Yamaha DX7 MiniMAX Expansion User Guide

```
*  Welcome to  *
* MiniMAX v2.2 *
```

1: Introduction

The DX7 MiniMAX[1] is essentially a very "lite" Yamaha DX7 expansion board. It provides the following new features:

MEMORY EXPANSION
- 4x memory expansion: There are now 128 patches[2] (what Yamaha calls "voices") arranged in 4 banks of 32. Each patch is directly selectable by standard MIDI Patch Change messages and, of course, the front panel.

GLOBAL PARAMETERS
- MIDI Transmit Channel: You can set the MIDI OUT channel from 1 to 16. (MIDI IN is already settable in the Yamaha factory DX7 v1.8 firmware using button Function 8).
- MIDI Receive in OMNI mode (receives on any/all channels). Added to Function 8.

BUGFIXES
- Includes the fixes for the DX7 Fixed Frequency table bug and also includes the faster boot.
- [v2.20+] Hardware-selectable MIDI Velocity Offset switch fixes the stock DX7 velocity issue.

Installation

You are looking at the wrong document. Please refer to the **DX7 MiniMAX Installation Guide** available on the www.musictechnologiesgroup.com website.

Manual Conventions

Regarding the LCD, this manual shows the variable part of the LCD content using an underline. The DX7 itself is not able to underline more than one character, but this convention makes it easier to visualize the changing part of the LCD versus the fixed part.

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[1] The information provided in this document is intended for informational purposes only and is subject to change without notice. Information may be changed or updated without notice. We may also make improvements and/or changes in the product(s) described in this information at any time.

[2] In this document the term "patch" is used to denote a programmed sound. For some unknown reason back in the 80's, Yamaha called these "voices". The typical use for "voices" these days is to indicate the degree of polyphony (how many keys you can hold down at once and get sound for).

```
THIS AREA IS FIXED
AND THIS: CAN CHANGE
```
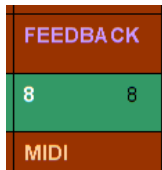
Version Check

You can check the version of your DX7 MiniMAX by powering the DX7 on. The greeting message contains the version information. You should see a version message such as:

```
*  Welcome to  *
* MiniMAX v2.2 *
```

The message goes away on its own after a few moments.

Updates to MIDI (Function Button 8)

The following items are available on button #8 in Function mode:

FEEDBACK	MIDI Ch In = 1	Settable MIDI Receive channel, or OMNI mode
8 8		
MIDI	SYS INFO UNAVAIL	Enable/Disable System Exclusive
	MIDI TRANSMIT ?	(Only if SYS INFO is set to AVAIL)

Recommended Initialization

After installing the board, or any time the battery is changed, there can be some random data in the DX7 RAM. Check and set the Function parameters and load some patch data to begin using your new DX7 MiniMAX:

1. Turn the Internal Memory Protect OFF to enable saving settings and data.
2. Check the Portamento Time and Mode (Mono/Poly). Double check ALL other Function settings for peculiarities.
3. Set the active Memory Bank to 1 (see below).
4. Set MIDI Ch In = 1 and MIDI Ch Out = 1 or whichever channel(s) you prefer (see below).
5. Load a set of patches from cartridge or system exclusive. If the latter is used, then Sys Info must be set to Available first.

2: Operation

Aside from Function 8 mentioned above, the other changes are the addition of new settings on buttons **12** and **13** in Function mode.

2.1 Memory Bank Selection (Function 12)

Recall that the DX7 has 32 internal patches accessed by pressing the INTERNAL button and then one of the patch numbers 1 through 32.

The DX7 MiniMAX has four banks of these to make the 128 patches:

Bank 1	Patches 1 to 32	=	MIDI patch numbers 1 to 32.
Bank 2	Patches 1 to 32	=	MIDI patch numbers 33 to 64.
Bank 3	Patches 1 to 32	=	MIDI patch numbers 65 to 96.
Bank 4	Patches 1 to 32	=	MIDI patch numbers 97 to 128.

To select a Bank and patch from the front panel, press the **Function** button to activate Function Control, then press button **12**:

```
FUNCTION CONTROL
Memory Bank = 4
```

You can then select which bank is active using the Data Slider or + / - buttons. The **next** patch you select will come from the memory bank you chose. Even when you return to play mode (say, by pressing INT and/or a patch number), this function remains active so you can continue to change banks with minimal button pressing. Please also see the *caveat* below.

A convenient way to select banks from your now expanded memory is to leave the most recently selected MEMORY BANK button "live" in Function mode. When you return to "play" mode, the Data Entry control remains active on the Memory Bank parameter thus making easy to access all 128 voices.

When you select a patch via the front panel, its patch number (1 through 128) will be transmitted on the DX7's MIDI OUT.

Another way to select patches is through MIDI IN. The patch numbers correspond to the patch numbers 1 to 128 in the table above. That is, on receipt of a MIDI Program Change message on the correct MIDI channel, the correct bank and patch will be activated. **Note that if you have cartridge installed it will be selected in place of Bank 2**.

Each bank must be saved or loaded individually using a cartridge or over MIDI.

CAVEAT: Keep in mind that this operating rule is the same for any function button. That means for example, if the most recently selected Function is Volume, you could accidentally turn the sound off without knowing the reason.

2.2 MIDI Transmit Channel (Function 13)

The MIDI note data, patch changes, etc. will be transmitted on the MIDI Channel specified here. Using the Data slider or the Yes/No buttons, select the MIDI OUT channel you want, the range is 1 to 16.

```
FUNCTION CONTROL
MIDI Ch Out = 1
```

Note: The MIDI IN channel is established via the standard DX7 Function button 8.

2.3 MIDI OUT Note-On Velocity Fix   [v2.20+ only]

The stock DX7 keyboard has a restricted range on the maximum MIDI Note-On velocity it transmits. If you strike a key extremely hard you can get a maximum velocity out of 118 ($76 hex). A hardware fix has been included that allows the player to obtain full MIDI Note-On velocity of 127 ($7F hex) without fear of damaging the keybed.

The MiniMAX circuit board has a switch, S1, that allows you to change between default (0) and full velocity (+3) operation. This switch is not intended to be changed on-the-fly with the power on, but you can try it for an A:B comparison **if your patches are backed up**.

When the switch is to the right, the setting is +0 (stock). If you perform a Function+16+32 Test Mode Entry button combination, you will see:

```
Vel+0,TEST MODE?
 ARE YOU SURE ?
```

Press Memory Select Internal twice to escape.

When the switch is to the left, the setting is +3 (enhanced). If you perform a Function+16+32 Test Mode Entry button combination, you will see:

```
Vel+3,TEST MODE?
 ARE YOU SURE ?
```

Press Memory Select Internal twice to escape.

Enjoy your updated DX7!
See the MTG web site for more great vintage synth and drum machine goodies.