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Consumer Products Division

Tone Editor
User's Manual

Doc. # ST-68-R1-042594

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Table of Contents

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1.0 Summary

This program permits the display and editing of tone parameters using an SCSP connected to the SCSI port of an Apple Macintosh computer. This program handles the following seven operations.

- **File Management**
  Manages file tasks including file input/output and saving.

- **Editing**
  Performs data editing operations including undo, cut and paste, and insert.

- **Number Processing**
  Increases voice, layer, mixer, velocity, PEG, and PLFO values.

- **Window Operation**
  Opens/closes Mixer, Velocity, PEG, PLFO, FM, and MONITOR windows.

- **FM Processing**
  Updates all layers that have the same start and end notes as the selected layer.

- **Preferences**
  Displays the SCSI ID, downloads the SCSPBIN format, and displays voice data.

- **SCSI Operations**
  Handles SCSI operations on the Macintosh during I/O of tone data to the Macintosh from the SCSP through the SCSI port.

2.0   Terminology

- **SCSP Format**
  The file containing all data required for display on the Macintosh.

- **SCSPBIN Format**
  The file containing the minimum data required to play a sound on the SCSP.
  The data in this file is actually downloaded to the SCSP.

- **Voice**
  The tone. The number associated with this window is the same as the MIDI
  program change number.

- **Layer**
  The sound data. Multiple layers are combined to form one voice. With FM, each
  module and each carrier is treated as a layer.

- **Wave**
 One type of sound data; used in reference to the PCM data of an actual sound.
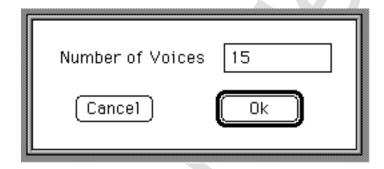
3.0 Tutorial
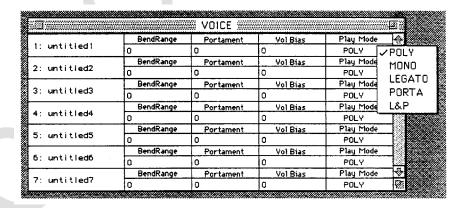
This tutorial describes the minimum operating procedure required to play a sound.

Voice Window Display

1. Start the tone editor.
    The tone editor first checks for the presence of the SCSP board in one of the Macintosh slots; if the board is not found, the program quits.

2. Select New from the File menu.
    A dialog box requesting the number of voices will be displayed.

3. Enter desired number of voices. In this example, enter "1". The Voice window will be displayed.

Note that only one line is displayed at this time because the specified number of voices was "1". Also note that the number of voices can be changed later.

Operation Example

- **Voice Window Setup Items**

  The Voice window setup items are:
  - Voice name
  - Bend range
  - Portamento time
 - Volume bias
  - Play mode
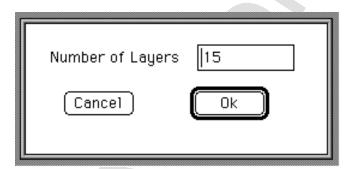
  Except for play mode, these item settings can be changed by clicking the number. For play mode, a pop-up menu is displayed.

  1. **Enter the Number of Voices**

     Double-click the voice name to display a dialog box enabling the voice name to be changed. The default filename for the first new file created is "untitled0". Double-click the name to display the dialog box, and enter any desired name. Managing the voices later may be simplified by assigning a name appropriate to the tone you create. Click the **OK** button to accept the name change and close the dialog box. The new name just entered should be displayed in the voice name area. The next step is to create the tone.

  2. **Set the Number of Layers**

     Double-click the number before the voice name to display the dialog box for setting the number of layers.

   Enter the number of layers as done for the number of voices. Enter "1" now. The Layer window will be displayed.

     Again, only one line will be displayed because there is only one layer; the number of layers can be changed later.

6
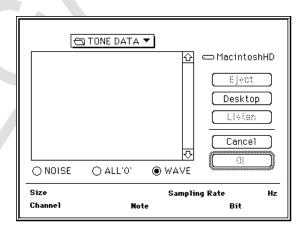
3. Operate the Layer Window

The Layer window functions as the mixer, making it possible to adjust the output and set the channel and level input to the effector. To determine the minimum operation required to output a sound, set the output to maximum and decide the range of the note of the MIDI device playing the sound. Click the END number. The insertion mark will be displayed. Now, enter "127". Next, move the DirectLevel slide bar all the way to the right. The number beside the slide bar should be 7. Enter a name for the layer. The procedure is the same as entering the voice name. This completes the output settings. All that remains is to set the detailed parameters. To do this, double-click the number beside the layer name. The Slot window will be displayed.


4. Operate the Slot Window

The parameters are divided into individual blocks, each with its own special window. First, only the minimum parameters required to play a sound will be set at this time. To display the wave data (AIFF data) input window, double-click the blank rectangle in the middle.

Select the AIFF file and click **OK**. With the Slot window still displayed, the AIFF filename will appear in the previously empty rectangle. If there is a loop in the selected wave data, double-click the Slot window inverter (small triangle with a circle around it). The Inverter window will be displayed.
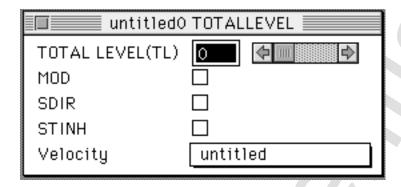
```
┌──────────────────────────────────────────┐
│ ▣ ═══════════ untitled0 INVERT ═══════════ │
├──────────────────────────────────────────┤
│ SIGNFRAGINVERT(SPCTL1)  ☐                 │
│ DATAINVERT(SPCTL0)      ☐                 │
│ LOOP SELECT(LPCTL)      ┌──────────────┐  │
│                         │ OFF          │  │
│ BASE NOTE               ┌───┐ ◁▥▥▥░░░▷  │
│                         │ 0 │           │
│ FINETUNE                  0   ◁░░░▥░░░▷  │
│ SAOFSET                                   │
└──────────────────────────────────────────┘
```

