

# OWNER'S MANUAL



## Oberheim

A Division of ECC Development Corporation

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**Oberheim**

# DPX-1

**Digital Sample Player**

**OWNER'S MANUAL**

**First Edition – December, 1986**

**"DPX-1 Owner's Manual"**  
**1st Edition Text & Illustrations**  
**by David M. Bertovic**

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**CAUTION:**

To prevent fire or shock hazard, do not expose this appliance to rain or moisture. Do not remove cover. No user serviceable parts inside. Refer servicing to qualified service personnel.

**WARNING:**

This equipment generates and uses radio frequency energy and if not installed and used properly, i.e., in strict accordance with the instruction manual, may cause harmful interference to radio communications.

Operation of this equipment in a residential area is likely to cause interference in which case the user at his own expense will be required to take whatever measures may be required to correct the interference.

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## WELCOME TO THE DPX-1

The staff at ECC/Oberheim would like take this opportunity to extend our congratulations to you on your purchase of the Oberheim DPX-1 Digital Sample Player. The DPX-1 is an 8-voice polyphonic instrument that is fast and easy to use. It is specifically designed to allow the musician to play the sampled sounds of the E-mu Emulator II, the Sequential Prophet 2000 and Prophet 2002, and the Ensoniq Mirage in both its keyboard and rack-mountable versions.

The DPX-1 is simple in its operation – just insert a disk, load and play . But its simplicity is really quite misleading. The heart of the DPX-1 is its Motorola 68000 microprocessor, an extremely fast and powerful microcomputer capable of transforming the data on a sample disk in just a few seconds. And the high-speed digital processing circuitry under the hood assures faithful and accurate reproduction of the sounds that are on it.

Although the DPX-1 doesn't do any sampling itself, nor will it allow editing of the sounds from the disk, it provides you with the largest available library of sampled sounds of any instrument in the world of sampling. And as more disks become available – from any manufacturer or sampled-sound developer – this library will continue to grow.

The front panel functions of the DPX-1 provide all the necessary parameters to set it up and interface it with other MIDI-compatible units. MIDI Channels 1 – 16 plus OMNI Mode are selectable as well as front-panel and MIDI Patch Changes, Fine Tune adjust, MIDI Controllers on/off functions, and sample loading/saving via the MIDI Sample Dump Standard. And all of this is packaged in a 2-rack space unit, an ideal addition to any instrument system.

The DPX-1 is a very serious instrument. It was designed for the serious musician who intends to enhance his or her music with sounds that can only be obtained from Digital Sampling. This manual will provide you with some serious information and we recommend that you read this document **in its entirety**. It was written to provide you with all the information you will need to operate and interface your DPX-1. We encourage you to experiment and, above all, have fun.

Thank you for your investment in the State of the Art.

### **Oberheim**

A Division of ECC Development Corporation  
Los Angeles, California  
USA

# IF YOU'RE IN A HURRY...

## A Quick-Start Procedure to Using the DPX-1

If you absolutely **must** start now, take the next five minutes and read the following:

### 1. INITIAL SET UP –

- Place the DPX-1 on any level surface (a slight angle is acceptable), or mount it in a rack cabinet. When rack-mounting the DPX-1, be sure to leave space above and below the unit to insure proper ventilation.
- Remove the 5 $\frac{1}{4}$ " drive protect card by flipping the Disk-Lock lever to its up (horizontal) position and pulling the card straight out. The 3 $\frac{1}{2}$ " drive is automatically protected by a mechanism that engages when a sample disk is ejected.

**Make absolutely certain that the 5 $\frac{1}{4}$ " drive protect card is inserted in its drive and that the 3 $\frac{1}{2}$ " drive is empty before the DPX-1 is transported.**

### 2. HOOK IT UP –

- Refer to the Back Panel Layout diagram shown on Page 12 for descriptions of the DPX-1's inputs and outputs. Make sure you use the right cables.
- The DPX-1 must be used as a MIDI Slave, so connect the MIDI OUT of the Master instrument to the MIDI IN of the DPX-1.

### 3. TURN IT ON –

- The POWER SWITCH is on the rear panel in the lower left-hand corner as you are facing the DPX-1 from the front. **Before inserting a disk**, reach around the unit and flip it to the right.
- The disk drives will be activated the moment you power the DPX-1 on, the 3 $\frac{1}{2}$ " drive first, then the 5 $\frac{1}{4}$ " drive. Since there aren't any disks in either of the drives, the Display will read *nd* for "no disk".

### 4. INSERT and LOAD DISK –

- Take a disk and insert it into the proper drive. The orientation of the disk is important: be absolutely certain that it is right-side up and "window-side" in (the area where the disk is scanned by the drives' heads). The rule-of-thumb is that the disk's label should be facing up and closest to you as it is inserted. The disk should slide in easily with a straight motion.

**Insert only one disk at a time.**

When a 3 $\frac{1}{2}$ " disk is used, the disk drive mechanism will lock the disk in place automatically. When a 5 $\frac{1}{4}$ " disk is used, you must manually flip the Disk-Lock/Eject lever to its down (vertical) position to lock the disk in place; otherwise, the disk cannot be read by the DPX-1.

- 
- Press the LOAD DISK key, located to the right of the 5 1/4" drive. The drive containing the disk will be activated and will then load the data contents into the DPX-1.

#### 5. FUNCTION SELECT –

- Press the rectangular Function key repeatedly to select the function desired. Pressing the Function button in this manner will cause the lights to "loop" around the six headings.
  1. When PATCH SELECT is lit, you can select any one of the DPX-1's 100 presets numbered 00 through 99. Use the < > buttons to change presets. When the desired Patch Number is displayed, press ENTER and that sample will be recalled. If a Patch No. is selected that does not contain sample data, the ERROR light will flash and the last valid preset will remain the active one.

The < > keys change values by 1. Holding either arrow key will cause the DPX-1's display to scroll through the Patch Numbers in numerical sequence.

2. When MIDI CHANNEL is lit, you are able to select the transmit and receive channel of the DPX-1. When the desired MIDI Channel is displayed, press ENTER and that Channel will be enabled. MIDI Channels 1 through 16 are available. If the display reads *on*, that indicates that OMNI Mode has been selected.
3. FINE TUNE permits the DPX-1 to be fine tuned to the other instruments in your system. The range of the FINE TUNE Function is  $\pm$  a 1/4-tone, represented on the display numerically as a range of 00 to 99. A display value of 50 is the center of the range, higher numbers are sharp adjustments and lower numbers are flat.
4. The remaining parameters of DATA DUMP, MIDI CONTROLLER and EXTENDED FUNCTIONS are covered later in the manual. The discussion begins on Page 26.

#### 6. ADJUST THE VOLUME –

- The VOLUME slider controls the volume level output of the DPX-1. Pushing it up gives an increase in volume. Pulling it down decreases the volume.

#### 7. WHEN YOU'RE FINISHED

- When you are done playing the DPX-1, be sure to eject the disk(s) before shutting it off. Do not transport the DPX-1 with a sample disk in either of the drives – use the protect card in the 5 1/4" drive for this purpose.

These brief procedures are explained in detail throughout the rest of the manual. We encourage you to read the manual in its entirety if you would like to learn more about the DPX-1.



# DPX-1 Front Panel Layout

**3 1/2" Floppy Disk Drive**  
Will read both Single and Double-sided  
3 1/2" floppy diskettes.

**"DRIVE ACTIVE"  
Indicator LED**

**Disk Eject Button**

**5 1/4" Floppy Disk Drive**  
Will read both Single and Double-sided  
5 1/4" floppy disks.

**Disk Lock/Disk Eject Lever**

**"DRIVE ACTIVE"  
Indicator LED**

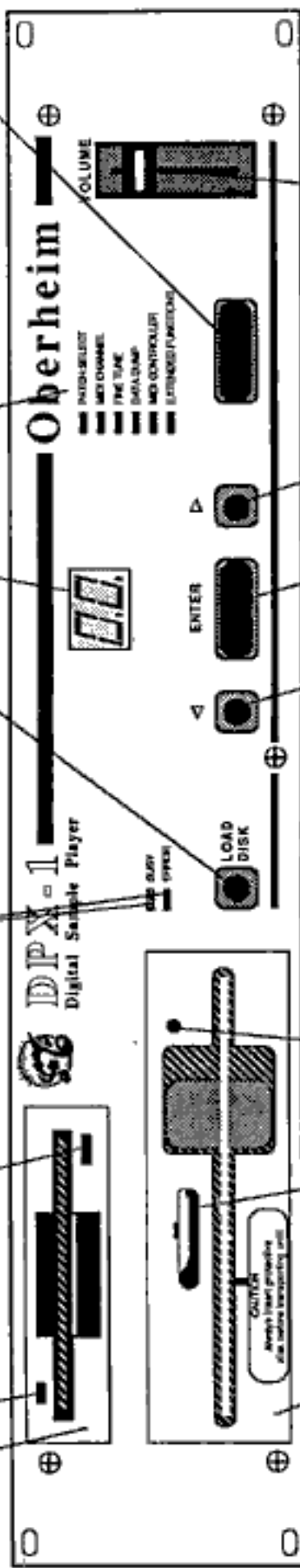
**BUSY and ERROR Indicators**  
BUSY - Lights when disk data is being loaded,  
a command/function is being executed, or when  
MIDI IN information is detected.  
ERROR - Current command/function cannot be  
completed due to one or more operational errors.

