

YAMAHA

Memory Management



DIGITAL PROGRAMMABLE ALGORITHM SYNTHESIZER

SUPPLEMENTAL BOOKLET

Welcome

The purpose of this guide is twofold. First, to supplement the information provided in the DX7 II Owner's Manual. Second, to provide a starting point for your own experimentation. By reading through this guide and trying the step-by-step examples you will gain a clear understanding of the memory management operations of the DX7 II synthesizer.

The DX7 II _{FD} and _D synthesizers include many new features that enhance the already familiar DX sound and make these keyboards an integral component in any MIDI system.

For continuing information concerning the DX7 II _{FD/D}, consult AfterTouch, the official publication of the Yamaha Users Group. Many advanced functions will be discussed in its pages in the coming months. There will also be information regarding the availability of other materials concerning more advanced applications. To receive a free copy of AfterTouch every month, send your request to AfterTouch, P.O. Box 2338, Northridge, CA 91323-2338. On your letter or postcard, be sure to indicate that you are the owner of a DX7 II _{FD/D}.

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Introduction

Introduction

Both the DX7 II FD and DX7 II D synthesizers are identical in appearance, operation, and sound quality. The only difference is that the FD provides a built-in disk drive. Therefore, all of the information in this supplemental guide applies to both machines, except of course, references to the disk drive.

Several new parameters have been added to these machines that open a whole world of sonic and performance possibilities. Once you have created a voice or performance memory, the DX7 II offers many flexible options for storing, retrieving and manipulating data. This guide will explain how to use the appropriate functions.

You'll notice several new parameters on the DX7 II if you are already familiar with FM voicing. If this is your first experience with FM synthesis, take an existing voice or performance memory and begin experimenting with the parameters described in the following sections.

As this guide deals specifically with DX7 II memory management, you will not find definitions for most of the voice and performance parameters. For more detailed definitions and examples about these features, refer to other DX7 II Supplement Guides. These are available on the following topics:

- Fractional scaling
- Microtuning
- FM voicing
- Real time parameter change
- Controller usage
- MIDI applications

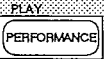
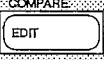
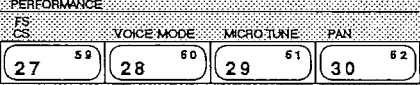
Before trying any of the examples in this guide, you must select one of the Edit modes described below.

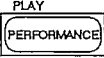
First, notice which Play mode is active. If the the LED above PERFORMANCE is lit, then the DX is in Performance Play mode. Press EDIT to enter the Performance Edit mode. This allows you to change and store performance parameter data (those functions under buttons 27-30).

If the Performance LED is not lit, then the DX is in either Single, Dual, or Split Play mode. Press EDIT to enter the Voice Edit mode. If you want to edit and store a voice parameter (those functions under buttons 7-13 or 23-26), you must be in one of the Voice Edit modes. Otherwise, the changes you make will not be stored.

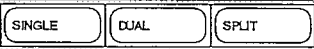
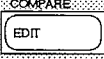
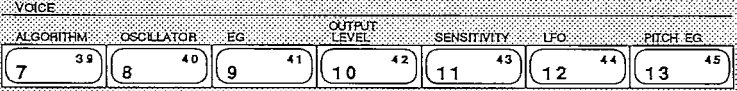
Entering Performance Edit Mode

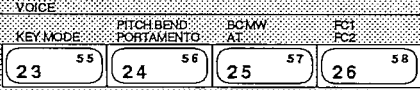
The examples below show you how to enter the appropriate Edit mode.

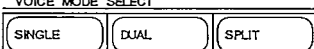
- 1  Press the Performance button.
- 2  Press the Edit button.
- 3  Use number buttons 27 ~ 30 to access the various Performance parameters.

 Press the Performance button again to return to Play Mode.

Entering Voice Edit Mode

- 1  Press one of the Voice Mode buttons.
- 2  Press the Edit button.
- 3  Use number buttons 7 ~ 13 and 23 ~ 26 to access the various Voice parameters.



 Press the same button you pressed in step #1 above to return to Play Mode.

After entering the Edit mode, the DX7's LCD will display whatever function was last selected. Therefore, it may be different than the display illustrated in the example. Simply press the button of the function you desire. You may need to press it several times to make the display match this example.

2

Overview

Data Descriptions

Voice Data Descriptions

The next few sections of this guide describe the various memory types available on the DX7 II. These include: Voice, Performance, Fractional Scaling, Microtuning, System Setup, Current Play/Edit, Compare/Recall and Initialized memories.

Voice data on the DX7 II is divided into two main categories: basic voice data and voice effect data. New parameters available in the basic voice data include:

- Pitch EG Range
- Pitch EG Velocity
- Fractional Scaling

New parameters available in the voice effect data include:

- Key Mode
- Unison Detune
- Pitch Bend Mode
- Portamento
- Random Pitch
- Breath Control
- Aftertouch
- Mod Wheel
- Foot Control (FC1 and FC2)
- MIDI In Control

A blank voice parameter chart has been included in the back of this guide. Photocopy and use it to keep track of your favorite voices.

Performance Data Description

In addition to the original FM voice parameters, and the new voice parameters listed above, the DX7 II models offer another type of memory called Performance Memory. A performance memory allows you to recall voice combinations and other performance-related functions at the touch of a single button. Performance memory parameters include:

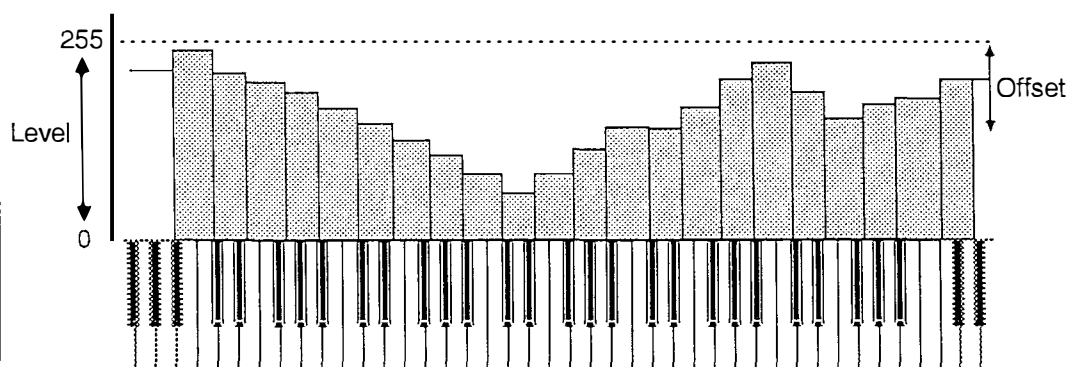
Parameter	Range
• Voice Mode	Single/ Dual/ Split
• Total Volume	Performance volume
• Balance	Voice A to Voice B
• Dual Detune	Dual mode only
• Split Point	Split mode only
• Pan	Mode, Range, Select and Pan EG
• Sustain Footswitch (FS1)	On/off
• Footswitch 2 (FS2)	Select, A and B on/off
• Continuous Sliders (CS1 and CS2)	Select, A and B on/off
• Microtuning	Table Select, A and B on/off
• Note Shift	+/- 24 semitones
• EG Forced Damp	On/off
• Performance Name	20 characters

A blank performance parameter chart has been included in the back of this guide. Photocopy and use it to keep track of your favorite performance memories.