Select the loop mode from the LOOP SELECT pop-up menu. Next, double-click the picture of a mountain in the Slot window. The EG window will be displayed. Move the AR and RR slide bars all the way to the right ("31" will be displayed).

```
┌──────────────────────────────────────────┐
│ ▣ ═══════════ untitled0 EG ═══════════════ │
├──────────────────────────────────────────┤
│ SORHOLD(EGHOLD)        ☐                  │
│ ATTACK RATE(AR)        31   ◁░░░░▥░▷       │
│ DECAY RATE1(D1R)       0    ◁▥░░░░░▷       │
│ DECAY RATE2(D2R)       0    ◁▥░░░░░▷       │
│ DECAY LEVEL(DL)        0    ◁░▥░░░░▷       │
│ RELEASE RATE(RR)       31   ◁░░░░░▥▷       │
│ KEY RATE SCALE(KRS)    0    ◁░▥░░░░▷       │
│ LPSLNK                 ☐                   │
│ ┌──────────────────────────────────────┐  │
│ │                                      │  │
│ │                                      │  │
│ │                                      │  │
│ └──────────────────────────────────────┘  │
└──────────────────────────────────────────┘
```
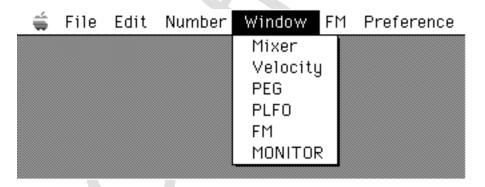
For the final setting, double-click the TOTAL LEVEL in the Slot window. The TOTAL LEVEL window will be displayed.

```
┌──────────────────────────────────────────────┐
│ ▤□▤▤▤▤  untitled0 TOTALLEVEL ▤▤▤            │
├──────────────────────────────────────────────┤
│  TOTAL LEVEL(TL)    ┌─────┐   ┌──┬──────┬──┐ │
│                     │ 0   │   │⇦ │▥▥▥   │⇨ │ │
│  MOD                └─────┘   └──┴──────┴──┘ │
│  SDIR               ☐                         │
│  STINH              ☐                         │
│                     ☐                         │
│  Velocity           ┌─────────────────────┐  │
│                     │ untitled            │  │
│                     └─────────────────────┘  │
└──────────────────────────────────────────────┘
```
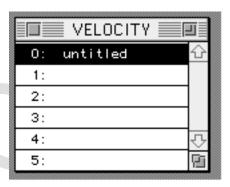
The velocity is selected from a pop-up menu, but is still not set.
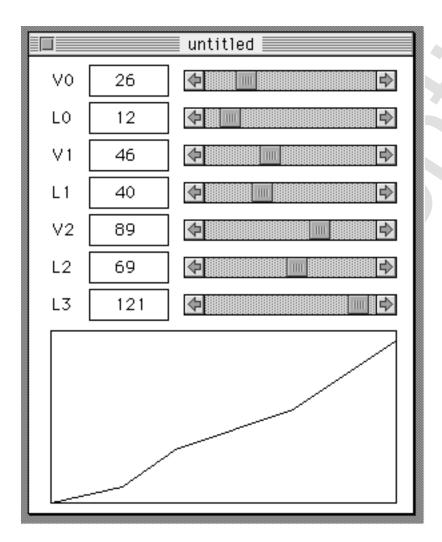
5. Set the Velocity
To set the velocity, first close the TOTAL LEVEL window. Select Velocity from the Window menu.

```
  🍎   File   Edit   Number  │ Window │ FM   Preference
                            ├────────┤
                            │ Mixer  │
                            │ Velocity │
                            │ PEG    │
                            │ PLFO   │
                            │ FM     │
                            │ MONITOR │
                            └────────┘
```

The Velocity window will be displayed.

```
┌────────────────────┐
│ ▤□▤  VELOCITY ▤▤回▤ │
├────────────────────┤
│ 0:  untitled    ⇧  │
├────────────────────┤
│ 1:                 │
├────────────────────┤
│ 2:                 │
├────────────────────┤
│ 3:                 │
├────────────────────┤
│ 4:              ⇩  │
├────────────────────┤
│ 5:              回  │
└────────────────────┘
```

Double-click "untitled" to enter a name, and double-click the number beside the name to display the Velocity Edit window.

Double-click number 0 to display the following.

Move the L0, L1, L2, and L3 slide bars all the way to the right. Close the Velocity Edit and Velocity windows to unclutter the screen. Now display the TOTAL LEVEL window again. The Velocity pop-up menu should now contain the name just assigned. If more than one velocity name was entered using the Velocity window, the other names can be selected from the pop-up menu.

6. **Play a Sound**
A sound can now be played. Try playing the MIDI device connected to the SCSP board with program change 0.

4.0 File Descriptions

The following files are used with the Tone Editor.

- **SCSP Data Files**
  Macintosh files containing detailed information. See the Appendix for details.

- **SCSPBIN Data Files**
  Files containing only the data that is actually loaded into 68000 memory and the header data required to create Macintosh files. See the Appendix for details.

- **Wave Edit Data Files**
  AIFF format files created with the Save operation.

- **Alchemy Files**
  AIFF format files created by Alchemy.

- **Sound Designer Files**
  AIFF format files created by Sound Designer.

5.0 Menu Summary

This chapter introduces the menu bar, pull-down menus, and Master Volume window of the Tone Editor.
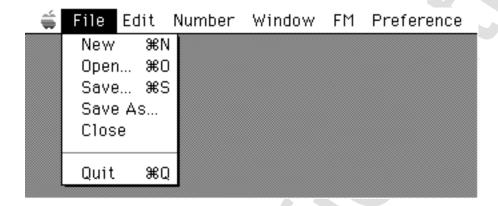
Menu Bar

The menu bar contains the following menus.
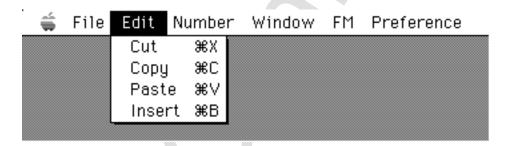
Pull-down Menus
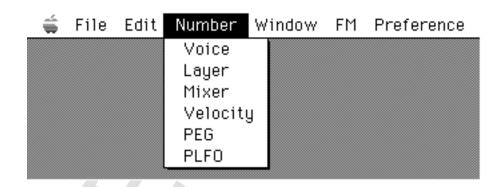
- **Apple Menu**
  This is the standard Apple menu.

- **File Menu**


- **Edit Menu**

- **Number Menu**

12
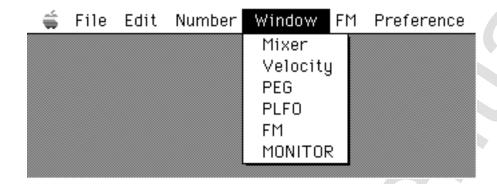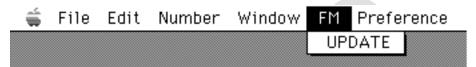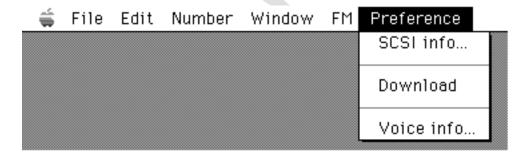
• **Window Menu**

• **FM Menu**
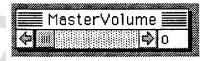
• **Preference Menu**

Master Volume Window

The Master Volume window is always displayed. The master volume can be changed while the master volume setting is displayed.

6.0 Function Details

This chapter explains the function of each menu item.

