Xboard25 Xboard49 Xboard61

Owner's Manual

© 2006 E-MU Systems
All Rights Reserved

PN:02EM770006004

Revision: A

E-MU World Headquarters
E-MU Systems
1500 Green Hills Road
Scotts Valley, CA 95066
USA

Asia Pacific Africa, Middle East
Creative Technology Ltd
31 International Business Park
Creative Resource, Singapore 609921
SINGAPORE

Europe
Creative Labs (Ireland) Ltd
Ballycoolin Business Park
Blanchardstown, Dublin 15
IRELAND

Japan
Creative Media K. K.
Kanda Eight Bldg., 3F
4-6-7 Soto-Kanda
Chiyoda-ku, Tokyo 101-0021
JAPAN

Important!

The complete Xboard manual is available in PDF format on the included CD-ROM.

Important

Le manual français de l' Xboard est disponible au format PDF, sur la CD-ROM inclus.

Wichtig

Das deutsche Handbuch ist als PDF Dokument auf der mitgelieferten CD-ROM vorhanden.

重要!

XBoardの日本語マニュアルは、インストールCD-ROMにPDFフォーマット形式で収録されています。

Table of Contents

INTRODUCTION

Congratulations on your purchase of the E-MU Xboard 25, Xboard 49, or Xboard 61 USB/MIDI controller. Xboard professional USB/MIDI controllers offer unmatched playability, real-time control and programmability in portable 25 key, 49 key, and 61 key packages. All models feature full-size velocity-sensitive keys with aftertouch, pitch and modulation wheels, and 16 controller knobs. The Xboard 61 additionally features 16 Patch Select/Program Change buttons, and four Zone enable/disable buttons.

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 Xboard MIDI output can even be used as a MIDI interface for your computer when connected via USB. The Xboard is 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.

You can also assign four different Keyboard Zones to four different MIDI channels, each using a different key range and velocity range. Also, each Zone can have different settings for Pitch Wheel, Mod Wheel, Latch, Aftertouch, Pedal, and Transpose.

All Xboard models contain a host of extra features. The "Snap Shot" feature lets you send multiple 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 programmable footpedal/footswitch setting, can select one of eight velocity curves, and can send program changes for up to 16 MIDI channels.

Requirements

The included Xboard 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, XP, or XP x64 Edition, and your computer must support USB to communicate with the Xboard. The Xboard can operate in MIDI Output mode without a computer if power is supplied via a 6VDC adapter or batteries.

On a Mac:

You must be running Mac OS X 10.3.9 or later to connect the Xboard. The Xboard can operate in MIDI Output mode without a computer if power is supplied via a 6VDC adapter or batteries.

Hardware Installation

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

The supplied USB cable provides power and a two-way data link between the Xboard 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 Xboard. This end is also keyed to prevent incorrect insertion.

Important: Windows 2000 users must install the software BEFORE the hardware is connected for the first time.

If the Xboard 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 Xboard to your Computer

USB Connection

USB provides a two-way data link between the Xboard and your computer and also supplies power to the Xboard. 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)
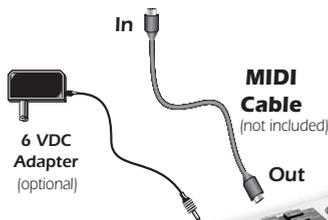
MIDI Connection

The Xboard sends MIDI performance data to another MIDI device, such as a MIDI sound module. The Xboard always transmits MIDI data except when "Thru" mode is enabled. (See page 39.)

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
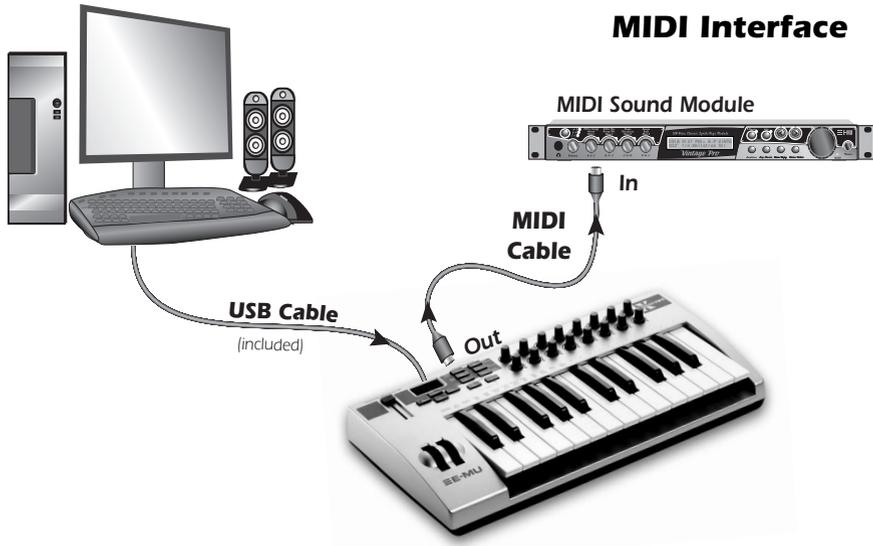
The Xboard can function as a MIDI interface when connected to your computer via USB. Set the Xboard MIDI port to "Thru" (page 39) to transmit MIDI from your sequencing application to an external MIDI device.

Software Installation

Macintosh OS X

Follow these instructions to install the Xboard Control software on a Macintosh computer.

1. Insert the Xboard installation CD.

2. Double-click the E-MU icon on your desktop.

3. In the E-MU folder that opens, double-click the **E-MU Xboard Apps & Docs** installer.

4. Follow the prompts to install the software.

Windows 2000

Follow these instructions to install the Xboard USB drivers and Xboard Control 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 Xboard, and the other software included on the CD.

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 Xboard to your computer using the supplied USB cable.

Windows XP

Follow these instructions to install the Xboard USB drivers and Xboard Control software on a Windows XP computer.

1. First connect the Xboard to your computer using the supplied USB cable, and turn it on.

2. If Windows prompts you with an Add New Hardware Wizard, click **Cancel**.

3. 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**.

4. The installation splash screen appears. Follow the instructions on the screen to complete the installation. You will have the option to install E-Mu Xboard, and the other software included on the CD.