**LOAD DISK Key**  
Instructs the DPX-1 to read  
the inserted disk for playback.

**Alpha-Numeric DISPLAY**  
2-character LED readout of the current  
function (Patch Number, MIDI Channel,  
Fine Tune, etc.) or an abbreviation of  
the DPX-1's current status.

**FUNCTION Selector**  
Shows which of the six available  
function parameters is in operation.  
Lighted LED indicates the currently  
selected function.

**FUNCTION SELECT Key**  
Used to select from among the six  
available operation parameters.



**DECREMENT Key**  
Subtracts a value of "1"  
from displayed value.

**ENTER Key**  
Instructs the DPX-1 to recognize a  
newly selected FUNCTION value.

**INCREMENT Key**  
Increases displayed value  
by a value of "1".

**VOLUME Slider**  
Controls the DPX-1's  
output level.

# Chapter 1: A FEW PRELIMINARIES

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## UNPACKING

It is obvious that by now you have opened your DPX-1's shipping carton. After you get it out of the box, place it on any level surface or mount it in a 19" standard rack cabinet (instructions below). After you have found a place to put your DPX-1, refer to the next section on HOOKUP for information on proper connections, interfacing and other tips.

### ACCESSORIES

The DPX-1 is shipped from the factory with a number of accessories. The checklist below identifies the items that should be in the box when you open it. If any of these items are not in the carton, **contact the Oberheim Dealer where it was purchased** and they will assist you in obtaining the missing items:

- The DPX-1 Digital Sample Player
- This Owner's Manual
- Warranty Card
- 6-foot A.C. Cord
- 10-foot MIDI Cable
- Two (2) 3 1/2" Floppy Disks
  - 1 w/ Mirage-compatible samples
  - 1 w/ Prophet 2000/2-compatible samples
- One (1) 5 1/4" Floppy Disk
  - w/ Emulator II-compatible samples
- One (1) 5 1/4" pressboard drive protect card
- ECC/Oberheim Authorized Service Centers Directory

### RACK MOUNTING

The DPX-1 is designed primarily to be used in a standard 19" rack mount cabinet. To install your DPX-1, you will need a Phillips-Head screwdriver and four mounting bolts (with washers) to mount the unit into the rack.

The oval holes on the four corners of the front panel are used to mount the DPX-1 into the rack cabinet. You will notice that they are somewhat larger than the bolts used to mount the unit. These holes are oval-shaped to provide some "play" when installing the unit into a rack cabinet, just in case the dimensions of the rack are not exact.

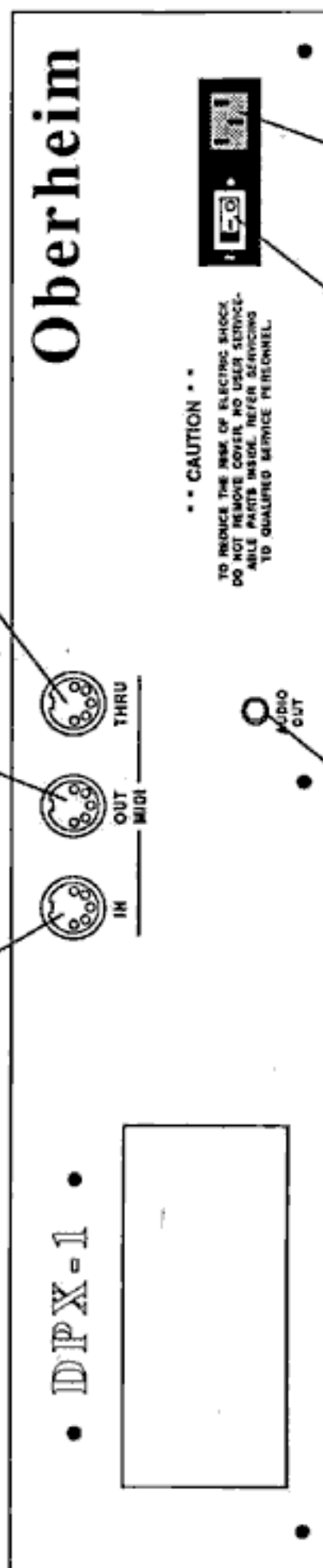
The DPX-1 uses two rack spaces. A standard "rack space" is 1 3/4 inches of vertical space in the cabinet. When installing the DPX-1 into the rack, we recommend leaving an air space of approximately 1/2-inch or so above and below the DPX-1 and other instruments in the rack so as to insure proper ventilation. This will help prevent the DPX-1 from possibly overheating, especially if it will be left powered on for prolonged periods of time. We therefore also recommend that the DPX-1 not be mounted adjacent to a power amplifier, or any other device that produces heat.

# DPX-1 Back Panel Layout

**MIDI IN Port**  
Connects the DPX-1 to your Master controller. Used by the DPX-1 to receive MIDI data.

**MIDI OUT Port**  
Connects the DPX-1 to a slave device with the DPX-1 as the Master. Used primarily when the DPX-1 is transmitting sample data.

**MIDI THRU Port**  
Connects the DPX-1 to other slave instruments in the system. Used to pass MIDI information from the Master to the other slaves.



• • CAUTION • •

TO REDUCE THE RISK OF ELECTRIC SHOCK  
DO NOT REMOVE COVER. NO USER SERVICE-  
ABLE PARTS INSIDE. REFER SERVICING  
TO QUALIFIED SERVICE PERSONNEL.

**AUDIO OUT Jack**

Connects the DPX-1 to your sound system. Use standard shielded audio cable.

**AC Power Switch**

Turns the DPX-1 on or off.

**AC Line Receptacle**

Connects the DPX-1 to an electrical wall outlet. Use the AC cord supplied as a standard accessory.

It is not necessary for the DPX-1 to be rack-mounted to work properly. The Sample Player will operate normally if placed on any level surface. A reasonably level surface is required in order for the disk drives to operate properly although the drives will work just fine if a shallow angle – less than 45° from the horizontal – is used. Just keep in mind that attempting to operate the DPX-1 resting on too steep of an angle (or upside-down, for that matter) may cause the drives to malfunction, causing permanent damage to the disk and possibly the drives' mechanisms themselves.

#### **DISK DRIVE PROTECTION**

The DPX-1's two floppy disk drives are protected from transit damage so as to prevent the drives' mechanisms from excessive movement when the DPX-1 is being transported.

The 3 1/2" drive incorporates an automatic head-lock feature that engages the moment the disk is ejected. The 5 1/4" drive, however, requires a heavy-gauge pressboard card to be inserted for transit protection and is included with your DPX-1 as a standard accessory. **Before powering the DPX-1 on, remove the card in the 5 1/4" drive by using the following procedure:**

1. Flip the DISC-LOCK LEVER to its UP position.
2. The drive-protect card can now be removed by grasping the front tab and gently pulling the card out with a straight motion.

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## **HOOKUP**

#### **A.C. POWER**

The DPX-1 can operate on AC power between 95-130 volts or 200-240 volts and is set for the AC level of the country to which it has been shipped from the factory. If it is necessary to change the AC line level, contact your nearest ECC/Oberheim Authorized Service Center for this non-Warranty modification.

- The small, rectangular AC receptacle on the back panel will be protected by a paper strip identifying the DPX-1's current AC setting.

After verifying that your DPX-1 is set for the proper AC line level, remove this strip, plug the female end of the AC cord into the DPX-1 and the male end into your wall outlet.

- Remove the 5 1/4" drive protect card, following the procedure outlined above. Turn on the DPX-1 with the power switch next to the power socket on the back panel.
- When the DPX-1 is powered on, the disk drives will be activated and will look for a disk in either of the two drives. A detailed discussion as to how the drives operate begins on Page 18.

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- When the DPX-1 is powered on, are the drives activated? Do the DRIVE ACTIVE LEDs light up? Does the front panel display light up? If not, check your connections.

### **AUDIO and MIDI CONNECTIONS**

Connect the DPX-1 to a mixing board, hi-fi system, instrument amplifier, or a sound system using the AUDIO OUTPUT jack. The DPX-1's output can be plugged into a Line Input, or an attenuated Microphone Input.

Connect the DPX-1 to your sound system **before** powering it on. The DPX-1 Back Panel Layout diagram on the Page 12 will assist you in setting up the DPX-1, showing the different connections that are possible with the back panel jacks. For a more detailed explanation, refer to the section titled BACK PANEL FUNCTIONS, beginning on Page 17.

