IMPORTANT SAFETY INSTRUCTIONS

WARNING – When using electric products, basic precautions should always be followed, including the following:

1) Read all the instructions before using the product.

2) Do not use this product near water – for example, near a bathtub, washbowl, kitchen sink, in a wet basement, or near a swimming pool or the like.

3) This product, in combination with an amplifier and headphones or speakers, may be capable of producing sound levels that could cause permanent hearing loss. Do not operate for a long period of time at a high volume level or at a level that is uncomfortable. If you experience any hearing loss or ringing in your ears, you should consult an audiologist.

4) The product should be located away from heat sources such as radiators, heat registers, or other products that produce heat.

5) The product should be connected to a power supply only of the type described in the operating instructions or as marked on the product.

6) The power-supply cord of the product should be unplugged from the outlet when left unused for a long period of time.

7) Care should be taken so that objects do not fall and liquids are not spilled into the enclosure through openings.

8) The product should be serviced by qualified personnel when:
    a) The power-supply cord or the plug has been damaged; or
    b) Objects have fallen, or liquid has been spilled onto the product; or
    c) The product has been exposed to rain; or
    d) The product does not appear to operate normally or exhibits a marked change in performance; or
    e) The product has been dropped or the enclosure damaged.

9) Do not attempt to service the product beyond that described in the user-maintenance instructions. All other servicing should be referred to qualified service personnel.

DANGER: INSTRUCTIONS PERTAINING TO RISK OF FIRE, ELECTRIC SHOCK, OR INJURY TO PERSONS: Do not open the chassis. There are no user serviceable parts inside. Refer all servicing to qualified personnel only.

GROUNDING INSTRUCTIONS:
This product must be grounded. If it should malfunction or breakdown, grounding provides a path of least resistance for electrical current to reduce the risk of electric shock. The plug must be plugged into an appropriate outlet that is properly installed and grounded in accordance with all local codes and ordinances.

DANGER – Improper connection of the equipment-grounding connector can result in a risk of electric shock. Check with a qualified electrician or serviceman if you are in doubt as to whether the product is properly grounded. Do not modify the plug provided with this product – if it will not fit in the outlet, have a proper outlet installed by a qualified electrician.

SAVE THESE INSTRUCTIONS

PianoBar User's Manual

Table of contents

1. *INTRODUCTION*

Congratulations! By purchasing the Moog PianoBar you have recognized you CAN teach an old dog new tricks…

Of course we mean no disrespect referring to the modern acoustic piano as an old dog; it has a long and distinguished history. Adapted from the Harpsichord and other early keyboard instruments, the forte-piano, produced around 1708 by Bartolomeo Cristofori of Padova, Italy, was the first keyboard instrument to feature a wide dynamic response to a player's touch. Composers began to flock to the instrument as it became more widely available to take advantage of its capability for musical expression. A number of technological innovations led to the modern piano – an instrument capable of whispery soft playing or thunderous passages. The piano has an impressive repertoire – from the highest statements of classical artistic purity to the greasiest boogie-woogie to elegant and complex jazz voicings. The piano is a sound that will forever be etched in our consciousness – and one always worth exploring.

Today, music is a varied and complex endeavor, often utilizing the latest in technology. Piano players and composers have often found a frustrating gap between the true touch, feel and voice of the piano and the technology of modern music making. In fact many have resorted to compromised means – digital instruments with plastic keys that lack the touch and sound of the piano. This is where the PianoBar comes to the rescue.

What does the PianoBar Do?

The PianoBar is a portable device designed to scan the keys of the piano and the pedals and transmit the playing of the piano as MIDI information. If you are unfamiliar with MIDI, there is detailed information in chapter 4. Simply put, MIDI is a method of capturing a musical performance;

it can be used to simultaneously play sounds other than the sound of the instrument being played, or record that performance information for later playback.

The PianoBar extracts the information about your piano playing by means of a Scanner Bar which rests above the keys of the piano and out of the way of the player's fingers. Yet it requires no technician to install it, it's portable, and IT SETS UP IN JUST A FEW MINUTES…. When you are done you can leave it installed or remove it.

