E-MU

EDITING PATCH: 6   MODIFIED   STORE

E-MU

X board25

X board49

Owner's Manual

Xboard25 Xboard49

Owner's Manual

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PN: 02EM770006000

Revision: A

Software Version: 1.00

E-MU World Headquarters
E-MU Systems
1500 Green Hills Road
Scotts Valley, CA
95067-0015
USA

Europe, Africa,
Middle East Creative Labs
Ballycoolin Business Park
Blanchardstown
Dublin 15
IRELAND

E-MU Japan
Creative Media K K
Kanda Eight Bldg., 3F
4-6-7 Soto-Kanda
Chiyoda-ku, Tokyo
101-0021
JAPAN
www.japan.creative.com

Table of Contents

Important!
The complete X Board manual is available in .pdf format on the included CD-ROM.

Important
Le manual français de l' X Board est disponible au format .pdf, sur la CD-ROM inclus.

Wichtig
Das deutsche Handbuch ist als .pdf Dokument vom enthaltenen CD-ROM vorhanden.

Battery Safety
- Do not mix batteries of different brands.
- Do not mix old and new batteries. Replace all batteries at the same time.
- Do not mix battery types. Examples of battery types are alkaline, heavy duty, rechargeable.
- Do not use damaged batteries.
- Observe proper polarity when installing batteries. Take care to prevent batteries from being put in backwards.
- Promptly remove dead or weak batteries.
- Do not leave the X Board switched "on" after the batteries are exhausted.
- Remove batteries if the X Board will be stored for long periods of time.

INTRODUCTION

Congratulations on your purchase of the E-MU X Board 25 or X Board 49 USB/ MIDI controller. The X Board professional USB/MIDI controllers offer unmatched playability, real-time control and programmability in portable 25 key or 49 key packages. Both models feature full-size velocity-sensitive keys with aftertouch, pitch and modulation wheels and 16 controller knobs. These keyboards are ideal for either studio or stage use since they can be used as stand-alone MIDI controllers or with a USB equipped PC or Macintosh computer. The X board MIDI output can even be used as a MIDI interface for your computer when connected via USB. The X Boards are ultra-portable and can be powered via USB, battery, or using the optional 6 VDC power supply.

Each of the 16 controller knobs can be programmed to any controller number on any MIDI channel. The keyboard can be transposed up or down ±4 octaves in order to play in any key and any pitch.

Both X Boards contain a host of extra features. The "Snap Shot" feature lets you send multiple program changes and controller values with a single button press. The "XBoard Latch Mode" lets you define a section of the keyboard as On/Off triggers—perfect for drum loops. Each of the 16 internal patches has a program-mable footpedal/footswitch setting, can select one of eight velocity curves, and can send program changes for up to 16 MIDI channels.

Requirements

The included X Board Control software provides an intuitive desktop interface that makes it easy to create custom templates for all your favorite hardware and software instruments.

On a PC:

You must be running Windows 2000 or XP, and your computer must support USB to communicate with the X Board. The X Board can operate in MIDI Output mode without a computer if 6VDC power is supplied via a DC adapter or batteries.

On a Mac:

You must be running Mac OS X to connect the X Board. The X Board can operate in MIDI Output mode without a computer if 6VDC power is supplied via a DC adapter or batteries.

Package Contents

- X Board Keyboard
- USB Cable
- CD-ROM containing the following software bundle
    + X Board USB Drivers
    + X Board Control software
    + Proteus X LE Desktop Sound Module
    + Ableton Live Lite 4 for E-MU
    + Adobe PDF Reader
    + PDF manual for X Board and X Board Control software
- This Owner's Manual

Optional

- DC Power Adapter

Hardware Installation

The connection diagrams on the following pages show how to connect the X Board to your computer or to another MIDI device.

The supplied USB cable provides power and a two-way data link between the X Board and your computer. The USB port on your computer is a small (1/8″ x 3/8″) rectangular opening. The connector is keyed so you cannot plug it in wrong. The other end of the USB cable is square and plugs into the back of the X Board. This end is also keyed to prevent incorrect insertion.

If the X Board is not connected to the computer via USB it requires a source of power in the form of a 6VDC adapter (tip positive) or (3) AA batteries.

Connecting the X Board to your Computer

USB Connection

USB provides a two-way data link between the X Board and your computer and also supplies power to the X Board. Always connect to the USB port on the computer itself—the USB port on your computer keyboard will not supply sufficient power.

USB Cable
(included)
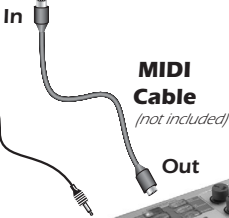
MIDI Connection

The X Board sends MIDI performance data to another MIDI device, such as a MIDI sound module. The X Board always transmits MIDI data except when "Thru" mode is enabled. *[See page 30.]*

MIDI Sound Module

In

MIDI Cable
(not included)

6 VDC Adapter
(optional)

Out

MIDI Interface

MIDI Sound Module

In

MIDI Cable

USB Cable
(included)

Out
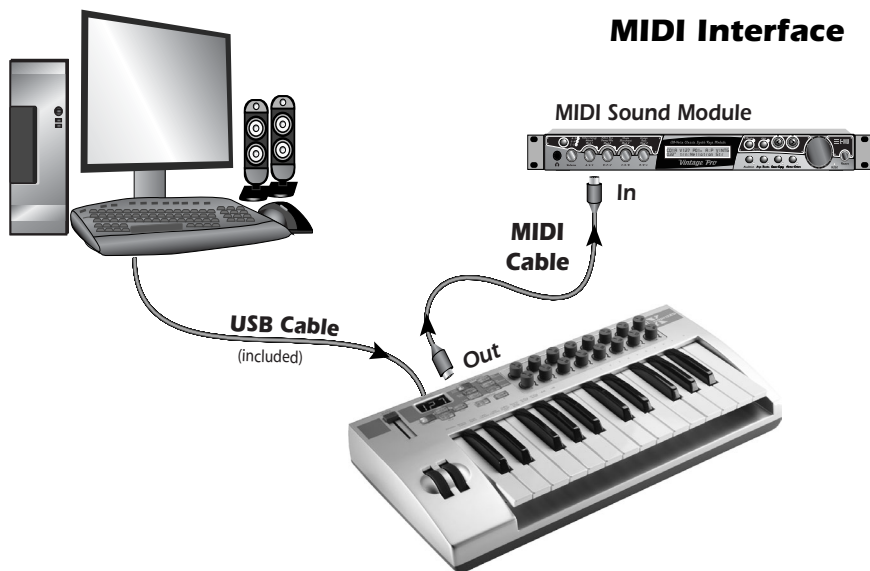
The X Board can function as a MIDI interface when connected to your computer via USB. Set the X Board MIDI port to "Thru" (page 30) to transmit MIDI from your sequencing application to an external MIDI device.

Software Installation

Macintosh OS X

Follow these instructions to install the X Board USB drivers and editor/librarian software on a Macintosh computer.

1. Double-click on the installer package.

2. Click on the lock icon and enter the administrator password you chose when you installed OS X.

3. Follow the prompts to install the software.

Windows 2000

Follow these instructions to install the X Board USB drivers and editor/librarian software on a Windows 2000 computer.

1. Make sure the X-Board is NOT CONNECTED to your computer.

2. Insert the E-MU software Installation CD into your CD-ROM drive. If Windows AutoPlay mode is enabled for your CD-ROM drive, the CD starts running automatically. If not, from your Windows desktop, click **Start->Run** and type **d:\setup.exe** (replace **d:** with the drive letter of your CD-ROM drive). You can also simply open the CD and double-click **Setup.exe**.

3. The installation splash screen appears. Follow the instructions on the screen to complete the installation. You will have the option to install:
   - **E-MU X Board** - USB Drivers and X Board Control Application
   - **Proteus X LE** - A virtual sampling musical instrument (VSTi)
   - **Ableton Live Lite for E-MU** - A loop-based composition/improvisation tool.
   - **Adobe Acrobat Reader**

4. Choose "Continue Anyway" when you encounter the "Windows Logo Testing" warning screen. See the note on the following page.

5. When prompted, restart your computer.

6. Connect the X Board to your computer using the supplied USB cable.

Windows XP

Follow these instructions to install the X Board USB drivers and editor/librarian software on a Windows XP computer.

1. First connect the X Board to your computer using the supplied USB cable. This will allow Windows to install a USB Audio Device driver for the product. Wait for this installation to complete.

2. Insert the E-MU software Installation CD into your CD-ROM drive. If Windows AutoPlay mode is enabled for your CD-ROM drive, the CD starts running automatically. If not, from your Windows desktop, click **Start->Run** and type **d:\setup.exe** (replace **d:** with the drive letter of your CD-ROM drive). You can also simply open the CD and double-click **Setup.exe**.

3. The installation splash screen appears. Follow the instructions on the screen to complete the installation. You will have the option to install:
   - **E-MU X Board** - USB Drivers and X Board Control Application
   - **Proteus X LE** - A virtual sampling musical instrument (VSTi)
   - **Ableton Live Lite for E-MU** - A loop-based composition and improvisation tool *(Windows only version at this time)*
   - **Adobe Acrobat Reader**

4. Choose "Continue Anyway" when you encounter the "Windows Logo Testing" warning screen. See the note on the following page.

5. When prompted, restart your computer.

Uninstalling all Audio Drivers and Applications

At times you may need to uninstall or reinstall some or all of the X Board's applications and device drivers to correct problems, change configurations, or upgrade outdated drivers or applications. Before you begin, close all X Board applications. Applications running during the uninstallation will not be removed.

---

1. Click **Start** -> **Settings** -> **Control Panel**.
2. Double-click the **Add/Remove Programs** icon.
3. Click the **Install/Uninstall** tab (or **Change or Remove Programs** button).
4. Select the **E-MU X Board** entry and then click the **Change/Remove** button.
5. In the **InstallShield Wizard** dialog box, select the **Remove ALL** option.
6. Click the **Yes** button.
7. Restart your computer when prompted.
8. You may now re-install existing or updated E-MU device drivers or applications.

Note About Windows Logo Testing

When you install the X Board USB drivers, you will see a dialog box that informs you that the driver has not passed Windows Logo testing.

However, the X Board USB drivers have been rigorously tested using the same test procedures that a signed driver requires, and it passes in all important categories, including those that measure the relative stability of the driver. So, it is perfectly safe to install these drivers on your computer.

Troubleshooting

Lost Communication

Should you loose MIDI communication between your X Board and an audio application (Cubase, Sonar, etc) or the X Board Editor, the X Board drivers may need to be re-selected in your application.

1. Go to your application's MIDI I/O settings, de-select the X Board for both MIDI input and output (or select a different MIDI device).
2. Apply these changes and exit the dialog.
3. Re-enter the application's MIDI settings and re-select the X Board drivers. If this does not work, the application may need to be restarted.

Wrong Driver in Windows XP or Windows 2000

You may encounter a situation where the X Board Control Editor or Proteus X LE programs are not running properly, even though the MIDI device itself seems to be working fine.

If this is the case, you may be in a situation where the Microsoft USB MIDI driver is running, rather than the E-MU USB MIDI Driver. This may happen if you add a USB Hub, or if you plug the X Board keyboard into a different USB port than the one it was plugged into when you installed the X Board software.

▶ **To confirm the problem, do the following:**

1. Temporarily disconnect any USB audio devices you may have connected (USB audio/USB MIDI interfaces, etc.).

2. Connect the Xboard to a USB port and switch the power to the on position.

3. Windows may prompt the user with an Add New Hardware Wizard--Cancel this wizard.

4. Start menu -> Settings -> Control Panel -> System -> Hardware -> Device Manager.

5. Under Sound, Video and Game Controllers, find the device called either **USB Audio Device** or **E-MU XBoardxx**.

6. Double-click on this device and then click on **Driver.**

7. • If the vendor shown here is E-MU Systems, you have run into a different problem, and you should contact Technical Support.
   • If the vendor shown here is Microsoft, instead of E-MU Systems, you have indeed run into this situation. Continue on to the next section.

