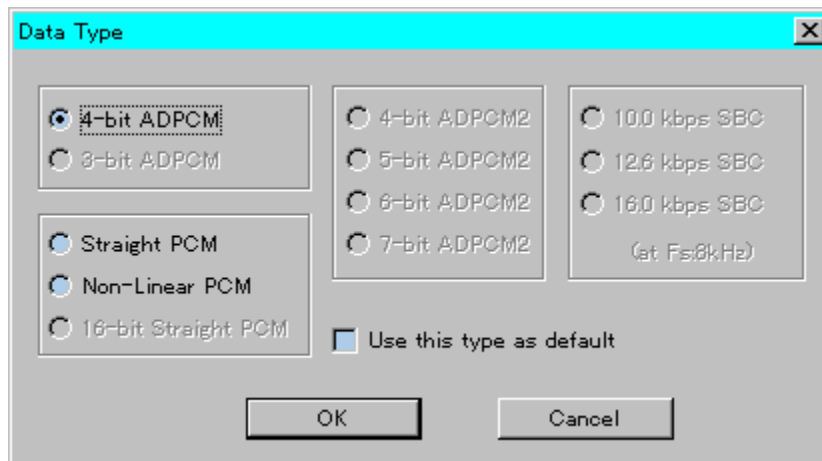


Figure 4-11: Selecting a Data Type

Selecting a Buzzer Frequency and Type (When Buzzer selected in the Sound Type dialog box)

The **Buzzer** dialog box appears as shown in Figure 4-11. Select a desired frequency and type option and click **OK**.

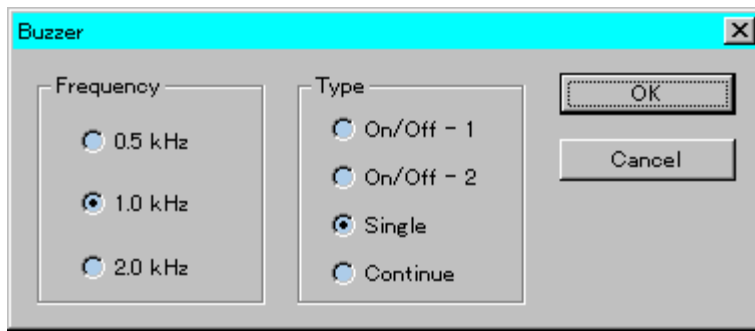


Figure 4-11: Selecting a Buzzer Frequency and Type

Creating Melody Data

VOICEPRO2 does not support melody data currently. Until the time when melody data support is provided on the **VOICEPRO2**, OKI undertakes melody data preparation upon customer's request.

To request melody data preparation, please contact your local OKI distributor together with the music notes for the melody.

Section 6: Deleting a Registered File --- File Register Mode

By choosing the **Operation | Delete** command or clicking the corresponding button on the Toolbar, Delete mode starts. (While in Delete mode, the Status Bar displays "Delete" on its right end.)

The **Delete** command deletes an entry (i.e. a sound data file registered) to the selected phrase number, but leaves the sound data file itself intact.

Click to select the Phrase No. from which the file registration is to be deleted. The sound file and relevant data is deleted. The deleted phrase remains blank and open until a new file is assigned. (The next Phrase No. data would not move upwards.)

To end **Delete** mode, right-click anywhere on the worksheet.

Section 7: Registering a Phrase --- Phrase Control Register

You can register a phrase (i.e. a registered sound data file) on the Phrase Control Register by following the procedures described below;

By choosing the **File | Register** command or clicking the corresponding button on the Toolbar, register mode starts. The Status Bar indicates "**Register**" on the right corner to show you are in register mode.

Selecting a Cell for Registering a Phrase

	Seq1	Seq2	Seq3	Seq4
00				
01	4_OK	S 81.9ms	4_OK	
02	6_4K	B 0.5K 294.9ms	8_OK	B 1.0K 294.9ms
03	Ons_tlong			

Figure 4-12: Selecting a Cell for Registering a Phrase

Click to select a cell to which you want to register a phrase.

If you click a **User-Defined Word No.** or blank **Sequence No.**, the left-most blank cell in the selected row is automatically selected for new entry, and the cell turns into sky-blue. If you click a cell that already has the registered phrase, your new entry will replace the existing entry. This cell also turns into sky-blue when selected.

You can't register a phrase to User-Defined Word No. 00. A diagonal line indicates the word number is not user-definable.

Selecting a Sound Type

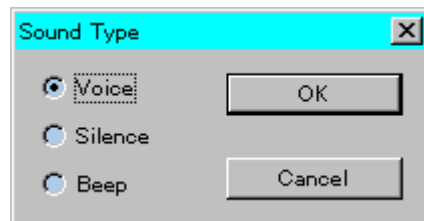


Figure 4-13: Sound Type Dialog Box

The **Sound Type** dialog box opens. Select one of the following;

Voice

Silence

Beep (Unavailable with some target devices)

Selecting Attributes for each Sound Type

Depending on the sound type you selected in the **Sound Type** dialog box, a new dialog box opens that allows you to select appropriate attributes for each sound type.

When “Voice” selected

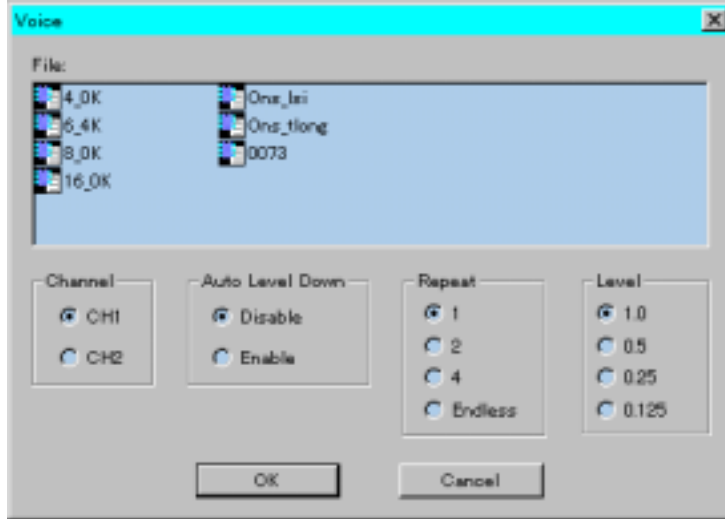


Figure 4-14: Voice Dialog Box

The **Voice** dialog box appears. Select an appropriate option for each attribute. Some attributes are unavailable depending on your target device.

File Select a sound data file for playback from those files registered on the File Register.

Channel Select either **CH1** or **CH2** to be used for playback.

Auto Level Down Select either **Enable** or **Disable**; this function is used for repeated playback only.

Repeat Select a number of times for repeat from 1 / 2 / 4 / Endless.

Level Select an output level from 1.0 / 0.5 / 0.25 / 0.125.

When “Silence” selected

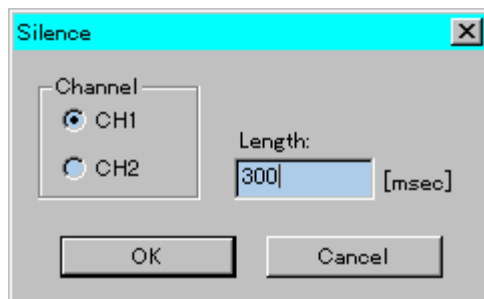


Figure 4-15: Silence Dialog Box

The **Silence** dialog box opens. Select an option or enter a value as required. Some attributes are unavailable depending on your target device.

Channel Select either **CH1** or **CH2** to be used for playback.

Length Enter time length value for Silence in msec.
The min. time unit for the MSM6650 family: 16.384 msec.
The min. time unit for the MSM9800 family: 32 msec.
The value entered is automatically adjusted to the closest multiple of 16.384 (or 32) msec.

