

Opcode Patch Librarian  
Version 4

## Supplement

for

## Yamaha DX/TX Family

DX7 II   DX7   TX7   TX816   DX1   DX5   E!  
RX11   RX5   RX21

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## About the Supplement

This document tells you everything you need to know about the Opcode Patch Librarian program which pertains specifically to the Yamaha DX7 and TX series of synthesizers. The information is presented in the same order as it is in the tutorial part of the main Patch Librarian manual. There is no specific section for the **Load/Send** menu; the Table of Contents above will refer you to the page where each item is described.

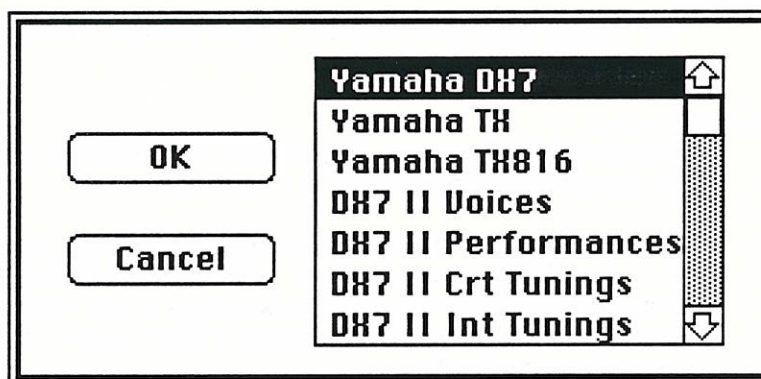
## What Synthesizers Does This Program Work With?

In addition to the Yamaha DX7 and DX7 II, this program supports the TX synthesizers: the TX7, and the TX816 (or the TX216, or anything in-between). The "patches" for all these synthesizers include the same type of "voice" information, but the DX7 II and TX synthesizers also include a small amount of extra data, called "function" or "performance" data. In the case of the DX7, pitch bend, portamento, modwheel, aftertouch and other such information is referred to as "function" data, and is stored separately from patches (e.g. one set of function data for all patches). In the case of the TX synthesizers, this information is called "performance" data, and is stored per patch, along with the voice information. The DX7 II also stores this information in each voice, but calls it "function" data. "Performance" data in the DX7 II refers to the DX7 II's 32 Performances. The Performances are not directly tied to patch information, and are therefore stored by the Librarian in separate Performance banks, not within the patches in Voice banks.

This program has been found to work with the DX9, which is essentially a stripped-down DX7: however, it has not been tested and no guarantee can be made. It can be used with a DX5 or a DX1, but is not optimally suited for these instruments' 2-voice performances. It will work for either single voices or entire bulk dumps. To edit parameters for DX5/DX1 performances, you will want to use the synthesizer itself. A "Bulk Storage" feature is included which can be used to store DX21 bulk data, DX5 performances, and patterns from RX drum machines (except the RX15). There is now a DX21 librarian available which can deal with individual patches as well as banks and libraries for the DX21, DX27, and DX100.

## File Types

When you start up the Yamaha DX/TX Family Librarian (or Editor/Librarian), after indicating your MIDI port setup, this window will appear:



At this point, it is up to you to select which of the nine types of files you want to open a window for. Five are for the DX7 II synthesizer, and the remaining ones are for the DX7, TX, and TX816 synthesizers, and Bulk Storage, respectively.

- DX7* Patches in DX7 files contain all of the voice definition information, but do not contain function data. The patch files contained on the librarian disk are all DX7 files. Each DX7 bank file contains 32 patches; a DX7 library file can contain any number of patches.
- TX* Patches in TX files contain function data as well as voice information. TX bank files contain 32 patches — these are ideally suited to working with a TX7, or one module of a TX816 rack.
- TX816* The patches in TX816 files are identical to those in TX files. The only difference is that the bank file can hold up to 256 patches, depending on how many modules you have in your rack. There is an **Whole Rack** option which allows the commands like **Send Patch** and **Get Bank** to treat the entire rack as a single instrument. There is also an option to allow communication with and backup of the entire memory of a DX7 with version 1 of the E! upgrade from Grey Matter Response. (Librarian support for version 2 of E! is currently under development). TX816 libraries are identical to TX libraries: in fact, if you save a TX816 library, it will probably come back as a TX library!!
- DX7 II Voices* DX7 II patches are similar to TX patches, but they contain additional information about the DX7 II's new voice and voice effect parameters: scaling modes, pitch bend modes, enhanced pitch envelope, new LFOs, new key modes, new foot controller information, new MIDI controller, and random pitch fluctuation. DX7 II Voice bank files contain 64 patches.
- DX7 II Performances* DX7 II Performance bank files contain 32 Performances, corresponding to the 32 Performances in the instrument's internal memory.

#### *DX7 II Crt Tunings*

Crt Tuning bank files contain 63 micro tunings, corresponding to the 63 micro tunings stored on a cartridge.

#### *DX7 II Int Tunings*

Int Tuning bank files contain 2 micro tunings, corresponding to the 2 user micro tunings in internal memory.

#### *DX7 II Fractional Scalings*

Fractional Scaling bank files contain 64 fractional scalings, corresponding to the 64 fractional scalings stored on a cartridge.