▶ **Windows XP -> You may recover by doing the following:**
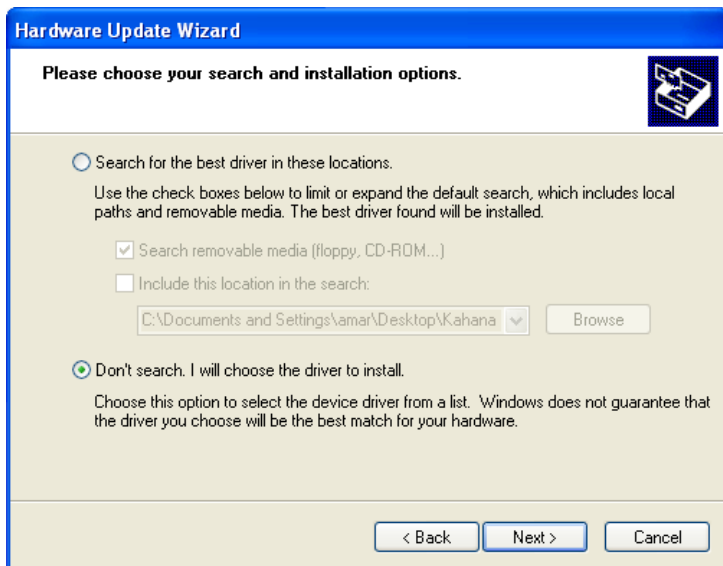
1. Click on **Update Driver**.

2. If you are running Windows Service Pack 2, you will receive this dialog box. Click on "**No, not this time**", then **Next**.
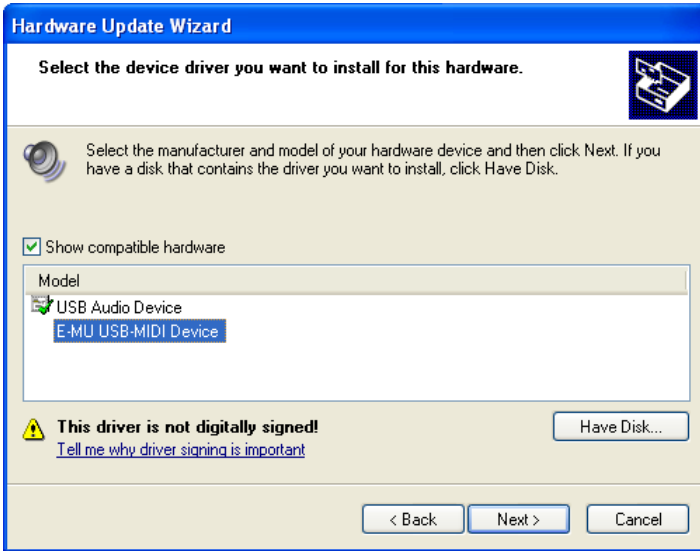
3. In the next panel, click on **(Advanced)** and then **Next**.
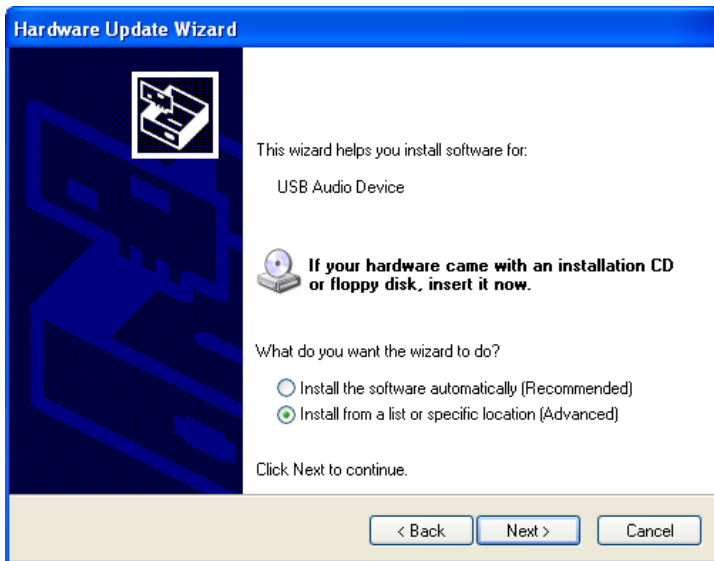
4. In the next panel. click on **Don't Search**, and then **Next**.

5. In the next panel, select the **E-MU USB-MIDI Device**, then **Next**.

6. After a few moments, you will see the Microsoft Digital Signature warning. Click **Continue Anyway**.

7. At this point, you should now be using the correct driver. It may be necessary to reboot your computer at this point.

▶ *Windows 2000 -> You may recover by doing the following:*

1. Double-click the incorrect listing in the Device Manager and choose **Update Driver...** from the Driver tab.

2. Choose **Next**, then Display a list of known drivers for this device...

3. Choose **Next**.

4. Choose **Have Disk...**

5. Insert your Xboard install CD. If the disk autoruns, Exit the disk's installer.

6. Click **Browse**.

7. Browse to the following file, double-click the file, and press **OK**: ---->
   X:\Audio\Drivers\Driver\emuumidi.inf (where X = your CD drive letter).

8. Choose **Next**.

9. Choose **Next** again. The Windows logo testing dialog should appear.

10. Choose **Yes**.

11. Click **Finish**. It may be necessary to reboot your computer at this point.

MAIN PANEL CONTROLS
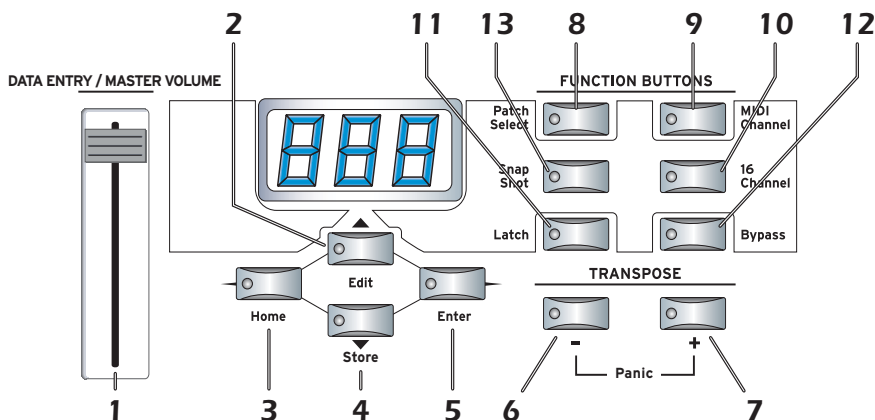
1. Data Slider / Master Volume

This control is used to enter data values when editing. When not being used for editing, the Data Slider functions as a master volume control transmitting a "Universal Real Time System Exclusive" message for Master Volume.

2. Edit

Press this button to edit the current patch.

To Edit: Press the Edit button, choose the parameter to be edited using the keyboard keys, enter the value with the slider, then press Enter.

3. Home

The Home button takes you out of edit mode and back into play mode **without saving** your edit. You can also think of this button as an **Escape** button which returns you to the power-up state of the keyboard. The Home LED is lit whenever the X Board is in Play mode.

4. Store Patch

Use this button to store your keyboard setup in one of the 16 memory locations.

To Store a Patch: After pressing Store, select the desired patch number using the data slider or numeric keys, then press Enter to store the current setup.

5. Enter

Press Enter to confirm your settings when editing. The Home LED illuminates after Enter is pressed.

6. Octave Down

This button transposes the keyboard down one octave each time it is pressed. The octave transpose value (-1, -2, -3, -4) momentarily appears in the display and the LED on the button remains lit.

7. Octave Up

This button transposes the keyboard up one octave each time it is pressed. The octave transpose value (+1, +2, +3, +4) momentarily appears in the display and the LED on the button remains lit.

MIDI Panic Button (6 + 7)

Pressing both of the Octave Transpose buttons simultaneously causes the following MIDI messages to be sent on all 16 channels: "All Notes Off", "All Sounds Off", "Sustain Pedal Off". This will turn off any "stuck notes" which occur when a synthesizer receives a note-on message without receiving a corresponding note-off message.

8. Patch Select

This button is used to select one of the 16 user patches in memory.

To Select a Patch: Press the Patch Select button, then choose a patch using the data slider or numeric keys and press Enter.

9. MIDI Channel Select

This button selects the active MIDI channel for the keyboard and all controls.

To Select a MIDI Channel: Press the MIDI Channel button, then select the channel using the data slider or numeric keys, and press Enter.

10. 16 Channel Control Mode

In this mode, one MIDI Continuous Controller number is assigned to all 16 knobs and each numbered knob transmits on the same numbered MIDI channel. This gives you control of one parameter (such as volume or pan) for all 16 MIDI channels. *See page 24 for detailed information.*

11. Latch Mode

In this mode, pressed keys continue to play until they are pressed again to turn them off. This allows notes to be sustained for any length of time without having to hold down the keys. A range of latch keys can be defined using the "Latch High Note" and "Latch Low Note" edit parameters. *See page 25.*

12. Knob Bypass

Knob Bypass disables the transmission of MIDI messages from the knobs or control pedal/footswitch to avoid abrupt parameter jumps in performance.

When Bypass is On, you can pre-set the knobs anywhere you like without sending MIDI controller messages. When you turn Bypass Off again, nothing is transmitted, but the knobs are now in the desired position for your performance. When you turn a knob, the value of the new knob position will be sent

This feature can also be used to set up any of the knobs the way you want, then send the values later using the Snapshot feature. *See page 26 for more information.*

13. Snapshot

When this button is pressed, the stored current settings of all performance controls (knobs, wheels, footswitch/pedal) are transmitted. This feature can also be used in conjunction with the Knob Bypass control to setup, and then send a group of MIDI continuous controllers messages at once.

Snapshot mode is always accessible, except while Edit mode is active.

14. Controller Knobs
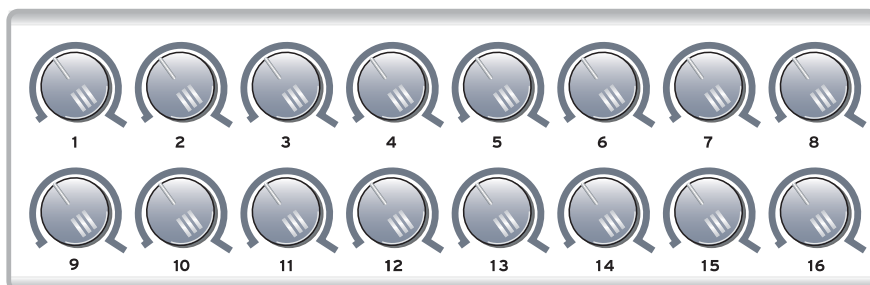
The 16 Controller Knobs are designed to modify the sound during performance. MIDI Continuous Controller messages are transmitted whenever the knobs are turned (except when "Knob Bypass" is enabled).

Whenever a controller knob is turned, the current value of the knob is displayed on the LED. Next, the letters "CC" flash on the display, followed by the flashing MIDI Continuous Controller number of the knob.

Normal mode

Any MIDI Continuous Controller number can be assigned to any knob. *See "MIDI Controller Knob Settings" on page 35.*

16 Channel Controller mode

In this mode, one MIDI Continuous Controller number is assigned to all 16 knobs and each numbered knob transmits on the same numbered MIDI channel. This gives you control of one parameter (such as volume or pan) for all 16 MIDI channels. *See page 24.*

BACK PANEL DESCRIPTION
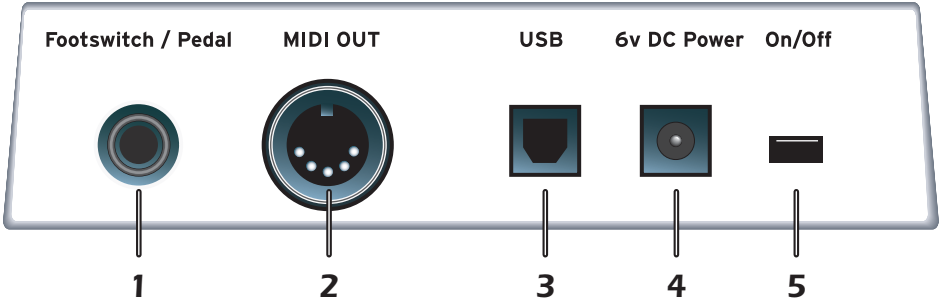
1. Footswitch / Footpedal Input

This jack accepts either a footswitch or continuously variable footpedal. The default setting is for a footswitch. To use a footpedal, see page 30.

Footswitch - Accepts either a normally-open or normally closed, momentary footswitch. The X Board auto-senses the polarity on power-up.

Footpedal - Accepts most standard footpedals with a stereo plug. *See the wiring diagram shown on page 52 for pedal wiring specifications.*

2. MIDI Output

Outputs note and controller MIDI data from the X Board. This jack can also be used as a MIDI interface from a computer software application. *See page 30.* Use a standard MIDI cable to connect the X Board to the MIDI input jack of other MIDI devices.