When “Beep” selected

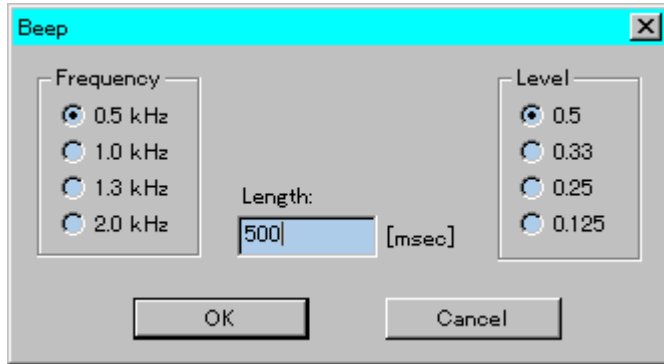


Figure 4-16: Beep Dialog Box

The **Beep** dialog box appears. Select an option or enter a value as required. Some attributes are unavailable depending on your target device.

Frequency Select a frequency for beep sound from 0.5 / 1.0 / 1.3 / 2.0 KHz.

Length Enter time length value for beep sound in msec.
The minimum time unit for beep sound is **16.384 msec**.
The value entered is automatically adjusted to the closest multiple of 16.384 msec.

Level Select an output level for beep sound from 0.5 / 0.33 / 0.25 / 0.125.

When you finish registering required phrases, you can end Register mode by right-clicking anywhere on the worksheet before selecting a new cell.

Section 8: Deleting a Registered Phrase --- Phrase Control Register

By choosing the **Operation | Delete** command or clicking the corresponding button on the Toolbar, Delete mode starts. (While in Delete mode, the Status Bar displays “Delete” on its

right corner.)

Click to select the User-Defined Word No. All phrases registered in the selected row (any Sequence No.) are deleted. The deleted cells remain blank and open until new files are assigned. (The next User-Defined Word No. data would not move upwards.)

If you select any cell (i.e. Sequence) having a registered phrase, the phrase in the cell is deleted. The following cells, if any, are moved forward to fill the opening.

To end **Delete** mode, right-click anywhere on the worksheet.

Section 9: Playing Back Registered Phrases --- Phrase Control Register

By choosing the **Operation | Play** command or clicking the corresponding button on the Toolbar, Play mode starts. (While in Play mode, the Status Bar displays “Play” on its right corner.)

Click to select a User-Defined Word No. According to phrases registered to sequences of the selected User-Defined Word, the sound data is expanded in the system memory, then playback starts. Note that the data used for this playback is PCM data, despite of the **Data Type** selected.

The Bar graph shows the sound level on real-time basis as playback proceeds. You can adjust the output level with the slider, **Vol (Out)**. When sound level exceeds 80 % (full scale = 100 %), the bar changes into red.

Note: The program’s output volume control is not intended for fine-tuning output level. If you need finer level control, use your external output level control.

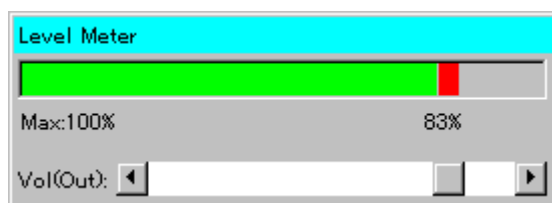


Figure 4-17: Level Meter Dialog Box

You can move the Level Meter dialog box to any position you like by dragging on the title bar of the dialog box.

To stop playback, choose the **Operation | Stop** command or click the corresponding button on the Toolbar. You can also stop playback by right-clicking anywhere on the worksheet. To end Play mode, right-click anywhere on the worksheet.

Section 10: Checking ROM-file Status

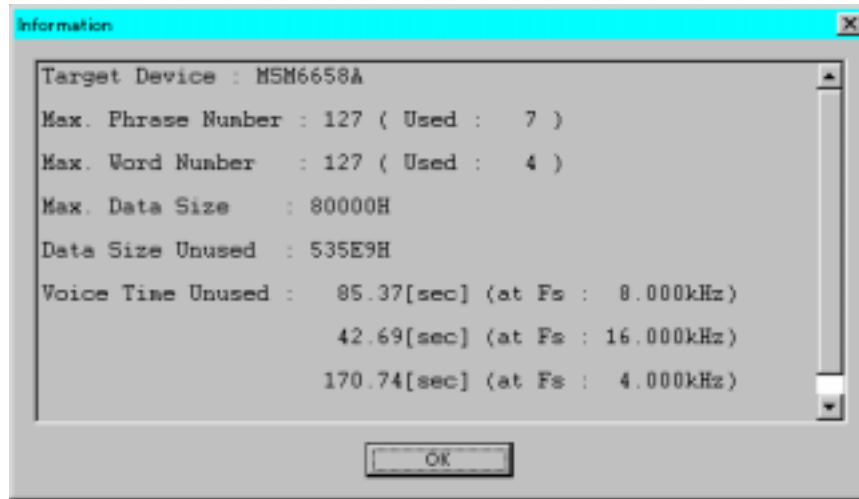


Figure 4-18: ROM-file Information Dialog Box

Choosing the **View | Information** command opens the **ROM-file Information** dialog box. You can check ROM-file status on the following items in this dialog box.

Target Device	Display the target device and the Serial ROM selected.
Max. Phrase Number	Display the max. phrase number that can be registered on the File Register and the number of phrases actually registered.
Max. Word Number	Display the max. number of User-Defined Words that can be registered on the Phrase Control Register and the number of User-Defined Words actually registered.
Max. Data Size	Display the total available data size in Bytes.
Data Size Unused	Display the total unused data size in Bytes.
Voice Time Unused	Display the total unused voice time calculated from the unused data size.

Section 11: Generating ROM Files

When you complete all the required procedures on the File Register and Phrase Control Register, you are ready to generate ROM files.

To generate ROM files follow the steps described below;

Choose the **Operation | ROM File** command or click the corresponding button on the Toolbar.

First, the **Granular Noise Reduction** dialog box opens, where you can set up parameters for granular noise reduction.

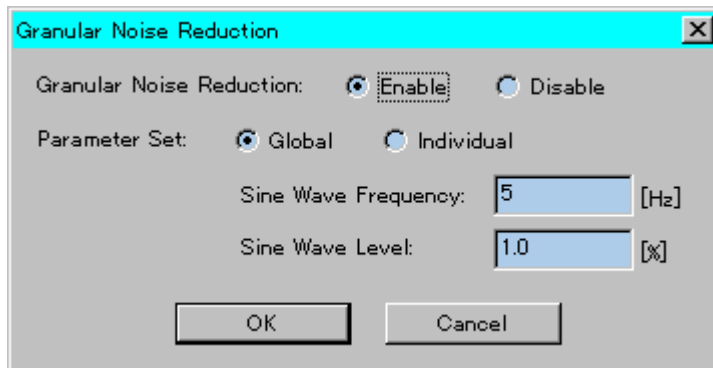


Figure 4-19: Granular Noise Dialog Box

Note: ADPCM coding, while being played back, may cause to produce noise known as “Granular Noise” around at 1/2 frequency of sampling frequency. Adding extremely low level sine waves at low frequency to source PCM data right before converting to ADPCM code may help to reduce this granular noise.

The following items are set up in the **Granular Noise Reduction** dialog box;

Granular Noise Reduction	Select Enable to turn on the noise reduction, or select Disable to turn it off. If you select Disable , the following items are disabled.
Parameter Set	Select Global if you want to use one parameter set (Frequency and level for sine wave) in common for all sound data files, or select Individual if you want to setup parameters for each individual file. When you select Individual , the following items are disabled.
Sine Wave Frequency	Enter frequency at Hz for sine wave to be added.
Sine Wave Level	Enter level in % for sine wave to be added.

Note the following when you use the Granular Noise Reduction.