Fractional Scaling Memory Description

On the original DX7, Level Scaling allowed a change in timbre or volume across the keyboard. It offered a choice of level-scaling curves and variable depth.

The DX7 II provides a much more flexible method of level scaling called Fractional Scaling. Using Fractional Scaling, the output level of each individual operator can be varied in 3-key groups so you can create virtually any level or timbre curve. The accompanying diagram illustrates this feature's effect.



Each bar in the above diagram represents an operator output value for a 3-key group. For example, you may want to set operator 6 output level to equal 62 in the range C#3 to D#3. From E3 to F#3 the same operator's output level may equal 87.

This may be set individually for each of six operators. A lot of memory is necessary to store all of these values. Therefore, the Fractional Scaling data for a voice must be stored separately from the voice itself. You will learn how to store these values so they may be accessed when you select a particular voice. For now, just remember that even though this data is selected (recalled) along with a specific voice, it is stored separately from the voice itself.

Microtuning Memory Description

The DX7 II provides 11 preset Microtuning scales. These are always available because they are permanently stored in the DX7 II memory.

Additionally, the DX7 II allows you to create your own microtuning scales. Consult the appropriate Supplement Guide for detailed instructions on how to do this.

Once you have created a scale, you may store it in one of two User Programmed scales. If you want to create more than two scales, they may be stored on a cartridge or a disk. The microtune function will allow you to access additional scales from a cartridge. Step-by-step instructions for storing and accessing additional microtuning scales will be described later in this guide.

*System Setup
Memory Description*

Beside voice and performance memories, the DX7 II provides a way to store specific MIDI and other “system setup” data. These include settings for the following functions:

- Master Tuning function
- Cartridge Bank number
- MIDI transmission channel
- MIDI reception channels
- Note On/Off mode
- Local On/Off function
- Control number
- Program Change transmit mode
- Program Change table

When you save and load the system with your voice and performance data, you always know the condition of all of these functions. This is useful if you transfer your voices to another DX7 II or if you frequently change any of these functions. However, you have the option of saving and loading voice and performance data without the system if they remain unchanged from bank to bank.

Current Play/Edit Memory

When you select a voice from the internal memory or a cartridge, the DX actually creates a copy of it in the Current Play/Edit memory. You may then play or edit the voice as you desire. This memory is a temporary holding place, or buffer, for a single voice. Selecting a different voice will replace the contents of this buffer. Therefore, to make any changes permanent, you must store the contents of this buffer back to either an internal or cartridge memory.

This also applies to an edited Microtuning scale and Performance Memory as well.

Compare/Recall Memory

When you edit a voice or performance, a copy of the original is also stored in this memory. This allows you to access the original unedited version, making it available for immediate comparison with the edited version.

*Initialized Voice/
Performance Memory*

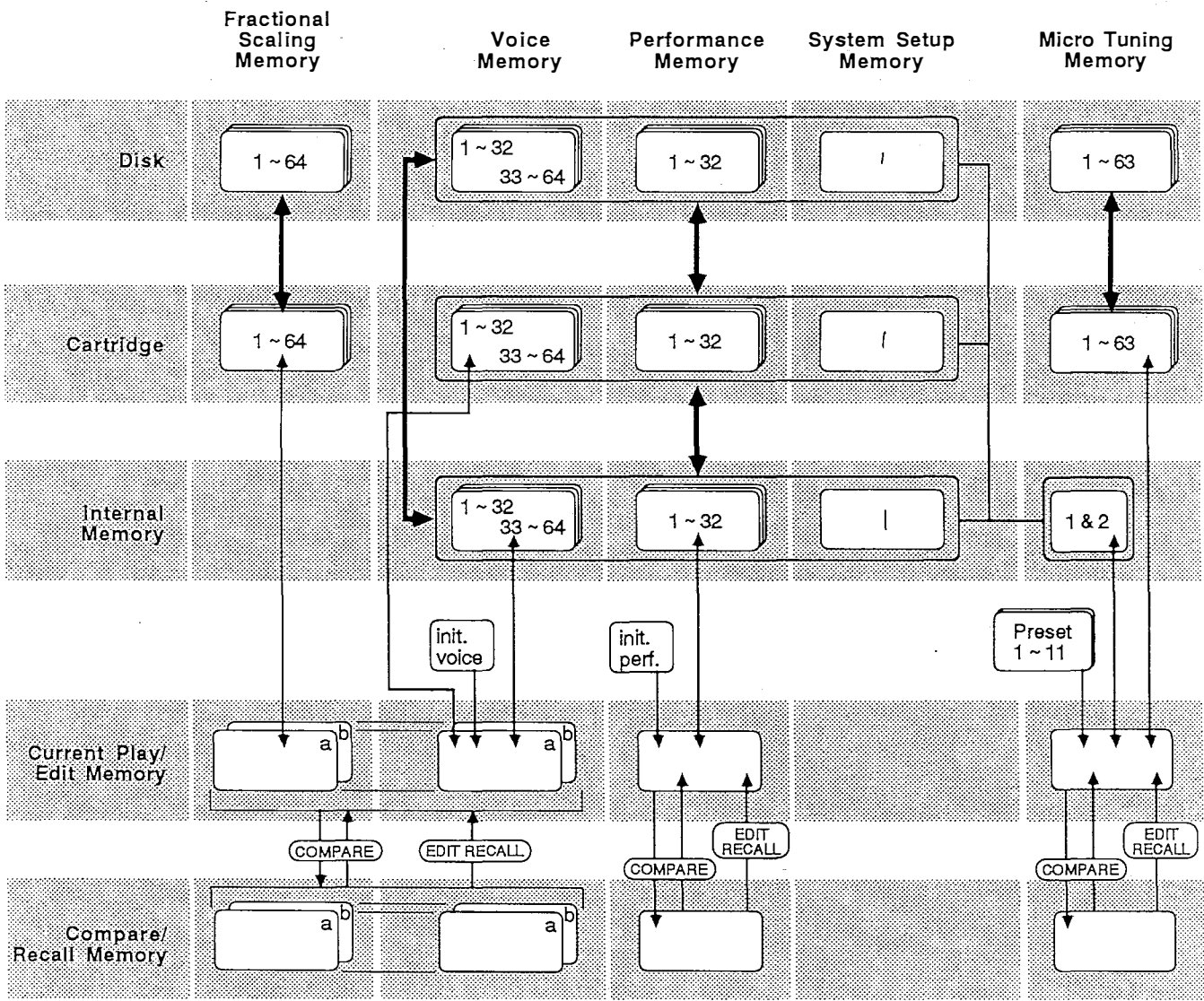
The initialize function provides a “clean slate” from which to begin creating your own voice or performance. A chart, available in the back of this guide, displays the default values for an initialized voice or performance.

3

Memory Layout

Memory Layout

The Memory Layout diagram below is also available on page 62 of your DX7 II Owner's Manual. Notice that the page is divided into rows (left to right) and columns (up and down).



The rows contain three types of storage media: Disk, Cartridge, and Internal (RAM) memory. These are described in detail later in this guide.

*Reading the
Memory Layout Diagram*

Complete descriptions of the memory types, listed below, are provided earlier in this guide. Notice that these memory types make up the other main sections of the Memory Layout diagram.