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

6. 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 Xboard's applications and device drivers to correct problems, change configurations, or upgrade outdated drivers or applications. Before you begin, close all Xboard-related 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 Xboard** 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 Xboard USB drivers, you will see a dialog box that informs you that the driver has not passed Windows Logo testing.

However, the Xboard 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 lose MIDI communication between your Xboard and an audio application (Cubase, Sonar, etc.) or the Xboard Control software, the Xboard drivers may need to be re-selected in your application.

1. Go to your application's MIDI I/O settings, de-select the Xboard 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 Xboard 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 Xboard Control or Proteus X software is 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 Audio Device driver is running, rather than the E-MU USB Xboard Driver. This may happen if you add a USB Hub, or if you plug the Xboard keyboard into a different USB port than the one it was plugged into when you installed the Xboard 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**.
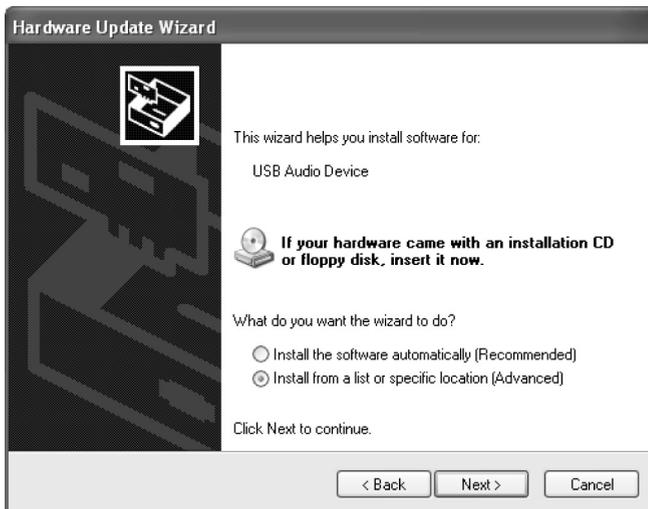
4. In the next panel. click on **Don't Search**, and then **Next**.
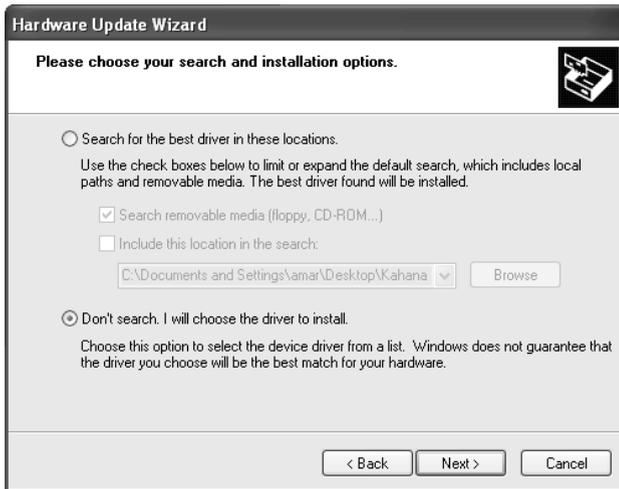
5. In the next panel, select the **E-MU USB-MIDI Device**, then **Next**.

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
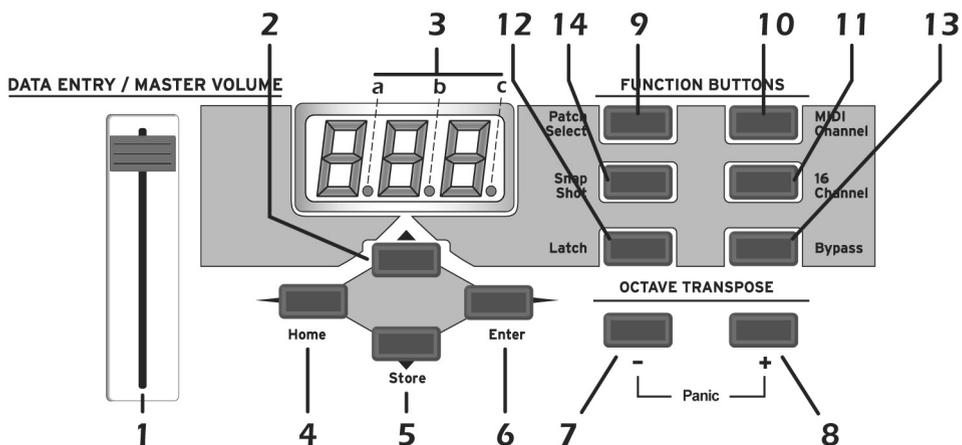
1. Data Entry / Master Volume Slider

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 and certain device settings.

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. MIDI Indicators

The decimal points in the LED flash to indicate USB and MIDI activity.
a. USB In
b. USB Out
c. MIDI Out

The activity indicators can be enabled or disabled from the X1 menu. See "X1 and X2 Functions" on page 38.

4. 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 Play mode, the normal operating mode of the keyboard. The Home LED is lit whenever the Xboard is in Play mode.

5. Store Patch

This button stores 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**, the **Octave Transpose +** and **-** buttons, or the **Direct Patch Select** buttons (Xboard 61 only), then press **Enter** to store the current setup.

6. Enter

Press Enter to confirm your settings when editing. In most cases, the Home LED illuminates after Enter is pressed, indicating a return to Play mode.

7. Octave Down

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

8. Octave Up

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

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.

Increment / Decrement Buttons

The Octave Transpose buttons can be used as increment/decrement buttons whenever the Data Slider is active for modifying an edit value (either numeric or non-numeric settings). The increment/decrement buttons allow you to increase or decrease the value one unit at a time.

9. 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**, the **Octave Transpose +** and **-** buttons, or the **Direct Patch Select** buttons (Xboard 61 only), and press **Enter**.

10. **MIDI Channel Select**

This button selects the Basic 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,** the **Octave Transpose +** and - buttons, or the **Direct Patch Select buttons** (Xboard 61 only), and press **Enter**.

11. **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 27 for detailed information.

12. **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 29.

13. **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 31.

14. **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.

The Snapshot function is accessible only while in Play mode (i.e., whenever the Home LED is lit).