1. Sine wave is added to PCM data immediately before conversion to ADPCM. So, PCM data stored in .pcm files is not affected or modified at all.
2. If you want to change the parameter set (Frequency and level for sine wave) for an already converted ADPCM file, save the file by using the **File | Save As** command in the

- Wave-form Editor window. This clears ADPCM conversion information in the file.
3. Evaluate the effect of Granular Noise Reduction using an evaluation board or your actual application prior to generating ROM files for production.

Secondly, the **Save File** dialog box opens. Enter the file name for the Hex. file to be generated. (Extension .HEX)

Lastly, the **ROM Size** dialog box opens. Select an appropriate ROM size from the following list.

256 Kbit ROM / 512 Kbit ROM / 1 Mbit ROM / 2 Mbit ROM / 4 Mbit ROM /
8 Mbit ROM

Click **OK** to start generating ROM files.

Note: If the selected ROM size is smaller than the total programming file size, the system automatically generates Hex files divided for programming across multiple ROM chips. When this happened, such Hex. File names should be “xxx1.hex”, “xxx2.hex”, “xxx3.hex” …….

If you select **Individual** for **Parameter Set** in the **Granular Noise Reduction** dialog box, the **Sine Wave Setup** dialog box appears immediately before converting each PCM data to ADPCM data, while generating ROM files. Enter a frequency and level for sine wave to be added to PCM data to appropriate text box.

Generating ROM files can take some time, so wait until the “**End of Generating ROM Files**” message dialog box is displayed.

Notes on MSM9831

MSM9831 requires the Phrase Control Register data to generate ROM files. If the **Operation | ROM File** command is selected for MSM9831 without the Phrase Control Register defined, an alarm dialog box appears with the following message:

“No Phrase Control Register Defined! Do you want the VOICEPRO2 to create the Phrase Control Register now?”

If you click **Yes** in this dialog box, the VOICEPRO2 creates the Phrase Control Register, after closing the dialog box, based on files registered on the File Register worksheet, then generates ROM files. If this happens, the VOICEPRO2 assumes Phrase 01 to be registered to User-Defined Word 01, Sequence 1, Phrase 02 to User-Defined Word 02, Sequence 1, and so on.

If you click **No** in the dialog box, the **Operation | ROM File** command is aborted and no ROM file is generated.

In addition to a HEX. file (xxx.hex), an information file (xxx.inf) and, if so selected, a binary file (xxx.bin) are generated in ROM files generation process. Remember that ROM-file information file (.mkr file containing the File Register and Phrase Control Register data) is not saved by the **Operation | ROM File** command.

You need to save the file separately if you want to keep those data for future use. (See “Section 12: Saving and Opening ROM-file Information File” later in this chapter.)

[Warning!]

If the generated ROM file includes any phrases synthesized at other sampling frequency than those displayed at **Fs Available** in the **Select Device** dialog box, the information file remarks such files as “(Unavailable Fs)” that appears rightmost on the line (as shown in Figure 4-20).

Be sure to select a sampling frequency from the **Fs Available** list unless you have a specific purpose in using such non-standard frequency.

It is recommended to check out this information file after generating ROM files so that no “(Unavailable Fs)” remarks appears in the file.

```

< Voice Data Information [ Target : MSM6650 ] [ fosc : 4096KHz : X'tal ] >

ROM : 1Mbit (      TTT.HEX )

====< Voice Data area >====

No.      File name  Data type      Start      End      Size      Fs      Time
1[001]   16_0K      4-bit ADPCM    B00 ~     A8A5 ( 9DA6)  16.0KHz  5.045
2[002]   0073       4-bit ADPCM    A8A6 ~    11508 ( 6C63)  11.0KHz  5.033 (Unavailable Fs)
3[003]   F2_1       4-bit ADPCM    11509 ~   17B65 ( 665D)  11.0KHz  4.754 (Unavailable Fs)
4[004]   8_0K       4-bit ADPCM    17B66 ~   1CA38 ( 4ED3)  8.0KHz   5.045

                                total time = 19.877sec
                                blank area = 1CA39 ~ 7FFFFFFF (7E35C7)

(Omitted hereunder)

```

Figure 4-20: Information File

Section 12: Saving and Opening ROM-file Information File

Saving a ROM-File Information File

File | Save As Save the current ROM-file Information file (containing the File Register and Phrase Control Register data) under a new file name.

File | Save Save the current ROM-file Information file (containing the File Register

and Phrase Control Register data) under the file name “as is”.

The **Save File** dialog box opens, where you can select a desired drive and a directory and enter a new file name, when required. (File extension .MKR)

Opening a ROM-File Information File

By choosing the **File | Open** command you can open a previously saved ROM-file Information file (containing the File Register and Phrase Control Register data).

You can also open a ROM-file Information file by selecting one of up to 4 files listed in the **Recently Used Files** list that appears below the **File** Menu.

Note: The File Register contains information on the folder where the registered file exists. If you moved the sound data file to another folder after the file being registered, the program can't locate such file when attempting to open the file. If this happened, a dialog box appears to display the following message.



Figure 4-21: “File Not Found” Message Dialog Box

Click **OK** to close the dialog box. The **Open File** dialog box opens. Select the file located in the new folder and click the **Open** button.

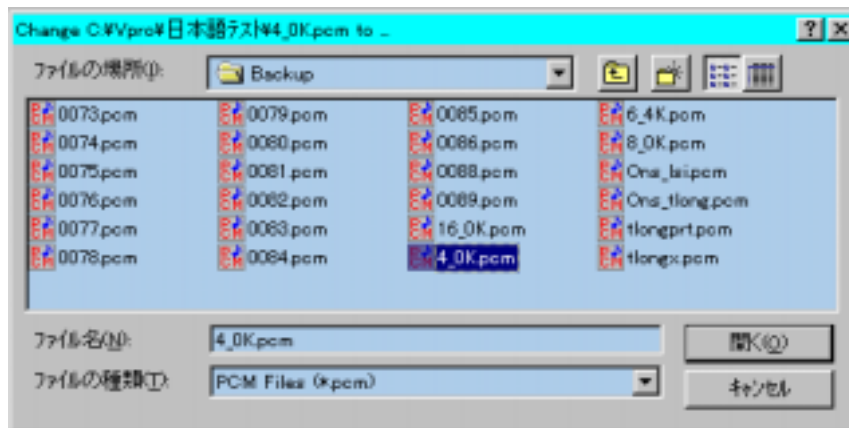


Figure 4-22: Selecting a New Location

The path selected in this dialog box is referenced whenever the program encounters difficulties in locating a file. If a file could not be found with the referenced path, then the **Open File** dialog box opens again. In this way, path to be referenced can be added. Such path references remains valid until you end VpRomf.exe.

If you click the **Cancel** button in the dialog box when it is opened for selecting a new file location, the program continues to load the ROM-file Information file assuming that the file has not been registered.

Section 13: Creating a Control ROM for MSM6388 and MSM6588

When you try to evaluate a sound data ROM for MSM6388/MSM6588 using the OKI-made dedicated evaluation board, you also need to create a control ROM separately. Follow the steps described below to create a Control ROM for MSM6388/MSM6588:

1. If you have not generated ROM files for MSM6388/MSM6588 yet, do it now. The information file (xxx.inf) generated during the process is used to create the Control ROM.
2. Select the **Operation | Control ROM** command to open the **File Open** dialog box, where the list of existing information files is displayed. Select a desired information file, then click **Open**.
3. An additional ROM file for the Control ROM is generated. (For 256 Kbit ROM only) The ROM file generated here is automatically named xxxC.HEX, where xxx represents the name of the information file you selected. For example, when you select "sample.inf" file, "samplec.hex" file is generated.