With the Piano Bar, you can:

- Play sounds when you depress a key on the piano – combine and layer sounds with the acoustic piano sound for rich new timbres. This is a great way to explore sounds and add new spice to your piano performances.
- Capture your piano playing in a computer, in a MIDI sequencer or notation software. This is a great way to increase productivity while composing music at the piano.

- Play MIDI music files into the PianoBar for education or entertainment. LEDs above the keys can be enabled to light up showing the notes being played.
- Whatever else your imagination can dream up!

How does it do it?

How does the PianoBar extract MIDI data from the keyboard and pedals? If you study the mechanics of a piano key and its action, you will find that the loudness of a tone produced by playing a key is closely related to the VELOCITY of the key being pressed. Therefore, by looking simply at the motion of the keys, you can get a highly accurate representation of the notes and loudness of the notes that are played. The Scanner Bar uses patented Infrared Scanning technology to measure the movement of the keys and transmit that information to the Control Module, where it is converted to MIDI.

The Pedal Sensor contains a pair of proximity sensors, which respond to the depression of the Soft and Sustain Pedals.

Why Moog and why the PianoBar?

Moog is concerned with the production of soulful and innovative music utilizing the best electronic design. The Piano is an instrument that can possess a depth of expression that is unrivalled by many instruments. The PianoBar is the fruit of collaboration between Don Buchla and Moog Music. Buchla is an important name in electronic music history – as he was working on synthesizers on the West Coast around the same time Bob Moog was working on the East Coast. His developments over the years include pioneering synthesizer designs and a number of innovative MIDI controllers – including the PianoBar. By creating an accessory that taps into the expressiveness of the piano, we hope that many piano players, casual or serious, may find new joy in a timeless instrument.

The following will explain fully the installation, function and possible uses for the Moog PianoBar. If you don't like reading manuals, "Getting Started" on p. 7 covers the installation and basic operation. It is highly recommended that you read the manual in order to obtain the maximum results from this product. We at Moog Music extend to you our sincerest hopes that your muse is awakened by this remarkable device.

We know you are itching to get started so here it is…

2. *GETTING STARTED*

PIANOBAR COMPONENTS

The PianoBar is shipped inside its own carrying case. Upon opening your new PianoBar, inspect the contents to ensure that all the components are present.
The PianoBar package contains the following components:

- Power Supply: Wall transformer connects the PianoBar to a source of AC.

- Control Module: The Control Module houses the user interface, the sounds and the brains of the PianoBar. Both the Scanner Bar and Pedal Sensor connect to the Control Module. The Control Module contains the brains and sounds of the PianoBar.
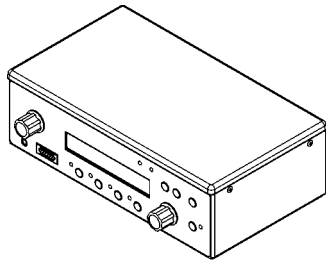
- Scanner Bar: The Scanner Bar is what senses the piano keys' movements and translates this into MIDI information. When it is installed, it rests on the cheek blocks (The wooden pieces next to the lowest and highest keys) and rests against the fallboard (the piece behind the keys).

CONTROL MODULE
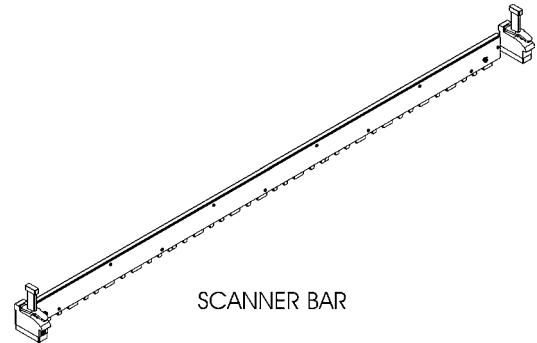
SCANNER BAR

- Pedal Sensor: The Pedal Sensor sits under the piano's pedals and detects the use of the sustain and soft pedal.
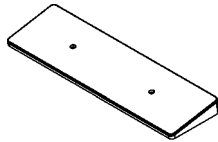
PEDAL SENSOR