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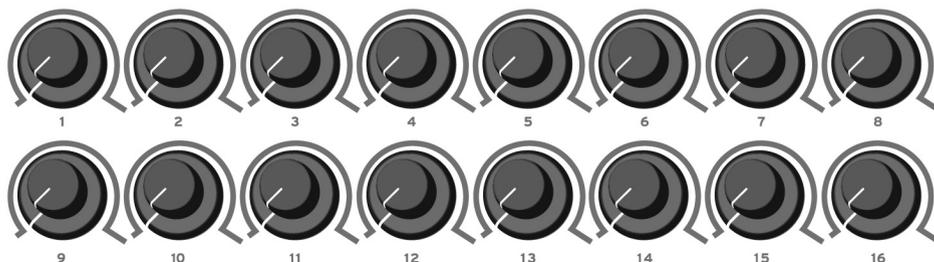
The 16 Controller Knobs are designed to modify the sound during performance. MIDI Continuous Controller messages are transmitted whenever the knobs are turned (except when "Knob Bypass" is enabled).

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 MIDI Continuous Controller assigned to the knob, then the letters "CH", and finally the MIDI channel on which the knob currently sends. To set the CC channel numbers of the knobs see page 27.

Normal mode

Any MIDI Continuous Controller number can be assigned to any knob. For instructions on setting this from the Xboard, see page 27. *For help setting this using the Xboard Control Software, see the Xboard Owner's Manual PDF.*

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 27.

3D MIDI and NRPN mode

Using the Xboard Control software, any of the 16 Controller Knobs can be configured to run in 3D MIDI mode, or NRPN mode. *For more information, see the Xboard Owner's Manual PDF.*

XBOARD 61 PANEL CONTROLS
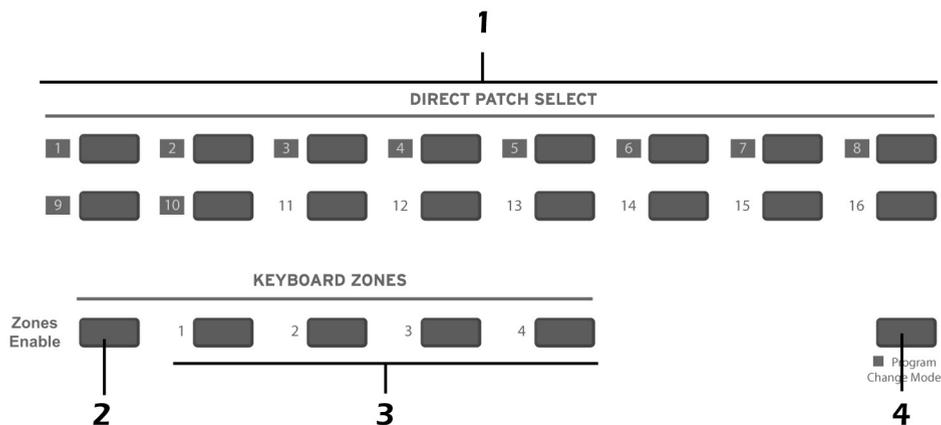
1. Patch Select / Numeric Keypad

These buttons serve a number of functions:

- With Program Change mode turned off, you can select a patch from 1 to 16 at any time. The LED for the current patch stays illuminated.
- When changing MIDI channel, or Storing and Loading Patches with the main panel controls, use buttons 1 through 16 to make a selection.
- For Program change mode, use buttons 1 through 10 to enter numerical values for Program Changes.
- Use the numerical keypad buttons when entering numerical values, such as Edit functions.

2. Zones Enable

Enables or disables keyboard Zone functions in the active patch. When Zones are enabled, the LED illuminates.

For the Xboard 25 or Xboard 49, you can enable or disable Zones using the X2 menu item "ZoE" (page 42) or the Xboard Control software.

3. Keyboard Zones Buttons

These buttons enable or disable individual Zones. When a Zone is enabled, the LED illuminates.

For the Xboard 25 or Xboard 49, you can enable or disable individual Zones using the Xboard Control software.

4. Program Change Mode

When you press this button, you switch between Program Change mode and Patch Select mode. The LED illuminates when in Program Change mode.

- **Program Change mode:** allows you to send MIDI program changes to other equipment using the numerical buttons. (0-9)
- **Patch Select mode:** allows you to select from 16 internal patches (1-16).

The Program Change Mode button also doubles as the **Enter** button when it, along with the **Enter** button, flashes.

Using the Numeric Keypad

The numeric keypad allows you to enter numeric values for Program Changes, and other settings.

### Use 1-10 to Enter Numerical Values
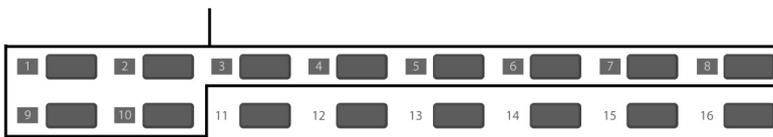
To use the numeric keypad to enter data, use the buttons labeled 1 through 10 to enter a value. The current value is reflected in the display. The "10" button acts as the value of 0, so if you want to enter a value of 109, you would press:

If you enter a value you don't like, you can clear the value by entering "0" three times.

BACK PANEL DESCRIPTION

Footswitch / Pedal   MIDI OUT   USB   6v DC Power   On/Off

1   2   3   4   5
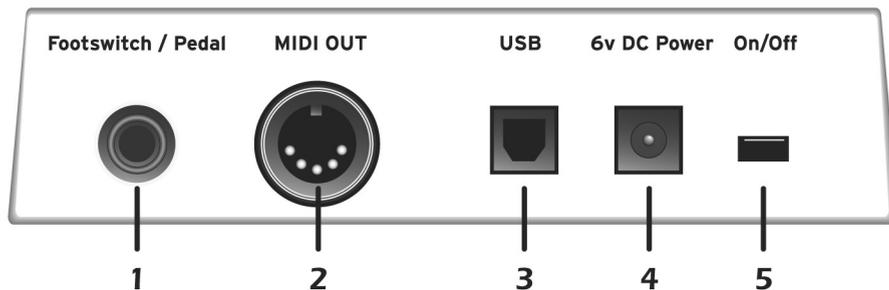
1. Footswitch / Footpedal Input

This jack accepts either a footswitch or continuously variable footpedal. The default setting is for a footswitch. To use a footpedal, see page 39.