#### *Bulk Storage*

The Bulk Storage file type is included so you can store bulk dumps of your RX5, RX11 or RX21 drum machine. (Sorry, RX15's don't do bulk dumps.) In fact, you can generally use it to do bulk dumps of any instrument which you can initiate from the front panel. Don't bother trying Casio or Roland equipment (these use handshake protocols).

### **Converting patches to other file types**

It is very simple to convert between DX7 II Voice, DX7, TX and TX816 patches. Simply drag or paste patches between banks or libraries of the different types. The "right thing" will happen in all cases: here is what happens in detail.

#### *Converting DX7 patches to TX or DX7II*

When you drag a DX7 patch to a TX or DX7 II window, the Librarian will automatically add the function data from the empty TX patch (or voice effect data from the empty DX7 II Voice patch). As shipped, the "empty patch" contains the data from the factory.

#### *Converting TX or DX7II patches to DX7*

When you drag or paste TX or DX7 II patches to DX7 files, TX performance data (or DX7 II voice effect data) is stripped off.

#### *Converting between DX7II and TX patches*

All of the TX function data is found (in some form) in DX7 II voices, so this information is preserved, and converted as necessary, when a TX voice is dragged to a DX7 II voice. The additional information in the DX7 II voice is taken from the empty DX7 II Voice patch.

When converting DX7 II patches to TX patches, all common information is converted, and the new voice effect data in the DX7 II is stripped off.

TX and TX816 patches are identical — they may be freely dragged from one window to the other, but no "conversion" is needed.

### Globally changing Function data for a TX or DX7II file

The conversion capabilities described above have an interesting and useful side effect — you can use them to change all function data, or DX7II voice effect data, in any group of selected patches, even an entire bank or library file. This is a three-step procedure:

1. Convert the patches to DX7 patches, which strips off the function or voice effect data. To do this, create a new DX7 bank (if you are converting patches in a bank) or library (if you are converting patches in a library). Select the TX or DX7 II patches you want to convert. Then, Option-drag them to the DX7 window. (If you are converting patches in a TX816 or DX7II bank, you will have to do this in groups of 32 patches at a time).
2. Put the desired function or voice effect settings in the "empty patch" for the TX or DX7II. To do this, first open a New Bank for the TX (or DX7II). If there is an Edit button in the bank window, select one of the voices, click on the Edit button, use the Editor to set the function settings as desired, Exit to the Librarian, make sure the patch is still selected, and choose "Set Empty Patch" from the Edit menu. If there is no Edit button, select one of the "init" voices, use the editing controls of your synthesizer to create a sound with the desired function data, choose "Get Patch from TX" (or DX7II) to transfer the edit buffer into the selected patch, and choose "Set Empty Patch" from the Edit menu. Now, whenever you open a new bank, or clear a patch in a new bank, it will be replaced by this patch.
3. Clear the patches from the TX or DX7II window, by selecting them and choosing Clear from the Edit menu.
4. Drag the patches from the DX7 window back to the TX or DX7II window, which will add the additional edited function or voice effect data to all of the patches at once.

### OK, Choose Your File Type!!

Now it is up to you to decide which of the nine file types to pick. The DX7 file type may be used with any of the synthesizers. The TX file type is most appropriate for the TX synthesizers, though it may be used with the DX7. The DX7 II file types may only be used with a DX7 II. You should probably pick **Yamaha DX7** because the patches supplied on this disk are in that format. Whichever you pick, the entire remainder of this supplement is divided into four parts: **DX7 and TX; TX816; DX7 II; and Bulk Storage**. Please turn to the part appropriate to the file type you have picked.

# DX7 and TX Files

## Setting up your Synthesizer

If you pick DX7, a dialog window will appear with specific information for setting up a DX7 to transfer its patch information. If you pick TX, the information is a little more general and vague. For either file type, the procedure you follow will vary according to the type of synthesizer you have.

---

### DX7

In order to send patches, you must do the following:

Step 1: Press the tan "Function" key which is about two inches to the left of the LCD display in the middle of the synthesizer.

Step 2: Press the number 8 from the bank of 32 green keys on the right of the display. The LCD will read:

```
FUNCTION CONTROL  
MIDI CH= 2
```

if, for example, the DX7 is receiving on channel 2. The DX7 can only send and receive program patches on channel 1, so if the channel number is anything other than 1, go to the slide bar near the left side of the synthesizer that says DATA ENTRY and slide it all the way down, toward you. The LCD should now read:

```
FUNCTION CONTROL  
MIDI CH= 1
```

Step 3: Press the number 8 again. The display will now read:

```
FUNCTION CONTROL  
SYS INFO UNAVAIL
```

In some cases you will see SYS INFO AVAIL. In either case, press the green YES key next to the DATA ENTRY slide bar. Now, for sure, the LCD display will read:

```
FUNCTION CONTROL  
SYS INFO AVAIL
```

Step 4: Hit the 8 key again. The LCD now reads:

```
FUNCTION CONTROL  
MIDI TRANSMIT?
```



## DX7 & TX Files

Your DX7 is now set up to transfer patches to the Macintosh. In order to receive patches, you must set internal memory protect to off. You will be able to listen to individual patches on the disk without changing anything in your internal memory, because they will be sent to the DX7's edit buffer. (The edit buffer is the place that your DX stores the sound it is currently playing. This allows you to edit the sound without changing what is in the internal memory.)