Also before powering on the DPX-1, connect it to the MIDI instrument that you will use as its Master. Because the DPX-1 does not have its own keyboard, it must be played as a "Slave" from another MIDI instrument as its "Master". The Master can be another MIDI synthesizer, a MIDI guitar synthesizer or MIDI guitar interface, a MIDI-equipped sequencer, drum machine or computer, or a MIDI keyboard controller. Using a standard MIDI interface cable, connect the MIDI OUT of the Master to the MIDI IN of the DPX-1.

The order in which you power on your instruments is important. First, turn on the DPX-1 with its VOLUME control set to its minimum (slider knob all the way down). Next, turn on the synthesizer or MIDI Controller that will drive the DPX-1. Then turn on the sound system – mixer first then the power amplifier. Powering on in this order will prevent a possible "lock-up" occurring from the MIDI connections and a possible audio "thump" from harming your speaker(s). When shutting down your system, reverse the order – turn off the power amplifier, then the mixer, then the DPX-1 and the rest of your instruments.

### **CARE & MAINTENANCE**

For proper care and handling, do not expose your DPX-1 to direct sunlight or to temperatures above 120° F (48.9° C).

Be careful not to spill any liquids on or into the DPX-1. Do not expose the DPX-1 to moisture or store it in an area that is damp or has high levels of humidity.

Should your DPX-1 require cleaning, use a soft cloth with mild soap (such as dishwashing liquid) and luke-warm water. Spray-type window cleaners are acceptable but do not spray the unit directly – spray the cloth first then clean the DPX-1. Do not use harsh or abrasive detergents or solvents. We do not recommend vinyl-treatment products that leave a residue.

### **SERVICING**

Should your DPX-1 need servicing, do not attempt repairs yourself. Refer to the section in the back of this manual titled IF YOU HAVE A PROBLEM and contact your nearest ECC/Oberheim Authorized Service Center. A current roster of Service Centers is included in the Owner's Packet along with this manual.

We also encourage you to familiarize yourself with the Warranty Policy in the back of the manual as it outlines your rights and responsibilities under the ECC/Oberheim Limited Warranty and lists several important exclusions.

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## SPECIFICATIONS

### Audio Sources

8-Voice polyphonic Digital Sample Player.

Reproduces sampled audio in digital data format, read from 3 1/2" or 5 1/4" floppy diskettes or received from MIDI via Sample Dump Standard.

All sample data is converted to 12-bit linear data format.

The DPX-1 will currently accept disk data from:

E-mu Systems	"Emulator II"
Sequential	"Prophet 2000"
	"Prophet 2002" (rack-mount)
Ensoniq	"Mirage" DSK-8 Digital Sampling Keyboard
	"Mirage" DMS-8 Digital Multi-Sampler (rack-mount)

### Hardware

#### Front Panel:

- One (1) 3 1/2" floppy disk drive
- One (1) 5 1/4" floppy disk drive
- LOAD DISK key
- "<" (decrement), ENTER, and ">" (increment) keys
- Function Select key
- VOLUME slider

#### Rear Panel:

- MIDI IN, MIDI OUT and MIDI THRU Ports
- AUDIO OUT jack
- AC ON/OFF switch
- AC power cord receptacle

### Audio

Signal-to-Noise: 80 dB  
Full output (10V Peak-to-Peak) into 10K  $\Omega$  load

Dynamic Range: 72 dB  
12-bit linear data

### MIDI Implementation

Basic Channel select for Transmit and Receive

Modes – Mode 1: OMNI On, Poly  
Mode 3: OMNI Off, Poly

Controllers – Controllers ON/OFF select  
Patch Change Commands ON/OFF select

MIDI Sample Dump Standard supported



### Miscellaneous

One (1) 2-Character LED Display

100 Sample Memory presets ("PATCH SELECT"), numbered 00 – 99

Memory capacity: 1 megabyte of internal RAM (512 Kilosamples)

Power Requirements (internally selectable):

North America and Japan: 95 – 120v A.C., 50 – 60 Hz

Europe: 200 – 230v A.C., 50 – 60 Hz

### Dimensions

Width (side-to-side)	18.97 in.	(48.18 cm.)	Standard Rack
Depth (front-to-back)	14.00 in.	(35.56 cm.)	
Height (top-to-bottom)	3.47 in.	( 8.81 cm.)	2 Rack Spaces
including feet	3.72 in.	( 9.45 cm.)	
Net Weight	18 lbs., 4 oz.	( 8.28 kg.)	
Shipping Weight	23 lbs.	(10.43 kg.)	

## Chapter 2: BASIC DPX-1 OPERATION

In order to gain a better understanding of the capabilities of your DPX-1, this chapter of the manual is devoted to describing its operating functions. It will give you a good working understanding of what the Sample Player is able to accomplish and how its front and back panels are laid out. Detailed information concerning how the DPX-1 processes sample data coming from a disk will be provided in the following chapter. Also, we will get into some step-by-step procedures that will help you make sense of all this new information.

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### BACK PANEL FUNCTIONS

#### A.C. RECEPTACLE, POWER SWITCH and LINE LEVEL SELECT

The recessed 3-prong receptacle is used to connect the DPX-1 to the electrical wall outlet with the AC power cord supplied as a standard accessory.

The AC switch on the rear panel applies power to the DPX-1 when turned ON. It is recommended that the DPX-1 be turned OFF when not in use.

The DPX-1 is shipped from the Oberheim factory set for local AC power. The Sample Player may be easily converted between 120v AC, 50 – 60 Hz and 230v AC, 50 – 60 Hz by a simple hardware change performed to its Power Supply internally. Contact your nearest ECC/Oberheim Authorized Service Center for more information and installation rates concerning this non-Warranty modification.

#### MIDI PORTS

The DPX-1 utilizes the universally accepted MIDI interface system and employs the three MIDI jacks – IN, OUT and THRU – that permit the Sample Player to be interfaced with other devices (a synthesizer, sequencer, computer, etc.) that are also equipped with MIDI.

**MIDI OUT** is used when the DPX-1 is intended to be used as a source of MIDI data. As examples, when a Patch Change is made from the DPX-1's front panel or when the MIDI Sample Dump Standard is used to send the contents of the DPX-1's memory to a receiving device, the MIDI OUT port is used to transmit these commands.

**MIDI IN** is used when the DPX-1 is being controlled as a Slave by another MIDI instrument or controller – sequencer, computer, mother keyboard, etc. In order to play the DPX-1 at all, you must connect a Master controller's MIDI OUT to the MIDI IN of the DPX-1.

**MIDI THRU** makes it possible to hook up to five MIDI instruments in a "chain" by passing MIDI data information along from one instrument to another that originates from the Master. The recommended limit of five instruments is assuming that you are not using very long MIDI cables (maximum total length for the entire rig is about 50'), that all of the instruments have been designed to conform to the MIDI Specification, and the components of the MIDI circuitry of each instrument – especially the opto isolators – are not malfunctioning.



## WHAT CABLES SHOULD I USE?

The AUDIO OUT jack requires a standard guitar cord when connecting the DPX-1 to your sound system. A "guitar cord" or audio cable is simply a 2-conductor shielded cable with a 1/4" plug on the end that plugs into the DPX-1.

The MIDI IN, OUT and THRU ports require standard MIDI cables for proper use.

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## FRONT PANEL FUNCTIONS

This section of the manual will deal with the DPX-1's operating procedures and explanations of the front panel functions. This section will give detailed descriptions over and above the brief information provided in the "Quick-Start" part in the beginning of the manual. You can use this section of the manual as a reference guide to the specific operating characteristics of the DPX-1's front panel features in the event you need assistance in the future. But it wouldn't be a bad idea to read through the next few pages now.

The DPX-1 is very simple to operate and it straight-forward in its physical layout. In fact, you may already be familiar with the general operation of the front panel Display and switches. We will refer to the switches as "buttons" or "keys". The function titles, as you may have already noticed, are designated by small rectangular indicator lights. These indicator lights are referred to as "LEDs" (Light Emitting Diodes), so we'll use that term throughout the rest of the manual as well.

We will also use an acronym throughout the manual when referring to the DPX-1's interfacing system. "MIDI" stands for Musical Instrument Digital Interface, the universally accepted interface standard for computer-based musical instruments.

### USING the DISK DRIVES

Although the DPX-1 is designed to be transported with a minimum of preparation, some care must be taken to insure that the disk drives are protected when the DPX-1 is being moved as well as when it is in use. Because disk drives in general are mechanical, a few points should be kept in mind:

- **Always** insert the drive protect card into the 5 1/4" drive before transporting the DPX-1. The 3 1/2" drive incorporates a feature that locks the internal head mechanism when no disk is present inside the drive. Thus, a drive protect card is not necessary for the 3 1/2" disk drive; in fact, using a dummy card or accidentally leaving a floppy disk in the 3 1/2" drive during transit will defeat the automatic head-lock feature and will actually present a potential for damage. Be careful!
- The card should be removed from the 5 1/4" drive before the DPX-1 is powered on.
- Avoid turning the DPX-1 off when a sample disk is in either or both drives, and do not transport the unit if floppy disks are in the drives. Eject the disk(s) first, then turn the DPX-1 off.