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

Footpedal - Accepts most standard footpedal types with a stereo plug. See the wiring diagram shown in the Xboard Owner's Manual PDF for pedal wiring specifications.

2. MIDI Output

Outputs note and controller MIDI data from the Xboard. This jack can also be used as a MIDI interface from a computer software application. See page 39. Use a standard MIDI cable to connect the Xboard to the MIDI input jack of other MIDI devices.

3. USB

Connects Xboard 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 Xboard. **Always connect to the USB jack on the computer itself** and NOT to a low-power USB connection that may be present on your computer keyboard or other USB peripheral.

4. 6 Volt DC Power

This jack allows the Xboard 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 Xboard on or off whether powered via USB, AC Adapter, or batteries.

POWERING THE XBOARD

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

- USB from the host computer
- 6 VDC Adapter *(Optional - Part Number: 70EM779006000)*
- (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.

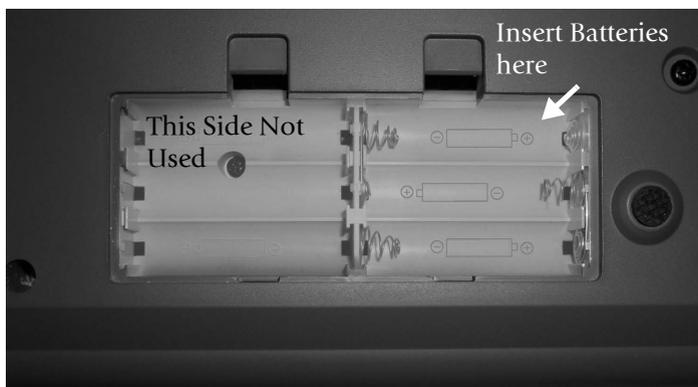## Inserting Batteries into the Xboard

Sometimes it's nice not to have to hassle with power at all. Thankfully the Xboard 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.

The battery compartment on the Xboard 25 and Xboard 49

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 several ways to enter data from the Xboard.

- **Data Slider** - Move the slider to select the data value.
- **Octave Transpose buttons** - Increment and decrement a value by pressing the "+" and "-" buttons.
- **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, since the keyboard remains "live" at these times)*.
- **Numeric Keypad (Xboard 61 only)** - Type in the value using keys 1-10. See page 22.

Selecting and Storing Patches

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

In addition, depending on the patch settings, the Xboard 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 Using the Main Panel

1. Press the **Patch Select button**, illuminating the LED. The **Enter** button and **Program Change Mode** button (Xboard 61) begin flashing.

2. **Select the desired patch number** using the data slider or the **Octave Transpose +** and - buttons. On the Xboard 61, you can also use the Direct Patch Select buttons 1 through 16.
   On the Xboard 61, the new patch you selected begins flashing.

3. Press **Enter** to confirm the operation. Press **Home** to cancel the operation.
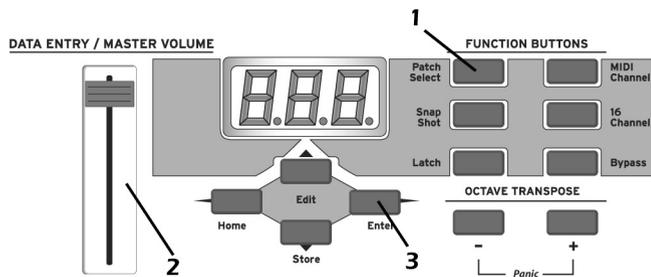
▶ **To Select a Patch Using Direct Patch Select Buttons (Xboard 61)**

1. Make sure Program Change mode is off. The Program Change Mode button's LED should not be lit.

2. Press one of Direct Patch Select buttons 1 through 16.

▶ **To Store a Patch:**

1. Press the **Store** button. The **Enter** and **Direct Patch Select** (Xboard 61) LEDs begin flashing.

2. Select the desired patch number using the **data slider** or the **Octave Transpose +** and - buttons. On the Xboard 61, you can also use the **Direct Patch Select** buttons 1 through 16.

   On the Xboard 61, the new patch you selected begins flashing.

3. Press **Enter** to store the patch. Press **Home** to cancel the operation.
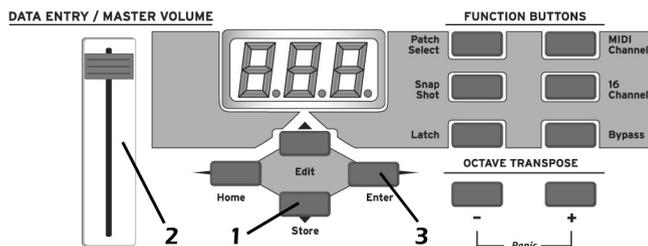
Changing the MIDI Channel

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 Xboard keyboard and controllers. Note that this setting is stored in and recalled from patches.

▶ **To Change the MIDI Channel:**

1. Press the **MIDI Channel** button. The MIDI Channel LED illuminates. On the Xboard 61, the Direct Patch Select button representing the Current MIDI channel also illuminates.

2. **Select the desired MIDI channel** using the data slider or the **Octave Transpose +** and - buttons. On the Xboard 61, you can also use the **Direct Patch Select** buttons 1 through 16.

   The **Enter** and **Direct Patch** Select (Xboard 61) buttons will be flashing. On the Xboard 61, the **Direct Patch Select** button representing the new MIDI channel begins flashing as well.

3. Press **Enter** to confirm the operation, or press **Home** to cancel the operation.

Transposing the Keyboard

OCTAVE TRANSPOSE

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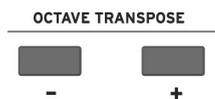
The keyboard can be transposed up and down ±4 octaves by pressing the **Octave Transpose** buttons. The octave number appears momentarily in the display. The LED on the transpose button remains lit to remind you that the keyboard is transposed. The transposition value is stored with the patch.

Octave Transpose works differently depending on your zones settings:

- With Zones disabled, the keyboard is simply transposed by octaves.

- With Zones enabled and **Octave Transpose Mode** set to **Pre Zone**, the keyboard is transposed, but each Zone's tuning stays the same.

- With Zones enabled and **Octave Transpose Mode** set to **Post Zone**, any Zone that has **Post Zone Octave Transpose** enabled is transposed, while the keyboard's tuning stays the same.