- Library Card: The Library Card serves a dual purpose. It functions as a memory storage device, which holds 20 Setups. It also serves as a height gauge for setting the distance between the Scanner Bar and the keys.
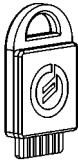
LIBRARY CARD

- Two cables: Used for connecting the Scanner Bar and Pedal Sensor to the Control Module.

And of course,

- This Manual.

To use the PianoBar you will need:

- A source of power: 85-250 Volts AC, 50-60 Hz.
- Your piano
- If you are using the PianoBar's built in sounds you will need a pair of amplified monitors or headphones
- If you are using external MIDI devices, you will also need MIDI cables to connect them to the Control Module.

PIANOBAR CONSIDERATIONS - What you should know about the piano on which you are installing the PianoBar

Please note that we have stated that the PianoBar works on *virtually* every 88-key acoustic piano.
There are some exceptions, and features that may affect the performance of the PianoBar.

- The piano must have 88 keys.
- Cheek-blocks that have unusual shaping, or are too skinny.
- Black Keys that end more than ¼" from the fallboard
- Non-Vertical fallboards – these pianos are not excluded from being used with the PianoBar, but their performance may be compromised if the Scanner Bar is allowed to flex.

What you don't have to worry about:

- Key span (the width of keys) – a lot of research went into determining the extremes of key span. The Scanner Bar can be adjusted to accommodate a large variety of key spans.
- Uneven key height – when installed and calibrated, the Scanner Bar's sensors compensate for any unevenness of the key height.

Other considerations:

- *Tuning and condition of piano* – The Moog PianoBar is used in conjunction with the sound and feel of the acoustic piano. For layering sounds from the Control Module with the acoustic piano, we assume that the piano in question is in reasonable condition and tuning. The PianoBar does not provide a method of muting the acoustic piano's sound, so if the piano is out drastically of tune, it will not be in tune with the sounds in the Control Module. Also,

if a piano is poorly regulated, the velocity of the keys may not be closely related to the loudness of the tone produced. In this circumstance, it is possible that the PianoBar will have keys that produce MIDI velocity information that is not the same as the loudness of the piano tone. In any case we highly recommend regular tuning and maintenance from a qualified Piano Technician. Your piano will love you for it.

- *Pedal sensor height* – Every piano sits at a different height in relation to the floor. Some pianos may be situated on a dolly, which raises the pedal height substantially. The Pedal Sensor must be at a distance of ½" to 1" from the pedals when they are depressed. For raising the Pedal sensor, we recommend the Pedal Height adjustment accessory (available from Moog Music pn PB-PS-HA). In a pinch you can use a book. If the Piano is too close to the pedal sensor due to placement on a carpet, we recommend a set of caster cups, available from your piano dealer. These will raise your piano.

- *External MIDI devices* – The PianoBar has a wealth of applications as a MIDI controller. If you plan on using the PianoBar with an external MIDI device – please consult the sections on the Channel Setup and Channel Route functions to learn how to configure the PianoBar with External MIDI devices.

- *USB Cables* – The PianoBar comes supplied with two USB-type cables. There is a 6' cable, to make the connection between the Scanner Bar and the Control Module. Do not substitute longer USB cables or USB cables that have smaller diameter wires. There is a 16' cable that is used to connect he Pedal Sensor to the Control Module. The cables are not interchangeable, always use the shorter cable to connect the

Scanner Bar to the Control Module. ***The PianoBar is not a standard USB device.***

- *Care of the PianoBar* – The PianoBar is designed as all Moog equipment is – robust. However, Care should be taken with the Scanner Bar's lower edge, which contains the infrared sensors that detect the motion of the keys. In general don't rest it in a manner that could cause wear to these components, and don't lean the Scanner where it can fall and possibly be damaged.