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- 
- Do not use a drive protect card that is wet, bent, warped (the card must retain its original flatness), creased or otherwise damaged. If the card becomes damaged or lost, use one of your sample disks in the 5 1/4" drive when transporting the DPX-1. You may risk damaging the sample disk, but this is certainly better (and obviously less expensive) than risking a possible broken disk drive. Remember to leave the 3 1/2" drive empty when transporting the DPX-1.
  - Both 3 1/2" and 5 1/4" floppy disks incorporate a "Write-Protect" feature on the outside of the disks' housing that prevents unintentional or accidental alteration/erasure of its data. Although the DPX-1 does not edit or copy samples, the drives themselves are capable of possibly altering or even erasing a disk should a malfunction occur.

**Therefore, we strongly recommend that you use the Write-Protect feature on each disk before it is inserted into the DPX-1. Each disk manufacturer provides (or should provide) instructions as to how the Write-Protect is enabled/disabled with each disk or disk set. If you are unsure as to how this is accomplished, contact your dealer for assistance.**

#### **DISK LOADING**

The majority of computer-based instruments have only one disk drive, or if it has more than one, the drives are of the same type because the instrument uses only one data format. As an example, the Mirage will read/write only Mirage disks, the Emulator II will read/write only Emulator II disks, etc.

The DPX-1, on the other hand, has the capability of handling several data formats and thus has two disk drives. Not only does it have two drives, but these drives are different: one reads 3 1/2" floppy disks and the other reads 5 1/4" floppies. Although the DPX-1 is able to handle both disk sizes, there are some limitations of which you should be aware:

- The 3 1/2" drive has priority over the 5 1/4" drive. This means that if you insert both sizes of disks, the 5 1/4" disk will be ignored when the LOAD DISK function is executed, until the 3 1/2" disk is ejected.
- The DPX-1 is able to process and play the data of one disk at a time only. If a disk is successfully loaded and another disk is then inserted and loaded, the data from the second disk will erase and replace the first disk's samples in memory. Therefore, the data from two or more disks cannot be combined within the DPX-1.

#### **Disk Loading Procedure**

Use following check-list when loading disks into the DPX-1:

1. **Before powering the DPX-1 on, remove the Drive-Protect card from the 5 1/4" drive by using the following procedure:**
  - Flip the DISK-LOCK LEVER to its up (horizontal) position.
  - The drive-protect card can now be removed by grasping the front tab and gently pulling the card out with a straight motion.

2. The moment the DPX-1 is first powered on, the disk drives will be activated to determine if any disks are present in the drives.

- The 3 1/2" drive will be activated first, during which time both the BUSY and the "Drive Active" LEDs will be lighted. The Display will read **Ld** indicating that the DPX-1 is attempting to load.
- The 5 1/4" drive will be activated next. During this time both the BUSY and the "Drive Active" LEDs will be lighted also. The Display will continue to read **Ld** indicating that the DPX-1 is attempting to load.
- Since there are no disks in either drive, the Display will read **nd** indicating that no disks were detected in either drive during the power up procedure. The BUSY and both "Drive Active" LEDs will go out.

3. Insert a disk into the appropriate drive. The orientation of the disk is of primary importance. Be absolutely certain that it is right-side up and "window-side" in (the area where the disk is scanned by the drives' heads).

The rule-of-thumb is that the disk's label should be facing up and closest to you as it is inserted. The disk should slide in easily with a straight motion.

- If a 3 1/2" disk is being used, the drive will automatically lock the disk in place.
- If a 5 1/4" disk is being used, you must manually flip the Disk-Lock/Disk-Eject lever to its down (vertical) position in order to lock the disk in place. **If the disk is not locked, loading the disk's data cannot take place.**

We recommend that only one disk be inserted at one time. If one 3 1/2" disk and one 5 1/4" disk are in the drives at the same time, only the 3 1/2" disk will be recognized by the DPX-1. The 5 1/4" disk will be ignored until the 3 1/2" disk is ejected.

4. Press the LOAD DISK key located just to the right of the 5 1/4" disk drive.

- The **entire data contents of the disk** will be loaded into the DPX-1's internal memory. During this time, the BUSY and the "Drive Active" LEDs will be lit. As the disk is being read, you will hear a slight amount of mechanical noise coming from the drive that is in use. This is a normal function of disk drives and is no cause for concern.
- As soon as the DPX-1 identifies the data on the disk, the Display will read out an abbreviation of the sampling device that was used to create the samples. The Display will continue to show this abbreviation until the entire disk is read.

**IMPORTANT:** Do NOT attempt to eject the disk during the LOAD DISK procedure. Doing so could possibly damage both the drive mechanism and the disk itself.

Should the disk be accidentally ejected during the LOAD DISK procedure, the DPX-1 will wait a few seconds then display a *dE* message that indicates a "Disk Error". If this should occur, remove the disk completely from the drive and turn the DPX-1 off. Wait five seconds and turn the DPX-1 back on. Then follow the instructions from Step 2.

- The time that it takes the DPX-1 to load a disk will be either the same as the original instrument that was used to create the samples or faster. This depends upon the brand of the data disk, and how much of its memory was used to make up the samples that are on it.
- Once the disk's data has been successfully loaded into the DPX-1's internal memory, it is then converted into a new form of data that the DPX-1 can use to play back the samples. This is called "remapping" of the data and is an essential function of the DPX-1. This conversion process is actually a kind of translating the disks' computer "language" into the DPX-1's computer "language".

The data conversion time is only a few seconds – and you will notice that it is considerably shorter than the load-in time. And as with load-in, the time required to remap depends upon the brand of the data disk, and how much of its memory was used to make up the samples that are on it. In some cases, remapping occurs instantly or will actually take place during the load-in procedure.

Depending on the type of disk that you are loading, the BUSY LED will flash on and off during remapping. In some cases it will not.

5. If the disk has been successfully loaded and converted, the BUSY and the "Drive Active" LEDs will go out and the DPX-1 will recall the lowest Patch No. (the sample preset number) that is on the disk. In the majority of cases, *00* is the number that will be displayed. In some cases it will be *01* or another preset number, depending on the disk.

The DPX-1 can now be played via a MIDI Master instrument. When the DPX-1 is being played, the BUSY LED will flash momentarily each time a note is received. This handy little feature lets you know if the DPX-1 is receiving MIDI Notes properly. The BUSY light will flash when MIDI data is recognized from any channel. If you are playing your Master controller and the BUSY light does not flash, the MIDI communication is faulty. If this is the case, re-check your connections.

There may be an occasion when a disk cannot be loaded into the DPX-1 successfully. The Display will read *dE* indicating that a "Disk Error" has been detected, and the ERROR LED will flash on and off. Errors that occur because of disk problems are discussed in the next section.

## ERRORS

If for some reason the DPX-1 displays a Disk Error (*dE*) message, eject the disk and make sure that it was inserted properly – label-side up and the label closest to you as the disk slides in. If, after several load attempts, the DPX-1 **consistently** displays a Disk Error, one or more of the following reasons may be involved:

1. **The disk is damaged.**

Inspect the disk for visible damage: warping, cracking etc. will almost always render a disk useless.

Unfortunately, the majority of disk "damage" is not visible: stray magnetism (from a speaker, power amplifier etc.), excessive heat, moisture etc. may corrupt the data enough to render the disk unreadable.

2. **The disk contains data that is not supported by the DPX-1.**

The DPX-1 cannot read disks from your home computer. It also cannot read Emulator II "Library" disks, only Performance disks. The DPX-1 cannot be expected to read disks made on sampling instruments that is not designed to support.

3. **The disk drives are out of alignment.**

Even with a known good disk, it is possible that the DPX-1 will be unable to read a disk because the alignment of its drive's head is aligned differently, even slightly, than the device that created the disk. This is not a common occurrence but it does happen occasionally, and there is no need to panic.

The main idea to keep in mind is that "it takes two to tango" – perhaps the device that the disk was made on is the culprit – so don't be too quick to blame the DPX-1. If you own the sampling instrument that was used to make the misbehaving disk, you might want to have its drive checked for proper alignment.

For more information and suggestions pertaining to errors and other mishaps, refer to "Chapter 4: TROUBLESHOOTING and ADVICE".

### **ENTER, < > ARROW Keys and DISPLAY**

The ENTER and < > arrow buttons comprise the "control center" of the DPX-1. It is the use of these three buttons in conjunction with the Function Parameters that enables you to operate the DPX-1 once a sample disk has been successfully loaded into memory and remapped.