If you select an information file for other devices than MSM6388/MSM6588 in the **File Open** dialog box, an error dialog box appears with the following error message;
"Invalid Information File! The selected file is NOT for MSM6388/MSM6588!"
Click **OK** to reopen the **File Open** dialog box and reselect a valid information file.

Section 14 About the Undo command

You can cancel the preceding action to restore the state before the action by choosing the **Operation | Undo [....-....]** menu command. (where, the action to be cancelled is displayed in [....-....]).

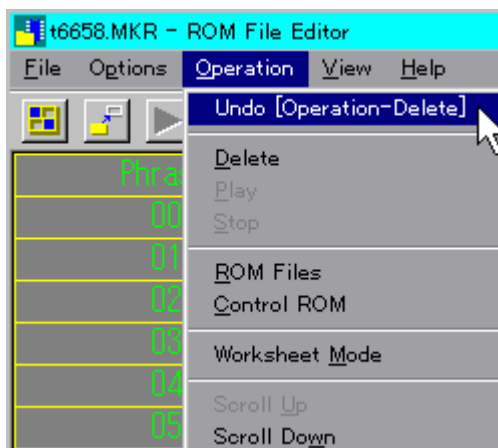


Figure 4-23: UNDO Command

This command enables you to trace back up to 30 steps (actions). However, the **Undo** command is not almighty, i.e. not all commands or operations can be cancelled. The following list shows menu commands that can be cancelled by the **Undo** command.

File New	/	File Open
File Register	/	Options Device
Options Setup	/	Operation Delete
Operation Worksheet Mode		

You can't undo (cancel) the **Undo** command itself.

When the ROM File Editor window is forced to terminate, i.e. not terminated in normal manner, a folder named "RomfUNDO" may be left over in the folder where VpRomf.exe exists. If this happens, you may delete such file as long as VpRomf.exe is not running.

Section 15 Other Topics

- You can open only one ROM File Editor window (VpRomf.exe) at one time.
- While recording or playback being performed in other window (VpMain.exe, VpComb.exe), you can't play back or generate ROM files.
The following menu commands and corresponding buttons in the ROM File Editor window are dimmed out and disabled during the above period.
Operation | Play, Operation | ROM File
- During playback or ROM files generation process, clicking the Windows' Close button ("X" button on the top right of Windows) is disregarded.

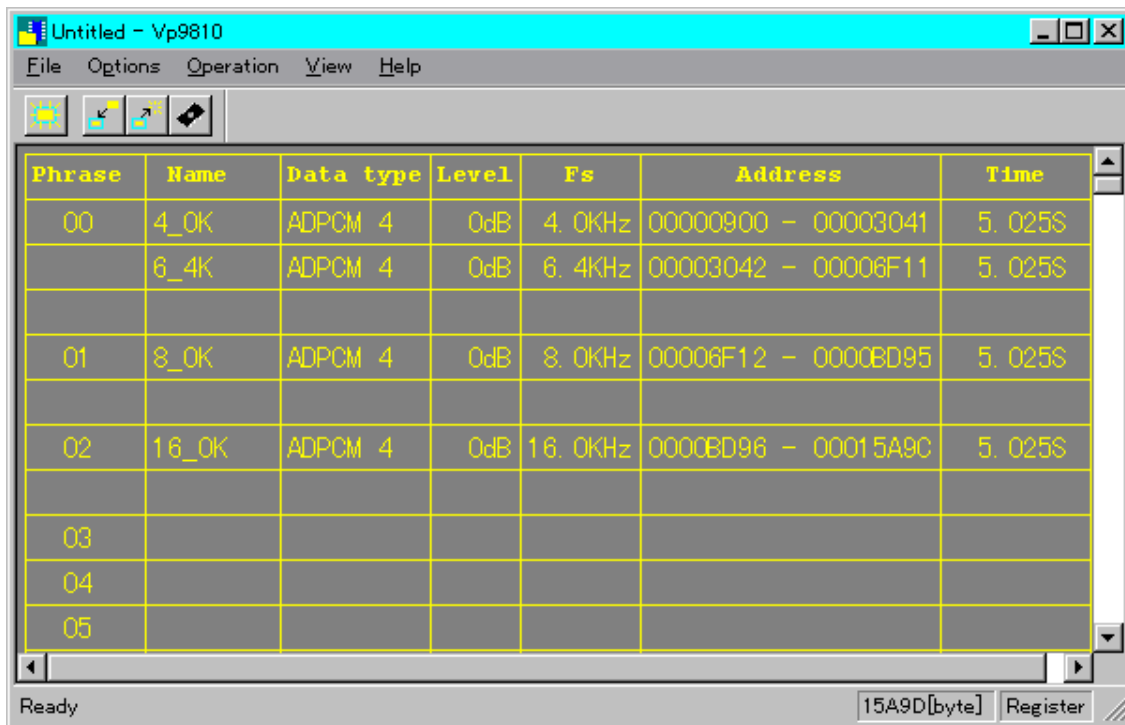
Chapter 5: ROM FILE EDITOR for MSM9810 (Vp9810.exe)

Section 1: What You Can Do with the ROM FILE EDITOR for MSM9810

Microchip memory has its own file format different from those used in your computer system. Therefore, sound data files you worked on with the **VOICEPRO2** must be reformatted or converted into ROM file format known as **Intel Hex.** format before being programmed into ROM.

The ROM File Editor for MSM9810 allows you to generate Intel Hex. format files for MSM9810 from such files as you recorded, edited, manipulated and evaluated by using the Wave-form Editor and the Composite Playback Editor.

Section 2: The ROM FILE EDITOR for MSM9810 Window



The screenshot shows a window titled "Untitled - Vp9810" with a menu bar (File, Options, Operation, View, Help) and a toolbar. The main area contains a table with the following data:

Phrase	Name	Data type	Level	Fs	Address	Time
00	4_0K	ADPCM 4	0dB	4. 0KHz	00000900 - 00003041	5. 025S
	6_4K	ADPCM 4	0dB	6. 4KHz	00003042 - 00006F11	5. 025S
01	8_0K	ADPCM 4	0dB	8. 0KHz	00006F12 - 0000BD95	5. 025S
02	16_0K	ADPCM 4	0dB	16. 0KHz	0000BD96 - 00015A9C	5. 025S
03						
04						
05						

The status bar at the bottom shows "Ready" and "15A9D[byte] Register".

Figure 5-1: The Worksheet

The Worksheet

The worksheet is where you can define which sound file is assigned to what Phrase Number (No.). This spreadsheet-like worksheet has predefined rows and columns; the first column (Row Headings) defines the Phrase Number for each row, starting from "00". Adjacent 6 columns have headings on the top, "Name", "Data Type", "Level", "Fs", "Address" and "Time" respectively.

Menu Bar

The Menu Bar of the ROM File Editor for MSM 9810 has the following menu items:

File

New	Clear the worksheet.
Open	Open an existing ROM-file Information file.
Save	Save the current ROM-file Information file under the file name "as is".
Save As	Save the current ROM-file Information file under a new file name.
Register	Register files and other data on the worksheet.
Exit	Close the window to end the program.

Options

Setup	Setup options.
--------------	----------------

Operation

Modify	Modify the contents of the worksheet.
Delete	Delete the contents of the worksheet.
ROM File	Generate ROM File(s) based on the current contents of the worksheet.

View

Toolbar	Show/Hide the Toolbar.
Status Bar	Show/Hide the Status Bar.

Help

About Vp9810	Display the Version and Copyright Information dialog box on the Vp9810.exe program.
---------------------	---

Toolbar

Buttons corresponding to the following menu items are available on the Toolbar in order of listing: You can show/hide the Toolbar by choosing the **View | Toolbar** command.

File Register	/	Operation Modify
Operation Delete	/	Operation ROM File

Status Bar

The Status Bar displays the following information. You can show/hide the Status Bar by choosing the **View | Status Bar** command.