- Fractional Scaling memory
- Voice memory
- Performance memory
- System Setup memory
- Micro Tuning memory
- Current Play/Edit memory
- Compare/Recall memory
- Initialized memory

In the Memory Layout diagram, the dark vertical arrows indicate how “blocks” of memory are moved between media types.

For example, look at the Fractional Scaling Memory column. The dark arrow indicates that Fractional Scaling data for 64 voices may be moved, as a block of memory, between a disk (in the FD) and a RAM cartridge. The arrow is double-headed indicating that this block of data may be moved in either direction (from cartridge to disk as well as disk to cartridge).

Next, look at the Disk row. Notice the box around Voice, Performance, and System Setup memories. This means that these memory areas are moved together. You may, for example, move this block of memory in either direction between a disk and internal memory. This block of memory always contains the following data:

- 64 voices
- 32 performances
- 2 user microtuning scales
- System setup data (at your option)

Now, look at the Internal Memory row. The box in the Micro Tuning Memory column refers to the user micro tuning scales 1 and 2. These are connected to and therefore are moved along with the Voice, Performance and the optional System Setup memories.

The two small dark arrows indicate that this same block of memory can be moved between disk and cartridge. It may also be moved between Cartridge and Internal Memory.

The last dark arrow on the right of the page illustrates that a block of 63 Microtuning scales may be moved between disk and cartridge.

Memory Protect

Current Play/Edit Memory and Compare/Recall Memory may contain data for one voice, one performance, or one microtuning scale. These memories allow you to compare a voice or scale that is currently being edited with the original unedited voice or scale.

Fractional scaling data is moved along with the voice to which it is stored. This means that when you use the compare function with a fractionally scaled voice, you will hear the fractional scaling in both the edited and original versions of the voice.


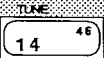

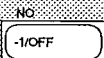


The two small boxes in the middle of the page indicate the initialize voice and initialize performance functions. Notice that these functions initialize the voice or performance in Current Play/Edit memory. This lets you begin programming a voice or performance from scratch. After you finish programming you need to store the voice or performance in the Internal Memory or a RAM cartridge.

To summarize, when referring to the Memory Layout diagram in your Owner's Manual, the thickness and direction of the arrows help illustrate how much and what type of memory is being moved.

Before moving or storing data you must first turn the memory protect function off. The paragraphs below define this function and describe how to do this.

The Memory Protect feature will help you avoid overwriting, and thereby losing, valuable data. The DX7 II Internal Memory, RAM cartridges and floppy disks all provide a software based method of turning this feature on or off. Floppy disks have a tab and RAM cartridges have a hardware switch that may also be used to protect valuable data.

Follow the steps below to access and change the memory protect function for either Internal or Cartridge Memory.

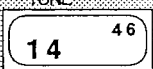
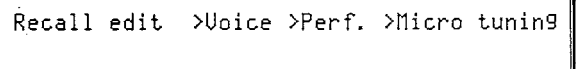

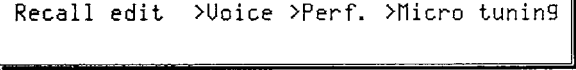




1		Press the Edit button.
2		Press the Tune button (#14) to access the Master tuning/Memory protect display.
3		Press the right cursor button to select INT Memory Protect.
4		Press the -1/NO button to turn the INT Memory Protect off.
5		Press the right cursor button again to select CRT Memory Protect.
6		Press the -1/NO button to turn the CRT Memory Protect off.

Edit Recall Function

While in any of the Play modes (Single, Dual, Split or Performance), you may wish to restore a voice you had been editing but hadn't yet saved. You may recall the last edited Voice, Performance, or Microtuning scale using the Edit Recall function.

For example, you finish editing a voice and return to the play mode. Before saving the voice, you select several different voices and wish to compare each with the edited version. At any time you may use the Edit Recall function to bring back the edited voice, currently in the Edit buffer, for comparison.

Simply follow the steps below to use the Edit Recall function.

1		
	Press button 14 until you enter the Recall Edit mode.	
2		
	Press the right cursor button to select the data you wish to recall: Voice, Performance or Micro Tuning.	
3		
	Press YES. The display will ask "Are you sure?"	
4		
	Press YES to recall the previous data or NO to cancel.	

4

Types of Media

Types of Media

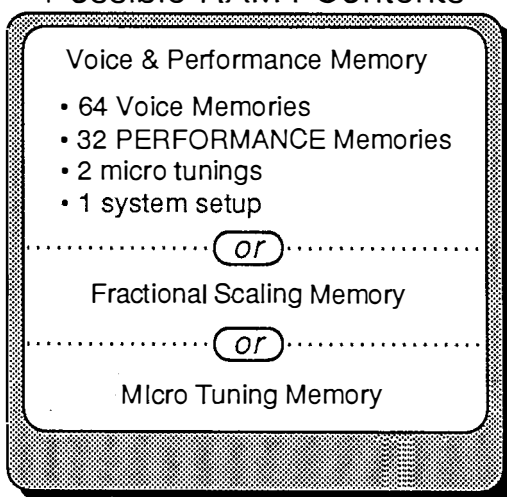
The DX7 II allows you to store and recall data from a variety of media. These include: Internal Memory (RAM), RAM4 Cartridge, ROM Cartridge (recall only), and floppy disk.

You may store 64 voices, 32 performance memories, two of your own microtuning scales, and one system setup in the DX7 II Internal Memory.

There are two types of DX cartridges, ROM and RAM. A ROM cartridge is loaded with data from the factory. This data is “burned into memory” and may not be changed. A RAM cartridge allows you to store your own data.

RAM Cartridges

Possible RAM4 Contents



A RAM4 cartridge, formatted for voice and performance data, may store 64 voices, 32 performance memories, two of your own microtuning scales, and one system setup.

A RAM4 cartridge, formatted for fractional scaling data, may store fractional scaling data for 64 internal voices. When a fractionally-scaled voice is selected from internal memory the DX7 II looks to the cartridge for the corresponding fractional data. As mentioned earlier, this is necessary because fractional scaling data requires a lot of memory.

A RAM4 cartridge, formatted for microtuning data, may store up to 63 microtuning scales. These may be accessed directly from cartridge, or you may load a microtuning scale into one of the user scales in the DX7 II Internal Memory.

Accessing a Cartridge Microtuning Scale

You may access a microtuning scale from a properly formatted RAM4 cartridge by following the steps below.

Insert a cartridge formatted for Micro Tuning data into the cartridge slot. Then...

1

COMPARE
EDIT

Enter the EDIT mode.

2

MICRO TUNE
29 61

Micro tuning >Table select >A >B
 Preset 1 Equal temperament on on

Press button 29 until the Micro Tuning display appears.

3

Micro tuning >Table select >A >B
 CRT 5 Cartridge tune on off

POLY/MONO PAN

◀

▶

Use the cursor buttons to select any of the parameters in this display.

>Table select: for selecting a Micro Tuning, including any of the 63 micro tunings in the cartridge.
 >A and >B: for setting which bank(s) the selected micro tuning will affect.
 >Key: a number of Micro Tunings will also include this parameter to establish the tonic key for the scale.

DATA ENTRY
 NO YES

-1/OFF

+1/ON

Use the Data Entry slider or buttons to change the selected parameter's data.

*Storing a cartridge
Microtuning Scale
to internal memory*

Follow the steps below to load a cartridge microtuning scale into one of the two internal user microtuning scales.