- The **DISPLAY** is a 2-character visual aid that tells you what numerical value is currently in use or what particular function has been recalled. The possible Display types and abbreviations are explained throughout the manual where appropriate.
- "**<**" is the decrement key. Pressing this button once decreases the displayed number by a value of ONE (1). Or if a function's options are displayed (in the form of an abbreviation), pressing this key repeatedly will loop among the available parameters in reverse order.

- ">" is the increment key. Pressing this button once increases the displayed number by a value of ONE (1). Or if a function's options are displayed (in the form of an abbreviation), pressing this key repeatedly will loop among the available parameters, just as the "<" key, but in ascending order.
- If you press and hold either < > keys, the currently displayed function will advance or reverse automatically. This is called "scrolling".
- **ENTER** key: When < or > is used to make changes, a small dot will appear in the lower right-hand corner of the Display to remind you that a change has been made. The DPX-1 will remain in its previous state until ENTER is pressed. Thus, pressing ENTER activates a change that you intend to make.

This operation holds true for all DPX-1 functions with the exceptions of FINE TUNE and MIDI CONTROLLER on/off, in which cases the change is "entered" automatically the moment it is made.

## FUNCTION PARAMETERS

In addition to the abbreviated information shown on the Display, the DPX-1's available operating functions are indicated by the LEDs in the Function Parameters section. The illuminated LED indicates which of these functions is active.

The rectangular button beneath the function titles on the front panel is used to select a parameter from among the six available. Pressing the Function Select key repeatedly will loop among the six functions from top to bottom. As each function is selected, the Display will read out the current status of that function.

### 1. PATCH SELECT

The DPX-1 allows for "Patch" or "preset" select, in which each sound sample that is loaded from the disk is indexed by a 2-digit number that is shown on the Display. PATCH SELECT permits you to select from among the presets in memory using the < > and ENTER keys.

The DPX-1 has memory locations for up to 100 Patches, numbered 00 through 99. Although the DPX-1 has the capacity to handle disks containing 100 presets, most disks contain far fewer than 100 samples – and some only one or two.

The DPX-1 gives you two ways in which to change Patches, either from its own front panel using the < > and ENTER keys, or by responding to a MIDI Patch Change command coming in from a Master controller to the DPX-1's MIDI IN.

#### Front Panel PATCH SELECT Procedure

- If the disk has been successfully loaded and converted, the DPX-1 will recall the lowest Patch No. (the preset number) that is on the disk. In the majority of cases, 00 is the number that will be displayed. In some cases it will be 01, or 08, or 12, or whatever happens to be the first valid preset.

The DPX-1 is smart enough to look for the first valid Patch No. because some disk manufacturers, for one reason or another, may not program any samples into the first one or two (or several) Patch No. locations. The DPX-1, after loading in, will quickly hunt around in memory and get the first available preset for you.

- After the DPX-1 recalls and displays the first preset on the disk, you are now able to select from among the other sounds on the disk that were also loaded in. Press either < > keys until the desired Patch No. is displayed. The new Patch No. will have a dot in the lower right-hand corner illuminated to indicate that a change has been made.
- Press ENTER. The BUSY indicator LED will light momentarily (and go out again) and the dot will disappear from the Display.
  - If the Patch No. that you selected contains valid sample data, the new preset will be recalled from memory.
  - If you selected a Patch No. that contains erroneous data or the sample location is blank, the ERROR LED will flash on and off and the last valid preset that was used will remain active. This way, you can still play the DPX-1 even if an invalid preset is accidentally selected. ERROR will continue to flash until a valid Patch No. is selected and ENTERed.

#### **MIDI PATCH SELECT Procedure**

- MIDI Patch Change commands are transmitted and received on what you have selected as the DPX-1's Basic Channel. The MIDI Channel must be the same for both your Master controller and the DPX-1 for any MIDI communication (including Patch Changes) to occur. Or, if you wish, the DPX-1 may be in OMNI Mode – displayed as *on* – in which case the DPX-1 will respond to all MIDI data regardless of the transmitting Channel Number.

Refer to the next section for details on MIDI CHANNEL selection.

- When the proper transmitting Channel on the Master and receiving Channel (or OMNI Mode) on the DPX-1 have been selected, making a Patch change on the Master will recall that Patch No. on the DPX-1. When a Patch Change command is recognized on the DPX-1, the ENTER function occurs automatically. This permits quick patch changes to be made on the DPX-1 remotely from the Master.
- MIDI Patch Changes, with an exception or two, operate pretty much the same as front panel Patch changes.
  - When a valid Patch No. is selected on the Master, the DPX-1 will recall that preset (remember: the ENTER command is automatic from MIDI) and display the new Patch No. in the window.

- If an invalid (un-programmed or blank) Patch No. is selected, the ERROR LED will flash on and off and the last valid preset that was used will remain active. As with front panel Patch selection, you can still play the DPX-1 even if an invalid Patch No. is accidentally selected. ERROR will continue to flash until a valid Patch No. is selected and ENTERed.

## 2. MIDI CHANNEL

When this function is selected, the Display will show the MIDI channel that is currently active. This is the Channel on which the DPX-1 both transmits and receives. MIDI Channels are selectable from 1 through 16, plus OMNI Mode.

- Press either < > keys until the desired MIDI Channel No. (or OMNI, depicted as *on*) is displayed. The < > keys will step through the 16 Channels plus OMNI in succession and loop around to the beginning.

The new MIDI Channel No. will have a dot in the lower right-hand corner illuminated to indicate that a change has been made.

- Press ENTER. The dot will disappear from the Display and the selected MIDI Channel will be entered.

### **MIDI Receive Information – MIDI IN**

The DPX-1, when set to a specific MIDI Channel, will receive MIDI Notes – which includes Velocity – and Controllers – Pitch Bend, Vibrato, Volume Pedal, Sustain Pedal and Pressure (After-Touch) – plus Patch Changes on that Channel. The DPX-1 is also able to recognize sample data sent to it using the MIDI Sample Dump Standard. The description of the DATA DUMP function starts on Page 26.

For Controller commands to be recognized, the DPX-1 function MIDI CONTROLLER must be turned on as the DPX-1 allows you to enable or defeat MIDI Controllers separately from MIDI Note information. More on that later – see Page 28.

When set to OMNI, the DPX-1 will respond to MIDI Notes and Controllers from the Master regardless of what Channel it is using to transmit. Just be sure that MIDI CONTROLLER is turned on if you want the DPX-1 to respond to MIDI Pitch Bend, Vibrato, etc.

### **MIDI Transmit Information – MIDI OUT**

The DPX-1, when set to a specific MIDI Channel, will transmit its own MIDI information on that Channel.

When set to OMNI, the DPX-1 will transmit its own MIDI information on Channel 1.

Since the DPX-1 does not have its own keyboard, modulation levers or wheels, or pedal inputs, just two MIDI OUT commands are generated by the DPX-1. The first is front panel Patch Changes: when a Patch is selected and ENTER is pressed, the new Patch No. is sent via MIDI OUT on the current Channel.



The second is DATA DUMP information. The DPX-1 is able to send and receive sample information via MIDI using the MIDI Sample Dump Standard. See the description on the DATA DUMP function, below.

#### **MIDI Pass Information – MIDI THRU**

The DPX-1 will pass MIDI data coming in from the Master to its MIDI THRU port unaffected by the DPX-1. This provision in the MIDI Specification permits the Master to control several instruments in a chain.

Using a standard MIDI cable, connect the MIDI THRU of the DPX-1 to the MIDI IN of the second slave instrument. Your Master will now control both the DPX-1 and the second slave connected to it.

The DPX-1 does not have to be the first slave instrument in the system. Connect your Master controller's MIDI OUT to the MIDI IN of a first slave (if you're using one), then connect the MIDI THRU of this first slave to the MIDI IN of the DPX-1. MIDI THRU provides MIDI Notes, Controllers and Patch Changes to the DPX-1 in this type of chain.

#### **3. FINE TUNE**

The FINE TUNE function permits the DPX-1 to be tuned to the other instruments that you are using. The < > keys are used to lower the pitch (< means flat) or raise the pitch (> means sharp). Pressing the ENTER button is not necessary as the pitch will change with each new Display value immediately.

The range of the FINE TUNE function is  $\pm 1/4$ -tone. The numerical range on the Display is 00 to 99:

- A displayed value of 50 indicates the center of the range.
- Values beginning with 49 on down to 00 represent flat tunings.
- Values beginning with 50 on up to 99 represent sharp tunings.
- You will notice that sharp or flat adjustments close to the center value will be very fine changes. The amount of pitch shift as you approach the extremes will become greater with each value change.

#### **4. DATA DUMP**

As mentioned several times throughout the manual thus far, the DPX-1 incorporates the MIDI Sample Dump Standard as a part of its MIDI capabilities. The Sample Dump function is both a transmit and receive feature which permits the DPX-1 to store samples in its internal memory sent to it across MIDI, as well as send the contents of its memory out MIDI to a receiving device.