INSTALLING AND CALIBRATING THE PIANOBAR

1) Place the Scanner Bar so the end pieces are resting on the cheek blocks. Squeeze the clamps and position the Height adjustment so the Scanner Bar is well above the keys. Whenever the height of the Scanner is adjusted, be sure to squeeze the quick release clamps rather than forcing the height adjusters up and down. Make sure the back of the Scanner Bar rests against the fallboard, and that the center mark aligns with the gap between middle C and the B below it.

USB connector
(To Control Module)

Height adjustment

Thumbscrew sdjustments
for key span

alignment marks

cheek blocks
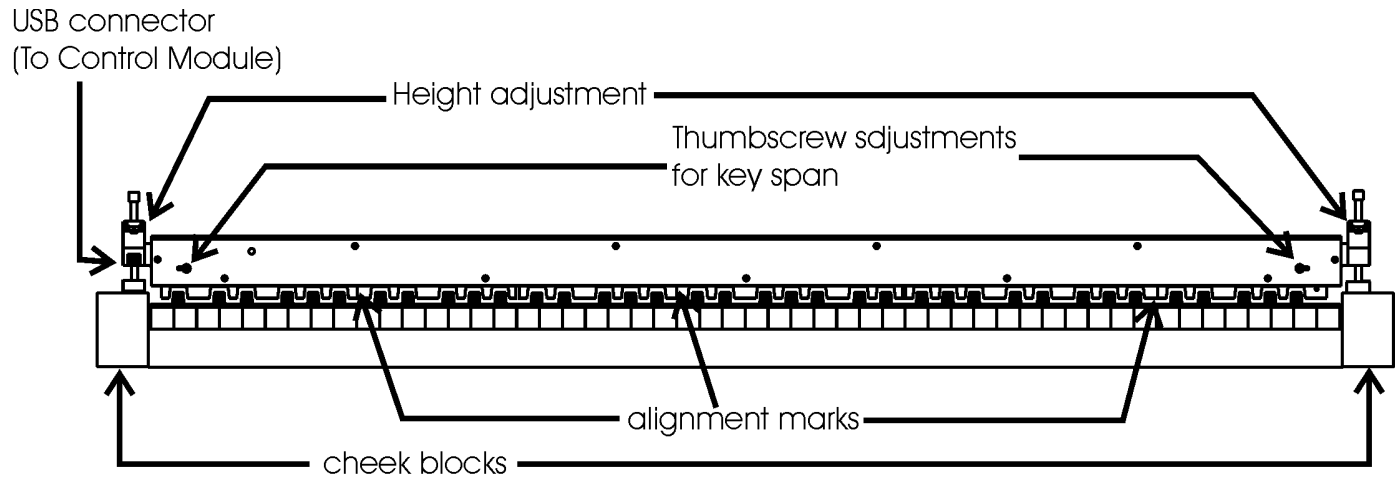
SCANNER BAR SET UP ABOVE PIANO KEYBOARD

12

2) For the outside sections of the Scanner Bar, locate the thumbscrews on the front. Loosen them. Adjust the outside sections so the alignment marks line up with the gaps between their respective Bs and Cs. Once the alignment marks are set, tighten the thumbscrews.

3) Place the Library card face up on the lowest B and C so the handle points towards the back of the piano. Use the left leveling system to adjust the height of the scanner so it barely touches the top

Use the handle of the Library Card to set the height of the Scanner Bar above the piano keys.
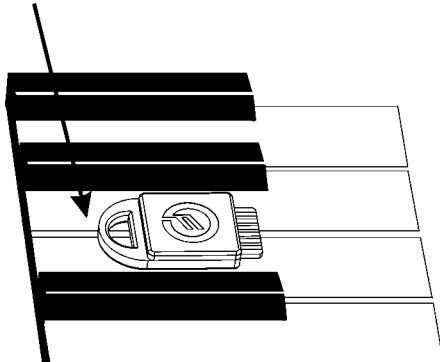
of the library card.