3. USB

Connects X Board to your computer via the supplied USB cable. The USB connection provides two-way communication when connected to the computer and also supplies power to the X Board. **Always connect to the USB jack on the computer itself** and NOT an unpowered USB connection that may be present on your computer keyboard or other USB peripheral.

4. 6 Volt DC Power

This jack allows the X Board to be powered from a standard 6VDC Adapter (positive tip) when not connected to the computer via USB.

5. On/Off Switch

This switch turns the X Board on or off whether powered via USB, AC Adapter, or batteries.

POWERING THE X BOARD

The X Board can be powered using any of the following power sources:

- USB from the host computer
- 6 VDC Adapter (optional)
- (3) AA batteries

The priority of power sources is as follows:

1. 6VDC power - will be used over all other power sources if available.
2. USB power - will be used if connected and 6VDC is not available.
3. Battery power - will be used only if no other power source is available.

Inserting Batteries into the X-Board

Sometimes it's nice not to have to hassle with power at all. Thankfully the X Board can be operated using (3) AA batteries. Battery life generally exceeds 5 hours using standard alkaline batteries. Lithium batteries typically last 16+ hours.

▶ **To Insert Batteries**

The battery compartment is located on the bottom of the unit.

1. Press the two tabs toward the middle of the battery door while lifting up. The compartment door lifts up and out.
2. Insert (3) AA batteries. Make sure you install them as indicated at the bottom of the battery compartment with + aligned with the + side of the battery.
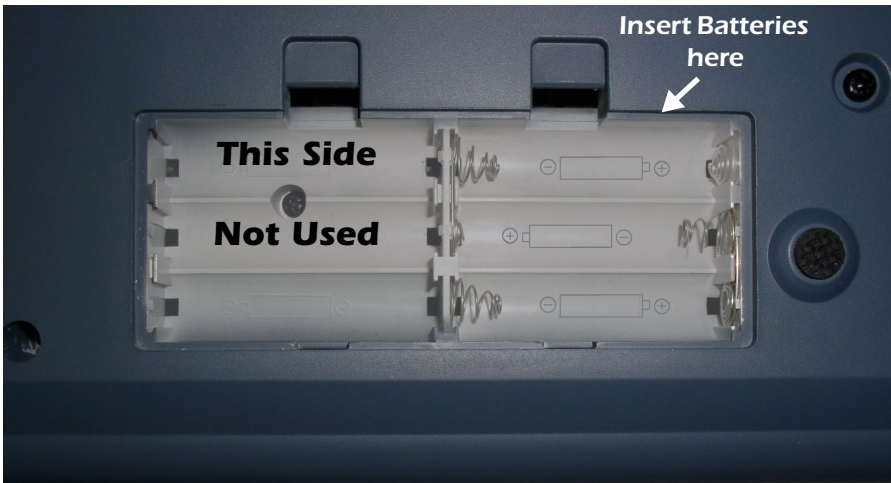
3. Insert the tabs of the battery compartment door into the hinge slots, then press down to snap the door closed.

BASIC OPERATIONS

Entering Data

There are two ways to enter data from the X Board front panel.

- **Data Slider** - Move the slider to select the data value.
- **Keyboard Data Entry** - The black and white keyboard keys marked with numbers can be used to directly enter data values *(except when changing the MIDI channel number or storing and selecting patches)*.

Selecting Patches

The X Board can hold 16 patches in its internal memory. A patch contains the settings for all user programmable controls of the X Board.

In addition, depending on the patch settings, the X Board can send MIDI program changes message(s) and initial controller settings for the knobs, wheels and footswitch/pedal when a particular patch is selected.

▶ **To Select a Patch**

1. Press the **Patch Select button**, illuminating the LED.

2. **Select the desired patch number** using the data slider.

3. The Enter button will be flashing. Press **Enter** to confirm the operation. Press **Home** to cancel the operation.

Storing Patches

▶ **To Store a Patch:**

1. Press the **Store** button. The Enter LED begins flashing.

2. **Select the desired patch number** using the data slider.

3. The Enter button will be flashing. Press **Enter** to store the patch. Press **Home** to cancel the operation.
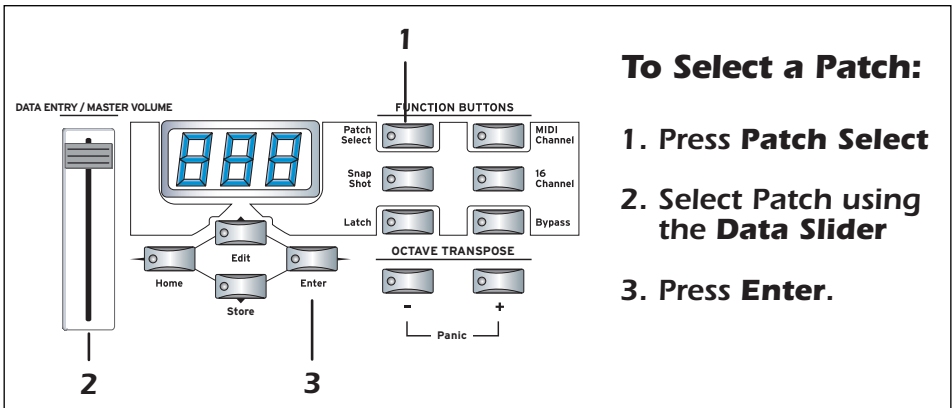
To Store a Patch:

1. Press **Store**

2. Select Save Location using the **Data Slider**

3. Press **Enter**.

Changing the MIDI Channel

The MIDI specification allows for up to 16 channels to be used. This control allows you to set the **Basic MIDI channel** for data transmitted by the X Board keyboard and controllers.

▶ **To Change the MIDI Channel:**

1. Press the **MIDI Channel** button. The MIDI Channel LED illuminates.

2. **Select the desired MIDI channel** using the data slider.

3. The Enter button will be flashing. Press **Enter** to confirm the operation. Press **Home** to cancel the operation.
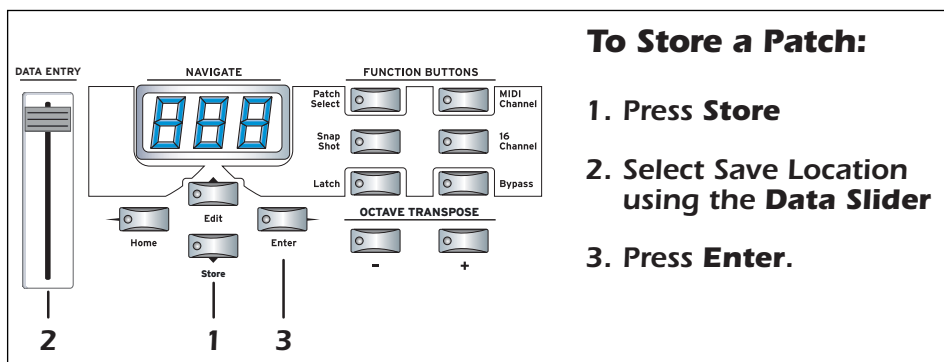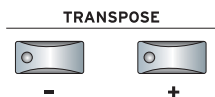
Transposing the Keyboard

The keyboard can be transposed up and down ±4 octaves by pressing the Transpose buttons. The octave number appears momentarily in the display. The LED on the transpose button remains lit to remind you that the keyboard is transposed. The transposition value is stored with the patch.

Editing Patches

The editable program functions are accessed using the labelled keyboard keys.

▶ **To Edit a Patch:**

1. Press the **Edit button**. The Edit LED illuminates.

2. **Select the desired Function** to be edited by pressing one of the marked keyboard keys. (The Velocity Curve is being edited in the example below.)

3. **Adjust the value of the parameter** using the data slider or using the numeric keyboard keys. The Enter button will be flashing.

4. Press **Enter** to confirm the operation. Press **Home** to cancel the operation.

5. Remember to **Store** the Patch or your changes will be lost when the X Board is turned off. *See page 22.*
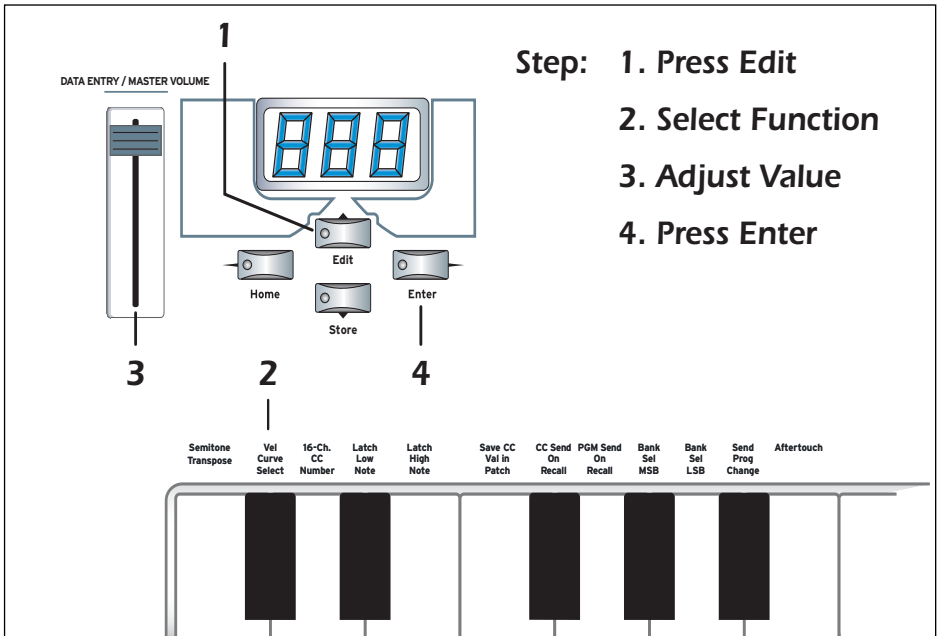
Scrolling Text Display

In the Edit menu, the 3-digit LED serves double duty as a scrolling text display. When you first press the Edit button, the word "**SELECt**" scrolls continuously across the display, prompting you to select an edit parameter by pressing one of the labelled keys. After an edit parameter is selected, the current value of the parameter is displayed. After a short delay, the edit parameter name begins scrolling. If you enter a value, the display stops scrolling.

You'll notice that the scrolling messages mix upper and lower case characters. This is a necessary compromise to display alphabetical characters on a numeric display. *A complete list of the scrolling messages appears on page 53.*

16 Channel Control Mode

16 Channel Control mode is a special performance mode in which all 16 knobs send one CC number on MIDI channels 1 through 16. This allows you to control a single parameter on all 16 MIDI channels. For example, if the controller number were set to #7 (Channel Volume), the knobs could be used to mix the volumes of all 16 MIDI channels.
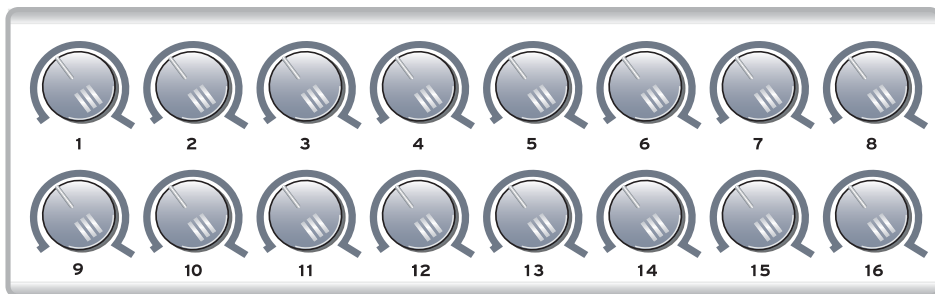
In 16 Channel Control Mode, each knob transmits on its same-numbered MIDI Channel. All knobs transmit the same MIDI Controller Number.

▶ **To Select 16 Channel Control Mode:**

1. Press the **16 Channel** button. The 16 Channel LED illuminates.

2. Press the button again to exit 16 Channel Control Mode. The LED goes off.

▶ **To Set the 16 Channel Control Number:**

1. Press the **Edit button**. The Edit LED illuminates.

2. Press the keyboard key marked **16-Ch. CC Number**.

3. **Select a CC number** from 0-127 using the data slider or using the numeric keyboard keys. The Enter button will be flashing.