**At the time this manual's publication, the MIDI Sample Dump Standard is not a function that every sampling instrument or mass storage device is capable of performing. Before attempting to send or receive sample data via MIDI, consult the Owner's Manual of the device that you are using with the DPX-1 to see if it supports this function.**

### Provisions of the Data Dump Standard

The established specification of the MIDI Sample Dump Standard provides for the transmission and reception of sample data **only**. This means that any of the analog parameters that modify the sample – envelopes, LFOs, keyboard setups, filter and velocity settings, etc. – **are not communicated via MIDI**. The raw sample data is the only information that is transferred. Depending on your particular requirements, the MIDI Sample Dump Standard may be of limited use.

Therefore the DPX-1, in order to make received data as playable as possible, will make certain settings by default:

- All sample data will be referenced to Middle C (the third C up from the bottom of the Keyboard, also referred to as C<sup>2</sup> or MIDI Note No. 60). The DPX-1 will then interpolate the remaining key values and permit you to play notes over as wide of a Keyboard range as possible. Some keys, particularly those at the top and bottom of your Master controller, may not play as a result.
- The filtering and final output stages are set to be "wide open" and any enveloping will relate to the natural dying out of the sample. This means that you will be given the highest level of the Filter and loudness output of the sample. Enveloping occurs as follows: when keys are played and held, the sample will play and decay as it exists in memory; if keys are played and released, the DPX-1 will play the selected sample as long as a key or keys are held down and will stop playing as soon as the keys are let go.
- The MIDI Sample Dump Standard allows for the transfer of one sample loop only. In the case of Prophet 2000 samples, where two loops are possible in a sample, only the Sustain Loop is transferred.
- When samples are transferred via MIDI, each separate sample is given a number that identifies it in memory. The DPX-1 will use this same number on the display so that Patch Select numbers remain consistent when transmitting and receiving.

### Using the DATA DUMP Function

The DPX-1 can send and receive sample data via the MIDI Sample Dump Standard. The procedure for transmitting, as well as the details of how and what is transmitted, it is slightly different than receiving sample data. We will discuss each separately.

#### DPX-1 Data Dump TRANSMIT – MIDI OUT

- Connect the DPX-1's MIDI OUT to the MIDI IN of the receiving device.
- The Sample Dump transfer occurs on the Basic Channel, so be certain that the MIDI Channels for both the DPX-1 and its receiver are the same, or that the receiving device is in OMNI Mode.
- The receiving device should be set up to be in its receive-data mode. Consult its Owner's Manual for the procedure on how to prepare it to receive data.

- When DATA DUMP is selected, the display will read *Sd* for "Sample Dump". Press ENTER to start the transfer.
- The DPX-1 will then transmit the **entire contents** of its memory. The DPX-1 does not permit the transfer out of individual samples. During this time, the BUSY LED will flash on and off. When the transfer is complete, the BUSY LED will go out.
- Check the receiving instrument to verify that the sample transfer was successful. The DPX-1 will send its samples just as they exist in memory, minus the analog modulations, with Patch Numbers and sample rates intact.

#### **DPX-1 Data Dump RECEIVE – MIDI IN**

- Connect the DPX-1's MIDI IN to the MIDI OUT of the transmitting device.
- The Sample Dump transfer occurs on the Basic Channel, so be certain that the MIDI Channels for both the DPX-1 and the transmitter are the same, or that the DPX-1 is in OMNI Mode.
- When DATA DUMP is selected, the display will read *Sd* for "Sample Dump". When *Sd* is displayed, the DPX-1 is automatically set up to be in its receive-data mode.
- The DPX-1 is able to receive the **entire contents** of the transmitter's memory or an **individual** sample. This assumes, of course, that the transmitting instrument is capable of sending both bulk and single samples. Select on the Master which format – either bulk or single – that you intend to transmit to the DPX-1.
- Start the transfer of sample data from the transmitting instrument. During this time, the BUSY LED will be lit steadily. When the transfer is complete, the BUSY LED will go out.
- Check the DPX-1 to verify that the sample transfer was successful.

#### **5. MIDI CONTROLLER**

The MIDI CONTROLLER function allows you to enable the DPX-1 to respond to MIDI Controller commands or, if controllers are not required, to instruct the DPX-1 to ignore them. This function simply turns MIDI Controller commands on (displayed as *on*) or off (displayed as *oF*).

Either of the < > keys are used to switch between on and off status of this function. It is not necessary to press the ENTER key because on/off select is made automatically when displayed. The ENTER button is inoperative in this mode.

- When *on*, MIDI CONTROLLER instructs the DPX-1 to respond to Pitch Bend, Vibrato, Volume Pedal, Sustain Pedal and Pressure (After-Touch) information transmitted from the Master.

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- When *off*, MIDI CONTROLLER instructs the DPX-1 to ignore Pitch Bend, Vibrato, Volume Pedal, Sustain Pedal and Pressure (After-Touch) information sent to it via MIDI. However, MIDI Notes plus Velocity, and Patch Change commands will still be recognized by the DPX-1 even if MIDI CONTROLLER is selected off. Notes, Velocity and Patch Changes are received by the DPX-1 at all times.

#### IMPORTANT NOTICE:

Most sampling instruments have a provision that, when the samples and related data are originally stored on the disk, certain MIDI controllers can be programmed to be switched off or even assigned to a different MIDI Controller No. The DPX-1 reads **everything** from the disk and follows these instructions accordingly. Therefore, **if one or more controllers are stored on the disk as being off, the DPX-1 will obey the disk and ignore those MIDI Controller commands received from MIDI IN even though the MIDI CONTROLLER function is *on*.**

Since there is no way to determine from the front panel what controllers have been enabled or reassigned on the disk, you may experience certain MIDI Controllers do not respond on some disks. If this is the case, please consult the literature that is included with the disk or disk set (if the disk was made by a manufacturer or sample-disk developer) or the person who made your disk if it was not commercially produced.

#### 6. EXTENDED FUNCTIONS

This parameter contains three separate functions, accessed by the *< >* keys. The EXTENDED FUNCTIONS allows you to select (1) Filter Tracking and (2) Dual-Oscillator modes (for Mirage samples only) and (3) permits you to display the DPX-1's current Software Version.

- The *< >* buttons can be used interchangeably to select the desired function. Pressing either button repeatedly will cause the DPX-1's display to loop through the three available EXTENDED FUNCTIONS.
- Once the desired function is displayed, the ENTER button puts the DPX-1 into a "sub-display" in which the selected function is turned either on or off.

##### 1. Filter Tracking – *FL*

The Filter Tracking function, much the same as synthesizer filtering, allows the DPX-1 to mask unwanted high frequencies which, in sampling instruments, amounts to little more than noise and other side-effects of the playback process referred to as "imaging".

Since filtering is a hardware function incorporated in many of today's sampling instruments, the DPX-1 also incorporates a 4-pole Low Pass analog filter on each Voice in order to perform this function.

- *FL* is the first function displayed when EXTENDED FUNCTIONS is first selected.

- Press ENTER. The display will read *on*, indicating that the samples in memory will be tracked by the DPX-1's internal filters. Each time the DPX-1 is powered on, the *FL* function will default to *on* status.

The LED next to EXTENDED FUNCTIONS will flash on and off to remind you that the DPX-1 is in a sub-display.

- The < or > keys are now used to switch between Filter Track on (displayed *on*) or Filter Track off (displayed *oF*).
- Once on or off status is selected, press ENTER again. Pressing ENTER activates the on or off status that was selected and returns you to the *FL* display and the EXTENDED FUNCTIONS LED will be lit steadily again.

### Using the Filter

The range and response of the DPX-1's filter is determined by the data on the disk. The best (and only) way to determine whether the filter should be used or not is by **listening**. If the presets that you are playing sound better with the filter on, then leave it enabled. If the samples sound as if they lack enough brightness, then turn the filter off.

### 2. Dual Oscillator Mode – *do* (Mirage disks only)

The Mirage incorporates two digital sample oscillators per Voice in reproducing its sounds. In some Mirage programs, these two oscillators are paired up in order to create a sound that would not be possible if only one was used. In some cases, each of the two oscillators on the Voice is actually producing a different sound so that when they are combined, the result is final sound of the intended sample. This is an optional feature of the Mirage (it is not required to be used on all samples) and is referred to on the Mirage as "Mix Mode" or "Chorus Mode".

The DPX-1's Dual Oscillator Mode, displayed as *do*, permits the DPX-1 to re-create these two functions of the Mirage. When a Mirage disk is successfully loaded and converted, the DPX-1 will search the data from the disk to see if Mix Mode or Chorus Mode was used. If so, *do* will be turned on automatically for Mix Mode, or Chorus Mode if the detune amount is not 0. If Mix Mode is not used, or if Chorus Mode detune amount = 0, *do* will be automatically turned off.

The DPX-1, normally an 8-Voice instrument, becomes a 4-Voice when Dual Oscillator Mode is enabled. The DPX-1 is a Single-Oscillator voiced instrument and its Voices are "doubled" in order to accomplish the Dual Oscillator function. Therefore, when *do* is on, you will be able to play only four notes at a time, instead of eight. This is necessary for the DPX-1 to reproduce the sound as it was intended.