- Brief description on a menu command or a Toolbar button.
- Total data size in bytes.
- Current operation or process status.

Window Size and Position

The program automatically saves the last window size and position settings. So, whenever you start up Vp9810.exe, it automatically opens its window in the same size and at the same position with those in your last session.

Scrolling the Worksheet

To scroll the worksheet, use the window's scroll bar located the right-hand side and the bottom of the window.

Section 3: Setting Up Options

Choosing the **Options | Setup** command will open the **Setup** dialog box.

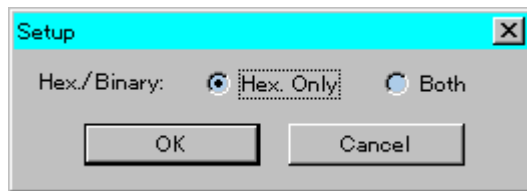


Figure 5-2: Selecting Binary File Option

Hex. / Binary

You can select either one of the following;

- | | |
|------------------|---|
| Hex. Only | HEX. file only is generated in generating ROM files process. |
| Both | Both binary and HEX. files are generated in generating ROM files process. |

Click **OK** to make your setup valid.

Section 4: Registering a File

By choosing the **File | Register** command or clicking the corresponding button on the Toolbar, register mode starts. The Status Bar indicates “Register” on the right corner to show you are in register mode.

There are three different registration modes available; insert, add and new, depending on what type of row you click to select.

1. When you click a row containing a file registered, a new row is inserted for a new file before the selected row.

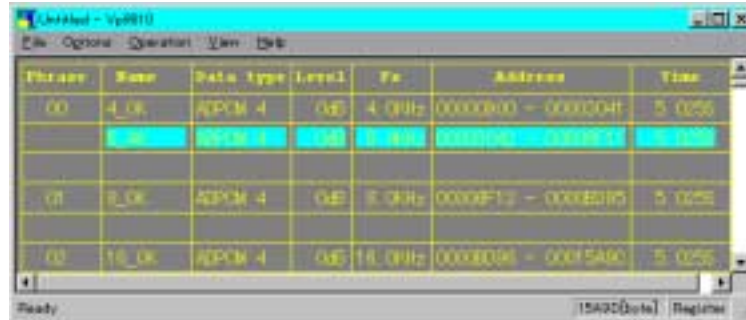


Figure 5-3: Insert Mode - Selecting a Row with a Registered File

2. When you click a blank row having no phrase number in the left-most cell, you can add a new file after any existing registered files for that phrase number.

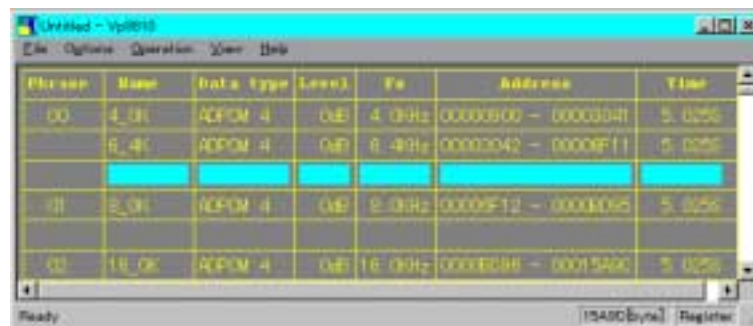


Figure 5-4: Add Mode - Selecting a Blank Row without Phrase No.

3. When you click a blank row having a phrase number in the left-most cell, you can register a new file to the new phrase number.

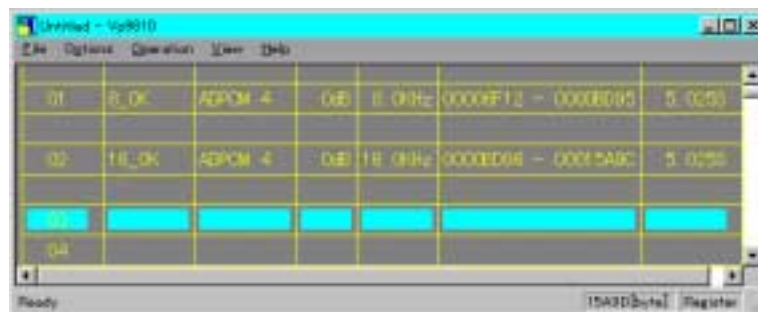


Figure 5-5: New Mode – Selecting a Blank Row with Phrase No.

To register a file, do as follows:

Selecting a Sound Type

The **Sound Type** dialog box opens. Select one of the following;

Voice

Silence

Selecting a Sound Data File

When you select "Voice" in the **Sound Type** dialog box, the **File Open** dialog box opens. Select a file to be registered.

A sound data file to be registered must satisfy the following minimum size requirement:

Where Data Type is 4-bit ADPCM or 4-bit ADPCM2: No less than 40 samples

Where Data Type is Straight PCM or Non-linear PCM: No less than 20 samples

Selecting Attributes for Each Sound Type

Depending on the sound type you selected in the **Sound Type** dialog box, a new dialog box opens that allows you to select appropriate attributes for each sound type.

When "Voice" selected

The **Voice** dialog box appears. Select an appropriate option for each attribute.

Data Type	Select one data type from the following list. 4-bit ADPCM / 4-bit ADPCM2 / Straight PCM / Non-linear PCM
Level	Select an output level from the following values. 0 / -2 / -4 / -6 / -8 / -10 / -12 / -14 / -16 / -18 / -20 / -22 / -24 / -26 / -28 / -30 [dB]

When "Silence" selected

The **Silence** dialog box opens. Enter a value as required.

Length	Enter time length value for Silence in ms. The min. time unit of Silence: 4 ms The time length range of Silence: 4 ms ~ 124 ms
---------------	--

You can neither start a phrase with silence nor end a phrase with silence. Silence can only be inserted in between physical sound data. As long as this requirement is satisfied, you can insert multiple silences.

An error message appears if you attempt to generate ROM files having any phrase starting or ending with silence.

Your selections are displayed on the screen.

When you complete registering required data, right-click anywhere on the worksheet to end Register mode.

Section 5: Modifying the Worksheet

By choosing the **Operation | Modify** command or clicking the corresponding button on the Toolbar, Modify mode starts. (While in Modify mode, the Status Bar displays “Modify” on its right corner.)

There are four different modifying modes available, Sound Type, Data type or Level, Time Length and Address, depending on which cell you click to select.

1. When you click a file name cell or <<S>> cell (cell in the “Name” column), you can reselect a Sound Type in the **Sound Type** dialog box. After reselecting a Sound Type, follow the steps described in “Registering a File” earlier in this chapter.

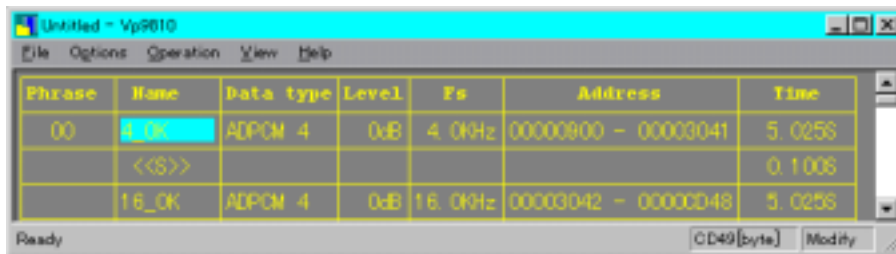


Figure 5-6: Reselecting a Sound Type

2. When you click a Data Type cell or Level cell, the **Voice** dialog box will open. You can modify the setups as required.