Even if you do not intend to change internal memory, you will have to set internal memory protect off. (Since it will be off, be sure not to hit the STORE key unless you want to). To turn off memory protect, do the following:

Find the pair of green keys marked

MEMORY PROTECT  
INTERNAL      CARTRIDGE

above and to the left of the tan function key. Press the one marked INTERNAL. The display will read:

MEMORY PROTECT  
INTERNAL      ON

Press the NO button by the data entry slide. It should now say:

MEMORY PROTECT  
INTERNAL      OFF

Your DX7 is now fully ready to communicate with the Macintosh.

**TX7**

The TX7 is always ready to respond to requests for patch information, but Memory Protect must be turned off in order for the Macintosh to transfer patches into either the "edit buffer" or the internal voice and function memory. Also, the TX7 must be set to the same MIDI channel as the Patch Librarian window being used.

To turn off Memory Protect on the TX7, press the key marked LOAD/PROT (in purple). If the display reads

```
IND nn xxxxxxxxxxxx
```

press the NORMAL/SHIFT key; the display will read

```
** SHIFT MODE! **
```

Then, if necessary, press the LOAD/PROT key repeatedly until the display reads

```
MEMORY PROTECT xxx
```

Press the NO data entry key to turn memory protect off.

To set the MIDI channel, be sure you are still in SHIFT mode, and press the MIDI MODE key. Press it repeatedly until the display reads

```
MIDI RCV. CH.      nn
```

Use the +1 and -1 Data Entry keys to select the desired channel.

**TX816**

If you are using the TX file type with a single TF1 module, you should be sure that the TF1 is set to the same MIDI channel as the Patch Librarian window you use. To set each TF1's channel, first put it in the PLAY mode. To get the play mode, hold down the SELECT button until a number (the program number) appears on the LED display. Then let go, and press SELECT once quickly. The LED will alternate between "CH" and the channel number. Use the +1 and -1 keys to select the desired channel.

The TX816 is always ready to respond to requests for patches, but you must turn off Memory Protect on the selected TF1 in order to send patch information to it. To do this, press the NO button once or twice, until the Memory Protect light goes out. (You may have to hold down the SELECT button for a second or two in order to cancel any data entry operation that was in progress: when this is done the LED display will be steady instead of blinking or alternating).

**DX5**

In order to transfer voice and performance information to and from the DX5, the MIDI Switch must be ON, and System Exclusive communication must be ON. Also, in order to send the DX5 a bank of voices or performances, memory protect must be off.

## Tell the Macintosh about your Synthesizer

Untitled	
Ch 1	Yamaha DX7
1:INIT VOICE	17:INIT VOICE
2:INIT VOICE	18:INIT VOICE
3:INIT VOICE	19:INIT VOICE
4:INIT VOICE	20:INIT VOICE
5:INIT VOICE	21:INIT VOICE
6:INIT VOICE	22:INIT VOICE
7:INIT VOICE	23:INIT VOICE
8:INIT VOICE	24:INIT VOICE
9:INIT VOICE	25:INIT VOICE
10:INIT VOICE	26:INIT VOICE
11:INIT VOICE	27:INIT VOICE
12:INIT VOICE	28:INIT VOICE
13:INIT VOICE	29:INIT VOICE
14:INIT VOICE	30:INIT VOICE
15:INIT VOICE	31:INIT VOICE
16:INIT VOICE	32:INIT VOICE

After you have set up your synthesizer, and OK'd the "be sure to do this" dialog window, a bank window (shown above) will open on the screen. It has 32 patches, which correspond to the 32 voices in the DX7 or TX7, or each module of a TX rack.

Load/Send	
Get Patch from TH	⌘G
Send Patch to TH	⌘S
Get Bank from TH	
Send Bank to TH	
Send on Select	
<input checked="" type="checkbox"/> Send Perf. to DX7	
<input checked="" type="checkbox"/> DX7, DX1, DX5 Voices	
TH7: Voices & TH Perf.	⏏
TH7: DX Functions	
TH816 [One Module]	

## DX7 & TX Files

Since each synthesizer has a slightly different way of communicating with the Macintosh, you need to tell Patch Librarian about what you're using. For instance, if you have a DX7, you'll have to push some buttons on it whenever you want to send something to the Mac — Patch Librarian will tell you when and which ones you have to push, but it has to know you're using a DX7. Patch Librarian will remember the choices you make, so you won't have to change them until you use a different synthesizer. These choices are located in the **Load/Send** menu which appears whenever the DX7 or TX bank (or library) window is active.

---

### DX7/DX1/DX5 Voices

Choose this if you are using a DX7, or if you only want voice information transferred. (It is not recommended to transfer performance information between this program and a DX1 or DX5).

---

### TX7 Voices & Perf.

Choose this if you are using a TX7. It addresses the memory for the TX7 itself

---

### TX7: DX Func.

Choose this *only* when you want to address the *extra* function memory in the TX7 which supplements a DX7.

---

### TX816 [One Module]

Choose this if you are communicating with one module of a TX816, or the currently selected internal bank of a DX7 with E!