4. Press **Enter** to confirm the operation. Press **Home** to cancel the operation.
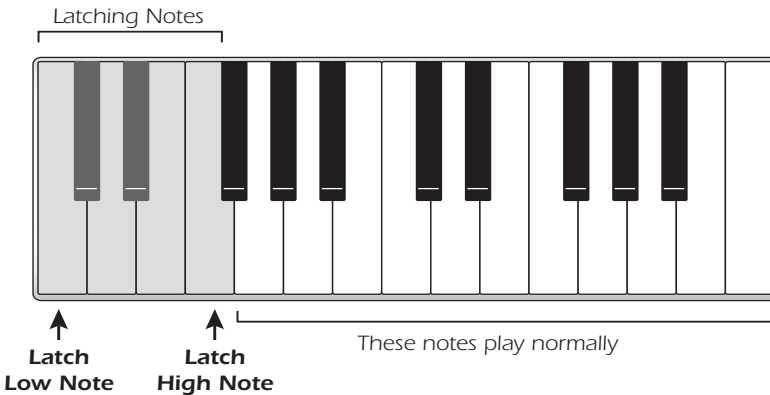
Note Latch Mode

This is a performance mode in which a selected range of keys can be set to Latch. A latched key remains on when pressed once. Pressing the key again turns the note off. Latched notes can be useful to trigger loops or repeating rhythmic patterns without having to hold the key.

Any range of keys (0-127) can be specified as latch notes. Therefore, you could set a range of latch keys that are only accessible with the keyboard transposed down, so as to be out the way in normal operation. Note that you cannot set a low key number higher that the high key, or a high key number lower than the low key.

Note latching is independent per MIDI channel. Notes can remain latched on a given channel while you switch to a different channel, either via direct channel setting change or via patch load. Additional notes can be latched on the new channel.

Turning Latch Mode off manually, via the Latch button, will switch off all latched notes, regardless of their channel or the sequence in which they were latched.

Latched notes are NOT switched off upon loading a new patch in which Latch Mode is OFF. To turn these notes off, either return to the original MIDI channel and play the same notes again, or manually switch Latch Mode ON and then OFF.

Latching Notes

Latch Low Note   Latch High Note

These notes play normally

▶ To Select Latch Mode:

1. Press the **Latch** button. The Latch LED illuminates.
2. Press the button again to exit Latch Mode. The LED goes off.

▶ To Set the Keyboard Range of Latched Notes:

1. **Low Key** -> Press the **Edit button**, illuminating the LED.
2. Press the keyboard key marked **Latch Low Note**.
3. **Press the keyboard key** of the **lowest** note you want to be in Latch Mode.

4. Press **Enter** to confirm the operation. Press **Home** to cancel the operation.

5. **High Key** -> Press the **Edit button**, illuminating the LED.

6. Press the keyboard key marked **Latch High Note**.

7. **Press the keyboard key** of the **Highest** note you want to be in Latch Mode.

8. Press **Enter** to confirm the operation. Press **Home** to cancel the operation.

Snap Shot

The X Board can store the settings of the 16 knobs and footpedal/footswitch with the Patch. When the Snap Shot button is pressed, the currently stored settings of all performance controls (knobs, wheels, footpedal) are transmitted. The initial setting of the footswitch is not transmitted.

Here's an example of how you might use this feature. The knob settings can be stored with the Patch, and can either be transmitted when the Patch is selected or not. For the purpose of this example, suppose the knob settings are NOT transmitted when the Patch is selected. At a certain point in your song, you could press Snap Shot and completely change the sound by sending the stored controller messages.

This feature can also be used in conjunction with the Knob Bypass control to set up, and then send a group of MIDI continuous controllers messages at once. See the description of "Bypass Mode" below.

Bypass Mode

When you move a controller knob on the X Board, the position value is immediately transmitted via MIDI. Knob Bypass disables the transmission of MIDI messages from the knobs or control pedal/footswitch.

Bypass mode allows you to pre-set the knobs to a known position in order to avoid abrupt parameter jumps in performance when you turn the knob.

When Bypass is On, you can set the knobs anywhere you like without sending MIDI controller messages. When you turn Bypass Off again, nothing is transmitted, but the knobs are now in the desired position for your performance. When you turn a knob, the value of the new position will be sent.

This feature can also be used in conjunction with the Snap Shot feature. In Bypass mode, moving the controller knobs temporarily changes the stored settings. Pressing Snap Shot in Bypass mode transmits the stored settings with any changes you made while in Bypass mode.

Edit Parameters

These parameters are accessed via the Edit button. See "Editing Patches" on page 23 for detailed instructions about how to access the Edit mode.

Semitone Transpose

The keyboard can be transposed up or down in one-semitone steps. Transpose works by shifting the keyboard position relative to middle C.

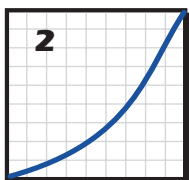The transposition range is -64 to +63 semitones.

Velocity Curve Select

This function selects one of the eight velocity curves to customize the feel of the keyboard. When playing a velocity-sensitive sound (such as piano), select a curve that provides the most natural response to your playing style.
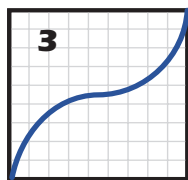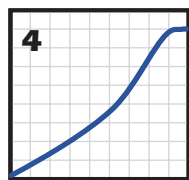
Select a curve from 1 to 8.
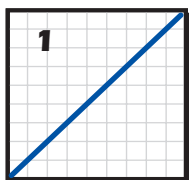
Linear - No change to velocity.

Compressed - For hard players.

Medium - Outputs medium velocity. Compressed dynamics

Compress/Limit - Outputs medium values. Limits dynamics.
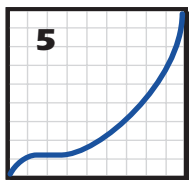
Low Vel 1 - Extreme compression. Outputs low velocity values.
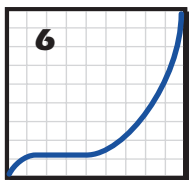
Low Vel 2 - Extreme compression. Outputs low velocity values.
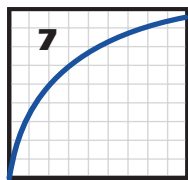
Expanded - Expands velocity range. Soft -> Loud.
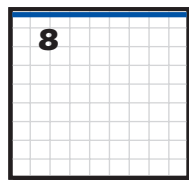
Full Velocity - Only outputs full velocity.

16 Channel CC Number

16 Channel Control mode is a special performance mode in which all 16 knobs send one CC number on MIDI channels 1 through 16. This allows you to control a single parameter on all 16 MIDI channels. *See "16 Channel Control Mode" on page 24 for more information about how to use this function.*

Latch High/Low Note

These keys allow you to set the keyboard range for Latch mode. *Please see page 25, for detailed information about Latch mode.*

Save CC Value in Patch

When this parameter is set to On, the position of the 16 knobs, Mod Wheel and Footswitch/Footpedal settings will be stored with the Patch. If this parameter is Off, the existing continuous controller settings are retained.

Select **on** to save the continuous controller settings, or **oFF** if you don't want the current CC settings stored with the patch.

CC Send On Recall

When this parameter is set to On, the stored settings of the 16 Controller Knobs, the Mod Wheel and the Footswitch/Footpedal will be transmitted when the Patch is selected. When set to Off the continuous controller settings will not be transmitted when the patch is selected.

Select **on** to transmit the initial CC settings, or **oFF** if you don't want the stored CC settings transmitted.

PGM Send on Recall

This switch enables or disables transmission of stored MIDI Program Changes when a new patch is selected. (The stored program changes for each MIDI channel can only be programmed from the X Board Control application.)

Select **on** to transmit stored program changes when a patch is selected, or **oFF** if you don't want the stored program changes transmitted on patch select.

Bank Send MSB

This parameter allows you to select the MIDI Bank MSB (most significant byte) that will be used when selecting program changes with the Send PC or PC Browse Mode commands.

Select a Bank MSB from 0-127.

For more information on MIDI Bank Select commands, see page 52.

Bank Send LSB

This parameter allows you to select the MIDI Bank LSB (least significant byte) that will be used when selecting program changes with the Send PC or PC Browse Mode commands.

Select a Bank LSB from 0-127.

For more information on MIDI Bank Select commands, see page 52.

Send Prog Change

This function sends MIDI program changes to your external gear on the currently selected MIDI channel.

▶ **To Send an External Program Change**

1. Press the **Edit** button.
2. Press the **PC Send** keyboard key.
3. Select the desired program change number from 0-127 using the **Data Slider** or **numeric keyboard keys**.
4. Press **Enter** to send the program change.
5. Press **Home** to exit without sending the program change.

Aftertouch On/Off

When Aftertouch is On, the keyboard will transmit channel aftertouch messages. Aftertouch is transmitted when additional pressure is applied to the keyboard after the keys have been pressed.

Select **on** to turn Aftertouch on, or **oFF** to turn it off.

Program Change (PGM) Browse Mode

This function allows you to browse through MIDI programs while playing the keyboard. Program change messages are sent on the basic MIDI channel.

▶ **To Browse MIDI Program Changes**

1. Press the **Edit** button.
2. Press the **PGM Browse Mode** keyboard key.
3. Select the desired program change number using the **Data Slider**. The program change numbers are shown on the LED. You can play the keyboard to listen to the selected program. (Program change messages are transmitted when the slider stops moving for one second.)
4. Press **Enter** or **Home** to exit Edit mode.

X1 Functions

This key accesses two miscellaneous functions. These are global functions which affect all patches. For example, if Pedal is set to Sus, it will remain so for all patches.

- **Mid** - Out or Thru - When **Out** is selected, the MIDI output transmits local data from the keyboard and knobs. When **Thru** is selected, the MIDI output transmits data from the host application.
- **PEd** - Selects between a footswitch (SuS) or a continuous footpedal (ctL)

▶ **To Select one of the X1 Functions**

1. Press the **Edit button**. The Edit LED illuminates.
2. **Select X1**.
3. **Adjust the data slider** to view the four functions: **Mid, PEd, SyS**.
4. Press **Enter** to select the desired function.
5. Select the desired value using the **data slider**.
6. Press **Enter** to confirm your selection. Press **Home** to cancel the operation.

Mid

The X Board can function as a MIDI interface between your computer applications and external MIDI gear. When set to **Thru**, MIDI data from your computer application is transmitted on the X Board's MIDI output jack. When **Out** is selected, the MIDI output transmits local data from the keyboard and knobs.

X Board keyboard and controller data is **NOT transmitted** from the MIDI output when this function is set to **Thru**. *(Keyboard/Controller data is always sent via USB.)*

Pedal

This function sets up the Footswitch / Footpedal input to accept a switch or a variable pedal control input.

- **SuS** = Sustain or footswitch input. In this mode, the X Board automatically senses the footswitch polarity on power up (either normally-open, or normally-closed). Because of the automatic sensing feature, you should not hold down the footswitch during power up or the switch action will be reversed.
- **ctL** = Control Pedal. The X Board accepts control pedals wired as shown on page 52.

E-MU X BOARD CONTROL

The E-MU X Board Control software allows you to easily edit and then archive X Board patches on your PC or Mac. All the features of the X Board are logically displayed on a single page, which makes patch editing a breeze.

X Board Control makes it easy to mix and match your favorite X Board patches, then save or archive them on your host computer.

In addition, the X Board Control allows you to program several other parameters, which are not accessible from the X Board keyboard. The additional features are as follows:

- X Board can send a different program change on any or all MIDI channels when a new Patch is selected.
- The MIDI channel and CC number are programmable for each of the 16 controller knobs.
- The initial settings for the 16 controller knobs, plus the pitch/mod wheels and control pedal can be transmitted when a new Patch is selected.
- The CC number for Pitch/Mod Wheels and Control Pedal are programmable.
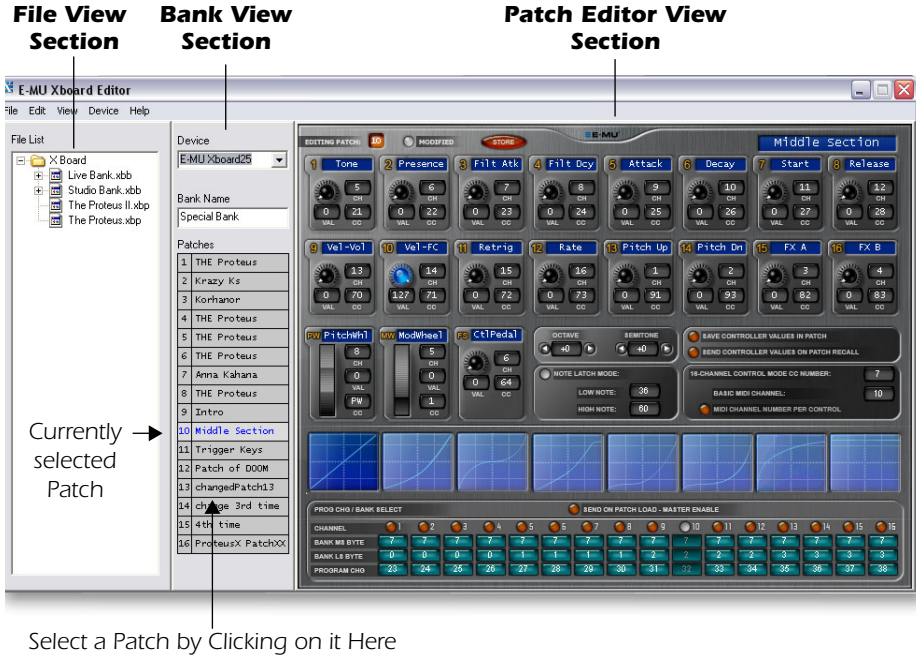- Knob controllers and X Board patches can be named with up to 16 characters.