File Menu
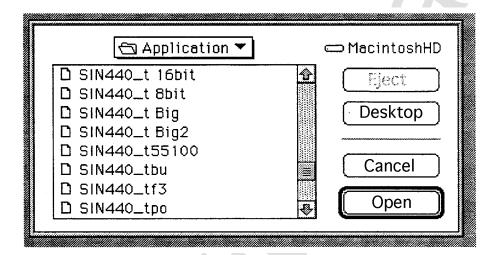
- **New**
  Opens a new tone library. To open a new tone library, open the Number of Voices window, set the number of voices, and click **OK**.
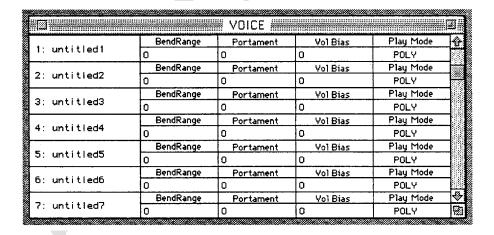
- **Open**
 Opens an existing tone format file. Selecting "Open" displays the following screen:
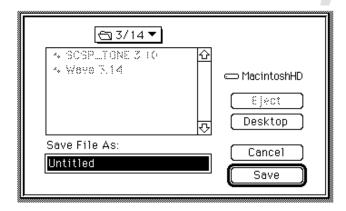
The screen lists only the SCSP format files. Only the files displayed in the screen can be loaded. Double-click a filename to open the Voice window (see page 26).

VOICE				
1: untitled1	BendRange	Portament	Vol Bias	Play Mode
	0	0	0	POLY
2: untitled2	BendRange	Portament	Vol Bias	Play Mode
	0	0	0	POLY
3: untitled3	BendRange	Portament	Vol Bias	Play Mode
	0	0	0	POLY
4: untitled4	BendRange	Portament	Vol Bias	Play Mode
	0	0	0	POLY
5: untitled5	BendRange	Portament	Vol Bias	Play Mode
	0	0	0	POLY
6: untitled6	BendRange	Portament	Vol Bias	Play Mode
	0	0	0	POLY
7: untitled7	BendRange	Portament	Vol Bias	Play Mode
	0	0	0	POLY

(Play Mode menu: ✓POLY, MONO, LEGATO, PORTA, L&P)
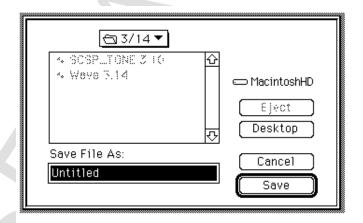
- **Save**

 Saves the SCSP file currently in use.

- **Save As**

  Saves the SCSP file currently in use under a different filename (this allows the user to change the filename). The following screen opens.

Below is one of the buttons used in this window.

- Save
Displays the Replace dialog, and saves the file if the Replace button is pressed.

**Replace existing
"Untitled-1" ?**

Cancel   Replace

• **Close**
Closes the file currently in use. An alert is displayed if the user attempts to close the file without saving it after changes have been made.
Windows beneath the active window are also closed automatically.
When the Slot window is closed, all Parameter windows are also closed.
When the Layer window is closed, the Slot window is also closed.
When the Voice window is closed, an alert is displayed if changes have been made.

⚠ Save changes to File Name
?

Save

Discard   Cancel

The following buttons are used in this window.

**- Save**
Saves the file.

- Discard
Closes the window without saving the changes.

- Cancel
Returns to the Edit window.

- **Quit**
  Terminates the Tone Editor and returns to the Finder. If any windows are open, an alert is displayed.

```
┌─────────────────────────────────┐
│  ┌───────────────────────────┐  │
│  │                           │  │
│  │  Replace existing         │  │
│  │  "Untitled-1" ?           │  │
│  │  ┌─────────┐   ┌────────┐ │  │
│  │  │ Cancel  │   │Replace │ │  │
│  │  └─────────┘   └────────┘ │  │
│  │                           │  │
│  └───────────────────────────┘  │
└─────────────────────────────────┘
```

Edit Menu

- **Cut**
  When in the Layer window, cuts the layer from the format to the clipboard.
  When in the Voice window, cuts the layer associated with the voice chunk, and saves the voice chunk data and the associated layer chunk data to the clipboard.
  When in the PEG, Velocity, or PLFO windows, cuts the data type of the window from the format to the clipboard.

- **Copy**
  When in the Layer window, copies the layer chunk data to the clipboard.
  When in the Voice window, copies the voice chunk data and the associated layer chunk data to the clipboard.   When in the PEG, Velocity, or PLFO window, copies the data type of the window to the clipboard.

- **Paste**
  Pastes the data from the clipboard. The clipboard data must match the data type of the window being pasted into. Paste operations are overwrite only.

- **Insert**
 Adds one more voice, layer, or mixer.
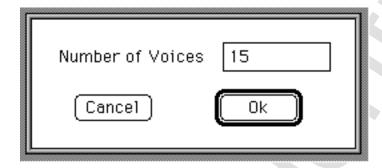
Number Menu

Number menu options are used to increase the corresponding value.
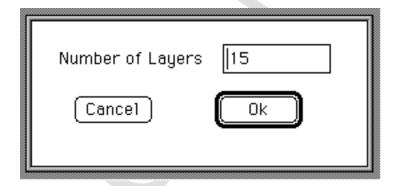
• **Voice**
  Sets the number of voices. The following dialog box opens.

  Number of Voices [15]

  [Cancel] [Ok]

  It is not possible to set a value less than the current number of voices.

• **Layer**
  Sets the number of layers. The following dialog box opens.

  Number of Layers [15]

  [Cancel] [Ok]

  It is not possible to set a value less than the current number of layers.
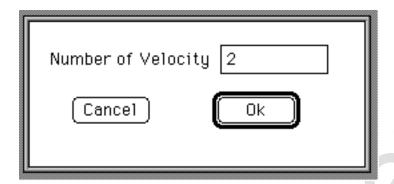
• **Mixer**
  Sets the number of mixers. The following dialog box opens.

  Number of Mixers [15]

  [Cancel] [Ok]

  It is not possible to set a value less than the current number of mixers.

- **Velocity**
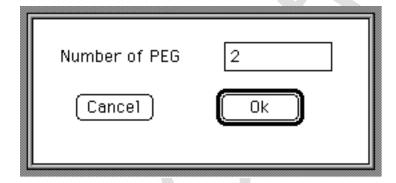
  Sets the velocity number. The following dialog box opens.

  Number of Velocity [2]

  Cancel   Ok

  It is not possible to set a value less than the current velocity setting.

- **PEG**
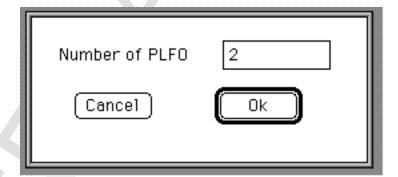
  Sets the PEG number. The following dialog box opens.