---

### Send Perf. to DX7

This option allows you to specify that the function data be sent to a DX7 whenever a single voice is sent to the DX7. The caution, of course, is that this data will remain in the DX7 even after you next change voices or send a bank to it. This has no effect when you specify TX7 or TX816 above: the function data is always sent in this case.

## Transferring data to and from your synthesizer

### Getting a bank from your synthesizer

In order to transfer the contents of your synthesizer's internal memory into the bank window, select **Get Bank from DX7** (or **TX**) from the **Load/Send** menu on the Macintosh. If something goes wrong, you can click the mouse to cancel the command. What happens next depends on what kind of synthesizer you have:

---

#### DX7

Patch Librarian will tell you to select the MIDI Transmit function on the DX7. Press the FUNCTION key on the DX7. You should see the following on the LCD:

```
FUNCTION CONTROL  
MIDI TRANSMIT?
```

(If not, follow the instructions given above for setting up the DX7 to transfer patches to the Macintosh, and press FUNCTION again.)

When the DX7's LCD reads "MIDI TRANSMIT", hit the green YES button on the DX7. The bank of voices will be sent to the Macintosh. If you are using a TX file type, INIT FUNCTION will be used as the function data for all the voices transferred.

---

#### TX7

You will be prompted to ensure that the SAVE FUNC setting of the TX7 is correct for loading either the TX Performances or the DX Functions.

##### *TX7: Voices & TX Perf*

Patch Librarian will request the 32 voices and TX performances, which will then be transferred to the active bank window.

##### *TX7: DX Func*

Patch Librarian will request the DX function memory, which will overwrite the performance data in the bank window: the voice data will remain unchanged.

---

#### TX816

The 32 voices and performances will be transferred to the active bank window.

## Sending a patch to your synthesizer

Whenever you choose **Send Patch to TX** from the **Load/Send** menu, or when you select a patch with **Send On Select** checked, the patch will be sent into the edit buffer of your DX or TX. (You cannot choose **Send Patch to TX** if you are in a library, but you CAN use **Send On Select**). The program will not be stored, unless you use the **STORE** function to save it in the internal or cartridge memory. The DX or TX must have internal memory protect off, even though the internal memory is not changed by this command. What will be sent once again depends on your type of synthesizer:

---

### DX7

You may choose whether or not to send the function data along with the voice data. Since the DX7 has no separate memory for the function data for each voice, the last function data you send will stay in the DX7 until you change it. To control whether or not you would like the function data sent, select **Send Perf. to DX7** from the **Load/Send** menu: it will be sent if checked. After clicking on a name, play notes on your DX7 to hear the new sound, and observe that the LCD shows the name of the patch you have sent.

---

### DX5

The performance data in a DX5 contains information for both the A and B voices, but there is no way to send this data to just the A or B part. So if you send performance data, your DX5 will be put in Single mode. This program cannot combine two voices. If you want a voice sent into A without disturbing B, or vice versa, you should *not* send performance data: be sure **Send Perf. to DX7** is *unchecked*. The DX5 should be in *omni* mode if you are going to send a performance to it; otherwise, be sure the "Source Select" of either the A or B generators (whichever you prefer) in the current performance is set to the same MIDI channel as you have set in the window. After clicking on a name, simply play notes on the DX5 to hear the new sound, and observe that the LCD shows the name of the patch you have sent.

---

### TX7

### TX816

The voice and function data for each patch will always be sent whenever you click on a name (unless you checked **TX7: DX Func**, in which case only function data will be sent).

## Getting a patch from your synthesizer

To load a single patch into the new bank window, first select where you want it to go. Then select **Get Patch from DX7** (or **TX**) from the **Load/Send** menu (or just type command-G). Read the following information for your particular synthesizer.

---

### DX7

The DX7 has a big advantage here over the TX synthesizers: you have direct access to 32 programs. Patch Librarian lets you automatically load not just one, but several consecutive individual patches from the DX7 with this command. After you choose the command, the following window appears:

**Program 3    currently contains FAIRLIGHT**

**Select the program to load into the selected location, and to select the next location.**

It tells you which program is selected, and the patch name currently stored there. To load a DX7 program into that location, first make sure the DX7 is in **SYS INFO AVAIL** mode. Then, select any program, internal or cartridge, by hitting **INTERNAL** or **CARTRIDGE**, and one of the buttons from 1 to 32. (You cannot send the edit buffer, unless you use the **DX7 STORE** function to store it into an internal memory location, and then send that location.) After you send the program, the next program (1 is next after 32) is selected so you can send another program into it. You can change which program is selected without sending patches by using the **Next** and **Prev** buttons.

Since the DX7 does not send function data, **INIT FUNCTION** data is automatically added to the patch sent for the TX file type.

---

## DX7 & TX Files

### TX7

You will be prompted to ensure that the SAVE FUNC setting of the TX7 is correct for loading either the TX Performances or the DX Functions. If **TX7: DX Functions** is selected, only the function data will be loaded: the voice data will remain unchanged. If **TX7: TX Voices & Perf.** is selected, both voice and performance data will be loaded.

### TX7

### TX816

The contents of the voice and performance edit buffers will be automatically placed into the selected location. If you want to load a voice in internal memory, put it in the edit buffer first by selecting it on the TX.