Definitions

Active Buffer The area of memory used by the X Board to hold control settings before a patch has been stored.

Bank A set of 16 patches representing one complete memory dump from the X Board.

Patch One complete set of parameters for the X Board.

Refresh This function updates the X Board Control application so that it matches the stored patches in the k X Board. Refresh is not performed automatically, You must manually Refresh if you have made edits on the X Board.

Store The act of writing a patch into the X Board non-volatile memory.

X Board Control WIndow

The X Board Control window is divided into three sections: File View, Bank View, and Patch Editor View.

Views

File View Section   **Bank View Section**   **Patch Editor View Section**

Currently selected Patch →

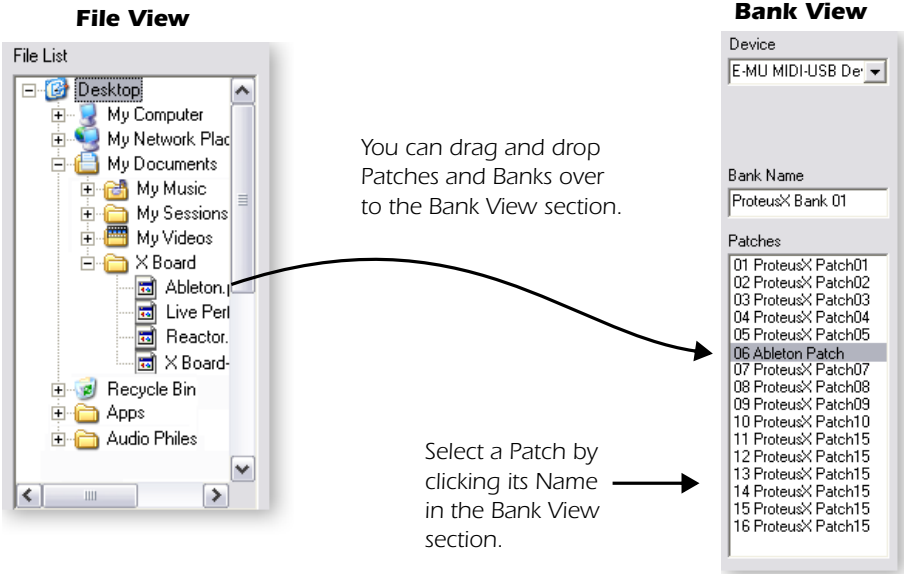*Select a Patch by Clicking on it Here*

File View

The file view section allows you to browse through your computer to locate X Board bank and patch files.

▶ **Loading and Saving Bank or Patch Files**

- Bank files can be loaded by simply dragging them onto the bank view section.
- Patch files can be loaded by simply dragging them onto a patch location.
- Bank or patch files can be saved by dragging and dropping (or copying and pasting) them onto the File View section.

File View

Bank View

You can drag and drop Patches and Banks over to the Bank View section.

Select a Patch by clicking its Name in the Bank View section.

Bank View

The bank view shows the current bank of 16 patches. Patches can be copied and arranged in the bank using copy and paste, drag and drop or menu operations. You can name the bank itself by typing in the Bank Name field.

> **IMPORTANT:** Any modifications you make using the editor are immediately transferred to the X Board active buffer. The opposite is NOT true. Edits made via the X Board hardware will not be transferred to the X Board Control software until you **Refresh**, using the Refresh option in the View menu.
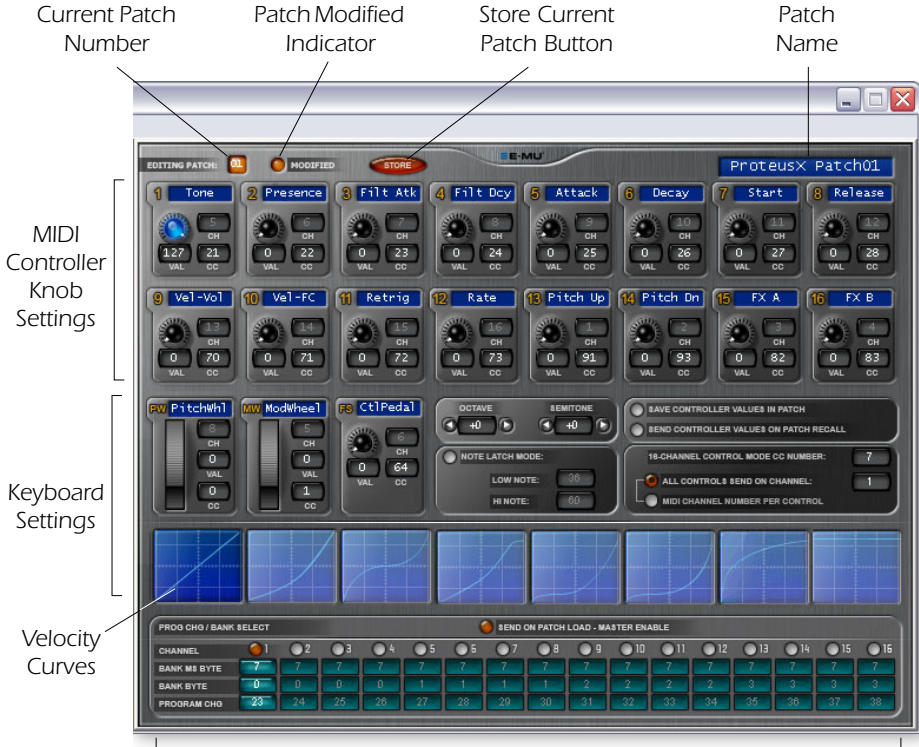
Depending on the setting in the Preferences menu, a patch will either be automatically saved when you select a new patch, or a pop-up dialog box will appear asking whether or not you want to store the patch. Whenever an edited patch is Stored, the Patch Name turns Red until the bank or patch is saved to disk.

Device

The Device field allows you to switch to a different X Board in the event that you have more than one X Board connected to your computer. The list displays all MIDI devices, but you are only allowed to select X Board. When a new selection is made, that connection becomes the default connection the next time the program is launched.

Re-selecting the current E-MU USB device is useful to re-establish lost communication between your computer and the X Board and will also "Refresh" the editor with the current X Board settings.

Patch Editor Screen

Current Patch Number

Patch Modified Indicator

Store Current Patch Button

Patch Name

MIDI Controller Knob Settings

Keyboard Settings

Velocity Curves

Stored Program Changes Sent on Patch Recall

Basic Operation

Changes on the X Board Control software are immediately reflected on the X Board.

▶ *Changing Settings*

- Knob or wheel changes can be made by moving the knob or wheel.
- Numeric values can be edited by typing in the field.

▶ *Storing Patches*

- Pressing the **Store** button immediately stores the current Patch to the X Board.
- **Changing the current Patch** in the Bank View section causes the Patch you last selected to be automatically stored in the X Board. *See Prefs on page 40*.

▶ *Changing Patches*

- Select a new patch from the Bank View, Patches section. Any changes you made to the previous patch will be automatically stored in the X Board.
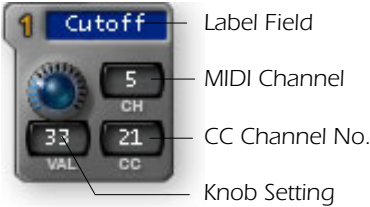
Patch Modified Indicator

This indicator lights whenever the displayed patch settings are not identical to the same-numbered patch stored in the X Board.

Patch Name

This field allows you to assign a name of up to 16 characters to each patch.

MIDI Controller Knob Settings

Label Field

MIDI Channel

CC Channel No.

Knob Setting

This group of 16 controls corresponds to the 16 controller knobs on the X Board. The 8-character label is visible only in the X Board Control.

The Value field displays the exact position of the controller knob. Numeric values from 0 to 127 can be directly typed in.

Initial Knob Settings - *Turning the knob on the screen won't affect your soft-synth. Instead, set the value using the X Board knob, then press* **Refresh** *to update the screen.*

The CC Channel number field allows you to set the MIDI continuous controller number (0-127) for each knob. The X Board CC numbers must match the CC numbers on your synthesizer in order to operate.

- **Note:** Don't confuse MIDI channels with MIDI CC channels. *See "MIDI Channels & Continuous Controllers" on page 51 for more information.*

The MIDI Channel field allows you to set the MIDI channel for each knob). This field is "greyed out" (and unavailable) unless the "MIDI Channel Number Per Control" option is selected (see below). Normally, all the controller knobs use the Basic MIDI channel. The "MIDI Channel Number Per Control" option allows you to select a different MIDI channel for each knob, the wheels, and the footpedal. This feature is only accessible from the X Board Control software.

18-CHANNEL CONTROL MODE CC NUMBER: 7

BASIC MIDI CHANNEL: 1

MIDI CHANNEL NUMBER PER CONTROL
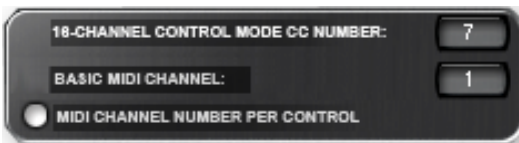
The keyboard ALWAYS transmits on this MIDI channel. The knobs also transmit on this channel, except when "MIDI Channel" Number Per Control" is selected.

Basic MIDI Channel:

The keyboard always transmits on the basic MIDI channel. The controller knobs, wheels and footpedal/footswitch also transmit on the Basic MIDI channel, except when the "MIDI Channel Number Per Control" option is selected. *See next option.*

MIDI Channel Number Per Control

Normally, the keyboard and all controllers are transmitted on the Basic MIDI channel. This option allows you to select any MIDI channel for each knob, the two wheels and the footpedal.

The example below shows how you might control four parameters on four different synthesizers using the sixteen controller knobs.
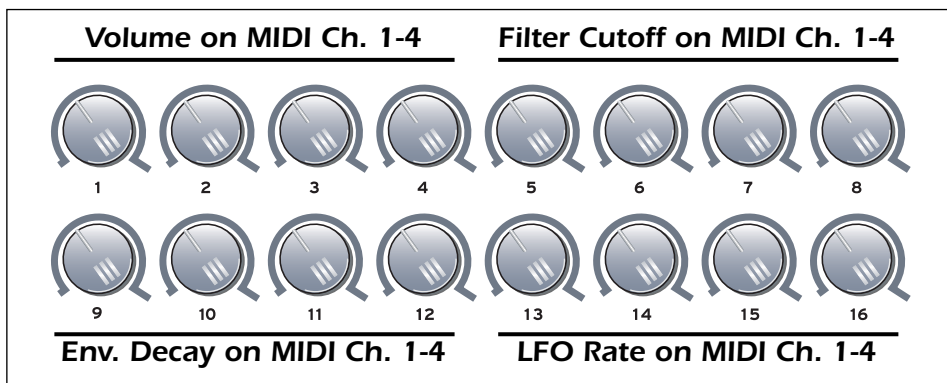

16 Channel Control Mode CC Number

This is the continuous controller number that will be used for all 16 knobs when the 16 Channel Control mode is enabled. *See page 24.*

16 Channel Control mode is a special performance mode in which all 16 knobs send one CC number on MIDI channels 1 through 16. This allows you to control one parameter on all 16 MIDI channels. For example, if the controller number were set to #7 (Channel Volume), the knobs could be used to mix the volume of all 16 MIDI channels.