First select a scale from the cartridge memory. This loads it into Current Play/Edit Memory. Next, you can easily store it by holding STORE and pressing either INTERNAL 1 or 2. While still holding STORE, press YES to confirm your choice and finish the storing process.

Select a micro tuning scale from the cartridge. Make sure INT Memory Protect is off. Then...

1	<div>TUNE</div> <div>14 46</div>	<div>Micro tuning9 >>>> C-2<<<< C#-2</div> <div>>Coarse>Fine C-1+ 0(939) 0</div>
Press button 14 until you enter the Micro Tuning edit mode.		
2	<div>EG COPY</div> <div>STORE</div>	<div>Micro tuning9 >>>Internal <<<</div> <div>Store data to memory ?</div>
Hold down the Store button. If the display reads Cartridge, press the Internal button before proceeding.		
3	<div>1 33</div> <div>or</div> <div>2 34</div>	<div>Micro tuning9 >>>Internal <<<</div> <div>Store data to memory 1</div>
While holding the Store button, press either button 1 or 2 for storing the Micro Tuning to one of the 2 Internal Micro Tuning memories.		
4	<div>YES</div> <div>+1/ON</div>	<div>Micro tuning9 >>>Internal <<<</div> <div>** Completed!</div>
The Cartridge scale is now stored in Internal memory. Release the Store button.		

Contents of Supplied ROM Cartridge

Bank 1	Voice & Performance Memory <ul style="list-style-type: none">• 64 Voice Memories• 32 PERFORMANCE Memories• 2 micro tunings• 1 system setup
Bank 2	Voice & Performance Memory <ul style="list-style-type: none">• 64 Voice Memories• 32 PERFORMANCE Memories• 2 micro tunings• 1 system setup
Bank 3	Fractional Scaling Memory
Bank 4	Micro Tuning Memory

A DX7 II ROM cartridge contains four banks of data. The information below describes the four banks of data contained in the ROM cartridge that was shipped with your DX7 II.

BANK 1:

64 voices, 32 performance memories, two user-defined microtuning scales, and one system setup.

BANK 2:

64 voices, 32 performance memories, two user-defined microtuning scales, and one system setup.

BANK 3:

Fractional scaling data for Bank 1 voices and performances.

BANK 4:

Unformatted - NOTE: On other DX7 II ROM cartridges, this bank may contain microtuning data.

5


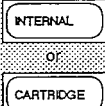
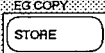
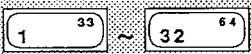
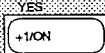
Internal Memory

Internal Memory

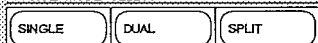
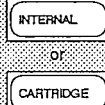
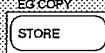

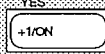
Once you have created or edited a voice or performance you may store it in either internal or cartridge memory. This allows you to permanently save a voice or performance and expand your library.

The diagrams below explain how to save a voice or performance to the DX7 II's internal memory.

Storing Performance Data

1		Press the Performance button.
2		Press the Internal button or the Cartridge button to select the storage area for your edited Performance data. NOTE: If you wish to save the Performance data to a RAM cartridge, make sure that a properly formatted Cartridge (DX7-2) is inserted in the cartridge port.
3		Press and hold the Store button.
4		While holding the Store button, use the number buttons to select the memory location for your edited Performance data. The LCD will echo your choice.
5		While still holding the Store button, press the +1/YES button.

Storing Voice Data

1		Press one of the Voice Mode buttons.
2		Press the Internal button or the Cartridge button to select the storage area for your edited Voice data. NOTE: If you wish to save the Voice data to a RAM cartridge, make sure that a properly formatted Cartridge (DX7-2) is inserted in the cartridge port.
3		Press and hold the Store button.
4		While holding the Store button, use the number buttons (and the 1-32/33-64 button if necessary) to select the memory location for your edited Voice data. The LCD will echo your choice.
5		While still holding the Store button, press the +1/YES button.

6

Cartridge Functions

ROM Cartridge

Accessing Banks

As mentioned earlier, a ROM cartridge may contain up to four banks of data. These may include Voice and Performance data, Fractional Scaling data, or Micro Tuning data. Follow the steps below to access and select a specific bank in a DX7 II ROM cartridge.

Insert the factory ROM cartridge into the cartridge slot. Then...

1

CARTRIDGE

15

47

Cartridge	>Bank	>Format
Voice & Perf.	1	xxxx

Press button 15 until you enter the Cartridge Voice & Performance mode.

2

YES

+1/ON

or

NO

-1/OFF

Cartridge	>Bank	>Format
Voice & Perf.	2	DX7-2

Use the +1/-1 buttons to select Bank 2. Notice that the format type for the chosen bank is also displayed.

To select a different type of data, simply press button 15 until the appropriate type is displayed. Then use the +1/-1 buttons to assign a bank number.

To hear the factory ROM voices as they are intended, load Bank 1 Voice and Performance data into the DX's Internal Memory. Then select Bank 2 for Voice and Performance, Bank 3 for Fractional Scaling, and Bank 4 for Micro Tuning data.

Your DX7 II was shipped from the factory with Bank 1 Voice and Performance data in Internal Memory. To use the other set of 64 voices and 32 performances on the cartridge, select Bank 2 Voice and Performance (see above). Now, when you press CARTRIDGE you will have access to a completely different set of voices and performances. These two sets of data must be used in this configuration. In other words, the Bank 2 cartridge performance memories expect to "see" Bank 1 voices in the Internal Memory.

Fractional Scaling Data

As mentioned earlier, Fractional Scaling data is stored on a cartridge separately from a voice. When you select a voice, the DX looks to the inserted cartridge to find the required fractional scaling data. For more detailed information about this subject consult the appropriate supplemental guide.

Before moving a fractionally scaled voice from a ROM to a RAM cartridge, you must first store the voice to Internal Memory. In doing so, you must also store the fractional data to a RAM cartridge. The diagram below explains how to do this.

The steps below describe how to move a fractionally scaled voice from a ROM cartridge into the DX's Internal Memory. This allows you to create your own voice and performance libraries using any type of voice (scaled or normal).

Insert a ROM cartridge into the cartridge slot. Select Bank 3 for Fractional Scaling data. Select Bank 1 or 2 for Voice and Performance data. Select the CARTRIDGE Single Play mode. Then...

1

Select a Fractionally Scaled Voice (for example, Bank 1, voice number 46 "SilvaTrmpt"). Both the Voice and the Fractional data are now in the Current Play/Edit buffer.

2

Remove the ROM cartridge. Insert a RAM4 cartridge that has been formatted for Fractional Scaling data.

3

EG COPY

STORE

Voice Internal CRT46 SilvaTrmpt
Store data to memory ? with fractional

Hold down the Store button while...

4

INTERNAL

1³³ ~ 32⁶⁴

Voice Internal CRT46 SilvaTrmpt
Store data to memory 64

...selecting an Internal memory location for the Voice. This example selects Internal memory 64 for the Voice and Cartridge memory 64 for the Fractional Scaling.

5

YES
+1/ON

Voice Internal CRT46 SilvaTrmpt
** Completed!

The data has been properly stored.

Moving A ROM Voice or Performance

Follow the steps below to move a voice or performance from a ROM cartridge to an internal or RAM4 cartridge memory.

Note:

If the performance includes CRT voices, then these voices must also be moved to the internal or RAM4 cartridge memory. Additionally, if the voices are moved to internal memory, you must also change the performance to call the appropriate INT voices.