To cancel the command, press any key or click the mouse. With the TX, the synthesizer might not respond for one of a few reasons, and this way you can cancel the command (since the request will have been lost), fix the problem, and try again. For the TX7 or TX816 to respond, both MIDI IN and MIDI OUT cables must be hooked up; the MIDI channel must agree with that of the TX module being dumped; on the TX816, the "OUT SLOT" must agree with the TF1 module being dumped.

## Sending a bank to your synthesizer

Sending banks is a pretty straightforward operation, but the data sent varies a tiny amount depending on your synthesizer. To send the currently selected bank to the synthesizer, simply choose **Send Bank To DX7** (or **TX**). The message **MIDI RECEIVED** will be displayed on the LCD if the command is successfully accomplished (on the TX816, **AV** and **AF** will appear on the display). Memory protect must be off for this command to work. To ensure that the command will be accepted, your DX or TX should be in the play mode (with a program number on the display). If you are in some parameter edit mode, the command might be ignored.

---

### DX7

No function data will be transmitted: the DX7 has no function memory.

### TX7: DX Func.

No voice data will be transmitted.

---



# TX816 Files

## Setting up your Synthesizer

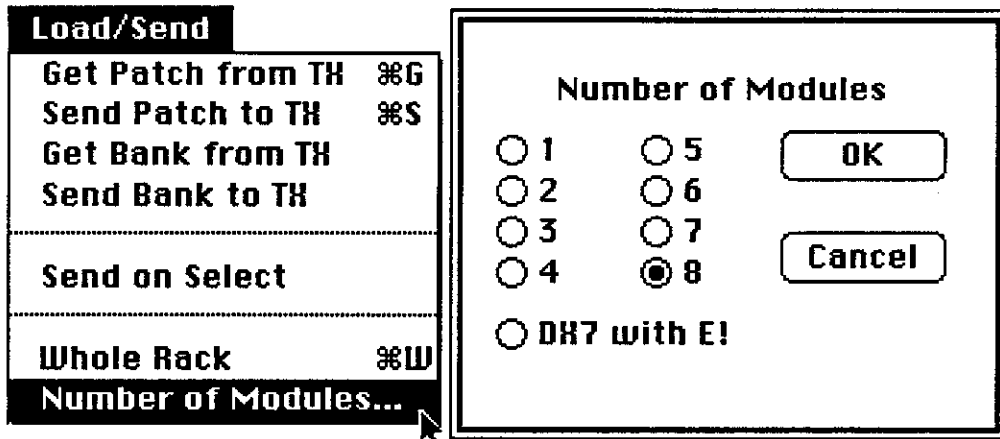
Untitled								
Ch 1	Yamaha TX816							Edit
1	INIT VOICE	INIT VOICE	INIT VOICE	INIT VOICE	INIT VOICE	INIT VOICE	INIT VOICE	
2	INIT VOICE	INIT VOICE	INIT VOICE	INIT VOICE	INIT VOICE	INIT VOICE	INIT VOICE	
3	INIT VOICE	INIT VOICE	INIT VOICE	INIT VOICE	INIT VOICE	INIT VOICE	INIT VOICE	
4	INIT VOICE	INIT VOICE	INIT VOICE	INIT VOICE	INIT VOICE	INIT VOICE	INIT VOICE	
5	INIT VOICE	INIT VOICE	INIT VOICE	INIT VOICE	INIT VOICE	INIT VOICE	INIT VOICE	
6	INIT VOICE	INIT VOICE	INIT VOICE	INIT VOICE	INIT VOICE	INIT VOICE	INIT VOICE	
7	INIT VOICE	INIT VOICE	INIT VOICE	INIT VOICE	INIT VOICE	INIT VOICE	INIT VOICE	
8	INIT VOICE	INIT VOICE	INIT VOICE	INIT VOICE	INIT VOICE	INIT VOICE	INIT VOICE	
9	INIT VOICE	INIT VOICE	INIT VOICE	INIT VOICE	INIT VOICE	INIT VOICE	INIT VOICE	
10	INIT VOICE	INIT VOICE	INIT VOICE	INIT VOICE	INIT VOICE	INIT VOICE	INIT VOICE	
11	INIT VOICE	INIT VOICE	INIT VOICE	INIT VOICE	INIT VOICE	INIT VOICE	INIT VOICE	
12	INIT VOICE	INIT VOICE	INIT VOICE	INIT VOICE	INIT VOICE	INIT VOICE	INIT VOICE	
13	INIT VOICE	INIT VOICE	INIT VOICE	INIT VOICE	INIT VOICE	INIT VOICE	INIT VOICE	
14	INIT VOICE	INIT VOICE	INIT VOICE	INIT VOICE	INIT VOICE	INIT VOICE	INIT VOICE	
15	INIT VOICE	INIT VOICE	INIT VOICE	INIT VOICE	INIT VOICE	INIT VOICE	INIT VOICE	
16	INIT VOICE	INIT VOICE	INIT VOICE	INIT VOICE	INIT VOICE	INIT VOICE	INIT VOICE	

### TX816 rack

The TX816 file type is valuable for use with a TX rack with any number of modules, or a DX7 with the E! upgrade. If you are using a TX rack, you must set things up in a very specific way while you are using the program: the leftmost TF1, in slot 1, must have the lowest-numbered MIDI channel, which is the one referred to in the TX816 window. The TF1 in slot 2 must have the next higher channel, the one in slot 3 (if any) the next higher one, etc. For instance, if you set the window to channel 4, your TF1's should be on channels 4,5,6,7,8,9,10, and 11, from left to right. If this setup is inconvenient for you, then you should treat each TF1 separately using its own TX window. (You can have eight of them on the screen now!)