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The Emulator II and the Prophet 2000 are single-oscillator instruments and thus do not require the use of Dual Oscillator Mode. When disks from either of these two instruments are used, the Dual Oscillator Mode displays can still be selected but this function will have no effect.

Although the DPX-1 will automatically enable/disable Dual Oscillator Mode depending upon what the disk tells it, this mode is included as a function to permit you to select on or off manually if required:

- When in EXTENDED FUNCTIONS, press either < or > key until **do** is displayed.
- Press ENTER. Whenever a Mirage disk is used that employs Mix Mode, or Chorus Mode with detune, the DPX-1 selects **on** status. If the Mirage disk does not use Mix Mode, or Chorus Mode with no detune, the DPX-1 selects **oF** status.
- The < or > keys are now used to switch between Dual Oscillator on (displayed **on**) or Dual Oscillator off (displayed **oF**).
- Once on or off status is selected, press ENTER again. Pressing ENTER returns you to the **do** display.
- Press the Function Key once and PATCH SELECT mode will become active. Press ENTER and the on or off status for Dual Oscillator mode that you selected will be activated.

### 3. Software Version

When selected, this parameter displays the current Software Version of the DPX-1. The microprocessor inside your DPX-1 handles all of the calculations required to perform the various functions of the Sample Player. The processor works according to a pre-programmed set of operating instructions called "software". Software can be altered at any time by ECC/Oberheim to reflect improvements or additions to these operating instructions. Whenever software is issued or revised, a new index number is assigned to the revision. This is known as the Software Version.

The Version of your DPX-1 can be displayed at any time simply by selecting this function. When entered, the index number of the DPX-1's operating software will be displayed.

Software Updates issued by ECC/Oberheim will be announced when released. Contact your nearest ECC/Oberheim Authorized Service Center for prices and availability.



## **VOLUME CONTROL and AUDIO OUTPUT**

The Volume Slider controls the output level for the DPX-1's AUDIO OUT jack on the back panel.

The VOLUME control operates as follows:

- When the knob is pulled all the way down, the control is at its minimum setting – no volume or silence.
- When the knob is pushed all the way up, the control is at its maximum setting.

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## Chapter 3: The DPX-1 DESIGN CONCEPT

Up to this point, we have simply covered how the DPX-1 performs its basic operations and what procedures are used in working the various functions. In this chapter, we will probe deeper into the internal workings of the Sample Player and see how it handles data coming off a sample disk.

Although not critical to your ability to use the DPX-1 effectively, we recommend that you read over this section in order to gain a better perspective on how the DPX-1 operates internally, how it interprets sample disk data and how it responds to the unique characteristics of the various samplers – the Emulator II, Prophet 2000 and Mirage – that it currently supports.

### What the DPX-1 Does, and What It Doesn't Do

#### SAMPLE DATA FORMAT

The DPX-1's internal design may be best described as a kind of "generic sampling circuitry". Any of the data formats that it supports is translated into a computer language that this "generic circuitry" can understand and use. Perhaps the most significant aspect of this conversion, although certainly not the only one, is the way in which the bytes of data that make up the sample are re-arranged in the DPX-1's memory.

An important consideration is that the "bit-resolution" of the sample (how many pieces of digital information are used to represent the original sound) can vary, depending on the sampling instrument that was used to make the disk. For example, some sampling devices use what is called an 8-bit companding format and some use 12-bit linear. The overall sound quality of the sample is dependent, to a considerable degree, on this bit-resolution. Typically, the more bits used to comprise the data bytes, the more accurate the sound reproduction, although many other factors are involved.

To insure a high degree of sound quality, the DPX-1 converts all sample data – regardless of its original format – into 12-bit linear data. This insures that the DPX-1 will reproduce the various formats with excellent fidelity.

#### LOAD-IN and CONVERSION

As the DPX-1 reads a sample disk that you are loading, all but a small portion of the data is used to reconstruct the samples. In general – and with very few exceptions – the DPX-1 will read, convert and respond to whatever is coming off the disk. In other words, the **entire contents** of the disk is read and the DPX-1 does exactly what the disk "tells" it to do with few exceptions.



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Just a very few of the items that are read in are ignored. As examples, the DPX-1 will ignore the operating software from Emulator II or Mirage disks (it doesn't need this information to work), and does not support the Ensoniq MASOS (Mirage Advanced Sampling Operating System) code.

The DPX-1 will recognize:

All digital sample data, which includes:

- the complete banks of sound data for each individual sample
- the precise sample rate for each sample
- all loops that are programmed into the samples' playback

All analog control data, which includes:

- keyboard mapping of the sample, or multiple samples if used
- all modifiers: envelopes, LFOs, detuning, transpositions, filter settings and the like

Control access parameters, which includes:

- Velocity
- Patch Change index numbers
- MIDI performance controllers: pitch bend, vibrato, volume pedal, sustain pedal, and monophonic pressure/after-touch

The DPX-1 will not reproduce:

Sequencer patterns, songs or merges

Arpeggiator patterns and assignments

"Stacker", a Prophet 2000 keyboard feature

Stereo audio or panning, individual or direct output assignments

Polyphonic pressure/after-touch

In summary, the DPX-1 as a sample **player** concerns itself with the accurate reproduction of sample data, but not the special performance functions that may be associated with the playback of the sound.

Also, as a dedicated sample **player**, the DPX-1 does not permit editing of the samples it reads, nor does it permit you to make disk copies of the data in its internal memory.

#### **PATCH NUMBER ASSIGNMENTS**

During the conversion process, the DPX-1 places the samples in memory indexed by a number that identifies each particular sample for recall. These numbers correspond exactly as they come off the disk so that there is no confusion when selecting samples on the DPX-1.

MIDI Patch Change commands, however, may be a point of confusion due to the different front panel arrangements on the various instruments. When playing the DPX-1 from a Master keyboard and also making MIDI Patch Changes from this Master, you must find out how it sends MIDI Patch Numbers in relation to what number is selected on its front panel.

As an example, on some instruments selecting Patch Number *01* (sometimes referred to as "Voice Number" on certain synthesizers or "Sample Number" on sampling instruments), will cause the device to send MIDI Patch Number *00* to slaves from its MIDI OUT. In other words, some units **subtract a value of 1** from the selected Patch when sending this command out MIDI. Patch *8* is sent as MIDI Patch *7*, Patch *45* is sent as *44*, etc.

In addition, when these same instruments receive MIDI Patch Changes, they **add a value of 1** to the received MIDI Patch Number. Thus, if MIDI Patch *00* is received, these devices recall their own internal Patch *01*. MIDI Patch *56* is recalled internally as *57*, MIDI Patch *25* recalls *26*, and so forth.

The DPX-1 Patch Changes, whether made from the front panel (and transmitting these changes to MIDI OUT) or receiving an incoming MIDI Patch Change command, is consistent with the MIDI Specification. In other words, when the DPX-1 receives a MIDI Patch Change command of *00*, it recalls *00*. MIDI Patch *45* is recalled as *45* on the display; MIDI Patch *23* is recalled by the DPX-1 as Patch No. *23*, etc.

Transmitting on the DPX-1 is also consistent. Selecting Patch *00* on the front panel sends Patch *00* out MIDI. Selecting Patch *33* sends *33*; Patch *12* is transmitted as MIDI Patch *12*, and so on.

The following chart may help clear up these points. Note that the DPX-1 and Mirage correspond with the MIDI Patch Numbers, while the Emulator II and Prophet 2000/2002 front panel displays add 1 to MIDI IN/subtract 1 to MIDI OUT Patch Change commands.

### Front Panel Displays

	MIDI Standard	DPX-1	Prophet 2000/2	Emulator II	Mirage
Patch #	00	00	1	01	00
.	01	01	2	02	01
.	02	02	3	03	02
.	03	03	4	04	03
.	.	.	.	.	.
.	.	.	.	.	.
.	.	.	.	.	.
.	etc.	etc.	etc.	etc.	etc.
End Patch #	.	.	12	.	.
.	.	.	.	.	.
.	.	99	.	99	47
.	.	.	.	.	.
.	127	.	.	.	.

For those of you who would like to become more familiar with the way that the DPX-1 selects Mirage sounds, the following chart will help illustrate how the DPX-1's display of Preset Numbers relate to Mirage sounds loaded from the disk:

Mirage Program Number .....	1	2	3	4
	DPX-1 Display Patch Numbers			
Select Upper + Lower Sound 1	00	03	06	09
Select Upper + Lower Sound 2	01	04	07	10
Select Upper + Lower Sound 3	02	05	08	11
<hr/>				
Change Upper + Lower Program Number	12	13	14	15
<hr/>				
Select Lower Sound 1	16	19	22	25
Select Lower Sound 2	17	20	23	26
Select Lower Sound 3	18	21	24	27
<hr/>				
Change Lower Program Number	28	29	30	31
<hr/>				
Select Upper Sound 1	32	35	38	41
Select Upper Sound 2	33	36	39	42
Select Upper Sound 3	34	37	40	43
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Change Upper Program Number	44	45	46	47

#### How the Chart Works

When The DPX-1 is displaying any of the 48 listed Patch Numbers (00 through 47), the corresponding Mirage Program Number (listed on the top line) and the function performed (listed down the left-hand column) will occur.