For example, imagine a ROM Performance Memory that includes a dual mode arrangement of voices CRT 4 and CRT 34. You want to copy this performance to an INT memory location. First, make a copy of this performance in the DX Internal Memory. Second, copy both of these voices to the internal memory following the same steps below. At this point, the performance data and the voices are in the DX's internal memory, however, the Performance Memory is still programmed to call CRT voices. Therefore, the last step is to edit the performance to select the INT voices you just copied.

The steps below describe how to copy a voice or performance from a ROM cartridge into the DX's Internal Memory or a RAM4 cartridge. This allows you to create your own voice and performance libraries using any voices you want.

Insert a ROM cartridge into the cartridge slot. Select Bank 1 or 2 for Voice and Performance data. Select cartridge Single Play mode then...

1

Select a non-fractionally scaled voice or performance.

2

Replace the ROM cartridge with a RAM4 cartridge.

3

EG COPY

STORE

Voice

Internal

CRT46

Silvatrmpt

Store data to memory ?

with fractional

Hold down the Store button while...

4

INTERNAL

1

33

~

32

64

Voice

Internal

CRT46

Silvatrmpt

Store data to memory 64

...selecting an Internal or Cartridge memory.

5

YES

+1/ON

Voice

Internal

CRT46

Silvatrmpt

Cartridge not ready ! (fractional)


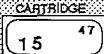
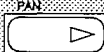
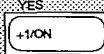
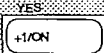
The data has been properly stored.

RAM4 Cartridge

You must first format a RAM cartridge for the type of data you wish to store. You may format a cartridge for one of three types of data: Voice and Performance, Fractional Scaling, or Microtuning. The format type (see below) will be displayed in this LCD.

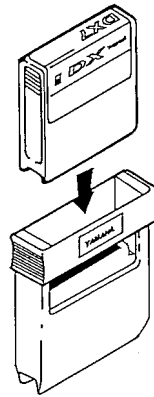
Format Type	Description
• DX7-2	DX7 II Voice and Performance data - includes System Setup and 2 User tunings
• FKS-Y	Fractional Keyboard Scaling data
• MTT-Y	Microtonal Tuning data

Follow the steps below to format a cartridge for a specific type of data.

- 1 Insert an unformatted RAM cartridge in the cartridge port.
- 2  Press the Edit button.
- 3  Press the Cartridge button (#15) until you get the LCD display for the type of formatting you desire:
 - To create a Voice & Performance cartridge, press button #15 until the "Voice & Perf." display appears.
 - To create a Fractional Scaling cartridge, press button #15 until the "Fractional SC." display appears.
 - To create a Micro tuning cartridge, press button #15 until the "Micro tuning" display appears.
- 4  Once you reach the display you want, press the right cursor button.
- 5  Now press the +1/YES button. The LCD display will ask "Are you sure?".
- 6  Press the +1/YES button once more.

Using a RAM1 Cartridge

You may use a RAM1 cartridge in the DX7 II. First, insert the RAM1 cartridge into an ADP1 cartridge adapter. Next, plug the adapter into the cartridge slot on the DX. See the illustration below.



7

Disk Functions

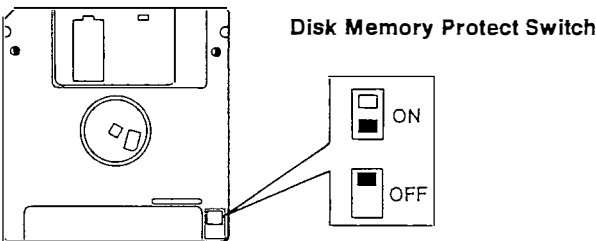
Disk Functions

The DX7 II FD provides an onboard disk drive. This drive uses 3.5 inch double-sided double-density floppy disks. You may store data in one of three formats on disk. These include: Internal memory (INT), Cartridge memory (CRT), and MIDI Data Recorder (MDR).

Once data has been stored in one of these formats, it may not be directly sent to another data type. In other words, if you store the contents of the internal memory to an INT file, you cannot directly output that file to a RAM cartridge. You must first load the data into Internal Memory, refer to the section entitled "Loading Internal Memory". It may then be saved to a RAM cartridge. Likewise, a CRT file must go to a RAM cartridge before being loaded into the Internal Memory. Be sure you check the correct format (INT, CRT, or MDR) when looking for a file on disk.

Data is stored in files on a disk. Each file has a number, a name, and a type (either INT, CRT, or MDR). This helps you (and the DX) keep track of data. Depending on their size, you may store up to 99 files on one disk.

A Memory Protect tab (see diagram below) may be used to protect valuable data from accidental erasure. The tab must be down in order to format or write to a disk.



Formatting a Disk

Before using a disk you must first format it. This allows the DX to keep track of where data is located on the disk. Unlike RAM cartridges, one type of formatting can accommodate all types of data.

Again, unlike a RAM cartridge, formatting a disk completely erases any information previously stored on it. Therefore, the display will ask you if you are sure you want to proceed. The DX recognizes if data is already present on a disk when you select the format command. This safety feature is for your convenience. You may want to proceed with this function to completely erase disks that contain unnecessary data.

Insert a blank disk into the disk slot. Then...

1	<div>DISK 16 48</div>	<div>Disk >Format >Back up >Free bytes ** Set disk and push [yes]</div>
Press button 16 until this display appears.		
2	<div>YES +1/ON</div>	<div>Disk >Format >Back up >Free bytes ** Set disk and push [yes] ** sure?</div>
Press YES. The DX will ask "Are you sure (this is the disk you want to format)?"		
3	<div>YES +1/ON</div>	<div>Disk >Format >Back up >Free bytes **BUSY** Now executing! track#=79</div>
Press YES to begin formatting the disk. Press NO to abort.		
<div>Disk >Format >Back up >Free bytes ** Completed!</div>		
After about 1 minute this display will appear indicating that the disk has been properly formatted.		

Once a disk is formatted you may use it to store and retrieve data. Determine the type of data you wish to save or load, then refer to the appropriate section below.

Saving Voice and Performance Data

Internal (INT)

An INT or CRT file contains the entire data of the internal memory or a RAM cartridge bank and cannot be broken into separate components.

The entire data in the internal memory may be saved to a single INT file on disk. This includes the following data:

- 64 Voice memories
- 32 Performance memories
- 2 User Micro Tuning Scales
- System Setup

Insert a formatted 3.5" disk into the disk slot. Then...

1	<div>DISK</div> <div>16 48</div>	<div>Disk INT >Dir >Save >Load >Del >Rename</div> <div>** Set disk and push [yes]</div>
	Press button 16 until you enter the Disk/INT mode.	
2	<div>YES</div> <div>+1/ON</div>	<div>Disk INT >Dir >Save >Load >Del >Rename</div> <div>File #</div>
	Press YES to access the Disk directory. Use the +1/-1 buttons until you select a blank file (the).	
3	<div>PAN</div> <div>▶</div>	<div>Disk INT >Dir >Save >Load >Del >Rename</div> <div>File # input filename ?</div>
	Press the right cursor button once. This selects the Save function.	
4	<div>COMPARE</div> <div>EDIT</div> <div>CHARACTER</div>	<div>Disk INT >Dir >Save >Load >Del >Rename</div> <div>File # xxxxxxxx input filename ?</div>
	Press and hold the Edit/Character button and type in a filename.	
5	<div>YES</div> <div>+1/ON</div>	<div>Disk INT >Dir >Save >Load >Del >Rename</div> <div>File # xxxxxxxx ** Are you sure?</div>
	Press YES. Because it is possible to overwrite (and erase) files on disk, make sure you have selected a blank file.	
6	<div>YES</div> <div>+1/ON</div>	<div>Disk INT >Dir >Save >Load >Del >Rename</div> <div>File # xxxxxxxx ** Completed!</div>
	Press YES to save the file to disk. Press NO to abort the process.	