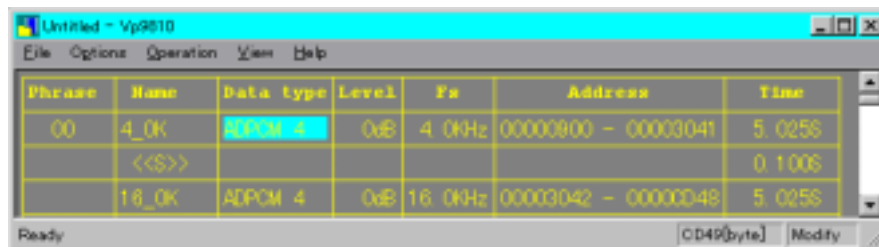


Figure 5-7: Modifying Data type or Level

3. When you click a Time cell, the **Silence** dialog box will open. You can modify the time length for Silence as required.

Phrase	Name	Data type	Level	Fs	Address	Time
00	4_OK	ADPCM 4	0dB	4.0KHz	00000900 - 00000041	5.025S
	<<S>>					0.100S
	16_OK	ADPCM 4	0dB	16.0KHz	00000042 - 00000048	5.025S

Figure 5-8: Modifying Time Length for Silence

- When you click an Address cell, the **Address** dialog box will open. You can modify the setups as required. However, if the Data Type of the selected row is ADPCM, you can't modify the address.

Phrase	Name	Data type	Level	Fs	Address	Time
00	4_OK	ADPCM 4	0dB	4.0KHz	00000900 - 00000041	5.025S
	<<S>>					0.100S
	16_OK	ADPCM 4	0dB	16.0KHz	00000042 - 00000048	5.025S

Figure 5-9: Modifying Address

Enter the following values in the appropriate field in the **Address** dialog box.

- Start** Enter the starting address in hexadecimal. The value entered should be within the address range and smaller than the ending address.
- End** Enter the ending address in hexadecimal. The value entered should be within the address range and larger than the starting address.

Now the worksheet displays the modified contents.

When you complete modifying the worksheet, right-click anywhere on the worksheet to end Modify mode.

Section 6: Deleting Data on the Worksheet

By choosing the **Operation | Delete** command or clicking the corresponding button on the Toolbar, Delete mode starts. (While in Delete mode, the Status Bar displays "Delete" on its right corner.)

There are two delete modes available, Delete a Phrase and Delete a File (Silence), depending on which cell you click to select.

1. When you click to select a Phrase number, all sound data files and Silence assigned to the selected phrase are deleted.

Phrase	Name	Data type	Level	Fs	Address	Time
00	4_OK	ADPCM 4	0dB	4.0KHz	00000000 - 00003040	5.025S
	<<S>>					0.100S
	16_OK	ADPCM 4	0dB	16.0KHz	00003042 - 0000CD48	5.025S

Figure 5-10: Deleting a Phrase

2. When you click to select a file name or Silence (<<S>>), the file or Silence selected is deleted.

Phrase	Name	Data type	Level	Fs	Address	Time
00	4_OK	ADPCM 4	0dB	4.0KHz	00000000 - 00003040	5.025S
	<<S>>					0.100S
	16_OK	ADPCM 4	0dB	16.0KHz	00003042 - 0000CD48	5.025S

Figure 5-11: Deleting a File or Silence

Now the worksheet displays the contents after deletion.

When you complete deleting required data, right-click anywhere on the worksheet to end Delete mode.

Section 7: Generating ROM Files

Choose the **Operation | ROM File** command or click the corresponding button on the Toolbar to generate ROM files for 9810.

First, the **File Save** dialog box opens. Enter the file name for the Hex. file to be created. (extension .hex)

Next, the **ROM Size** dialog box opens. Select an appropriate ROM size from the following list:

256 Kbit ROM / 512 Kbit ROM / 1 Mbit ROM / 2 Mbit ROM
4 Mbit ROM / 8 Mbit ROM

Click **OK** to start generating ROM files.

Note: If the selected ROM size is smaller than the total programming file size, the system automatically generates Hex files divided for programming across multiple ROM chips. When this happened, such Hex. File names should be “xxx1.hex”, “xxx2.hex”, “xxx3.hex” …….

In addition to a HEX. file (xxx.hex), an information file (xxx.inf) and, if so selected, a binary file (xxx.bin) are generated in ROM files generation process. Remember that ROM-file information file (.mkr file containing the Worksheet data) is not saved by the **Operation | ROM File** command. You need to save the file separately if you want to keep those data for future use. (See “Section 8: Opening and Saving a ROM-file Information File” later in this chapter.)

When any unregistered phrase exists, the program automatically assigns 4.0 kHz/40 samples silence data to this phrase.

The assigned data is listed in the ROM-file information file as follows:

silence rom area xxxxx- xxxx

Section 8: Opening and Saving a ROM-file Information File

Opening a ROM-File Information File

Choosing the **File | Open** command opens the **File Open** dialog box. Select a file name to open and display an existing ROM-file Information file (containing the Worksheet data).

You can also open a ROM-file Information file by selecting one of up to 4 files listed in the **Recently Used Files** list that appears below **File** Menu.

Saving a ROM-File Information File

File | Save As Save the current ROM-file Information file (containing the Worksheet data) under a new file name.

File | Save Save the current ROM-file Information file (containing the Worksheet data) under the file name “as is”.

The **Save File** dialog box opens, where you can select a desired drive and a Directory and enter a new file name, when required. (File extension .MKR)

Chapter 6: ROM WRITER CONTROLLER (VpRomw.exe)

The ROM Writer Controller window is a dialog-box only window.

The ROM Writer Controller is the control center of the attached **ROM Writer** when you program ROM or OTP chips using Hex. files you generated with the ROM File Editor.

Section 1: Initial Setup

When you run **VpRomw.exe** for the first time (or whenever after you have changed on-board Rotary SW value), you need to set up the matching value (identical to the Rotary SW value) in the **Setup** dialog box that can be opened by clicking the **Setup** button in the ROM Writer Control dialog box.

Section 2: The ROM Writer Control Dialog Box

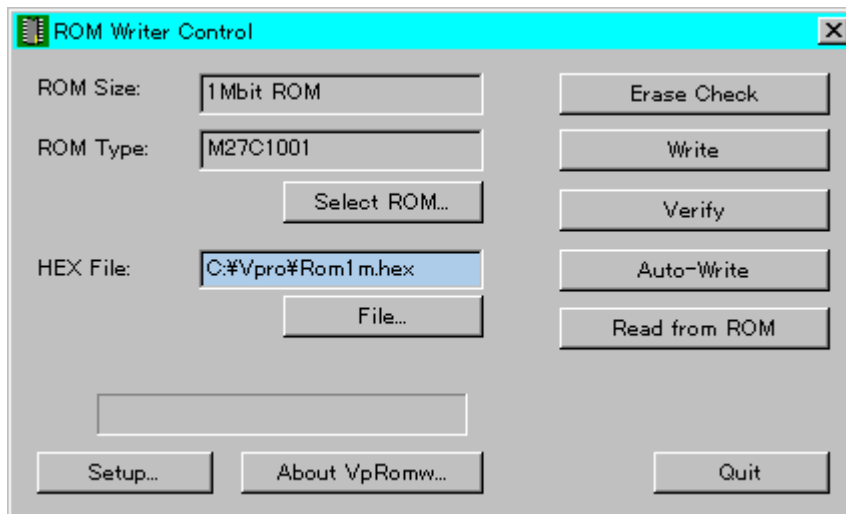


Figure 6-1: ROM Writer Control Dialog Box

The Dialog Box Position

The program automatically saves the last position of the dialog box when you exit from the program. So, whenever you start up VpRomw.exe, it automatically opens the dialog box at the same position in your last session.

[Warning!] When you launch the program, the following dialog box opens. If a memory chip is mounted on the socket of the ROM Writer, be sure to dismount it, then click OK. If you leave the chip mounted, the chip may be damaged.



Figure 6-2: Dismount Chip Alarm Dialog Box

Section 3: Selecting a ROM Type and Size

Click the **Select ROM** button to open the **Select ROM** dialog box.