  Number of PEG [2]

  Cancel   Ok

  It is not possible to set a value less than the current PEG setting.

- **PLFO**

  Sets the PLFO number. The following dialog box opens.

  Number of PLFO [2]

  Cancel   Ok

 It is not possible to set a value less than the current PLFO setting.

Window Menu

Each Window menu item opens the corresponding closed window or closes the corresponding open window.
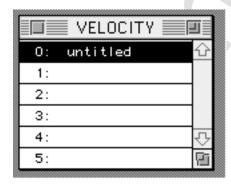
- **Mixer**
  Opens/closes the Mixer window.

```
┌──────────────────────────┐
│ ▣ ═══ MIXER ═══      ▣   │
├──────────────────────────┤
│  0:  MIXER0          ⇧   │
│  1:  MIXER1              │
│  2:  MIXER2              │
│  3:  MIXER3              │
│  4:  MIXER4          ⇩   │
│  5:  MIXER5          ▣   │
└──────────────────────────┘
```

For information on the Mixer window, see page 38.
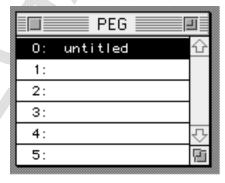
- **Velocity**
  Opens/closes the Velocity window.

```
┌──────────────────────────┐
│ ▣ ═══ VELOCITY ═══  ▣   │
├──────────────────────────┤
│  0:  untitled       ⇧   │
│  1:                     │
│  2:                     │
│  3:                     │
│  4:                 ⇩   │
│  5:                 ▣   │
└──────────────────────────┘
```

For information on the Velocity window, see page 39.
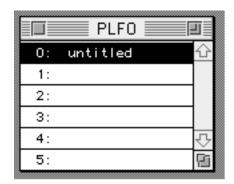
- **PEG**
  Opens/closes the PEG window.

```
┌──────────────────────────┐
│ ▣ ═══ PEG ═══       ▣   │
├──────────────────────────┤
│  0:  untitled       ⇧   │
│  1:                     │
│  2:                     │
│  3:                     │
│  4:                 ⇩   │
│  5:                 ▣   │
└──────────────────────────┘
```

For information on the PEG window, see page 41.

- **PLFO**
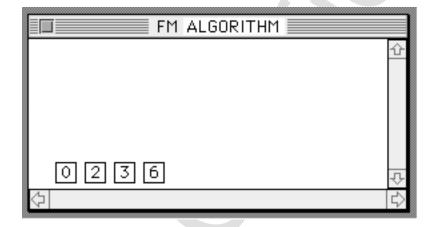
  Opens/closes the PLFO window.

For information on the PLFO window, see page 43.

- **FM**

  Opens/closes the FM Connection window.
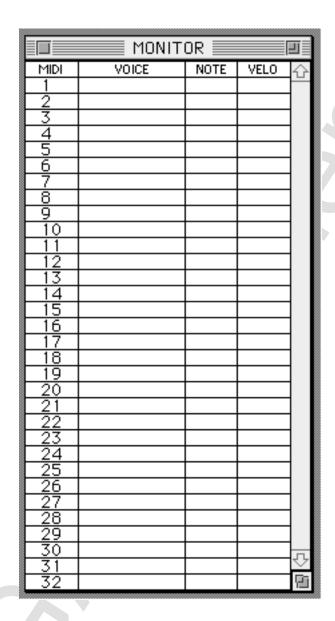
For information on the FM Connection window, see page 45.

- **MONITOR**
  Opens/closes the MONITOR window.

MIDI	VOICE	NOTE	VELO
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			
16			
17			
18			
19			
20			
21			
22			
23			
24			
25			
26			
27			
28			
29			
30			
31			
32			

For information on the MONITOR window, see page 46.

FM Menu

- **UPDATE**
  Updates layers that have the same start and end notes as the layer selected in the Layer window.

Preference Menu

- **SCSI Address**
  Displays the current SCSI ID.

```
SCSI ID:    6

     Exit
```
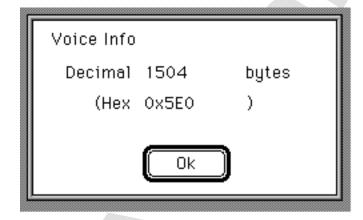
- **Download**
  Downloads the SCSPBIN format for tone data to the SCSP board.

- **Voice Info**
 Displays the total number of bytes in the tone data being edited.

```
Voice Info

   Decimal 1504      bytes

      (Hex  0x5E0      )

         Ok
```
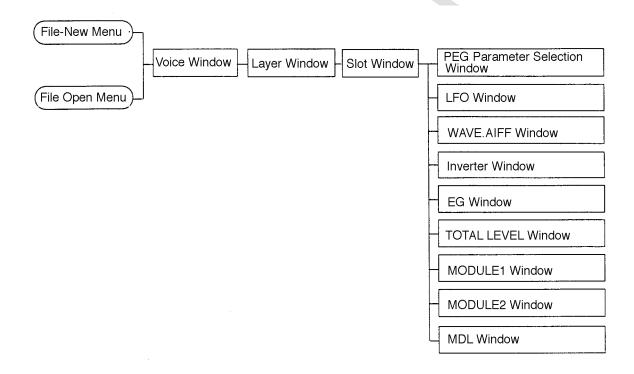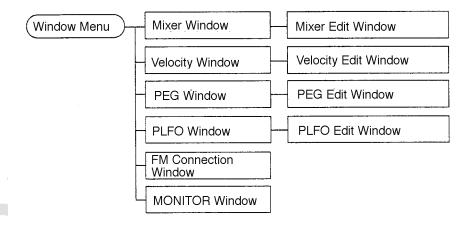
7.0 Windows

This chapter explains the parameters that can be set for the functions of each window.

Window Relationships

The window relationships are shown below.

```
( File-New Menu )─┐
                  ├─[ Voice Window ]─[ Layer Window ]─[ Slot Window ]─┬─[ PEG Parameter Selection Window ]
( File Open Menu )─┘                                                   ├─[ LFO Window ]
                                                                       ├─[ WAVE.AIFF Window ]
                                                                       ├─[ Inverter Window ]
                                                                       ├─[ EG Window ]
                                                                       ├─[ TOTAL LEVEL Window ]
                                                                       ├─[ MODULE1 Window ]
                                                                       ├─[ MODULE2 Window ]
                                                                       └─[ MDL Window ]
```

```
( Window Menu )─┬─[ Mixer Window ]──────[ Mixer Edit Window ]
                ├─[ Velocity Window ]───[ Velocity Edit Window ]
                ├─[ PEG Window ]────────[ PEG Edit Window ]
                ├─[ PLFO Window ]───────[ PLFO Edit Window ]
                ├─[ FM Connection Window ]
                └─[ MONITOR Window ]
```

Voice Window

VOICE				
1: untitled1	BendRange	Portament	Vol Bias	Play Mode
	0	0	0	POLY
2: untitled2	BendRange	Portament	Vol Bias	Play Mode
	0	0	0	POLY
3: untitled3	BendRange	Portament	Vol Bias	Play Mode
	0	0	0	POLY
4: untitled4	BendRange	Portament	Vol Bias	Play Mode
	0	0	0	POLY
5: untitled5	BendRange	Portament	Vol Bias	Play Mode
	0	0	0	POLY
6: untitled6	BendRange	Portament	Vol Bias	Play Mode
	0	0	0	POLY
7: untitled7	BendRange	Portament	Vol Bias	Play Mode
	0	0	0	POLY

The Voice window changes the voice monitor and parameters.
The following parameters can be set from this window.