Loading Internal Data

Once data has been saved to an INT file on disk, it may be loaded back into the Internal memory. Before loading a CRT file to internal memory you must first load it to a RAM cartridge, refer to the "Loading cartridge memory" section later in this guide.

Insert a 3.5" disk with the file you want to load into the disk slot. Then...

1	<div>DISK</div> <div>16 48</div>	<div>Disk INT >Dir >Save >Load >Del >Rename</div> <div>** Set disk and push [yes]</div>
Press button 16 until you enter the Disk/INT mode.		
2	<div>YES</div> <div>+1/ON</div>	<div>Disk INT >Dir >Save >Load >Del >Rename</div> <div>File # xxxxxxxx</div>
Press YES to access the Disk directory. Use the +1/-1 buttons to select the desired file.		
3	<div>PAN</div> <div>▶</div>	<div>Disk INT >Dir >Save >Load >Del >Rename</div> <div>File # xxxxxxxx Load without system?</div>
Press the right cursor button twice. This selects the Load function.		
4	<div>YES</div> <div>+1/ON</div>	<div>Disk INT >Dir >Save >Load >Del >Rename</div> <div>File # xxxxxxxx Load without system?</div>
Press NO to load with the system, or press YES to load without the system.		
5	<div>YES</div> <div>+1/ON</div>	<div>Disk INT >Dir >Save >Load >Del >Rename</div> <div>File # xxxxxxxx ** Are you sure ?</div>
The display will ask "Are you sure?."		
6	<div>YES</div> <div>+1/ON</div>	<div>Disk INT >Dir >Save >Load >Del >Rename</div> <div>File # xxxxxxxx ** Completed!</div>
Press YES to load the file from disk. Press NO to abort the process.		

Cartridge (CRT)

The procedures for saving and loading data from a cartridge are very similar to those just described for the internal memory.

The entire contents of a RAM cartridge or one bank in a ROM cartridge may be saved to a single disk file. This includes the following data:

- 64 Voice memories
- 32 Performance memories
- 2 User Micro Tuning Scales
- 1 System Setup
- OR -
- Up to 64 Fractional Scaling memories
- OR -
- Up to 63 User Micro Tuning Scales

Saving Cartridge Data

Insert a formatted 3.5" disk into the disk slot
and a RAM4 cartridge into the cartridge slot. Then...

1

DISK

16 48

Disk CRT >Dir>Save>Load>Del>Rename>Bank
** Set disk and push [yes] 1

Press button 16 until you enter the Disk/CRT mode.

2

YES

+1/ON

Disk CRT >Dir>Save>Load>Del>Rename>Bank
File # 1

Press YES to access the Disk directory. Use the +1/-1 buttons to select a blank file (the).

3

PAN

▶

Disk CRT >Dir>Save>Load>Del>Rename>Bank
File # input filename ? 1

Press the right cursor button once. This selects the Save function.

4

COMPARE

EDIT

CHARACTER

Disk CRT >Dir>Save>Load>Del>Rename>Bank
File # xxxxxxxx

Press and hold the Edit/Character button and type in a filename.

5

YES

+1/ON

Disk CRT >Dir>Save>Load>Del>Rename>Bank
File # xxxxxxxx ** Are you sure ?

Press YES. Because it is possible to overwrite (and erase) files on disk, make sure you have selected a blank file.

6

YES

+1/ON

Disk CRT >Dir>Save>Load>Del>Rename>Bank
File # xxxxxxxx ** Completed!

Press YES to save the file to disk. Press NO to abort the process.

Loading Cartridge Data

Once data has been saved to a CRT file on disk, it may be loaded back into a RAM cartridge.

Insert a 3.5" disk with the file you want to load into the disk slot, and a RAM4 cartridge into the cartridge slot. Then...

1	DISK <div>16 48</div>	Disk CRT >Dir>Save>Load>Del>Rename>Bank ** Set disk and push [yes] 1
	Press button 16 until you enter the Disk/CRT mode.	
2	YES <div>+1/ON</div>	Disk CRT >Dir>Save>Load>Del>Rename>Bank File # xxxxxxxx 1
	Press YES to access the Disk directory. Use the +1/-1 buttons to select the desired file.	
3	PAN <div>▶</div>	Disk CRT >Dir>Save>Load>Del>Rename>Bank File # xxxxxxxx to cartridge ? 1
	Press the right cursor button twice. This selects the Load function.	
4	YES <div>+1/ON</div>	Disk CRT >Dir>Save>Load>Del>Rename>Bank File # xxxxxxxx ** CRT=XXX-X ok?
	Press YES. The format of the RAM cartridge will be displayed. Press YES again to continue, pressing NO will allow you to change the cartridge.	
5	YES <div>+1/ON</div>	Disk CRT >Dir>Save>Load>Del>Rename>Bank File # xxxxxxxx ** Are you sure ?
	The display will ask "Are you sure?."	
6	YES <div>+1/ON</div>	Disk CRT >Dir>Save>Load>Del>Rename>Bank File # xxxxxxxx ** Completed!
	Press YES to load the file from disk. Press NO to abort the process.	

MIDI Data Recorder Functions

The DX7 II FD's disk drive can be used to record a variety of system exclusive MIDI data. This includes sequence data, voice data, rhythm pattern data, and other useful bulk memory data. You might for example store sequence data from a QX5 sequencer which has no built-in disk drive.

The MIDI equipment transmitting the data you wish to store must be able to output system exclusive messages without a "dump request". In other words, it must be able to transmit its data without receiving a request from another device. It must also be able to send data in bulks that are no larger than 20 kilobytes. Larger volumes of data must be split up into 20K segments within the transmitting equipment.

Recording Incoming MIDI Data

Recording external MIDI data is a two-step process. First, the DX must receive the incoming data. This is temporarily placed in a buffer. Next, you must write this data to disk assigning a name to the new file. The DX7 II will ignore any data that exceeds the 20K byte maximum per file.

Saving MIDI Bulk Data

Insert a formatted 3.5" disk into the disk slot,
and make the appropriate MIDI connections. Then...

1

DISK

16

48

Disk MDR >Dir >In >Out >Del >Rename
** Set disk and push [yes]

Press button 16 until you enter the Disk/MDR mode.

2

YES

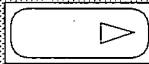
+1/ON

Disk MDR >Dir >In >Out >Del >Rename
File #

Press YES to access the Disk directory. Use the +1/-1 buttons to select a blank file (the).

3

PAN



Disk MDR >Dir >In >Out >Del >Rename
File # input filename ?

Press the right cursor button once. This selects the MIDI data In function.

4

COMPARE

EDIT

CHARACTER

Disk MDR >Dir >In >Out >Del >Rename
File # xxxxxxxx

Press and hold the Edit/Character button and type in a filename.

5

YES

+1/ON

Disk MDR >Dir >In >Out >Del >Rename
File # xxxxxxxx ** Are you sure ?