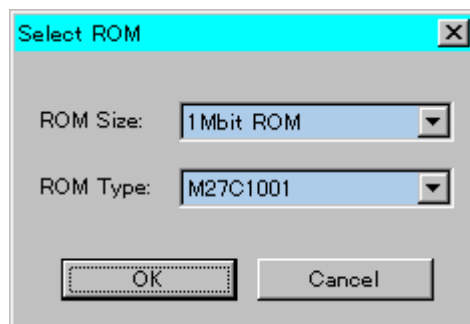


Figure 6-3: Select ROM Dialog Box

Select an appropriate ROM size from the **ROM Size** drop-down list box. The list includes the following ROM sizes;

256 Kbit ROM / 512 Kbit ROM / 1 Mbit ROM / 2 Mbit ROM /
4 Mbit ROM / 8 Mbit ROM / OKI OTP

Next, select a ROM type (the product code) from the **ROM Type** drop-down list box. Clicking **OK** determines the target device for programming.

The setup in this dialog box is automatically saved, so the next time you launch the program the setup remains valid.

[Warning!] When you click **OK** in the **Select ROM** dialog box, the following dialog box appears. If a memory chip is mounted onto the socket of the ROM Writer, be sure to dismount it, then click **OK**. If you leave the chip mounted, the chip may be damaged.



Figure 6-4: Dismount Chip Alarm Dialog Box

Section 4: Selecting a HEX. File

Enter a file name of the Intel HEX. format file in the **HEX File** text box. You can either type in the file name or click the **File...** button to open the **Open File** dialog box where you can select a HEX. file you want.

The file name entered in this text box is automatically saved, so the next time you launch the program the setup remains valid.

Section 5: Erase Checking

Click the **Erase Check** button to start erase check of the target device. The following dialog box appears to prompt you to mount a chip onto the socket.



Figure 6-5: Mount a Chip Prompting Dialog Box

Mount a ROM or OTP chip onto the socket of the attached ROM Writer. Be sure to place an microchip in the proper direction in accordance with the picture printed on the ROM Writer. When the microchip is mounted properly, click **OK**. Erase check (checking that the ROM or OTP chip has no programmed data) starts and the Progress Bar displays the progress of operation.

Section 6: Programming ROM

Now you are ready to start programming ROM. Click the **Write** button in the dialog box. Again, the **Mount a Chip** dialog box appears to prompt you to mount a chip onto the socket. When the microchip is mounted properly, click **OK**.

The ROM Writer starts writing (write the contents of the HEX. file to ROM/OTP) and the Progress Bar displays the progress of operation.

Section 7: Verifying Programmed Data

To start verifying programmed data, click the **Verify** button in the dialog box. Again, the **Mount a Chip** dialog box appears to prompt you to mount a chip onto the socket. When the microchip is mounted properly, click **OK**.

The ROM Writer starts verifying (compare the contents of the HEX. file with that of ROM/OTP) and the Progress Bar displays the progress of operation.

Section 8: Auto-Programming

Click the **Auto-Write** button in the dialog box. Again, the **Mount a Chip** dialog box appears to prompt you to mount a chip onto the socket. When the microchip is mounted properly, click **OK**.

The **Auto-Write** button allows you to automate a series of programming operations into a single continuous work-flow, starting from Erase Checking, then Writing HEX. data to ROM, and lastly Verifying programmed data by comparing with the source data.

Section 9: Loading Data from ROM

To load data from a ROM chip, click the **Read from ROM** button in the dialog box. The **Mount a Chip** dialog box appears to prompt you to mount a chip onto the socket. When the microchip is mounted properly, click **OK**.

The ROM Writer starts loading ROM data (read out the contents of ROM/OTP and write to the HEX. file specified) and the Progress Bar displays the progress of operation.

[Warning!] Before you start this operation, you need to specify the HEX. file name to which loaded data is to be stored. If the file name you specified already exists, such HEX. file is overwritten by loaded data.

Section 10: Checking Version Number

To display the **Version/Copyright** dialog box for checking the version number of VpRomw.exe, click the **About VpRomw...** button in the dialog box.

Section 11: Quitting ROM Writer Controller

To quit the ROM Writer Controller, click the **Quit** button in the dialog box. The dialog box closes to end the program.

Section 12: Programming MSM66P54/P56 in SOP Package

An optional adapter socket (not included in this package) is required to program MSM66P54 or MSM66P56 in SOP package. Contact your AR-204 distributor for further details.

Appendix

1. File Formats

VOICEPRO2 / VOICEPRO

(Head of File)

PCM Data Counts	[4]	The value entered here is “n” because This example has PCM data No. 1 ~ n, As described below.
Version Number	[2]	The current version is “3”.
Sampling Frequency	[2]	This represents value from the actual sampling frequency divided by 100. e.g. 10.6 KHz → 106
ADPCM Bit Size	[2]	0...4-bit, 1...3-bit SBC Files: 0...16.0 Kbps, 1...12.6 Kbps, 2...10.0 Kbps
(Booked)	[8]	
File Type Flag	[2]	Bit 0...PCM Enable Flag Bit 1...ADPCM Enable Flag Bit 2...SBC Enable Flag (1...Enabled, 0...Disabled)
Mono / Stereo	[1]	0...Monaural, 1...Stereo
Sampling Frequency (Lower Digits)	[1]	Lower 2 digits of sampling frequency in Hz. (e.g. 25 where 11.025 KHz)
(Booked)	[106]	
PCM Data No. 1	[2]	PCM Data, 16-bit signed
		Stereo data: Left and Right samples alternately.
PCM Data No. n	[2]	
ADPCM Data No. 1	[1]	ADPCM (or SBC) Data
		ADPCM data: 2 data per Byte when 4-bit, 1 data per Byte when 5-bit or above
ADPCM Data No. n	[1]	

Note: 1. [] represents data size in Bytes.

2. Multi-byte data alignment in a file is little endian format (lower bit information

towards the head of the file).

ONSAKU

(Head of File)

PCM Data Counts	[4]	The value entered here is “n” because This example has PCM data No. 1 ~ n, as described below.
99	[2]	“99” in binary decimal.
Sampling Frequency	[2]	0...4.0 kHz, 1...5.3 kHz, 2...6.4 kHz 3...8.0 kHz, 4...10.6 kHz, 5...12.8 kHz 6...16.0 kHz, 7...21.2 kHz, 8...32.0 kHz 9... 6 kHz, 10...10.0 kHz, 11...12.0 kHz 12...14.0 kHz, 13...25.6 kHz
ADPCM Bit Size	[2]	0...4-bit, 1...3-bit
Version Number	[8]	
File Type Flag	[2]	Bit 0...PCM Enable Flag Bit 1...ADPCM Enable Flag (1...Enabled, 0...Disabled)
(Booked)	[108]	
PCM Data No. 1	[2]	Upper 4-bit: ADPCM data
		Lower 12-bit: PCM data
PCM Data No. n	[2]	PCM data: Straight binary unsigned

Note: 1. [] represents data size in Bytes.