Changing Controller CC Channel Numbers

You can change MIDI continuous controller numbers (0-127) for each knob, pedal, or the Mod Wheel on the Xboard. The Xboard CC numbers must match the CC numbers on your synthesizer in order to operate.

▶ **To Change Controller CC Channel Numbers:**

1. Press the **Edit** button.

2. Move the controller you want to change. This can be any of the 16 controller knobs, a pedal, or the Mod Wheel. The Enter button blinks and the display shows you the controller's current CC Channel number.

3. **Select the desired CC Channel number** using the data slider or the **Octave Transpose +** and - buttons. On the Xboard 61, you can also use the Direct Patch Select buttons 1 through 16.

4. Press **Enter** to confirm the operation. Or, press **Home** to cancel the operation.

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.
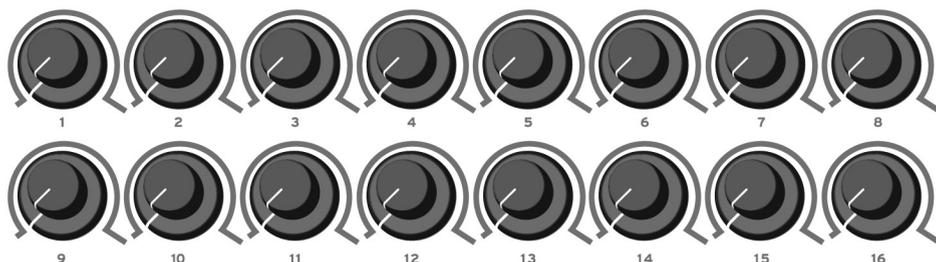
In 16 Channel Control Mode, each knob transmits on its same-numbered MIDI Channel. All knobs transmit the same MIDI Controller number.

▶ **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**, the **Octave Transpose** buttons, or the numeric keyboard keys. The **Enter** button flashes.

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

Working With Zones

▶ **To Enable or Disable the Zones Function**

• Use the **ZoE** function in the X2 menu. See page 42.

• For the Xboard 25, 49, or 61, use the **Enable All** button in the Xboard Control software. *See the Xboard Owner's Manual PDF.*

• On the Xboard 61, press the **Zones Enable** button. When enabled, the LED illuminates.

▶ **To Enable or Disable a Specific Zone**

• On the Xboard 61, press the corresponding button for Zone 1, 2, 3, or 4. When enabled, the LED illuminates.

• For the Xboard 25, 49, or 61, Enable Zones in the Xboard Control software. *See the Xboard Owner's Manual PDF.*

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.

Latched notes work differently depending on whether Zones are enabled or disabled.

Latch Mode, Zones Disabled

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 with the Latch button switches 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*
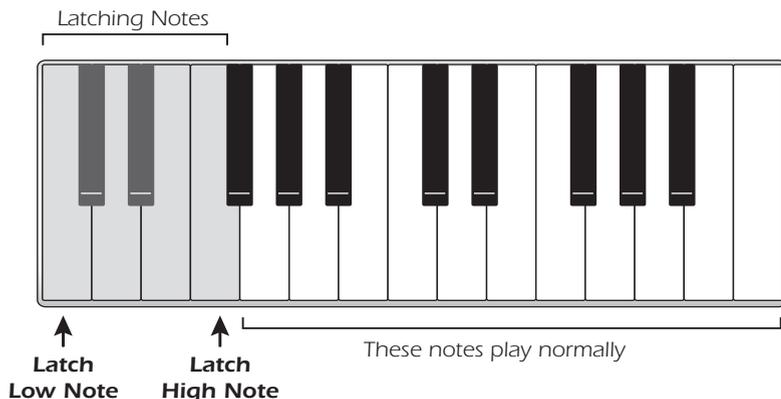
▶ **To Select Latch Mode:**

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.

Latch Mode, Zones Enabled

If you have Zones enabled, the Latch Low Note and High Note settings are ignored. Instead, Latch Mode is handled on a per-zone basis. Use the Xboard Control software to turn latch mode on or off for each Zone. *See the Xboard Owner's Manual PDF for more information.*

For zones with Latch Mode enabled, turning on Latch mode using the **Latch** button on your Xboard turns on latch for those zones.

Turning Latch Mode off manually with the **Latch** button switches 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.

Snap Shot

The Xboard 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.
Note: Snap Shot cannot transmit values for controls that are set to NRPN mode.

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 Xboard, 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.
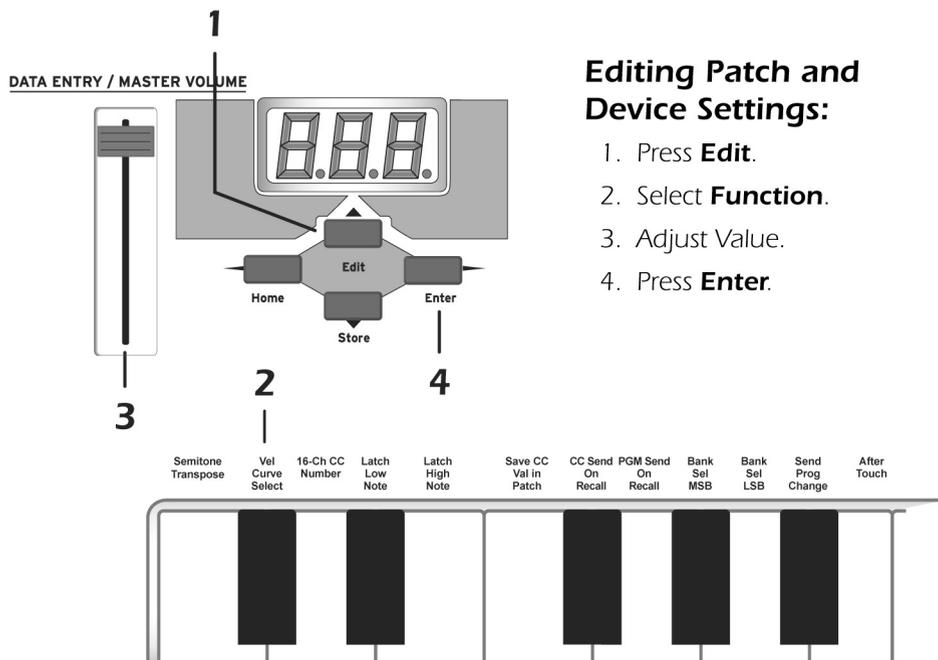
Note: Snap Shot cannot transmit values for controls that are set to NRPN mode.