Pitch Wheel Settings
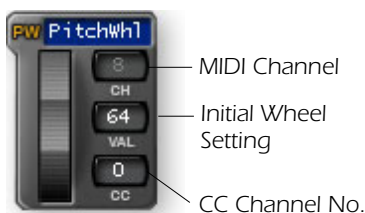
The pitch wheel can either be programmed as a MIDI pitch bender or set to any MIDI continuous controller number with an initial setting, CC number and MIDI channel.

The normal use for the spring-loaded pitch wheel is a pitch bender. A pitch wheel is a special type of MIDI controller with higher resolution and its own dedicated CC channel.

When any alphabetical character is typed into the CC channel number field, the entry changes to read "PW", and the control operates as a pitch wheel. (The "Restore Pitch Wheel" option in the Edit menu also sets this controller to the Pitch Wheel function.)

When programmed as a pitch wheel, the screen wheel jumps back to the center setting when released, just like its counterpart on the X Board. You can pre-set the initial setting of the Pitch Wheel by typing a number into the value field.

If a number from 0-127 is entered in the CC fields, the wheel becomes an ordinary continuous controller and the screen wheel no longer jumps back to the center position when released.

The MIDI Channel field allows you to set the MIDI channel for the pitch wheel. This field is unavailable unless the "MIDI Channel Number Per Control" option is selected. *(See page 35.)* Note that it is possible using this control, to set the pitch wheel to a MIDI channel other than the one the keyboard is using.

Mod Wheel Settings

MIDI Channel

Initial Wheel Setting

CC Channel No.
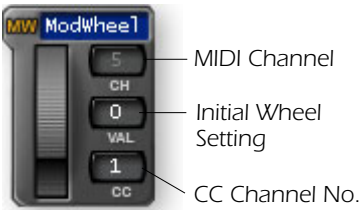
The modulation wheel settings are programmable just like the other controller knobs with an initial setting, CC number and MIDI channel. The MIDI Channel field allows you to set the MIDI channel for the mod wheel. This field is unavailable unless the "MIDI Channel Number Per Control" option is selected. *(See page 35.)*

You will normally leave the Mod Wheel set to it's default setting of CC 1, since this is a standard function on every MIDI synthesizer.

Pedal/Footswitch Settings

MIDI Channel

CC Channel No.

Initial Pedal Setting
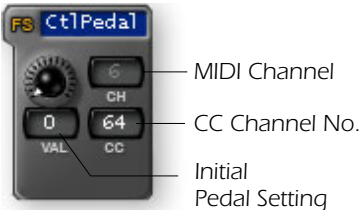
The Control Pedal input accepts either a momentary-on footswitch or a continuously variable pedal. Like the other controllers, an initial setting, CC number and MIDI channel can be programmed. The MIDI Channel field allows you to set the MIDI channel for the mod wheel. This field is unavailable unless the "MIDI Channel Number Per Control" option is

selected. *(See page 35.)* The default setting for the Control Pedal is CC 64, which is the standard MIDI sustain pedal number.

Octave / Semitone Transpose Settings

These settings allow you to transpose the keyboard up or down in octave or semitone steps. The octave transpose range is ±4 octaves. The semitone transposition range is -64 to +63 semitones.

Note Latch Mode Settings

This section allows you to program the high and low keys for latch mode, as described on page 25. You can also turn latch mode on or off by pressing the amber-colored button. Note that you cannot set a low key number higher that the high key, or a high key number lower than the low key.

Save Controller Values in Patch
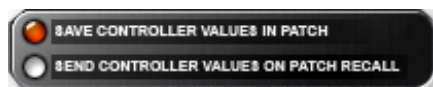
When this parameter is set to On, the position of the 16 knobs, Mod Wheel and Footswitch/Footpedal settings will be saved with the Patch.

If this parameter is Off, the existing continuous controller settings are retained.

Send Controller Values on Patch Recall

When this parameter is set to On, the stored settings of the 16 Controller Knobs, the Mod Wheel and the Footswitch/Footpedal will be transmitted when the Patch is selected. When set to Off the continuous controller settings will not be transmitted when the patch is selected.

Note: Pressing the **Snapshot** button will immediately send the stored controller values.

Velocity Curve Select

This function selects one of the eight velocity curves to customize the velocity response of the keyboard. Select a synthesizer preset that has velocity programmed (such as a piano), then choose a curve that gives you the best control.

Click on an image to select the desired velocity curve for the patch. *See page 27 for descriptions of the curves.*

Program Change per MIDI Channel

Master Enable

In this example, five program changes will be transmitted.
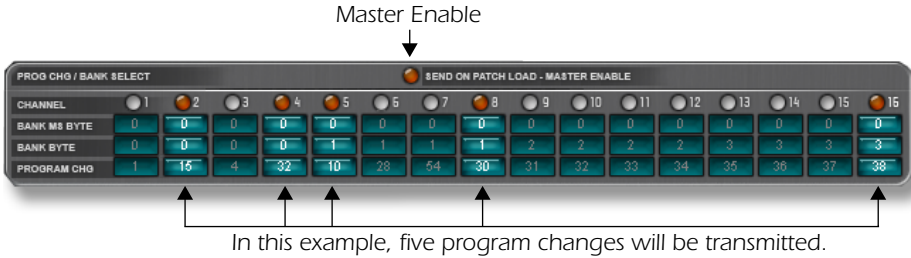
The X Board has the ability to transmit a MIDI Program Change on each of the 16 MIDI channels whenever a patch is selected. This feature allows you to set up all your MIDI instruments for a performance by simply selecting a patch on the X Board. Program Bank MSB and LSB numbers are also transmitted. *See "MIDI Bank Select Commands" on page 52 for more information.*

The Master Enable button turns Program Change transmit on or off for all 16 MIDI channels. The enable buttons over each channel slot allow you to select which channels will transmit program change messages when the patch is selected.

This feature is only accessible via the X Board Control software.

Patch Editor View

All patch parameters can be edited in this screen. Any changes you make are immediately sent to the active buffer on the X Board, but will not be stored.

▶ Changes will be stored in the X Board if you:

1. Press the **Store** button or…

2. **Change the Current Patch** from the Bank View.

If you have made changes to the Patch Editor controls and don't want them saved, select the Revert function from the File menu to revert to the X Board's stored settings for that patch.
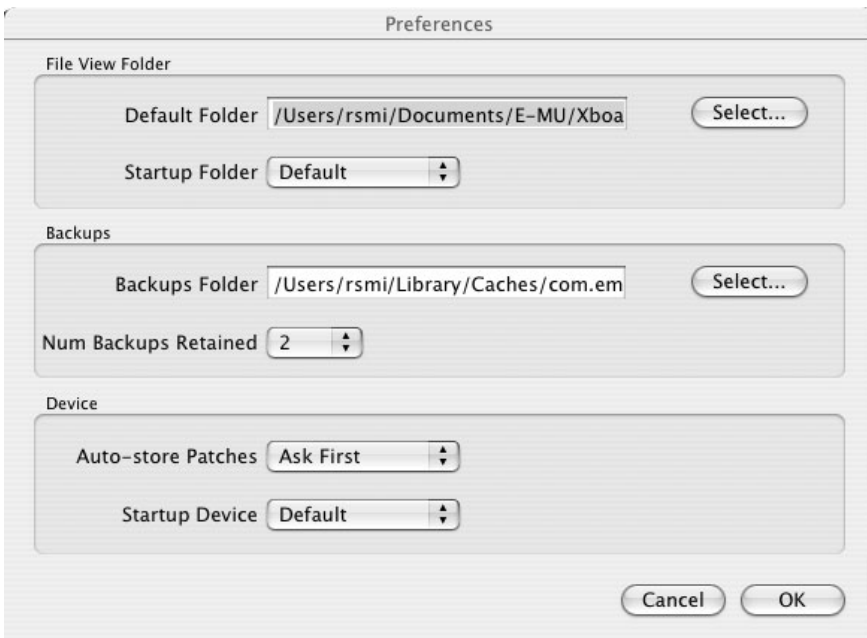
MENU ITEMS

E-MU X Board Menu

About E-MU X Board
This popup dialog box displays the current revision of the X Board Control
software.

Preferences...

Macintosh view

File View Folder
These options allow you to choose the location in your computer where saved
Banks and Patches will be stored.

Default Folder - Saved Patches and Banks will be stored in the selected folder.

Startup Folder - Default or Last - This option lets you choose whether the
Default bank or the last bank selected in "File, Choose
Folder…" will be shown when you launch the X Board
Control.

Backups

These options allow you to choose the location where automatic backups will be stored and how many backup files will be retained 2-4. Backup files are created whenever you quit the X Board Control application.

Backups Folder - Backup Patches and Banks will be stored in the selected
(Mac App only) folder.

Num Backups Retained - Selects how many backup files will be retained (2, 3 or 4).

Device

Auto Store Patches - Ask First or Always - When **Ask First** is selected, a popup dialog box appears asking if you want to store when you change a patch without storing. When **Always** is selected, a modified patch is automatically stored without asking when you change patches.
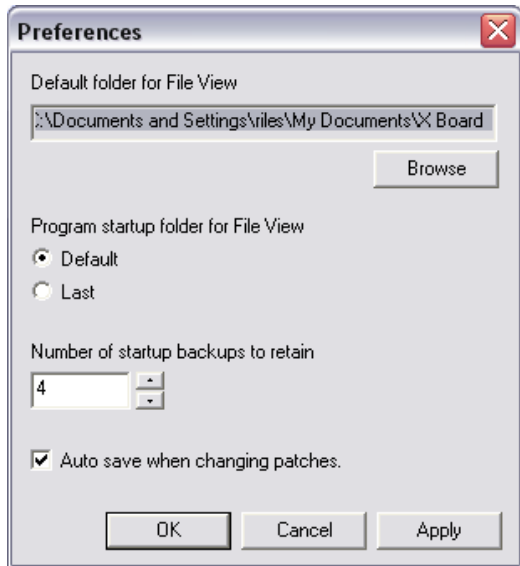**PC App** -> shows "Auto save when changing patches"

Startup Device - Default or Last - This option selects which keyboard will
Note: On the PC this is called: "Program startup folder for File View". be selected on startup when you have more than one X Board connected to USB. You can choose the default X Board (as selected in the Device menu), or you can choose the last X Board you selected.

PC view

Preferences

Default folder for File View

:\Documents and Settings\riles\My Documents\X Board

Browse

Program startup folder for File View
⦿ Default
○ Last

Number of startup backups to retain
4

☑ Auto save when changing patches.

OK   Cancel   Apply

File Menu

Load From File (PC version)

This option allows you to Load saved **Bank Files**, **Patch Files** or **Both** into the X Board Control.

Select Folder

Select File Type
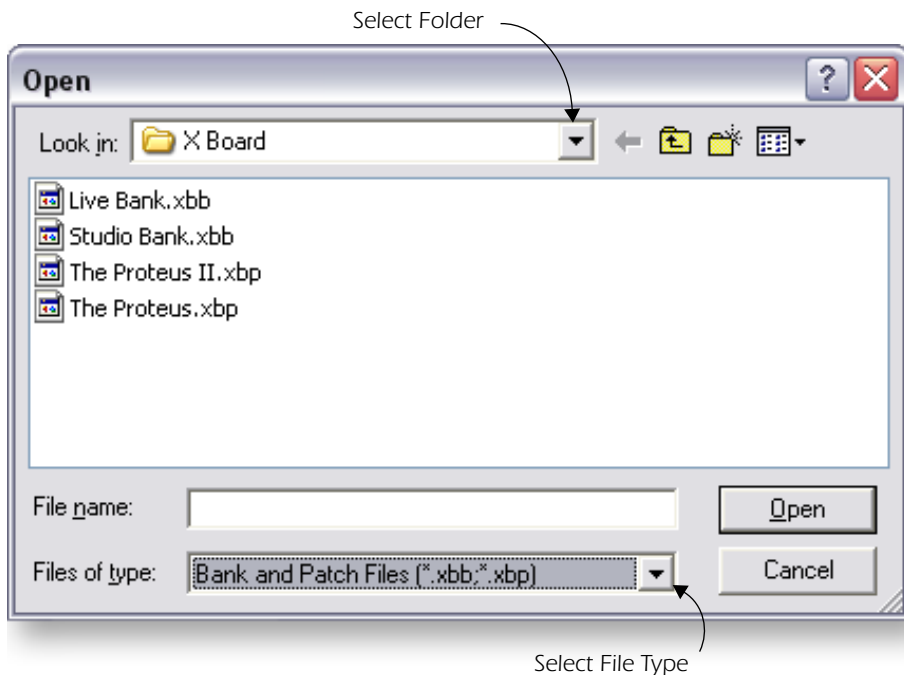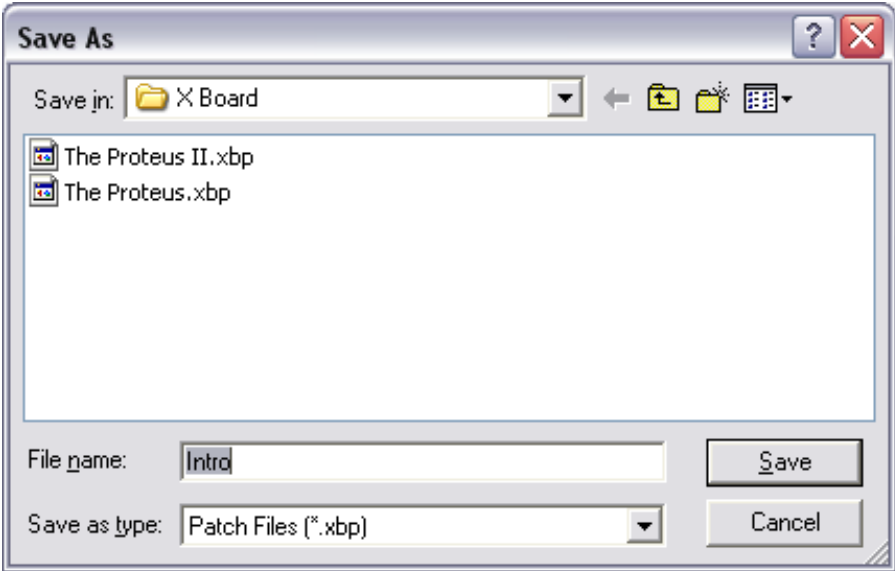
▶ To Load a Bank or Patch