3. Multi-byte data alignment in a file is little endian format (lower bit information towards the head of the file).

2. Error/Warning Messages

Error/Warning Message	Its likely cause/What to do
<p>Insufficient Memory Insufficient System resources</p>	<p>The program can't run properly due to insufficient system memory. Close other running programs to secure more free system memory, or add memory boards.</p>
<p>AR204 board isn't installed. PLL Unlock error A/D Reset error Hardware error (Can't Load .LCA files) Data Converter error Recording error Playing error Unable to play</p>	<p>The AR204 board fails to operate properly. The board's I/O address may conflict with other I/O addresses in your system. Change the value of the on-board rotary switch, and then set up the matching value in the Rotary SW field in the Setup dialog box (for further details see your manual).</p> <p>Or, it fails due to heavy background process for other running programs. Close other running programs. (A heavy background process may cause the board's failure because it doesn't make use of interrupt calls.)</p>
<p>LCA Files load error</p>	<p>Can't find .LCA files that are required for the AR204 to operate. Check that 5 .LCA files exist in the folder where you installed the VOICEPRO2 programs. If those 5 files don't exist, re-install your VOICEPRO2 programs. If those 5 files do exist and you still see this error message, then the path to the VOICEPRO2 program folder may include double-byte character strings (e.g. Japanese characters). Re-install your VOICEPRO2 programs so that the path to the folder would not include any double-byte character strings.</p>

Error/Warning Message	Likely Cause/What to Do
<p>File Open error File Read error File Write error</p>	<p>Failure in reading the file or writing the file. Check the following: whether the file is not collapsed, or whether your disk has enough free space, or whether the file name doesn't include illegal characters, or whether the file is attached with Write-prohibit attribute, or whether your directory tree is too deep.</p>
<p>Illegal Composite Playback Table File. xxxxxxx doesn't exist! xxxxxxx open error Can't open xxxxxxxx.PCM file. Error in the file xxx.mkr. <code=xx>. ROM Register File Read error.</p>	<p>Can't load files registered with this table file.</p> <p>Check that the table file is not collapsed. Or, check the contents of the table file and redo registering files</p>
<p>The sampling frequency is not supported. ONSAKU file format is not supported. The data type defined by ONSAKU is not supported.</p>	<p>VOICEPRO2 can't handle this PCM or WAV file as it was not created by VOICEPRO2, or the file may be collapsed. Re-create this PCM or WAV file. If you want to use ONSAKU format files in VOICEPRO2 programs other than VpMain.exe, you need to convert the files to VOICEPRO2 format in advance by opening and re-saving those files.</p>
<p>Undo fails.</p>	<p>Undo failure. Check that the system has enough free memory or the disk has enough free space.</p>
<p>Oversized Data! VpMain.exe aborts loading the file.</p>	<p>VpMain.exe aborts loading the PCM file because it is too large to be loaded.</p> <p>If you created the PCM file using this system, the current Memory Size setting is lower than before. Try again after increasing the Memory Size value in the Setup dialog box. (You need to restart your VOICEPRO2 after changing the value.)</p>

Error/Warning Message	Likely Cause/What to Do
Invalid value. Illegal Frequency Parameter Illegal Level Parameter Illegal Time Parameter Illegal Ratio Parameter	Invalid value entered in VpMain.exe where you were prompted to enter an value. Carefully read the message and check the range for the value displayed in the dialog box, and enter a valid value.
Too many files on Register	In VpComb.exe, you attempted to register more than 30 PCM files in vertical direction. You can register up to 30 files.
Illegal operation (Invalid selection)	In VpComb.exe, you attempted to select a invalid cell or index. Try again. See your manual for further detail on this operation.
Oversized data for playback!	In VpComb.exe, The total PCM data size of the flagged files (for playback) is oversized Try again after decreasing the number of the flagged files or increasing the Memory Size value in the Setup dialog box. (You need to restart your VOICEPRO2 after changing the value.)
Too many sequences.	In VpRomf.exe, you attempted to register more than 8 sequences in the Phrase Control Register. You can register up to 8 sequences.
Invalid Information File! The selected file is NOT for MSM6388/MSM6588.	In VpRomf.exe, you attempted to generate Control ROM by using the Operation Control ROM menu command, but the selected information file was not for MSM6388/MSM6588. Re-select a right file and try again.
Unknown Serial ROM. Unknown Oscillator. Unknown Unit Size. Unknown Oscillation frequency.	In VpRomf.exe, some options were not properly set up or left undefined. Carefully read the message and check the range for the value displayed in the dialog box, and enter a valid value.

Error/Warning Message	Its likely cause/What to do
<p>No Phrase Control Register Defined! Do you want the VOICEPRO2 to create the Phrase Control Register now?</p>	<p>In VpRomf.exe, you attempted to generate ROM files for MSM9831 before defining the Phrase Control Register. When your target device is MSM9831, you need to define the Phrase Control Register. Select Yes to let the system automatically generate the register, or redo registering in the Phrase Control Register</p>
<p>Oversized Data! Warning! Data size exceeds memory capacity.</p>	<p>In VpRomf.exe, you attempted to register files that exceeds your target device max. capacity. Readjust your total file size or delete some files so that the total size fits in your target device capacity.</p>
<p>Invalid frequency value! Invalid level value! Invalid silence time value!</p>	<p>In VpRomf.exe, you entered invalid value. Carefully read the message and check the range for the value displayed in the dialog box, and enter a valid value.</p>
<p>Too many HEX files.</p>	<p>In VpRomf.exe, you attempted to generate HEX files that have to be divided into more than 35 files. Try again after decreasing the number of divided files by increasing the ROM's bit size or adjusting your file size by decreasing the number of registered files.</p>
<p>Undefined ROM Type error! Undefined HEX file error!</p>	<p>In VpRomw.exe, ROM type or HEX file name left undefined. Try again after selecting a ROM type or entering a HEX file name.</p>
<p>HEX File Read error!</p>	<p>In VpRomw.exe, the program could not retrieve the selected HEX file. Check the following; Whether the path to the file is correct, or whether the file is not collapsed, or whether your disk is fully functional, or whether the file name doesn't include illegal characters, or whether the file is attached with Write-prohibit attribute, or whether your directory tree is too deep.</p>

Error/Warning Message	Its likely cause/What to do
HEX File Write error!	<p>In VpRomw.exe, the program could not write to the specified HEX file. Check the following;</p> <p>Whether the path to the file is correct, or whether the file is not collapsed, or whether your disk is fully functional, or whether the file name doesn't include illegal characters, or whether the file is attached with Write-prohibit attribute, or whether your directory tree is too deep.</p>
Erase Check error! (Address = xxxx) ROM Writer error! (Address = xxxx) Verify error! (Address = xxxx) ROM Read error! (Address = xxxx)	<p>In VpRomw.exe, The process appearing in the message fails.</p> <p>Replace a ROM chip.</p> <p>If the error still exists, most likely causes are;</p> <ul style="list-style-type: none"> • I/O address conflict. • Unstable power supply from your computer to the ROM Writer due to its power supply capacity shortage. • Faulty ROM. • Faulty ROM Writer • Faulty ROM Writer cable. • Faulty AR204 board. • Faulty ISA slot.
Insufficient ADPCM samples! (<40 samples) Insufficient PCM samples! (<20 samples)	<p>In Vp9810.exe, you attempted to register a file that did not satisfy the minimum sampling requirement.</p> <p>For ADPCM, no less than 40 samples are required.</p> <p>For PCM, no less than 20 samples are required.</p>

Error/Warning Message	Its likely cause/What to do
<p>Start Address is larger than End Address. End Address exceeds the limit. Invalid Address error Invalid Level error Improper use of Silence in Phrase: xx! (Silence can't be longer than 124ms)</p>	<p>In Vp9810.exe, a value entered or selected is invalid.</p> <p>Carefully read the message and check the range for the value displayed in the dialog box, and enter a valid value.</p>
<p>No Sound Data File registered!</p>	<p>In Vp9810.exe, You attempted to generate ROM files with no sound data files registered.</p> <p>Register necessary files first, then try again.</p>
<p>Oversized Data!</p>	<p>In Vp9810.exe, you attempted to register data files which data size exceeds the maximum memory capacity of your target device.</p> <p>Adjust data size or delete a registered file so that the total data size will fit in the target memory size.</p>
<p>Improper use of Silence in Phrase: xx! (Can't start or end a phrase with Silence)</p>	<p>In Vp9810.exe, the Phrase No: xx starts or ends with Silence.</p> <p>You can only use Silence in between physical sound data. If this requirement is met, you can use multiple Silences.</p>