Press YES. Because it is possible to overwrite (and erase) files on disk, make sure you have selected a blank file.

6

YES

+1/ON

Disk MDR >Dir >In >Out >Del >Rename
** Now waiting MIDI bulk data!

Press Yes. The DX is now waiting for a MIDI bulk dump. Begin transmitting from the other device.

Disk MDR >Dir >In >Out >Del >Rename
Busy Now executing!

This is the display during data reception.

Disk MDR >Dir >In >Out >Del >Rename
** Now waiting MIDI bulk data!

This display means the data was properly received and is ready to be written to disk.

7

YES

+1/ON

Disk MDR >Dir >In >Out >Del >Rename
File # xxxxxxxx ** Completed!

Press NO to write the file to disk (this is the only choice).

If you did not want to write the file to disk, simply use the Delete function to remove it.

Transmitting MIDI Data from Disk

A file containing MIDI data you have recorded may be transmitted back (loaded) to the external equipment as follows.

*Insert a 3.5" disk with the file you want to load into the disk slot,
and make the appropriate MIDI connections. Then...*

1

DISK

16 48

Disk MDR

>Dir >In >Out >Del >Rename

** Set disk and push [yes]

Press button 16 until you enter the Disk/MDR mode.

2

YES

+1/ON

Disk MDR

>Dir >In >Out >Del >Rename

File # xxxxxxxx

Press YES to access the Disk directory. Use the +1/-1 buttons to select the desired file.

3

PAN

Disk MDR

>Dir >In >Out >Del >Rename

File # xxxxxxxx transmit ?

Press the right cursor button twice. This selects the MIDI data Out function.

4

YES

+1/ON

Disk MDR

>Dir >In >Out >Del >Rename

File # xxxxxxxx ** Are you sure?

Press YES. The display will ask if you are sure. At this point, prepare the other device to receive incoming data.

Disk MDR

>Dir >In >Out >Del >Rename

BUSY Now executin9!

This is the display while the DX is transmitting the file.

Disk MDR

>Dir >In >Out >Del >Rename

File # xxxxxxxx ** Completed!

This display means the data has been sent via MIDI to the other device.

8

Utilities

Utilities

Formatting a Disk

There are several utility functions provided on the DX7 II FD that pertain to disk management. These are described below.

Before using a new disk you must prepare it to store data in the DX7 II FD format. This process is called Formatting (or initializing) a disk.

Insert a blank disk into the disk slot. Then...

1

DISK
16 48

Disk >Format >Back up >Free bytes
** Set disk and push [yes]

Press button 16 until this display appears.

2

YES
+1/ON

Disk >Format >Back up >Free bytes
** Set disk and push [yes] ** sure?

Press YES. The DX will ask "Are you sure (this is the disk you want to format)?"

3

YES
+1/ON

Disk >Format >Back up >Free bytes
BUSY Now executing! track#=79

Press YES to begin formatting the disk. Press NO to abort.

Disk >Format >Back up >Free bytes
** Completed!

After about 1 minute this display will appear indicating that the disk has been properly formatted.

Remaining Disk Memory

After recording (storing) a number of files on disk, you may want to check the remaining memory. The number of free bytes lets you determine how many files are available for storing data. For example, a INT or CRT file takes up about 16 kilobytes of disk space. This function displays the approximate number of INT or CRT files that may be stored on the remaining disk space.

An MDR file can be any size from 1 to 20 kilobytes. Therefore, the number of files per disk depends on the size of the files you store.

Insert a 3.5" disk that contains data into the disk slot. Then...

1

DISK

1648

Disk >Format >Back up >Free bytes

** Set disk and push [yes]

Press button 16 until this display appears.

2

YES

+1/ON

Disk >Format >Back up >Free bytes

###k bytes free (INT/CRT:## files)

Press the right cursor button twice. The available memory in bytes, as well as the number of INT/CRT additional files will be calculated.

Directory of Files

This function lets you check the names and numbers of files stored on disk. It also allows you to access deleted file locations for storing new data. Before deleting or renaming a specific file, you may look at and select it using this function. Be sure to check the appropriate file type (INT, CRT, or MDR).

Insert a 3.5" disk with the file you want to select into the disk slot. Then...

1

DISK

1648

Disk INT >Dir >Save >Load >Del >Rename

** Set disk and push [yes]

Press button 16 until you enter the desired Disk data mode (INT, CRT or MDR).

2

YES

+1/ON

Disk CRT >Dir>Save>Load>Del>Rename>Bank

File # xxxxxxxx

Press YES to access the Disk directory. Use the +1/ -1 buttons to select the desired file.

Deleting Files

You may delete a file from disk that is no longer needed. This can free-up disk space for storing more important data.

Insert a 3.5" disk with the file you want to delete into the disk slot. then...

- 1**

DISK

48
16

Disk INT >Dir >Save >Load >Del >Rename
** Set disk and push [yes]

Press button 16 until you enter the desired Disk data mode (INT, CRT or MDR).
- 2**

YES

+1/ON

Disk INT >Dir >Save >Load >Del >Rename
File # xxxxxxxx

Press YES to access the Disk directory. Use the +1/-1 buttons to select the desired file.
- 3**

PAN

▶

Disk INT >Dir >Save >Load >Del >Rename
File # xxxxxxxx ?

Press the right cursor button three times. This selects the Delete function.
- 4**

YES

+1/ON

Disk INT >Dir >Save >Load >Del >Rename
File # xxxxxxxx ** Are you sure?

Press YES. The display will ask "Are you sure (this is the file you want to delete)?"
- 5**

YES

+1/ON

Disk INT >Dir >Save >Load >Del >Rename
BUSY Now executing!

Press YES to delete the file. Press NO, then the left cursor twice to abort this process.
- 6**

Disk INT >Dir >Save >Load >Del >Rename
File # ** Completed!

This display means the file has successfully been deleted from the disk.

You may rename a file on disk.

Insert a 3.5" disk with the file you want to rename into the disk slot. Then...

<p>1</p>	<p>DISK</p> <p>16 48</p>	<p>Disk INT >Dir >Save >Load >Del >Rename ** Set disk and push [yes]</p>
<p>Press button 16 until you enter the desired Disk data mode (INT, CRT or MDR).</p>		
<p>2</p>	<p>YES</p> <p>+1/ON</p>	<p>Disk INT >Dir >Save >Load >Del >Rename File # XXXXXXXX</p>
<p>Press YES to access the Disk directory. Use the +1/-1 buttons until you select the desired file.</p>		
<p>3</p>	<p>PAN</p> <p>▶</p>	<p>Disk INT >Dir >Save >Load >Del >Rename File # XXXXXXXX to</p>
<p>Press the right cursor button four times. This selects the Rename function.</p>		
<p>4</p>	<p>COMPARE</p> <p>EDIT</p>	<p>Disk INT >Dir >Save >Load >Del >Rename FILE # XXXXXXXX to xxxxxxxx</p>
<p>Press and hold the Edit/Character button and type in the new filename.</p>		
<p>5</p>	<p>YES</p> <p>+1/ON</p>	<p>Disk INT >Dir >Save >Load >Del >Rename FILE # XXXXXXXX to xxxxxxxx** sure?</p>
<p>Press YES. The display will ask "Are you sure (this is the correct filename)?"</p>		
<p>6</p>	<p>YES</p> <p>+1/ON</p>	<p>Disk INT >Dir >Save >Load >Del >Rename FILE # xxxxxxxx ** Completed!</p>
<p>Press YES to rename the file; press NO to return to step 3 or press the left cursor to abort the process.</p>		

Creating Backup Disks

Although the disks used in the DX7 II FD are very reliable, you may wish to “backup” or duplicate valuable data as a precaution against accidental disk erasure.