To set each TF1's channel, first put it in the PLAY mode. To get the play mode, hold down the SELECT button until a number (the program number) appears on the LED display. Then let go, and press SELECT once quickly. The LED will alternate between "CH" and the channel number. Use the +1 and -1 keys to select the desired channel.

The TX816 is always ready to respond to requests for patches, but you must turn off Memory Protect on the selected TF1 in order to send patch information to it. To do this, press the NO button once or twice, until the Memory Protect light goes out. (You may have to hold down the SELECT button for a second or two in order to cancel any data entry operation that was in progress: when this is done the LED display will be steady instead of blinking or alternating).



After setting up your synthesizer, and OKing the "be sure you do this" box, the bank window (shown below) will open, with eight columns. If you have fewer, you must inform Patch Librarian by choosing the **Number of Modules...** command from the **Load/Send** menu. Click on the number of modules you have: the bank window will shrink down to the appropriate size. Your selection will be remembered: you shouldn't have to do it again.

---

**DX7 with E!** If you are using a DX7 with E!, you should set the following:

MIDI IN CONTROL  
SYS/EX ON  
by pressing FUNCTION, OPERATOR SELECT, 9, YES

MIDI OUT CONTROL  
SYS/EX ON  
by pressing FUNCTION, OPERATOR SELECT, 25, YES

MIDI OUT CONTROL  
SYS/EX=TX  
by pressing FUNCTION, OPERATOR SELECT, 26 repeatedly until you see  
SYS/EX=nn, YES

MEMORY PROTECT  
INTERNAL OFF

It is very important that Patch Librarian know you are using a DX7 with E! instead of a TX816, because bank transfers are done very differently. For instance, the entire DX7 just uses one MIDI channel where the TX rack may use up to eight channels. To do this, choose **Number of Modules...** from the **Load/Send** menu, and click on **DX7 with E!**.

---

**Whole Rack** If this option is checked, then each load or send operation will automatically affect all modules in your rack (or your entire E! memory). **Echo Keyboard, Play Example, and Play On Select** also will play through all modules in your rack if this is checked.

If this option is *unchecked*, each load or send operation will affect *only* the module (or E! bank) corresponding to the selected column (if you're not sure which column is selected, click on a patch in the one you want — that'll select it for sure!). Echoed keys or played examples will play through the selected module only.

## Transferring data to and from your TX816

### Helping your Macintosh

**TX816**            The MIDI OUT on a TX816 can only be connected to one module at a time. Therefore, whenever you are loading patches *from* the TX816 to the Macintosh, you will have to set the OUT SLOT of the rack. Patch Librarian will always tell you what the OUT SLOT needs to be set to. You will be prompted to make sure the OUT SLOT corresponds to the module to be loaded. If **Whole Rack** is checked, you'll have to press the OUT SLOT 's +1 button at least seven times over the course of a command.

**DX7 with E!**    With E!, Patch Librarian needs you help to select between the upper four and lower four banks, but it selects among each group of four by sending program changes. These have the unfortunate effect of destroying the program in the edit buffer, so you should store it somewhere before you proceed with the **Get Bank** or **Send Bank** command. If Patch Librarian needs patches in the lower four banks, it will tell you to select Internal Bank 1. When it needs patches in the upper half, it will ask for Internal Bank 5. To set either one, press the INTERNAL key on the DX7. You should see the following on the LCD:

```
INTERNAL BANK n  
In-pp WhizBang 1
```

Move the DATA ENTRY slider until either 1 or 5 (whichever is needed) is displayed.

## Getting a bank from your synthesizer

In order to transfer the contents of your synthesizer's internal memory into the bank window, select **Get Bank from TX816** from the **Load/Send** menu on the Macintosh. If something goes wrong, you can click the mouse to cancel the command. What happens next depends on what kind of synthesizer you have:

---

**TX816** If **Whole Rack** is checked, the entire contents of the window will be loaded with the contents of all modules of the TX rack.

If **Whole Rack** is *not* checked, only the currently selected column will be loaded with the contents of the corresponding module's internal memory.

---

**DX7 with E!** If **Whole Rack** is checked, the entire contents of the window will be loaded with the entire E! memory.

If **Whole Rack** is *not* checked, only the currently selected column will be loaded with the corresponding internal bank.

## Sending a patch to your synthesizer

Whenever you choose **Send Patch to TX816** from the **Load/Send** menu, or when you select a patch with **Send On Select** checked, the patch (or patches) will be sent into the edit buffer of your DX or TX816. (You cannot choose **Send Patch to TX816** if you are in a library, but you *can* use **Send On Select**. If you do, it will be sent into the leftmost module). The program will not be stored, unless you use the **STORE** function to save it in the internal or cartridge memory. The DX or TX816 must have internal memory protect off, even though the internal memory is not changed by this command. The selected voice and function data will be sent to your synthesizer.

---

**TX816** If **Whole Rack** is checked, all patches in the currently selected *row* will be sent to their respective modules' edit buffers.