1. Select **Load from File** from the File menu. The popup dialog box shown above appears.

2. **Locate the folder** containing your Banks and P.atches. (The default folder is set in the Preferences menu.)

3. Select **Bank** files, **Patch** files or **Both** to be shown.

4. **Select the desired Bank or Patch file.**

5. Press **Open** to load the file or **Cancel** to cancel the operation.

Save Patch (PC version)

This option allows you to Save X Board **Patches** to your hard disk.

▶ **To Save a Patch to Disk**

1. Select **Save Patch** from the File menu. The popup dialog box shown below appears.

Save As	? ✕
Save in: 📁 X Board ▼ ← 🔼 📁 📰▾	
📄 The Proteus II.xbp	
📄 The Proteus.xbp	
File name:	Intro	Save
Save as type:	Patch Files (*.xbp) ▼	Cancel

2. **L**ocate the folder where the Patch will be saved. (The default folder is set in the Preferences menu.)

3. Select **Patch** files as the type.

4. Press **Save** to save the Patch or **Cancel** to cancel the operation.
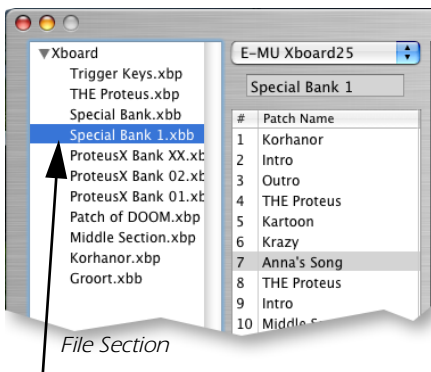
▶ **To Save a Bank to Disk**

1. Select **Save Bank** from the File menu. The popup dialog box shown above appears.

2. Locate the folder where the Bank will be saved. (The default folder is set in the Preferences menu.)

3. Select **Bank** files as the type.

4. Press **Save** to save the Bank or **Cancel** to cancel the operation.

Loading and Saving Files from the Mac

The Load and Save options in the File menu change depending on whether an object in the File or Bank section is selected.
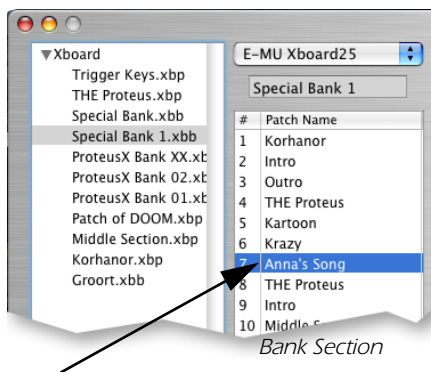
- **Load/Save Bank** - Select an object in the File Section.
- **Load/Save Patch** - Select an object in the Bank Section.

Load/Save Bank	**Load/Save Patch**

File Section

Bank Section

Select an object in the File Section…
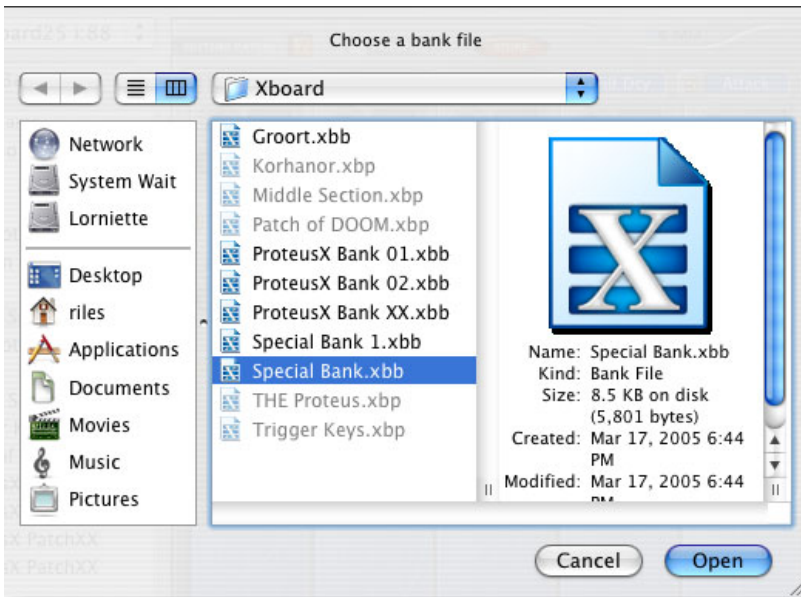
Select an object in the Bank Section…

…then choose Load or Save from the File Menu.

Load From File (Mac version)

This option allows you to load saved **Bank Files**, **Patch Files** into the X Board Control.

▶ **To Load a Bank or Patch**

1. Select any object in the **File** Section to load a **Bank**.
   Select any object in the **Bank** Section to load a **Patch**.

2. Select **Load Bank or Patch from File** in the File menu.

3. **Locate the folder** containing your Banks and Patches. (The default folder is set in the Preferences menu.)

4. **Select the desired Bank or Patch file.** (Only the file type you selected will be available to load.)

5. Press **Open** to load the file or **Cancel** to cancel the operation.

Save Bank or Patch (Mac version)

This option allows you to save X Board **Banks or Patches** to your hard disk.

▶ **To Save a Bank or Patch to Disk**

1. Select any object in the **File** Section to save a **Bank**.
   Select any object in the **Bank** Section to save a **Patch**.

2. Select **Save Bank or Patch to File** in the File menu.

3. **Locate the folder** containing your Banks and Patches. (The default folder is set in the Preferences menu.)

4. **Select the location for your Bank or Patch file.**

5. Press **Save** to save the file or **Cancel** to cancel the operation.
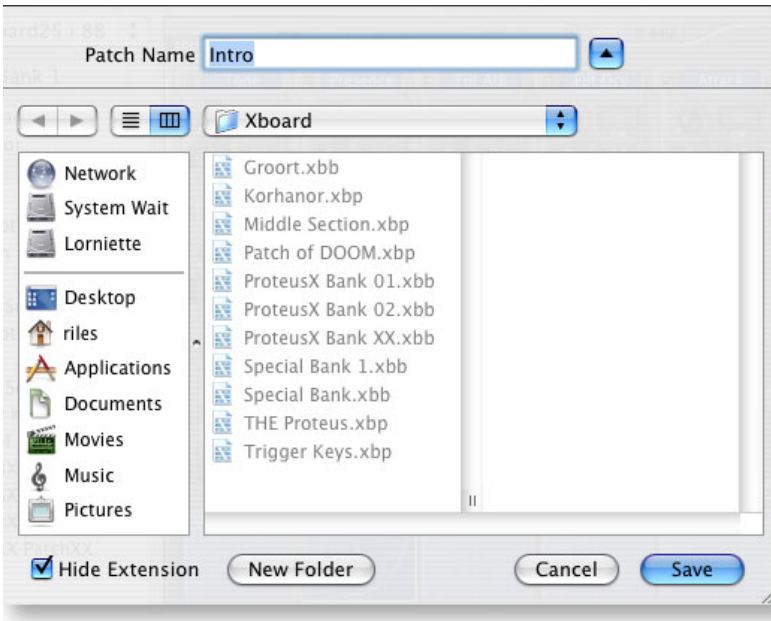
Choose Folder

This option allows you to select the folder that will appear in the **File View** area of the patch editor to be used for loading or saving X Board files.

Store

This menu option stores the current Patch into the X Board's non-volatile memory. This function duplicates the **Store** button on the X Board Control Patch Editor screen.

Revert

The X Board Control automatically backs up the contents of the X Board whenever you open the editor. This is so you can undo any changes you make during an editing session if you so desire. *See "Backups" on page 41.*

Revert allows you to select one of the auto-backups so that you can "go back" to a previous state of the X Board.

The Revert dialog box is shown below. The date and time of the auto-backups are recorded. Backup number one is the oldest backup.The number of automatic backups can be selected in the Preferences menu. *See page 41.*
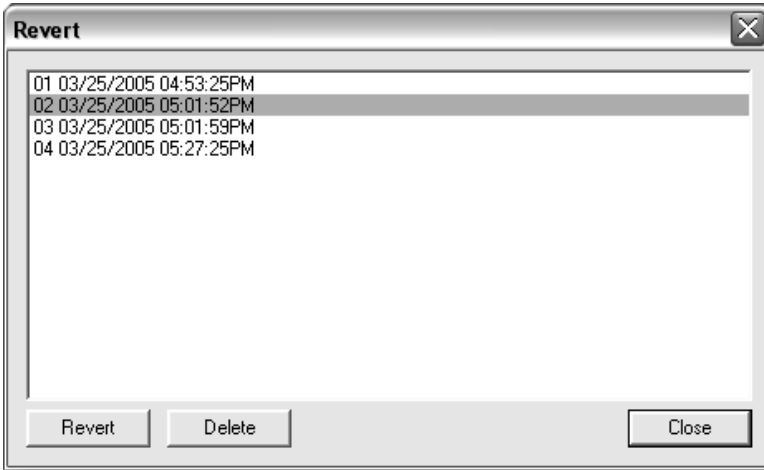
• On the Macintosh version, a second "Patch" revert file is also created when you open the application. This patch file is rewritten whenever the current patch s edited. This allow you to revert to the last patch you edited.

Edit Menu

Cut

Selected patch files can be cut (removed) from the Bank View area. After choosing Cut, the file is placed on a temporary "clipboard" so that it can be "Pasted" into another patch location or into the selected File folder. (Select the new location, then choose "Paste".)

Cut can also be used to remove an edited patch. A default factory patch will be left in its place.

Copy

This function copies a selected bank or patch from the patch or file area and places it on a temporary "clipboard" so that it can be "Pasted" into another patch location or into the selected File folder.

- **Banks** can be copied from the **File View** section or from the **Bank Name** in the Bank Section.
- **Patches** can be copied from the **File View** section or from the list in the **Bank Section**.

Paste

This function writes the clipboard contents into the file folder or into a patch location.

- **Banks** can be pasted into the file folder or onto the **Bank Name** field in the Bank View section.
- **Patches** can be pasted into the **File View** section or over an existing **Patch** in the Bank Section.

Clear

This option removes the selected patch from the bank list. A default factory patch will be left in its place.