Tone Name
Displays the tone name. Double-click the name to change it; a dialog box will be displayed.

Name : untitled0

Cancel   OK

Double-click the number beside the name to open the Layer window (see page 27).

BendRange
Sets the adjustable range of the BendRange value. Values from 0 to 13 can be set.
This value expresses the change in pitch as a MIDI note when the pitch Bend wheel is moved to the maximum setting.

Portamento
Sets the portamento time. Values ranging from 0 to 127 are permitted.
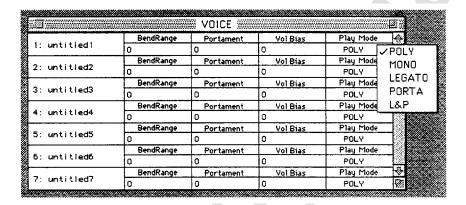
VOLBias

Sets the volume bias. Values ranging from -128 to 127 are permitted.

MODE
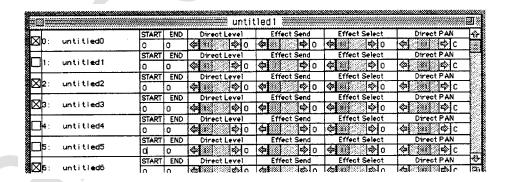
Displays the play mode.

POLY, MONO, LEGATO, PORTA, L&P mode selections can be made from the pop-up menu. PORTA is an abbreviation for PORTAMENTO. L&P is an abbreviation for LEGATO and PORTAMENTO.

Layer Wndow

The Layer window is opened by double-clicking the voice name.   Layer parameters can be changed from this window.
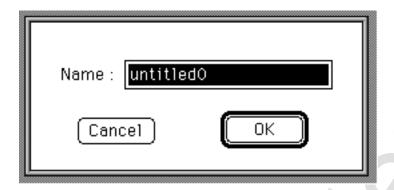
The following parameters can be set from this window.

FM Connection Carrier Check Box

Base slot used when ON (selected) (if plural boards are installed). This is used in the FM Connection window. For further details, see the FM Connection window section.

Layer Name
Displays the tone name. Double-click the name to change it; a dialog box will be displayed.

```
Name : untitled0

       Cancel          OK
```

Double-click the number to the left of the name to open the Slot window (see page 29).

START
Sets the start note. Values ranging from 0 to 127 are permitted. Also sets which MIDI note is played in this layer. When other MIDI notes come between the START and END notes, the sound from this layer is played.

END
Sets the end note. Values ranging from 0 to 127 are permitted. Also sets which MIDI note is played in this layer. When other MIDI notes come between the START and END notes, the sound from this layer is played.

Direct Level
Sets a direct send. Values ranging from 0 to 7 are permitted; 7 sets the maximum output level.

Effect Send
Sets an effect send. Values ranging from 0 to 7 are permitted; 7 sets the maximum output level.

Effect Select
Sets the effect input channel. Values ranging from 0 to 15 are permitted.
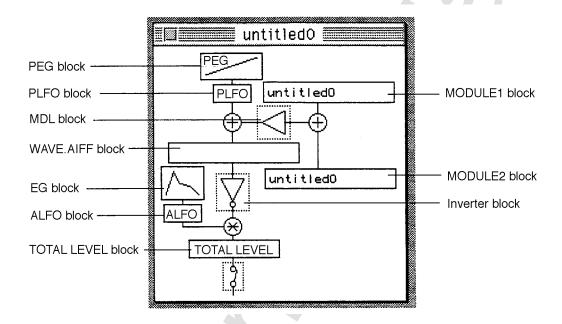
Direct PAN
Sets PAN. Values ranging from R16 to C to L16 are permitted.

Slot Window

This window is opened by double-clicking the number in front of the layer name of the Layer window.
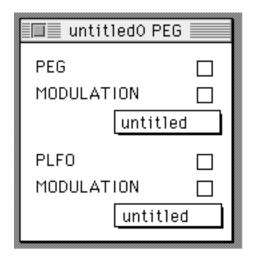
Multiple Slot windows can be displayed simultaneously. The Parameter window applies to all Slot windows, and only one Parameter window can be displayed. SCSP register parameters can be edited, and the Parameter window can be opened.

Double-click the corresponding icons in the Slot window to open the parameter (PEG), PLFO, ALFO, WAVE.AIFF, inverter, EG, SLOTOUT, MODULE1, MODULE2, and MDL blocks. The switches toggle on/off with each click. WAVE.AIFF displays the AIFF filename used in that slot. MODULE 1, 2 display the layer name, and are disabled when the LEVEL (MDL) is 0 (see page 37).

If the Slot window is moved while holding the shift key depressed, the Parameter window opened from that Slot window also moves.

PEG Parameter Selection Window

This window is opened by double-clicking the PEG block in the Slot window.

The Parameter window allows selection of the parameters set from the PEG and PLFO windows using a pop-up menu.

PEG (PEON)
Sets PEG on/off.

MODULATION (MWE)
Turns PEG adjustment using the MODULATION wheel on/off.

PEG Pop-up Menu
Enables selection of the parameters created in the PEG window.

PLFO (PLON)
Sets PLFO on/off.

MODULATION (MWL)
Turns PLFO adjustment using the MODULATION wheel on/off.
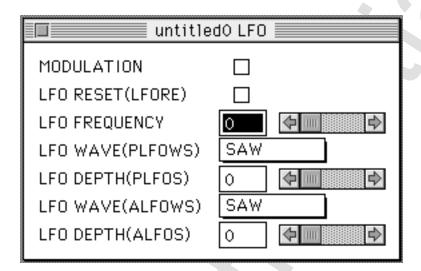
PLFO Pop-up Menu
Enables selection of the parameters created in the PLFO window.

LFO Window

This window is opened by double-clicking the PLFO or ALFO block in the Slot window.

Parameters relating to hardware LFO can be edited from the LFO window. The following parameters can be set from this window.

MODULATION
Turns the hardware LFO bit on/off.