You may want to keep backup disks in a safe place (away from the original), and use them only if the original becomes damaged or lost. It is also recommended that when using a backup disk, you switch the backup disk’s memory protect on before using the disk.

To backup an original disk, you must first format a duplicate disk. This is done from the same display as the “Back up” function. Insert the disk, and follow the directions in the LCD.

Format a blank disk. Locate a 3.5" disk that you wish to back up (duplicate). Then...

1	DISK <div style="border: 1px solid black; padding: 2px; display: inline-block;">16 48</div>	<div style="border: 1px solid black; padding: 5px;"> Disk >Format >Back up >Free bytes ** Set disk and push [yes] </div> <p>Press button 16 until this display appears.</p>
2	PAN <div style="border: 1px solid black; padding: 2px; display: inline-block;">▶</div>	<div style="border: 1px solid black; padding: 5px;"> Disk >Format >Back up >Free bytes ** Are you sure? </div> <p>Press the right cursor button once. This selects the Back up function.</p>
3	YES <div style="border: 1px solid black; padding: 2px; display: inline-block;">+1/ON</div>	<div style="border: 1px solid black; padding: 5px;"> Disk >Format >Back up >Free bytes ** Set original disk and push [yes] 0% </div> <p>Press YES. The DX will prompt you to insert the Original (master) disk.</p>
4	YES <div style="border: 1px solid black; padding: 2px; display: inline-block;">+1/ON</div>	<div style="border: 1px solid black; padding: 5px;"> Disk >Format >Back up >Free bytes **BUSY** Now executin9! </div> <p>The DX will load a portion of the file into its memory, then ask you to insert the Duplicate (backup) disk.</p>
5	YES <div style="border: 1px solid black; padding: 2px; display: inline-block;">+1/ON</div>	<div style="border: 1px solid black; padding: 5px;"> Disk >Format >Back up >Free bytes ** Set duplicate disk and push [yes] 0% </div> <p>The DX will write this portion of the file to disk, then ask you to insert the Original (master) disk.</p>
6	<p>Repeat steps 3 ~ 5 until the display reads: ** Completed! The % indicates the percent of disk data that has been backed up.</p>	

9

Data Charts

Data Charts

The following blank data charts are useful for keeping track of your favorite voices and performances. The init data charts display the contents of the Current Edit/Play buffer after using the Init function.

Voice name :

Date : / /

ALGORITHM		OSCILLATOR	OP	1	2	3	4	5	6	Key mode		Foot control 1	
ALG		Mode								Key assign mode		P. MOD	
FBL		Coarse•Fine								Unison detune		A. MOD	
OSC.Sync		Detune								Pitch Bend		EG. B	
Transpose		E G	OP	1	2	3	4	5	6	Range		P. Bias	
L F O		RS								Step		Foot control 2	
Wave		R1								Mode		P. MOD	
Speed		R2								Portamento		A. MOD	
Delay		R3								Mode		EG. B	
Mode		R4								Step		P. Bias	
PMS		L1								Time		MIDI IN control	
PMD		L2								Random pitch S.		P.MOD	
AMD		L3								Modulation Wheel		A. MOD	
Sync		L4								P. MOD		EG. B	
Pitch	E G	Output Level	OP	1	2	3	4	5	6	A. MOD		P. Bias	
Range		Scaling mode								EG. B			
Velocity										Breath Control			
RS		Output Level								P. MOD			
R1		LD								A. MOD			
R2		LC								EG. B			
R3		BP								P. Bias			
R4		RC								After Touch			
L1		RD								P. MOD			
L2		Sensitivity	OP	1	2	3	4	5	6	A. MOD			
L3		Velocity								EG. B			
L4		AMS								P. Bias			

Blank Performance Data Chart



Performance name :

	A		B	
Voice mode				
Voice No(name)				
Total volume				
Balance				
Dual detune				
Split point				
Sustain foot switch				
Foot switch () RNG				
Continuous slider 1 ()				
Continuous slider 2 ()				
Micro tuning table select () Key=				
EG forced damping				
Note shift				
PAN mode				
PAN range				
PAN select				
PAN EG	R1	R2	R3	R4
	L1	L2	L3	L4

ALGORITHM		OSCILLATOR	OP	1	2	3	4	5	6	Key mode		Foot control 1		4	
ALG	1	Mode		ratio	→					Key assign mode	POLY	P. MOD		0	
FBL	0	Coarse•Fine		1.00	→					Unison detune	—	A. MOD		0	
OSC.Sync	ON	Detune		+0	→					Pitch Bend		EG. B		0	
Transpose	C3	E	G	OP	1	2	3	4	5	6	Range	2	P. Bias	0	
L	F	0	RS		0	→					Step	0	Foot control 2		7
Wave	TR1	R1		99	→						Mode	normal	P. MOD		0
Speed	35	R2		99	→						Portamento		A. MOD		0
Delay	0	R3		99	→						Mode	sus. key p.retain	EG. B		0
Mode	SINGLE	R4		99	→						Step	0	P. Bias		0
PMS	3	L1		99	→						Time	0	MIDI IN control		
PMD	0	L2		99	→						Random pitch S.		P.MOD		0
AMD	0	L3		99	→						Modulation Wheel		A. MOD		0
Sync	ON	L4		0	→						P. MOD	0	EG. B		0
Pitch	E	G	Output Level	OP	1	2	3	4	5	6	A. MOD	0	P. Bias		0
Range	8 oct.	Scaling mode		norm.	→						EG. B	0	Breath Control		
Velocity	OFF														
RS	0	Output Level		99	0	0	0	0	0		P. MOD	0	A. MOD		
R1	99	LD		0	→						A. MOD	0	EG. B		
R2	99	LC		-lin	→						EG. B	0	P. Bias		
R3	99	BP		C3	→						P. Bias	+0	After Touch		
R4	99	RC		-lin	→						After Touch		P. MOD		
L1	50	RD		0	→						P. MOD	0	A. MOD		
L2	50	Sensitivity	OP	1	2	3	4	5	6		A. MOD	0	EG. B		
L3	50	Velocity		0	→						EG. B	0	P. Bias		
L4	50	AMS		0	→						P. Bias	+0			

Init Performance Data Chart



Performance name : INIT PERF

	A		B	
Voice mode DUAL	INT 1		INT 1	
Voice No(name)				
Total volume	99			
Balance	+0			
Dual detune	0			
Split point	—		—	
Sustain foot switch 64	ON		ON	
Foot switch (64-67)RNG	PORTAMENTO ON		ON	
Continuous slider 1 (14)	NO EFFECT			
Continuous slider 2 (15)	NO EFFECT			
Micro tuning table select (#1: EQUAL) Key= TEMP.	OFF		OFF	
EG forced damping	OFF			
Note shift	+0		+0	
PAN mode	I: A; ON B; ●N			
PAN range	0			
PAN select	LFO			
PAN EG	RI 99	R2 99	R3 99	R4 99
	LI 50	L2 50	L3 50	L4 50