If **Whole Rack** is *not* checked, only the currently selected patch will be sent to the corresponding module's edit buffer.

---

**DX7 with E!** The currently selected patch will be sent to the DX7's edit buffer.

## Loading a patch from your synthesizer

To load a single patch into a bank window, first select where you want it to go. Then select **Get Patch from TX816** from the **Load/Send** menu (or just type command-G).

---

**TX816** If **Whole Rack** is checked, the contents of all the modules' edit buffers will be loaded into the respective columns of the currently selected *row*.

If **Whole Rack** is *not* checked, only the edit buffer contents of the module corresponding to the currently selected patch will be loaded.

---

**DX7 with E!** This command will do nothing because E! does not yet respond to patch requests. Stay tuned for future versions. For now, get a bank at a time, and drag the patches yourself where you want them.

## Sending a bank to your synthesizer

To send the currently selected bank(s) to the synthesizer, simply choose **Send Bank To TX816**. The message `MIDI RECEIVED` will be displayed on the LCD if the command is successfully accomplished (on the TX816, AV and AF will appear on the display(s)). Memory protect must be off for this command to work. To ensure that the command will be accepted, your DX or TX should be in the play mode (with a program number on the display). If you are in some parameter edit mode, the command might be ignored.

---

**TX816** If **Whole Rack** is checked, the entire contents of the window will be transferred to all modules of the TX rack.

If **Whole Rack** is *not* checked, only the currently selected column will be sent to the corresponding module's internal memory.

---

**DX7 with E!** If **Whole Rack** is checked, the entire contents of the window will be transferred to the entire E! memory.

If **Whole Rack** is *not* checked, only the currently selected column will be sent to the corresponding internal bank.

# DX7 II Files

## Setting up your Synthesizer

There are only a few things you must do to set up the DX7 II. These things are all done while the instrument is in Edit mode. To place the DX7 II in Edit mode, press either the SINGLE, DUAL, SPLIT, or PERFORMANCE buttons so that the button becomes lit, then press the EDIT button.

---

### Channel Numbers

The DX7 II sends and receives all patch information over the channel specified by its Device Number. The Librarian sends and receives all such information over the channel specified in the current window. You should therefore make sure that the two numbers are the same. For most users, it doesn't matter what the channel is, as long as the two numbers are the same.

To set the Device Number on the DX7 II, enter Edit mode, then press button #31 repeatedly until

```
MIDI >Device number      >Receive block
          1                  1-32
```

appears in the LCD Display. Then use the CURSOR and DATA ENTRY buttons to set the Device number.

To receive note information from the Librarian, the DX7 II must either be in Omni mode, or its Receive Channel must be the channel the Librarian is using to play notes. (See MouseKeys in the main Patch Librarian manual for more information.)

To set Omni mode or change the Receive Channel, enter Edit mode, then press button #31 repeatedly until

```
Channel   >Trns ch  Rcv ch>A >B   >Omni
messages  1          1  1     off
```

appears in the LCD Display. Then use the CURSOR and DATA ENTRY buttons to set the appropriate values.

Since the Librarian receives all note information over all channels, it does not matter what the DX7 II's Transmit Channel is set to, unless MouseKeys is in Multi mode. (See MouseKeys in the main Patch Librarian manual for more information.)



**Memory Protection**

If you are going to be sending banks of voices, performances, or micro tunings to the DX7 II's internal memory, its memory protection should be turned off. If you are going to send banks of fractional scalings or microtunings to the cartridge, the cartridge's memory protection should be turned off. You will be able to send *individual* patches to the DX7 II without changing anything in its internal memory or cartridge, because they will be sent to the DX7 II's edit buffer. (The edit buffer is the place where your DX7 II stores the voices, performance, tuning and scaling that it is currently using. This allows you to edit these items without changing what is in the internal memory.)

To turn off memory protection, enter Edit mode, then press button #14 repeatedly until

```

>Master tuning      Memory protect >INT >CRT
+ 0                on      on

```

appears in the LCD Display. Then use the CURSOR and DATA ENTRY buttons to set the appropriate values. If you are turning off cartridge memory protection, be sure to turn off the protection switch on the cartridge itself.

**Cartridge Formattting**

If you will be sending data to the cartridge, you must be sure the cartridge is formatted correctly, by checking its format name:

Desired Data Type	Format Name
Voices and Performances	DX7-2
Fractional Scalings	FKS-Y
Micro Tunings	MTT-Y

To format the cartridge, turn off its memory protection (see above), enter Edit mode, then press button #15 repeatedly until the correct data type appears in the LCD Display - Voice & Perf., Fractional SC., or Micro Tuning. (Only 1 type of data may reside on a RAM cartridge at one time.) Then use the CURSOR keys to move to 'Format' in the display, then press YES twice. The DX7 II will respond with

\*\* Completed!

to signal successful formatting. (Note that you cannot transfer voices & performances to a cartridge via MIDI.)

## Transferring data to and from your synthesizer

---

### DX7 II Voices

#### Getting a bank from your synthesizer

To transfer the voices in your synthesizer's internal memory into the bank window, select **Get Bank from DX7 II** from the **Load/Send** menu on the Macintosh. If something goes wrong, you can click the mouse to cancel the command. All 64 internal voices will be transferred into the window.