LFO RESET (LFORE)
Resets LFO each time a note is turned on.

LFO FREQUENCY (LFOF)
Sets the LFO oscillation frequency. Values ranging from 0 to 31 are permitted.

LFO WAVE (PLFOWS)
Sets the shape of the PLFO wave. Available selections are SAW, SQUARE, TRI-ANGLE, and NOISE.

LFO DEPTH (PLFOS)
Sets the effect on LFO pitch. Values ranging from 0 to 7 are permitted.
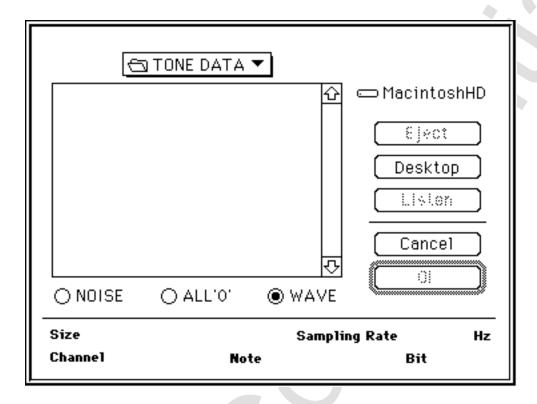
LFO WAVE (ALFOWS)
Sets the shape of the ALFO wave. Available selections are SAW, SQUARE, TRI-ANGLE, and NOISE.

LFO DEPTH (ALFOS)
Sets the effect of mixing on LFO EG. Values ranging from 0 to 7 are permitted.

WAVE.AIFF Window

This window is opened by double clicking the WAVE.AIFF block (normally a blank rectangle) in the Slot window.

This window displays the details of the wave to be selected. When the OK button in this window is clicked, the loop start address (LSA) of the selected AIFF file, the loop end address (LEA) of the sound data, and the parameters set with the radio buttons are written in the SCSP format. The following parameters can be set from this window.

NOIS
Uses internally generated data (noise) as the sound input data.

ALL "0"
Uses internally generated data (ALL "0") as the sound input data.

WAVE
Displays the Layer dialog when OK is pressed.

Listen
Plays the selected file through the Macintosh speaker.
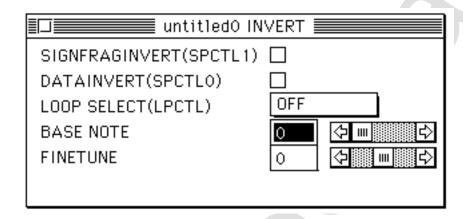
OK
Reads the wave.

Inverter Window

This window is opened by double-clicking the inverter block in the Slot window.

This window enables bit inversion of the sound input data, and editing of the loop type, layer sample note, and FINETUNE parameters.   The following parameters can be set from this window.

SIGNFRAGINVERT (SPCTL1)
Inverts the sign bit of the sound input data.

DATAINVERT (SPCTL0)
Inverts all bits other than the sign bit of the sound input data.

LOOP SELECT
Selects the loop type from the following options:
- FORWARD
- REVERSE
- ALTERNATE
- OFF

BASE NOTE
Sets the base note. Values ranging from 0 to 127 are permitted.
When an AIFF file is loaded, the BASE NOTE value in the AIFF file is automatically loaded to set this parameter.
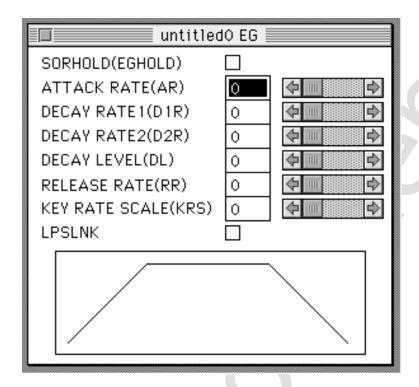
FINETUNE
Sets the fine tune parameter. Values ranging from -64 to 63 are permitted.
When an AIFF file is loaded, the FINETUNE value in the AIFF file is automatically loaded to set this parameter.

EG Window

This window is opened by double-clicking the EG block (where the picture of a mountain is displayed) in the Slot window.

```
┌─────────────────────────────────────────┐
│ ▤▢▤▤▤▤▤  untitled0 EG  ▤▤▤▤▤▤▤ │
├─────────────────────────────────────────┤
│ SORHOLD(EGHOLD)        □                 │
│ ATTACK RATE(AR)       │0│  ⇦▥░░░⇨       │
│ DECAY RATE1(D1R)      │0│  ⇦▥░░░⇨       │
│ DECAY RATE2(D2R)      │0│  ⇦▥░░░⇨       │
│ DECAY LEVEL(DL)       │0│  ⇦▥░░░⇨       │
│ RELEASE RATE(RR)      │0│  ⇦▥░░░⇨       │
│ KEY RATE SCALE(KRS)   │0│  ⇦▥░░░⇨       │
│ LPSLNK                 □                 │
│   ┌─────────────────────────────────┐   │
│   │        _____              │   │
│   │       /            \             │   │
│   │      /              \            │   │
│   │     /                \           │   │
│   │    /                  \          │   │
│   └─────────────────────────────────┘   │
└─────────────────────────────────────────┘
```

This window enables editing EG-related parameters. Parameters can also be changed by dragging EG. The following parameters can be set from this window.

SORHOLD (EGHOLD)
- ON
  Holds an attack value of "000."
- OFF
  The attack value varies with the attack rate (AR).

ATTACK RATE (AR)
Sets the change in EG in the attack state. Values ranging from 0 to 31 are permitted.

DECAY RATE1 (D1R)
Sets the change in EG in the decay 1 state. Values ranging from 0 to 31 are permitted.

DECAY RATE2 (D2R)
Sets the change in EG in the decay 2 state. Values ranging from 0 to 31 are permitted.

DECAY LEVEL (DL)
Sets the attenuation level for EG transition from decay 1 to decay 2. Values ranging from 0 to 31 are permitted.

RELEASE RATE (RR)
Sets the change in EG in the release state. Values ranging from 0 to 31 are permitted.
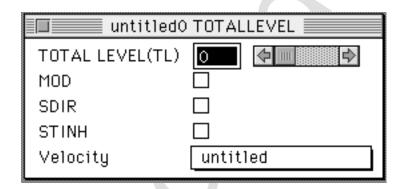
KEY RATE SCALE (KRS)
Sets the amount of EG key rate scaling. Values ranging from 0 to 15 are permitted.

LPSLNK
If the address of the loaded sound slot input data exceeds the loop start address, EG changes to decay 1 rather than EG = "000."

TOTAL LEVEL Window

This window is opened by double-clicking the TOTAL LEVEL block in the Slot window.

This window enables editing of the volume and pitch parameter. The following parameters can be set from this window.

TOTAL LEVEL (LFORE)
Sets the attenuation level applied to the EG value. Values ranging from 0 to 127 are permitted.