Example #1    If DPX-1 Patch Number 10 is recalled, what the DPX-1 plays will be Upper + Lower Sound 2/Mirage Program 4.

Example #2    If you want to Select Upper Sound 2/Mirage Program 3, select and ENTER DPX-1's Patch Number 39.

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## A LOOK AT THE DIFFERENT SAMPLERS

It may also be useful to provide a look at each of the currently supported samplers individually, as each model has characteristics unique to its design and operation. The remainder of this chapter is devoted to the discussion of these peculiarities and how they might affect your use of the DPX-1.

It may also be a good idea for you to contact your nearest music dealer or the manufacturers of the various sampling instruments and purchase their Owner's Manuals. DPX-1 owners who desire detailed information on how the sampling devices supported by the DPX-1 operate may find these manuals useful.

### GENERAL

The sampling devices currently supported by the DPX-1 incorporate a disk-load provision that requires all incoming data off a disk to be valid. Should any data byte be unreadable, they will reject this entire disk, even though the majority of the data is ok.

The DPX-1, on the other hand, will not reject any disk solely on the basis of an unreadable data byte or two. It will attempt to reconstruct whatever it can or simply ignore invalid data, which in the majority of cases may be inaudible anyway. Only errors in critical sectors of the disk (like the preset numbers or "headers" that tell the DPX-1 where to place the samples in memory, for example) will cause the DPX-1 to reject a disk as a whole.

### Emulator II

1. Be sure that the Emulator II disk that you are using is a Performance Disk and **not** a Library Disk. The DPX-1 is not able to use Emulator II Library Disks because they do not contain all of the data required to playback sounds. Attempting to load an Emulator II Library Disk will result in a **dE** (Disk Error) message on the display.

In addition, since the DPX-1 has its own operating software, the operating software on Emulator II Performance disks is ignored during load-in. You can use any Emulator II Performance disk that contains software-plus-sample data.

2. The flexibility of the Emulator II permits the user to activate or defeat certain MIDI Controllers and store these setups on the disk. It is also possible to route standard MIDI Controllers to modulate the sound in non-conventional ways. As examples, Pitch Bend control can be turned off, Volume Pedal control may be routed to control the filter, and Sustain Pedal commands may be used to modulate LFO speed, etc.

Therefore, it is important to understand that the DPX-1, in following the data commands coming off the disk, will reproduce these re-routings (if any have been programmed onto the disk) accurately. We are mentioning this because such assignments cannot be changed on the DPX-1 and the possibility exists for some unexpected results when playing the DPX-1.

3. Although the DPX-1 recognizes Sustain Pedal information loaded in from an Emulator II disk, it does not respond to "Foot Switch 1" or "Foot Switch 2" commands.

### Prophet 2000/2002

1. The DPX-1 will read all disks from any revision of a Prophet 2000 or a Prophet 2002. The 3 1/2" disk drive reads both single-sided and double-sided disks.
2. The Prophet 2000/2002 has several performance features that are not supported by the DPX-1. Disk information that comprises sequencer, arpeggiator or stacker functions is ignored by the DPX-1 when loading a disk.

### Mirage

1. The DPX-1 is capable of using the Mirage "boot disk" as well as formatted disks that contain only sample and configuration data. The boot disk is one that contains the program used to start up the Mirage as well as its operating software. Any remaining space on this boot disk is used to load in samples, which the DPX-1 recognizes. The operating software is ignored during load-in.

Since the DPX-1 has its own operating software, you can use any Mirage disk that contains sample data, regardless of whether it is a boot disk or not.

2. The Mirage sampling and playback design involves a dual-oscillator system for the reproduction of complex sampled sounds, referred to as "Mix Mode" or "Chorus Mode". The Emulator II, Prophet 2000/2002 and DPX-1 are all single-oscillator devices. So, in order for the DPX-1 to re-create the sonic capability of this feature, a Dual Oscillator mode – displayed as *do* in EXTENDED FUNCTIONS – is incorporated.

Dual Oscillator mode is simply switched on or off in EXTENDED FUNCTIONS. See Page 30 for details and procedure.

3. Disks created using MASOS (Mirage Advanced Sampling Operating System) are not supported.

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## Chapter 4: TROUBLE- SHOOTING and ADVICE

From time to time you may experience some odd or otherwise strange occurrences that might appear unexpectedly. For those DPX-1 owners who own other instruments or computers that use disk drives and related advanced digital circuitry, you are no doubt well aware of little "glitches" that show up for no apparent reason. You are also well aware that the vast majority of these malfunctions are in no way serious, amounting to little more than temporary inconveniences. For those of you whose DPX-1 is the first and only disk-drive device that you own, this section should enlighten you as to what you can expect, and how these problems can be avoided.

### DISK HANDLING

More than anything else, problems arising from damaged disks due to mishandling and carelessness are the most prominent cause of disk errors or the inability of the DPX-1 to properly read a disk. Following the checklist below, and making it a part of your routine, will save you much frustration and bewilderment:

1. Disks should be kept from being bent, cracked or dropped. Disks aren't particularly happy when stepped on, sat upon or dropped onto a hard surface. Disks can't swim either, so keep them out of the water and away from moisture in general.
2. Disks should not be exposed to direct sunlight, extremes in heat or cold, smoke, dust or chemical fumes. And neither should you, for that matter.
3. The disk's ability to store data is due to the fact that it is a magnetic medium. Therefore, you will be wise in keeping your precious collection away from speakers, wires, power amplifiers — just about anything that emits magnetism of any kind.
4. It is essential for 5 1/4" disks to be put back into their protective sleeves when not in use. This means immediately after ejecting a disk from the drive.
5. The exposed magnetic surfaces of the disk should never be touched. Finger prints and disk drives don't get along very well.
6. Store your disks vertically in a protective carrying case, especially when transporting. Back pockets and pizza cartons are definitely out.

In short, disks are sensitive little creatures that require the utmost in care. That's why back-ups should be obtained whenever possible. Since the DPX-1 does not copy, backing up must be done on the sampler it was made from or duplicates purchased outright. Taking a few moments or spending a few extra bucks now will help prevent a small tragedy later.

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With these points in mind, any damaged disk will almost certainly produce an error when attempting to load it. The DPX-1 won't be able to tell you what kind of an error has occurred, just that something is wrong. A damaged disk is a likely possibility. And since most disk damage is not usually visible, it may be a real challenge in determining just exactly where the problem exists.

As a suggestion, take the disk that is suspect and try it on another DPX-1 or the sampler from which it was made. If the disk works on another unit, then the DPX-1 may need servicing. If the disk does not work on the second instrument either, it is obvious that the disk is the faulty one.

Last, it is not uncommon for a known good disk not to load in perfectly every time. The possibility for a good disk to be misread once in a while is no different than a brand-new car back-firing occasionally. Don't panic. Just try it again.

Inserting the disk wrong – a little off center, a bit too far into the drive or not far enough – will cause an error display. Eject the disk and try it again.

#### **More Hints....**

1. For disks that were made as copies (i.e., not commercially produced and purchased), make sure that they are properly labelled. And this goes for all of your disks. Accidentally inserting one of the disks from your home computer just won't work.
2. When using disks made as copies, you will also do well to purchase premium quality disks. Disks really aren't as expensive as you might think and although sound quality is of primary importance, reliability is not far behind. Ask anyone who has experienced disk failure because they bought a batch of bad disks on a 3-for-99¢-blowout special. Don't be cheap. And don't say we didn't tell you.
3. Always use the Write-Protect feature of the disk before inserting and loading. Refer to the manufacturer's instructions that is included with your disk or disk set.

#### **CARE and FEEDING OF THE DRIVES**

After the disk itself in importance comes the disk drive. Although your DPX-1 is designed to be carted around with a minimum of preparation, that doesn't mean it will hold up to constant abuse. Rack mounting is highly recommended, but don't throw the rack around like it's indestructible either.

One of the more common causes of disk errors, particularly those errors detected and displayed with known good disks, point to a disk drive that may be out of alignment. Even with a disk that has always worked fine, it is possible that the DPX-1 will be unable to read a disk because its head alignment is different, even slightly, than the device that created the disk. This is not a common occurrence but it does happen occasionally, and there is no need to panic.

If errors occur consistently, you might want to have the drives of both the DPX-1 and any DPX-1-supported sampler that you own or use with the DPX-1 checked for proper alignment, or any other possible malfunction that would relate to the misreading of a disk.