#### Sending a patch to your synthesizer

Whenever you choose **Send Voice to DX7 II** from the **Load/Send** menu, or when you select a patch with **Send On Select** checked, the patch will be sent into the edit buffer of your DX7 II. (You cannot choose **Send Patch to DX7 II** if you are in a library, but you CAN use **Send On Select**). The patch will not be stored, unless you use the **STORE** button to save it in the internal or cartridge memory.

#### Getting a patch from your synthesizer

To load a single patch into the new bank window, first select where you want it to go. Then select **Get Voice from DX7 II** from the **Load/Send** menu (or just type command-G). This will transfer the voice which is currently in the instrument's edit buffer into the selected voice location.

#### Sending a bank to your synthesizer

To transfer the voices in the current bank window into your synthesizer's 64 internal voice locations, select **Send Bank to DX7 II** from the **Load/Send** menu on the Macintosh. If something goes wrong, you can click the mouse to cancel the command. The DX7 II will signal successful transmission by displaying

\*\* MIDI bulk data received!

## DX7 II Performances

The transfer of Performance data works analogously to the transfer of Voice data — that is, individual performances are transferred between the DX7II's performance edit buffer and the selected performance.

Unfortunately, due to the way Performances are received by the DX7II, not all of the commands are as useful as you might expect. In particular, sending an individual performance to the DX7 II does *not* select the voices referenced by that performance, which makes the feature practically useless.

Also, it is very important to remember that Performances *refer* to voices and that they do not *contain* one or two voices. If you send a bank of performances to the DX7II, and one of them uses internal voices 19 and 26, the voices *currently* in DX7 II internal locations 19 and 26 will be used, *not* the voices which resided in locations 19 and 26 at the time the performance was created or sent to the librarian. You may therefore wish to name performance banks and the voice banks they refer to similarly, so that performances are always paired to their correct voices. Then whenever you send a performance bank, you can also send the appropriate voice bank.

---

## DX7 II Microtunings

There are two types of Microtuning banks: Internal Microtunings and Cartridge Microtunings. You can also make libraries of Microtunings. Individual microtunings may freely be moved between either type of bank, or libraries.

Transfers of Microtunings work like just like Voice data transfers: Send Microtuning and Load Microtuning access the Microtuning edit buffer, and Send Bank and Load Bank access either the two internal or the 63 cartridge microtunings.

As mentioned earlier, if you are using Cartridge Microtunings, the RAM cartridge must be formatted for microtunings, and it must be unprotected if you plan to write to it.

---

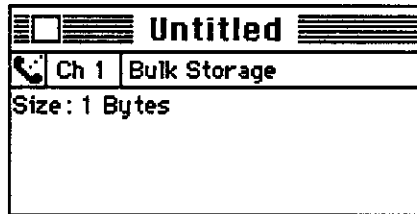
## DX7 II Fractional Scalings

Fractional Scalings are sent and received in the same manner as Voices: Send Scaling and Load Scaling access the Fractional Scaling edit buffer, and Send Bank and Load Bank access the 64 Fractional Scalings in the cartridge.

As mentioned earlier, if you are using banks of Fractional Scalings, the RAM cartridge must be formatted for fractional scalings, and it must be unprotected if you plan to write to it.

---

# The Bulk Storage File Type



The Bulk Storage data type is designed to allow saving pattern information (or any other system exclusive data) from the RX-11 or RX-15 drum machines. It may also be used to save the 64 performances in a DX-5. However, it makes absolutely no assumptions about the data stored: it may be used with any MIDI device that has these characteristics: The bulk data dump can be initiated from the device itself (instead of requiring a MIDI request), and, the message coming out of the device can go back in without any change. All Yamaha bulk messages obey these requirements, and Bulk Storage can save DX7 voices, DX21 voices, or any others. There are probably devices from other manufacturers which Bulk Storage can save as well.

The **Bulk Storage** window lets you enter a "name" (in addition to the file name). It shows how many bytes of data are stored. You cannot open a library window for Bulk Storage.

## RX-11

To use an RX-11 with Bulk Storage, you must do all of the following:

Set `SYS INFO` to `AVAIL`.

Remember what you set the `SYS INFO CH` to when you load the data so that you can make sure it's the same when you send it back.

Press `YES` when the display reads `MIDI TRANSMIT?` in order to load a file into the Macintosh.

Be at the play level (the display should read `SELECT PTN xx` or `SELECT SONG xx`) to be able to send a file to the RX-11. Sadly, there is no `MIDI RECEIVED` indication — all you can do is listen to the patterns, and verify that they're different!

## Transferring Data

### Load/Send

<b>Get Bulk Data from Device</b>	<b>⌘G</b>
<b>Send Bulk Data to Device</b>	<b>⌘S</b>

### Loading data from the device

When you choose **Get Bulk Data from Device** in the **Load/Send** menu, you are prompted to send data from the device. After each complete MIDI message, the number of bytes is updated. You may send as many messages as you want (be careful not to run out of memory), and they will be stored. When the messages are "replayed", they will all be transmitted as fast as possible, so don't put more in one bulk storage file than an instrument can handle at one time.

### Sending data to the device

The command **Send Bulk Data to Device** sends the contents (if any) of the active bulk storage window to the external device.