4) Place the library card in a similar position on the highest B and C. Use the right leveling system to adjust the height of the right side of the scanner.

5) Plug the longer of the two provided cables into the Pedal Sensor. Place the Pedal sensor under the piano's pedals so the cable comes out the back. When either the Soft Pedal or the Sustain Pedal are depressed, they should be approximately ½" to 1" above the pedal sensor, adjust height if necessary.

6) Connect the Pedal Sensor and Scanner to the Control Module using the cables provided, using the shorter of the two cables to connect the Scanner to the Control Module. Place the Control Module so you can conveniently view the screen and reach the buttons.
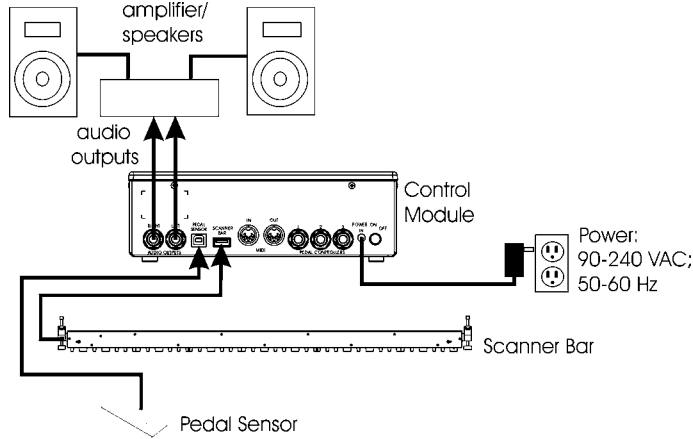
7) Connect the Control Module to the Power source and sound system (or headphones). Connections to external MIDI devices can be made if so desired, or the MIDI interface of a nearby computer.

Connections to external MIDI devices
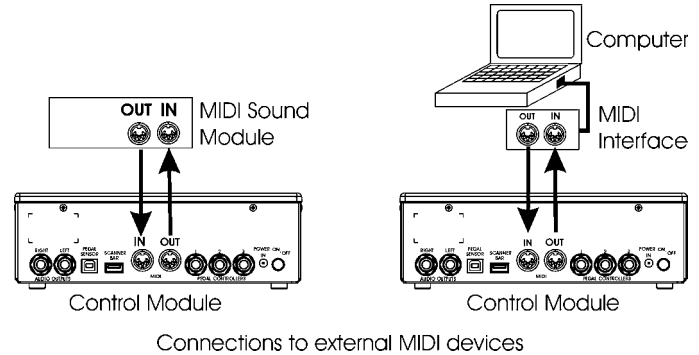
8) Turn on the power (on the back of the Control Module). The opening screen displays the version number of the software. After a few seconds a second screen is displayed. If the Scanner is at the correct height, the screen will say "Press Enter to Calibrate". This screen appears for about 6 seconds, so press Enter before it disappears, if calibration is necessary. Calibration will be necessary the first time the Scanner is installed on

14

a piano – to skip calibration, simply wait for the screen to change to the Main Setup Page. If the Scanner is set too high or low, the screen will display prompts in the left and right upper corners of the screen to raise or lower the left or right levelers, respectively, until the Scanner is at the correct height. When done, press Enter and you will see the "Press Enter to Calibrate" screen – do so. The display now prompts the user to play all the keys on the piano. Calibration merely requires the playing of all the keys on the piano. Take care to depress the keys fully, and make sure the keys don't bounce. Once you have pressed all the keys down, press escape, and installation is complete! Please note that if you press Enter and enter the calibration page, you must play all the keys, or the Scanner will be "confused" and send incorrect data.