MOD
Uses the sound data as the modulation signal in DSP.

SDIR
Outputs the sound data without multiplying EG, TL (volume), and ALFO.
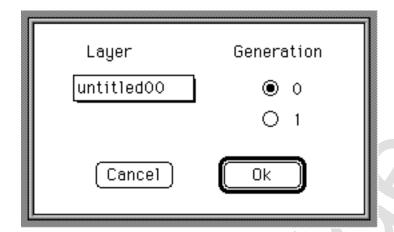
STINH
Prohibits writing the slot output to the data buffer.

Velocity
Selects the velocity.

MODULE1 Wndow

This window is opened by double-clicking the MODULE1 block in the Slot window.

This window allows the source to be set as modulation input X. Modulation X of the selected layer is set to the selected generation. The following parameters can be set from this window.

**LAYER Pop-up Menu**
Displays the layer name.
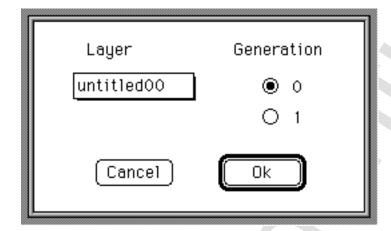
Generation
- 0
  Latest data
- 1
  Data from the last generation

MODULE 2 Window

This window is opened by double-clicking the MODULE2 block in the Slot window.


This window allows the source to be set as modulation input Y. Modulation Y of the selected layer is set to the selected generation. The following parameters can be set from this window.

LAYER Pop-up Menu
Displays the layer name.

Generation
- 0

  Latest data
- 1

  Data from the last generation

MDL Window

This window is opened by double-clicking the MDL block in the Slot window.
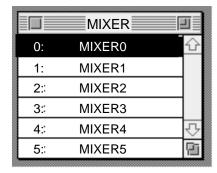
The following parameter can be set from this window.
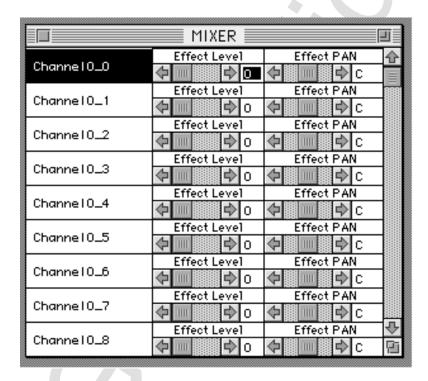
LEVEL (MDL)
Sets the effect (degree of modulation) on modulation of the modulation input source. Values ranging from 0 to 15 are permitted.

Mixer Window

```
┌─────────────────────────────┐
│ ▣═══════ MIXER ═══════ ▣ │
├─────────────────────────────┤
│  0:       MIXER0        ⇧  │
│  1:       MIXER1           │
│  2::      MIXER2           │
│  3::      MIXER3           │
│  4::      MIXER4        ⇩  │
│  5::      MIXER5        ▣  │
└─────────────────────────────┘
```

This window allows the mixer name to be changed. Double-clicking on the left beside a mixer window name opens the Mixer Edit window.

Mixer Edit Window

```
┌──────────────────────────────────────────────┐
│ ▣ ═══════════ MIXER ═══════════════ ▣ │
├──────────────────────────────────────────────┤
│             Effect Level      Effect PAN    ⬆ │
│ Channel0_0  ⇦ ▥    ⇨ 0   ⇦ ▥   ⇨ c       │
│             Effect Level      Effect PAN       │
│ Channel0_1  ⇦ ▥    ⇨ 0   ⇦ ▥   ⇨ c       │
│             Effect Level      Effect PAN       │
│ Channel0_2  ⇦ ▥    ⇨ 0   ⇦ ▥   ⇨ c       │
│             Effect Level      Effect PAN       │
│ Channel0_3  ⇦ ▥    ⇨ 0   ⇦ ▥   ⇨ c       │
│             Effect Level      Effect PAN       │
│ Channel0_4  ⇦ ▥    ⇨ 0   ⇦ ▥   ⇨ c       │
│             Effect Level      Effect PAN       │
│ Channel0_5  ⇦ ▥    ⇨ 0   ⇦ ▥   ⇨ c       │
│             Effect Level      Effect PAN       │
│ Channel0_6  ⇦ ▥    ⇨ 0   ⇦ ▥   ⇨ c       │
│             Effect Level      Effect PAN       │
│ Channel0_7  ⇦ ▥    ⇨ 0   ⇦ ▥   ⇨ c       │
│             Effect Level      Effect PAN    ⬇ │
│ Channel0_8  ⇦ ▥    ⇨ 0   ⇦ ▥   ⇨ c    ▣ │
└──────────────────────────────────────────────┘
```

Mixer parameters can be changed from this window. The following parameters can be set from this window.
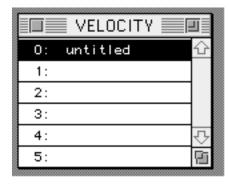
Effect Level
Sets an effect send/return. Values ranging from 0 to 7 are permitted.

Effect PAN
Sets a PAN for outputs to which an effect is applied. Values ranging from R16 to C to L16 are permitted.
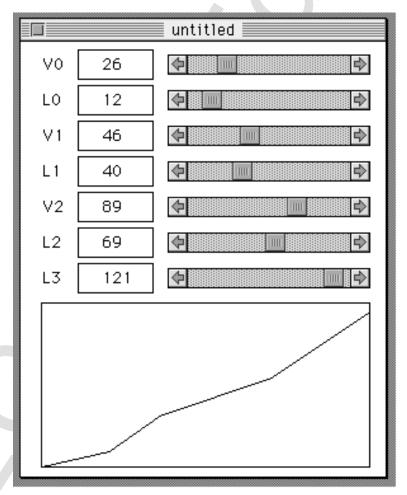
Velocity Window

Enables changing the velocity name. Double-clicking on the left beside a velocity window name opens the Velocity Edit window.

Velocity Edit Window

The following parameters can be set from this window. The effect of parameter changes can be viewed on the bottom graph.

VELOCITY 0
Sets the velocity 0 (horizontal axis) parameter.
Values ranging from 0 to 127 are permitted.

VELOCITY LEVEL 0
Sets the level 0 (vertical axis) point of the velocity curve.
Values ranging from 0 to 127 are permitted.

VELOCITY 1
Sets the velocity 1 (horizontal axis) parameter.
Values ranging from 0 to 127 are permitted.

VELOCITY LEVEL 1
Sets the level 1 (vertical axis) point of the velocity curve.
Values ranging from 0 to 127 are permitted.

VELOCITY 2
Sets the velocity 2 (horizontal axis) parameter.
Values ranging from 0 to 127 are permitted.