Editing Patch and Device Settings

Many editable settings are accessed using the labelled keyboard keys or other controls.

▶ To Edit a Setting:

1. Press the **Edit button**. The Edit LED illuminates.
2. **Select the desired setting** 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, the numeric keyboard keys, the **Octave Transpose** buttons, or the Numeric Keypad (Xboard 61 only). 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 the next time you recall a stored patch, or when the Xboard is turned off. See page 26.

Editing Patch and Device Settings:

1. Press **Edit**.
2. Select **Function**.
3. Adjust Value.
4. Press **Enter**.

Scrolling Text Display

In Edit mode, and in some other situations, the 3-digit numeric display 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 as described above. Once an edit parameter is selected, the current value of the parameter is displayed. After a short delay, the edit parameter name begins scrolling periodically across the display as a reminder of which parameter you're editing. Once 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.

Edit Parameters

These parameters are accessed via the Edit button. See "Editing Patch and Device Settings" on page 31 for detailed instructions about how to access the Edit mode.

PGM Send on Recall

Every Xboard patch stores a MIDI program change number (as well as Bank Select MSB and LSB settings) for each of the 16 MIDI channels. The "PGM Send On Recall" setting is a master switch which enables or disables transmission of the stored MIDI program change settings when a patch is recalled.

Select **on** to transmit the program changes, etc. stored in a patch when that patch is recalled. This allows you to reconfigure all of your MIDI instruments at once by simply recalling that patch. Select **oFF** if you don't want the stored program changes transmitted on patch recall.

This feature has a couple of tricky aspects which you need to be aware of in order to use it as intended:

- In addition to the master on/off switch, there is also an on/off switch per MIDI channel. When the master switch is set to on, program changes will be sent upon patch recall only on channels whose per-channel on/off switch is also set to on in the patch. This allows you to restrict program change sends to only the desired channels. However, unlike the master switch, these per-channel switch settings can only be modified using the Xboard Control editor application. Since all of these switches are set to off by default, full setup of this feature is possible only using that application.

- The master and per-channel on/off settings, as well as the program change and bank select numbers, are stored in and recalled from patches. They are not global settings and can be different from one patch to the next. Since they are applied immediately following recall of a patch, these settings must already be stored in a patch in order to have any effect upon what happens when the patch is recalled, and will apply only to that patch. It follows that the patch must be stored again anytime these settings get changed – otherwise, any changed settings will be lost.

Send Program Change

This function sends MIDI program changes to your external gear on the currently selected Basic MIDI channel. *(At the same time, it edits the program change number for the current MIDI channel in the active patch. See "PGM Send on Recall" on page 33 for more info.)*

Note that the program change send includes a send of Bank Select MSB and Bank Select LSB according to the settings for those parameters on the same MIDI channel in the current patch. See page 34.

▶ *To Send an External Program Change Via the Main Control Panel*

1. Press the **Edit** button.

2. Press the **Send Prog Change** keyboard key.

3. Select the desired program change number from 0-127 using the **Data Slider**, **Octave Transpose** buttons, or **numeric keyboard keys**.

4. Press **Enter** to send the program change.

5. Press **Home** to exit without sending the program change. *(This also leaves the program change setting for the current MIDI channel unmodified in the active patch.)*

▶ *To Send an External Program Change (Xboard 61)*

1. Make sure the **Program Change Mode** button's LED is lit. If not press the button to light it.

2. Use the **Direct Patch Select** numerical buttons to enter a one- to three-digit program change number. Use the button labeled "10" to enter a "0."

3. Do one of the following:
   - If Zones are enabled, press the corresponding Zone button for the MIDI channel you want to send the Program change across. If you want to send the Program Change over the current MIDI channel, press **Enter** or the **Program Change Mode** button (they will be blinking).
   - If Zones are not enabled, press **Enter** or the **Program Change Mode** button (they will both be blinking).

Bank Sel MSB

This parameter allows you to select the MIDI Bank Select MSB (most significant byte) that will be used when sending program changes via the Prog Change, PGM Browse Mode or PGM Send On Recall features.

Select a Bank MSB from 0-127. Note that this merely edits the Bank Select MSB setting for the current MIDI channel in the active patch. It does not cause a MIDI message to be sent immediately.

For more information on MIDI Bank Select commands, see the Xboard Owner's Manual PDF.

Bank Sel LSB

This parameter allows you to select the MIDI Bank Select LSB (least significant byte) that will be used when sending program changes via the Send Prog Change, PGM Browse Mode or PGM Send On Recall features.

Select a Bank Select LSB from 0-127. Note that this merely edits the Bank Select MSB setting for the current MIDI channel in the active patch. It does not cause a MIDI message to be sent immediately. *For more information on MIDI Bank Select commands, see the Xboard Owner's Manual PDF.*

Program Change (PGM) Browse Mode

This function allows you to play the keyboard and use the wheels and rotary controls while browsing through MIDI programs. Program change messages are sent on the Basic MIDI channel as described above (See "Send Program Change" on page 33.). This includes sending Bank Select MSB and Bank Select LSB according to current settings for that MIDI channel in the active patch.

▶ To Browse MIDI Program Changes

1. Press the **Edit** button.
2. Press the **PGM Browse Mode** keyboard key. The display shows the current program change setting for the patch's basic MIDI channel.
3. Select the desired program change number using the **Data Slider** or the **Octave Transpose** buttons. The program change numbers are shown on the display. (In order to avoid sending continuous barrages of program change messages which might confuse receiving equipment, program change messages are transmitted only when the slider stops moving for one second. The display will briefly show "---" whenever this occurs.) You can play the keyboard and use other performance controllers to audition the selected program.
4. Press **Enter**.

    Press **Home** to leave the program change setting for the current MIDI channel unmodified in the active patch. The unmodified setting is used in one final program change message send to restore the previously-loaded program in any device which is receiving on that channel.