USING THE PIANOBAR FOR THE FIRST TIME

Now that the PianoBar is installed and calibrated, it is ready to use. The Control Module display will look something like this:

0	1	u		P	l	a	y	e	r			P	i	a	n	o						
V	L	:	8			V	L	:	8			V	L	:	8			V	L	:	8	

This is called the Main Setup Page. The items displayed include the current Setup number and name, as well as the activity and volume settings of Channels 1-4 of the setup. The volume of the active channels can be set by pressing the appropriate channel button located under the display and adjusting the number displayed with the Value Control. Note when you play a key on the piano, a bar next to the active channels shows the relative velocity of the note played.   The internal sound assigned to a MIDI channel is set in a function called "Channel Setup".

Note that there is a green LED lit on the Scanner Bar. This LED has a photosensor switch that can be

used to change Setups. Simply cover the LED with your finger. You will notice that an LED will light up above a key on the piano that corresponds to the number of the current Setup. (#1 is the lowest A on the Keyboard). Simply press another key, and the current Setup will be changed to the number that matches that key (for instance – middle C is 40). This allows quick access to any Setup from 1 to 88. Another way to change Setups is with the Value rotary control on the front of the Control Module. There are 100 Setup memory locations: 60 user Setups, 20 library card Setups, and 20 factory Setups. The user Setups are shipped with Setups from the factory. These can be edited to suit the needs of the user. The library card Setups are empty until a library card with Setups is installed in the slot on the front panel of the control module. The factory Setups are permanently installed.

By taking a tour of the Setups, you can quickly see the variety of sounds and effects that you can add to the sound of a piano. Keep in mind that a Setup can contain the complete configuration of 16 MIDI channels – both in and out. There is a wealth of possibilities contained in the PianoBar – to discover them let's continue.

3. *THE PIANOBAR'S CONTROLS, CONNECTIONS AND MENUS*

THE CONTROL MODULE'S FRONT PANEL
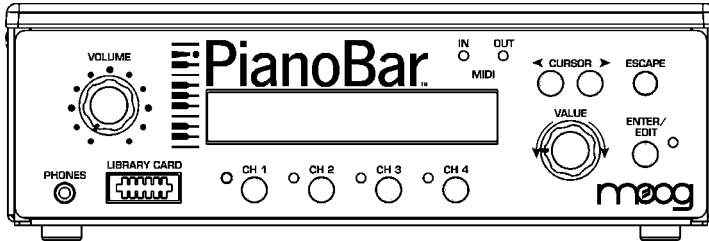
The Front Panel of the Control Module has all the controls necessary for using and editing Setups.

- Volume – sets the overall volume of the internal sounds
- Phones – 1/8" jack used to connect headphones.
- Library Card – used to load sounds into Setups # 61-80 from Library Cards
- Display- Shows information about Setups

- Channel buttons – Allow Quick changes in Volume settings of channels 1-4 in the Main Setup Page.
- MIDI indicators – Display status of MIDI in and Out. Lights up when MIDI data is sent or received.
- Cursor – Moves Cursor.
- Value – Used for changing Setups or data entry when Editing Setups.
- Escape – Takes the User "Up one level" when editing Setups. It also sends an All Notes Off message in Main Setup Page
- Enter/Edit – Chooses and executes functions / Takes the User to the Edit menu for editing Setups.

THE REAR PANEL CONNECTIONS
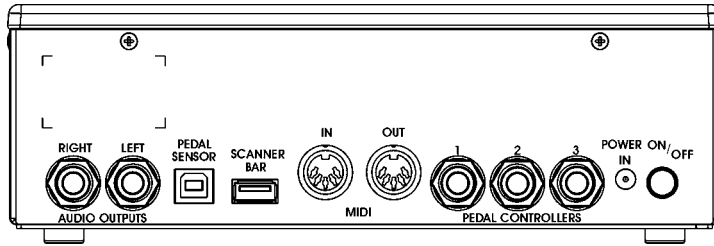
The Rear Panel contains all the connections to hook the PianoBar up to the outside world.