VELOCITY LEVEL 2
Sets the level 2 (vertical axis) point of the velocity curve.
Values ranging from 0 to 127 are permitted.
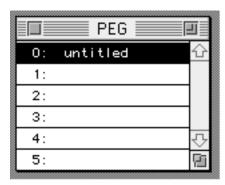
VELOCITY LEVEL 3
Sets the level 3 (vertical axis) point of the velocity curve.
Values ranging from 0 to 127 are permitted.
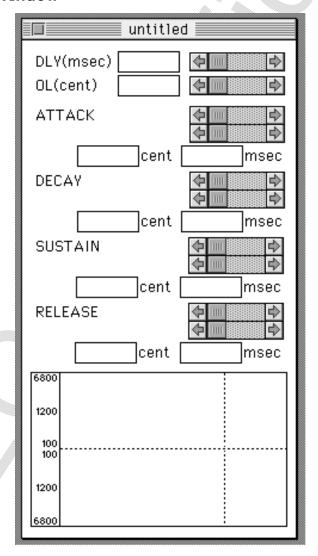
PEG Window

(Pitch Envelope Generator)

Enables changing any of the maximum 256 PEG names that can be registered.
Double-clicking on the left beside a PEG window name opens the PEG Edit window.

PEG Edit Wndow

Mixer parameters can be changed from this window. The following parameters can be set from this window. Parameter changes are immediately reflected in the graph.

DELAY TIME (msec)
Sets the delay time to PEG start.

OFFSET LEVEL (cent)
Sets the offset level from the key-on note to PEG start.

ATTACK LEVEL(cent)
Value of the attack level.

ATTACK TIME (msec)
The time to PEG attack.

DECAY LEVEL (cent)
Value of the decay level.

DECAY TIME (msec)
Time to PEG decay.

SUSTAIN LEVEL(cent)
Value of the sustain level.

SUSTAIN TIME (msec)
Time to reach the sustain level.

RELEASE LEVEL (cent)
Value of the release level.
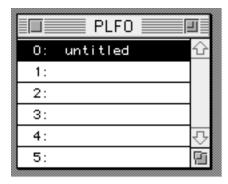
RELEASE TIME (msec)
Time to reach the release level. The ATTACK, DECAY, SUSTAIN and RELEASE items each have two sliders. The top slider represents the level (ATTACK LEVEL for the ATTACK item), and moving the slider to the right increases the level in the positive direction, as long as the slope of the bottom slider is not "0" (furthest left position). If the slope is "0," the segment time increases as the slider is moved to the right. The bottom slider represents the slope. Moving the slider to the right sharply increases the slope. In other words, changing the upper level changes the segment time.
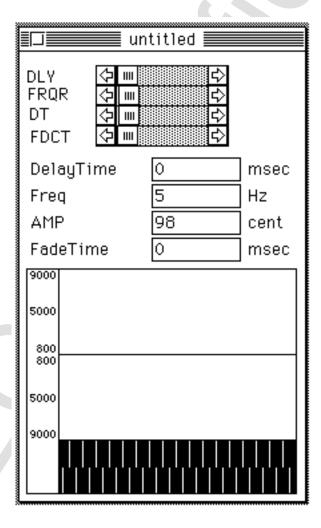
PLFO Window

(Pitch Low Frequency Oscillator)

Enables setting up to 256 PLFO names. Double-clicking on the left beside a PLFO window name opens the PLFO Edit window.

PLFO Edit Window

The following data is changed by setting the parameters in this window. Parameter changes are immediately reflected in the graph.

PLFO DELAY TIME (msec)
PLFO delay time.

PLFO FREQUENCY (Hz)
PLFO waveform frequency.

PLFO AMPLITUDE (cent)
The amplitude when PLFO waveform is in normal state.

PLFO FADE TIME (msec)
The transition time required for PLFO to go (from start) to normal state.

Slider Explanation

The sliders cannot be adjusted by dragging the thumb directly with the mouse.

DLY: Moving the slider to the right increases the delay time.
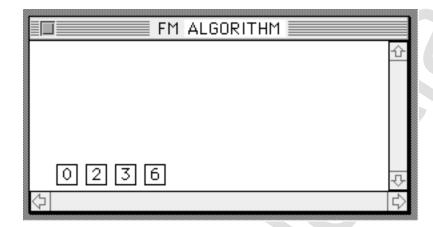
FRQR: Moving the slider to the right increases the amplitude. Moving the slider to the left decreases the amplitude.

HT: Moving the slider to the right decreases the frequency and simultaneously increases the amplitude. If the fade time is not "0," moving the slider to the right also increases the fade time. Moving the slider to the left increase the frequency and simultaneously decreases the amplitude. If the fade time is not "0," moving the slider to the left also decrease the fade time.

FDCT: Moving the slider to the right increases both the amplitude and the fade time. Moving the slider to the left decreases both the amplitude and the fade time.

FM Connection Window
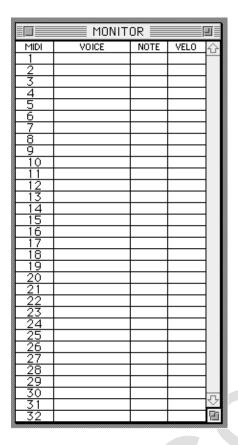
This window displays the FM connections of the currently selected tone.
To use layers for FM, the following settings are required.

- Set the modulator and carrier to the same START and END values.
- Add a carrier check button to the carrier.
- Set the FM connection data in the Slot window.

When the FM Connection window is opened or the FM Connection window is updated from the FM menu after the above settings are made, the FM algorithm will be displayed in the FM Connection window. The number used at this time is the number of each layer in the Layer window.

MONITOR Window

When this window is displayed, a MIDI device can be monitored in real-time through the SCSI port. MIDI channel program changes (SCSP voice name), notes, and velocity are displayed.

MIDI
MIDI channel displayed as a fixed value in the range 0 to 31.

VOICE
Displays the SCSP voice name corresponding to the program change of the MIDI channel received through the SCSI port.

NOTE
Displays the NOTE received through the SCSI port.
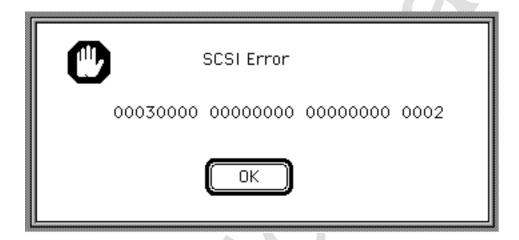
VELO
Displays the velocity number received through the SCSI port.

8.0 Error Handling

Processing is stopped and an error dialog box is displayed when an error occurs.

This dialog box displays errors occurring during SCSP communication, and errors caused by conflicts with other applications.

Pages 48-60 of this document have been archived. The revised pages of the "Appendix: File Formats" can be found in ST-235-030795 entitled "Tone Editor User's Manual Addendum: File Formats".

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