CC Send On Recall

Every Xboard patch stores an initial value (position) setting for each of the 16 Controller Knobs, the Pitch Wheel, the Mod Wheel and the Footpedal. The "CC Send On Recall" setting enables or disables transmission of these stored values when a patch is recalled.

Select **on** to transmit the values stored in a patch when that patch is recalled. In conjunction with the "Save CC Values In Patch" feature, which lets you control the settings which get stored in a patch (see below), this allows you to simultaneously preset many individual parameters of your MIDI instruments exactly as desired, by simply recalling that patch. (If "PGM Send On Recall" is also switched on in the same patch, the program changes are sent first, followed by the controller messages, so that the controller messages will affect the newly-loaded programs.)

When set to **oFF**, the continuous controller settings will not be transmitted when the patch is selected.

Note: This feature has a tricky aspect which you need to be aware of in order to use it as intended:

The "CC Send On Recall" setting is stored in and recalled from patches. It is not a global setting and can be different from one patch to the next. Since it is applied immediately following recall of a patch, this setting must be stored in a patch in order to have any effect upon what happens when the patch is recalled, and will apply only to that patch. It follows that the patch must be stored again anytime this setting gets changed – otherwise, the changed setting will be lost.

Save CC Value in Patch

This setting is useful in conjunction with the "CC Send On Recall" feature (see above). When this parameter is set to **On**, the current initial value (position) settings of the 16 Controller Knobs, the Pitch Wheel. the Mod Wheel and the Footpedal will be stored in a patch when the patch is stored. If this setting is **oFF**, the existing controller initial value settings in the patch are retained, even if you have adjusted one or more controls in the meantime. Therefore, turning this option oFF effectively "locks" the controller initial value settings into the patch.

Note that this setting is applied when you store a patch, not just after the patch is recalled, and is thus effective immediately upon being changed – unlike some settings discussed above, it doesn't need to first be stored in a patch in order to become effective.

Note: You cannot save values for controllers that are set to NRPN mode.

Tips for Use…

Assuming you wish to use the "CC Send On Recall" feature with a particular patch, turn this option **on** while editing the controller initial value settings in that patch. Once you've stored the patch with the desired initial controller settings, switch this option **oFF** and store the patch one more time. This will save the **oFF** setting for this option in the patch. Since the **on/oFF** setting will also be recalled whenever you recall the patch, the **oFF** setting ensures that the initial controller settings won't be accidentally overwritten if you later change some other setting in the patch and store it again. If you later want to change one or more of these settings, simply switch the setting back on before storing the patch with the updated settings (and don't forget afterwards to switch the option back oFF and store the patch again as described above, to lock in the updated settings).

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.

Note: This setting, unlike most of the settings described in this section, is a device setting, which is not stored in or recalled from patches. It is thus also a global setting which affects all patches in common – or rather, it affects device behavior independently of patches.

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.
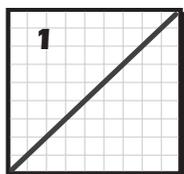
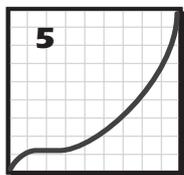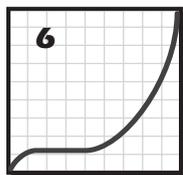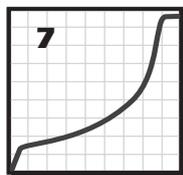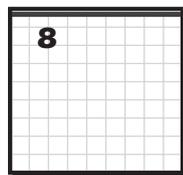|			
1	**2**	**3**	**4**
Linear - No change to velocity.	**Compressed** - For hard players.	**Medium** - Outputs medium velocity. Compressed dynamics	**Compress/Limit** - Outputs medium values. Limits dynamics.
5	**6**	**7**	**8**
Low Vel 1 - Extreme compression. Outputs low velocity values.	**Low Vel 2** - Extreme compression. Outputs low velocity values.	**Expanded** - Expands velocity range. Soft -> Loud.	**Full Velocity** - Only outputs full velocity.
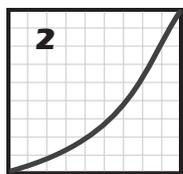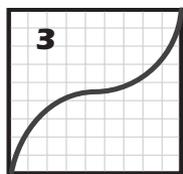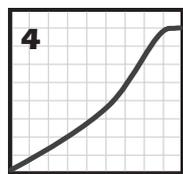
You can also select the MIDI minimum velocity, which essentially reduces the vertical scale of the above drawings. See page 41.

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 27 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. See page 29 for detailed information about Latch mode.

X1 and X2 Functions

The X1 key accesses the X1 functions. These are global functions that 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)
- **ind** - Turns the decimal point USB/MIDI indicators on or off. See page 17.
- **Zod** - Turns the zones status message on or off.
- **PbM** - Determines the behavior of the Numeric Keypad after you send a program change.
- **CAL** - The Calibration sub-menu. The functions here allow you to make very specific calibrations. These settings are intended for advanced users.

The X2 key accesses the X2 functions. These are global functions which affect only the active patch. For example, if you turn Zones off it will remain so for only the active patch.

- **ZoE** - Enables and disables Zones functions in the active patch.

▶ To Select one of the X1 or X2 Functions

1. Press the **Edit button**. The Edit LED illuminates.
2. **Select X1 or X2**.
3. Adjust the **data slider** or use the **Octave Transpose** buttons to view the functions.
4. Press **Enter** to select the desired function.
5. Select the desired value using the **data slider** or the **Octave Transpose** buttons (except with CAL).
6. Press **Enter** to confirm your selection. Press **Home** to cancel the operation.

X1 Menu Items
The following is a description of the items located in the X1 menu.

MIDI (Mid)

The Xboard 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 Xboard's MIDI output jack. When **Out** is selected, the MIDI output transmits local data from the keyboard and knobs.

Xboard 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 (PEd)
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 Xboard 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 Xboard accepts control pedals wired as shown in the Xboard Owner's Manual PDF.

Indicators (ind)
The decimal points in the LED indicate USB and MIDI activity. Select **on** or **oFF**. 1st = **USB In**; 2nd = **USB Out**; 3rd = **MIDI Out**.