Restore Pitch Wheel

The Pitch Wheel controller on the Patch Editor can be reprogrammed to operate as a standard MIDI real-time controller. This option restores the Pitch Wheel controller to its normal function as a synthesizer pitch wheel.
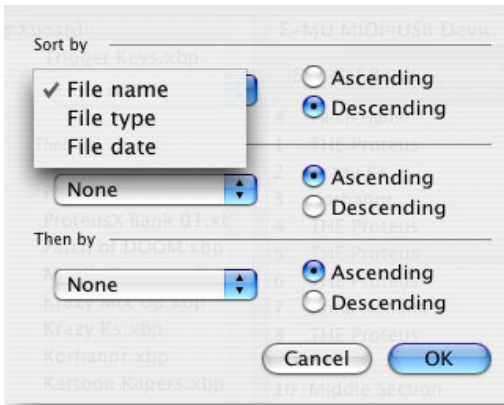
View Menu

Patch Editor
This option allows you to either show or hide the patch editor section of the X Board Control software.

Sort Files
Files in the File View section can be sorted by Name, Type, or Date in either ascending or descending order. The sort dialog box (Mac) is shown below. (This option is only available in Mac OS X.)

Macintosh only

Refresh
Selecting this option updates the X Board Control display with the current state of the X Board, including the active buffer and non-volatile memory contents. Refresh also updates the File view with the current contents of the specified file folder

Refresh should be performed any time you have changed the Controls on the X Board and want the X Board Control Editor to show these changes. For example, if you adjust the controller knobs on the X Board, the display will not reflect the current state of the knobs until you select Refresh.

Device Menu

Select

This option selects the current X Board in the event that you have more than one X Board connected to your computer.

Help Menu

The Help menu calls the .pdf version of this operation manual.

APPENDIX

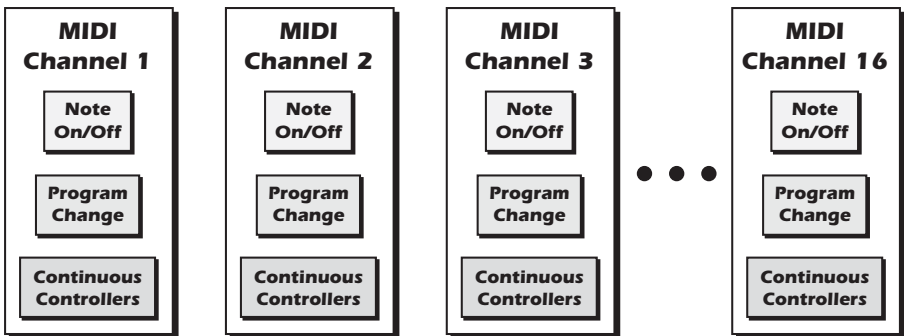## MIDI Background

MIDI Channels & Continuous Controllers

MIDI continuous controllers may seem confusing at first, but they are really very simple once you understand them. You probably already know that there are 16 MIDI channels per MIDI cable. Information on a MIDI channel will only be received by an instrument set to receive that channel. MIDI channels are usually associated with different sounds. In this way, up to 16 sounds per MIDI cable can can be separately controlled.

Each MIDI channels uses three basic types of messages; note on/off, preset changes, and continuous controller messages. When you play the keyboard, the X Board transmits information about which notes were played and how hard.

The X Board can also send *continuous controller* information from its 16 knobs, pitch and mod. wheels as well as aftertouch from the keyboard *(key pressure applied after the notes have been pressed)*. These controls are used to add more expression or control.

The controller knobs send out information on separate continuous controller numbers. There is a set of 128 continuous controller numbers (0-127) for each MIDI channel. Some continuous controllers, such as modulation wheel, volume, and pan have standardized numbers. For example, volume is usually sent on continuous controller #7.

Normally, the X Board controller knobs and wheels transmit on a single MIDI channel, but each of the 16 knobs and wheels can be programmed to transmit on a different MIDI channel if you so desire. *See page 35 for more information.*

| MIDI Channel 1	MIDI Channel 2	MIDI Channel 3	MIDI Channel 16
Note On/Off	Note On/Off	Note On/Off	Note On/Off
Program Change	Program Change	Program Change	Program Change
Continuous Controllers	Continuous Controllers	Continuous Controllers	Continuous Controllers

MIDI Program Change Commands

The X Board has the ability to transmit a different MIDI Program Change command on each of the 16 MIDI channels. This feature can only be programmed using the X Board Control software.

MIDI Bank Select Commands

The X Board also transmits MIDI bank select commands using MIDI continuous controller numbers. Continuous Controller (CC) 0 is the MSB (most significant byte) and CC 32 is the LSB (least significant byte). Normally you send both the MSB and LSB controllers to implement a bank change.
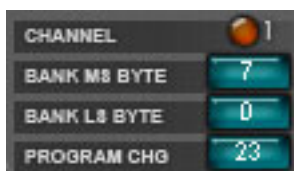
The selected bank remains selected until you change it (either via MIDI or by changing the bank from the display). Standard MIDI Program Change commands select from 128 presets within the selected bank.

Footpedal Wiring

The potentiometer value can be anywhere from 10KΩ to 250KΩ in value. Pedals with these specifications are available at any music dealer.

Footpedal Wiring
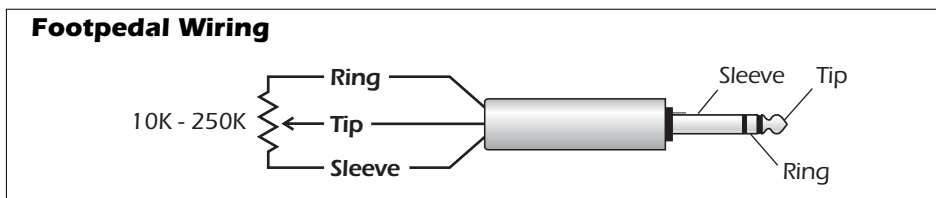
LED Scrolling Text Messages

The three digit LED display doubles as a text display to help identify many of the edit functions. You'll notice that the scrolling messages mix upper and lower case characters. This is a necessary compromise to display alphabetical characters on a numeric display. The complete list of scrolling text messages are shown below.

Scrolling Text Messages

Displayed Text	Translation
SELECL	Select
CC	Continuous Controller number
16-Ch	16 Channel CC number
LAtch Lo notE	Latch Low Note
LAtch Hi notE	Latch High Note
CC StorE in PAtch	CC Store in Patch
CC SEnd on PAtch rEcALL	CC Send on Patch Recall
ProG SEnd on PAtch rEcALL	Program Send on Patch Recall
bA SEL MSb	Bank Select MSB
bA SEL LSb	Bank Select LSB
ProG SEnd dirECt	Program Send Direct
AFtErtouch	Aftertouch
LocAL out dESt	Local out destination (MIDI or USB)
tHr	MIDI Thru
USb tHru	USB Thru
Midi outPut ModE	MIDI Output Mode
PEdAL inPut ModE	Pedal Input Mode
SYS dEViCE id	SysEx Device ID
PAnic	Panic Button

MIDI Implementation Chart

MIDI Information	Transmitted	Recognized	Remarks
MIDI Channels	1-16	No	16 MIDI Channels
Note Numbers	0-127	No	
Program Change	0-127	No	
Bank Select Response?	Yes	No	MSB + LSB
Modes: Omni *(Mode 1)* Mono *(Mode 2)* Poly *(Mode 3)* Mode 4 *(Y/N)* Multi *(Mode 5)*	No No No No No	No No No No No	
Note On Velocity	Yes	No	
Note Off Velocity	No	No	
Channel Aftertouch	Yes	No	
Poly (Key) Aftertouch	No	No	
Pitch Bend	Yes	No	
Active Sensing	No	No	
System Reset	No	No	
Tune Request	No	No	
System Exclusive Sample Dump Standard File Dump MIDI Tuning Master Volume Master Balance Notation Information Turn GM1 System On Turn GM2 System On Turn GM1 System Off Other *(See Remarks)*	No No No No Yes No No No No No No	No No No No No No No No No No No	
NRPNs	No	No	
RPN 00 *(Pitch Bend Sensi.)* RPN 01 *(Chan. Fine Tune)* RPN 02 *(Chan Coar. Tune)* RPN 03 *(Tuning Prog Sel.)* RPN 04 *(Tuning Bank Sel.)* RPN 05 *(Mod Depth Rang)*	No No No No No No	No No No No No No	
MIDI Timing & Sync	No	No	
MIDI Clock	No	No	
Song Position Pointer	No	No	
Song Select	No	No	
Start Continue Stop	No No No	No No No	
MIDI Time Code	No	No	
MIDI Machine Control	No	No	
MIDI Show Control	No	No	
General MIDI Compat? Is GM default mode?	No No	No No	
DLS compatible? Import DLS Files? Export DLS Files?	No No No	No No No	

MIDI Implementation Chart (part 2 - Controllers)

Control #	Function	Transmitted	Recognized	Remarks
0	Bank Select MSB	Yes	No	See Note *
1	Mod Wheel MSB	Yes	No	*
2	Breath Cntl MSB	No	No	*
3		No		*
4	Foot Cntl MSB	No	No	*
5	Portamento MSB	No	No	*
6	Data Entry MSB	No	No	*
7	Chan Volume MSB	No	No	*
8	Balance MSB	No	No	*
9				*
10	Pan MSB	No	No	*
11	Expression MSB	No	No	*
12	Effect Cntl 1 MSB	No	No	*
13	Effect Cntl 2 MSB	No	No	*
14 - 15	UNDEFINED	- - -	- - -	*
16	GenPur Ctrl 1 MSB	No	No	*
17	GenPur Ctrl 2 MSB	No	No	*
18	GenPur Ctrl 3 MSB	No	No	*
19	GenPur Ctrl 4 MSB	No	No	*
20 - 31	UNDEFINED	- - -	- - -	*
32	Bank Select LSB	Yes	No	*
33	Mod Wheel LSB	Yes	No	*
34	Breath Cntl LSB	No	No	*
35				*
36	Foot Cntrlr LSB	No	No	*
37	Portamento LSB	No	No	*
38	Data Entry LSB	No	No	*
39	Chan Volume LSB	No	No	*
40	Balance LSB	No	No	*
41				*
42	Pan LSB	No	No	*
43	Expression LSB	No	No	*
44	Effect Cntl 1 LSB	No	No	*
45	Effect Cntl 2 LSB	No	No	*
46				*
47				*

MIDI Implementation Chart (part 2 - Controllers)

Control #	Function	Transmitted	Recognized	Remarks
48	Gen Pur Ctrl 1 LSB	No	No	*
49	Gen Pur Ctrl 2 LSB	No	No	*
50	Gen Pur Ctrl 3 LSB	No	No	*
51	Gen Pur Ctrl 4 LSB	No	No	*
52				*
53				*
54				*
55				*
56				*
57				*
58				*
59				*
60				*
61				*
62				*
63				*
64	Sustain Pedal	Yes	No	*
65	Portamento on/off	No	No	*
66	Sostenuto	No	No	*
67	Soft Pedal	No	No	*
68	Legato Footswitch	No	No	*
69	Hold 2	No	No	*
70	Variation	No	No	*
71	Timbre/Har Inten	No	No	*
72	Release Time	No	No	*
73	Attack Time	No	No	*
74	Brightness	No	No	*
75	Sound Cntrlr 6	No	No	*
76	Sound Cntrlr 7	No	No	*
77	Sound Cntrlr 8	No	No	*
78	Sound Cntrlr 9	No	No	*
79	Sound Cntrlr 10	No	No	*
80	Gen Purp Cntrlr 5	No	No	*
81	Gen Purp Cntrlr 6	No	No	*
82	Gen Pur Ctrlr 7	No	No	*
83	Gen Pur Ctrlr 8	No	No	*
84	Portamento Cntrl	No	No	*

MIDI Implementation Chart (part 2 - Controllers)

Control #	Function	Transmitted	Recognized	Remarks
85 - 90	Undefined	- - -	- - -	*
91	Effects 1 Depth	No	No	*
92	Effects 2 Depth	No	No	*
93	Effects 3 Depth	No	No	*
94	Effects 4 Depth	No	No	*
95	Effects 5 Depth	No	No	*
96	Data Increment	No	No	
97	Data Decrement	No	No	
98	NRPN (LSB)	No	No	
99	NRPN (MSB)	No	No	
100	RPN (LSB)	No	No	
101	RPN (MSB)	No	No	
102 - 119	UNDEFINED			
120	All Sound Off	Yes	No	
121	Reset All Controllers	No	No	
122	Local Cntrl on/off	No	No	
123	All Notes Off	Yes	No	
124	Omni Mode Off	No	No	
125	Omni Mode On	No	No	
126	Poly Mode Off	No	No	
127	Poly Mode On	No	No	
NOTES:	* The X Board can transmit ANY continuous controller number from 1 to 127. A "No" response simply indicates that the controller is not transmitted or received by default.			

Appendix

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