Zones On/Off Status Display (Zod)
Select **On** or **Off**.
If on, when you select a new patch, the Edit LED display shows a message indicating whether zones enabled or disabled in the new patch. This is especially useful for the Xboard 25 and Xboard 49, since they don't have a Zones Enable button.

Patch Buttons Program Change Mode Auto-Disable (PbM)
With this setting on, the Program Change Mode button turns off automatically after you send a program change, returning the numeric keypad to Direct Patch Select Mode.

With this setting off, the Numeric Keypad remains in Program Change mode after you send a program change.

Calibrate Sub-Menu (CAL)

When you select CAL and press Enter, you are taken to the CAL sub-menu, which contains calibration functions. To select a function, use the data slider to select a Calibration function, and press **Enter**. To cancel, press **Home**.

CCM

This feature enables you to calibrate any control on your Xboard, one at a time, optimizing your Xboard's action for your playing technique.

After you select the CCM function and press **Enter**, all LEDs on the Xboard turn off (except the display, which says "adjust a control"). This is Calibration Standby mode. What you do next depends on which control you want to calibrate.

▶ **To Calibrate a Controller Knob, Mod Wheel, or Data Entry Slider:**

1. Sweep through all possible values **without pressing harder either direction than you normally would**. As you adjust, the display shows raw control values, reverting to the name of the control you are adjusting.

2. Press **Enter** to store the calibration, or press **Home** to back out of the process. You are returned to the Calibration Standby mode.

3. Press **Enter** to calibrate another control, or **Home** to finish.

▶ **To Calibrate the Pitch Wheel:**

1. Sweep through all possible values **without pressing harder in either direction than you normally would**. As you adjust, the display shows raw control values, reverting to the word "Pit" (as in "Pitch Wheel").

2. Let the Pitch Wheel spring back to its normal position in the center.

3. Press the illuminated **Snap Shot** button. The Edit LED should say "Ctr" (as in "Center"). You can repeat this step as many times as you want.

4. Press **Enter**. You are returned to the Calibration Standby mode.

5. Press **Enter** to calibrate another control, or **Home** to finish.

▶ **To Calibrate Aftertouch using One or More Keys:**

1. Press and hold the key(s) you want to use for calibration. Use the maximum amount of force you want for Aftertouch. The Edit LED alternates between the current key value and the word "Aft" (as in "Aftertouch").

2. Press and hold the key(s) with the minimum amount of force at which you want the Xboard to begin sending Aftertouch messages.

3. While holding the key(s), press the **Snap Shot** button. The Edit LED should say "tHr" (as in Threshold).You can repeat this step as many times as you want.

4. Press **Enter** to store the calibration, or press **Home** to back out of the process. You are returned to the Calibration Standby mode.

5. Press **Enter** to calibrate another control, or **Home** to finish.

MIDI Minimum Velocity (UMi)

This setting allows you to choose the lowest possible velocity for your Xboard. Raising the lowest possble velocity keeps the shape of the velocity curves, but in effect "crunches" them. Look at the example below. If you're using Velocity Curve 1, and you change the low velocity to 28, the curve maintains the same shape, but has a smaller vertical scale.

Low Velocity = 1 (default) Low Velocity = 28
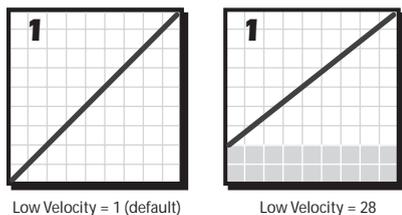
Bear in mind that you aren't changing the actual Velocity Curve— you're changing a device setting that affects all velocity curves the same way. So, if you switch to a different velocity curve, the Low Velocity stays the same.

Velocity Sense Time Limit Low (tLo)

Select a Value between 0 and 998 (default value: 20).

This sets the lower limit for keystroke timing, and thus adjusts the detection of *maximum* velocity. The lower you set this setting, the harder you will have to strike the keys in order to produce a maximum-velocity MIDI Note On message. Below a setting of 10 or so, you may find it impossible to produce a maximum-velocity MIDI Note On message.

Velocity Sense Time Limit High (tHi)

Select a Value between 1 and 999 (default value: 255).

This sets the upper limit for keystroke timing, and thus adjusts the detection of *minimum* velocity. The higher you set this setting, the softer you will have to strike the keys in order to produce a minimum-velocity MIDI Note On message.

Note that increasing the Low setting beyond the existing High setting will result in the High setting being changed automatically so that it remains higher than the new Low setting, and vice versa. Setting the velocity sense time limit values too close to one another will result in jumpy, "either/or" playing dynamics (either very loud or very soft).

Aftertouch Sense Level Limit Low (ALo)
Select a Value between 0 and 998 (default value: 80).

This sets the lower limit for the Aftertouch sensing circuit. It is thus the threshold setting, which determines how much pressure you have to apply in order to make the Xboard *begin* sending Aftertouch messages. If this setting is adjusted too low, you may find it difficult to play the keyboard *without* sending Aftertouch messages.

Aftertouch Sense Level Limit High (AHi)
Select a Value between 1 and 999 (default value: 600).
This sets the upper limit for the Aftertouch sensing circuit. It thus determines how much pressure you have to apply in order to make the Xboard send a maximum-value Aftertouch message. If this setting is adjusted too high, you may find it impossible to produce a maximum-value Aftertouch message, regardless of how hard you press.

Note that increasing the Low setting beyond the existing High setting will result in the High setting being changed automatically so that it remains higher than the new Low setting, and vice versa. Setting the aftertouch sense level limit values too close to one another will result in jumpy, "either/or" response (either no aftertouch or maximum aftertouch).

X2 Menu Items
The following is a description of the items located in the X1 menu.

Zones Enable in Patch (ZoE)
Tuns all zones on or off in the active patch. For the Xboard 61, this serves the exact same function as the Zones Enable button. It is most useful on the Xboard 25 or Xboard 49, since they don't have a Zones Enable button.

Read the Complete Manual

The complete Xboard manual, includeing instructions on the Xboard Control software, is available in PDF format on the included CD-ROM and installs with the Xboard software.

▶ **To view the manual:**

1. Make sure you've installed Adobe Acrobat reader.
2. From the **Start** menu, select **Programs**, **Creative Professional**, **E-MU Xboard Documents**, **Owners Manual**.

INDEX