- Power: The PianoBar requires a +12VDC center positive power supply which can deliver 830 mA or greater. A power supply is provided with the PianoBar.
- Pedal Controllers 1-3: These three ¼" TRS (Tip/Ring/Sleeve) jacks accept an expression pedal input. Works with moogerfooger EP-1 or equivalent. All three pedal inputs can be configured to send MIDI CCs in a Setup.

- MIDI In/Out: MIDI out connects to external MIDI devices to send MIDI from the PianoBar to the external device. MIDI In is connected to the MIDI out of an external MIDI device to receive MIDI data. The current Setup determines how MIDI channels 1-16 are routed, externally and internally. These are set in Channel Setup and Channel Route.
- Scanner Bar In: Connects to the Scanner Bar to receive the Piano's Performance data. *Note: Although this is a standard USB connector, this is not a USB device.*
- Pedal Sensor In: Connects to the Pedal Sensor to receive signals from the sustain and soft pedals. *Note: Although this is a standard USB connector, this is not a USB device.*
- Audio Outputs: Two ¼" jacks deliver the audio output of the PianoBar's internal sounds to your amplification.

NAVIGATING THROUGH THE MENUS

The PianoBar's Menu system is really quite simple – there are 3 basic levels: the Main Setup Page, the Edit Menu, and the Edit functions you can select in the Edit menu. Navigation is simple: Press Enter/Edit to go deeper into editing, and press escape to "come back to the surface".

Main Setup Page

```
01u  Player    Piano
VL:8    VL:8     VL:8     VL:8
```

press "ESCAPE" to return to the Main Setup Page

press "ENTER/EDIT" to access Edit Menu

Edit Menu

```
01u  Lib  ChnSetup  Cntrlrs
Effects  ChnRoute  Options
```

press "ESCAPE" to return to the Edit Menu

move cursor under edit function and press "ENTER/EDIT" to access edit functions.

Library
```
01u  Player    Piano
Name
```

Channel Setup
```
Ch1  s   0:001   GrandPiano
pg1   Vol:+4    Midi:all  Zone
```

Controllers
```
A#      S  1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16
Val:       B
```

Effects
```
Reverb  Chorus          s
Plate    Off
```

Channel Route
```
01u  In   CH 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16
Int           I
```

Options
```
DSP:7  LagComp:2   Tune:off
PC:127   LEDTRACK   BaseCh: 1
```

19

There are a few instances where the Enter/Edit button serves a different purpose, such as changing between two pages (such as Channel Route), or initiating a process (such as formatting a library card). The actual parameters and functions are frequently abbreviated. The following is a comprehensive guide to the Menus and Functions of the Control Module.

MAIN SETUP PAGE

The Main Setup page is described in brief in the "Getting Started" Chapter. Let's review and elaborate:
The Main Setup Page looks something like this:

Type of Setup:
User (u), Card(c),
Or Fixed (f)
Setup Name
Setup number

| 0 | 1 | u | | P | l | a | y | e | r | | P | i | a | n | o |
| V | L | : | 8 | | V | L | : | 8 | | V | L | : | 8 | | V | L | : | 8 |

Channel 1 Volume   Channel 2 Volume   Channel 3 Volume   Channel 4 Volume
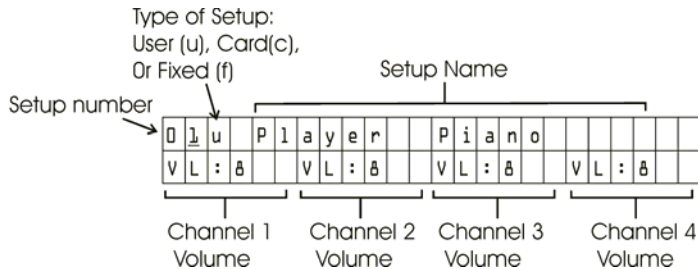
The Main Setup Page is the screen used for performance applications. There are three functions that can be performed: changing Setups, and altering the volume of Channels 1-4, and sending an "All Notes Off" message. In addition, the Main Setup Page displays a bar graph of the MIDI velocity on Channels 1-4 if they have an internal sound or external MIDI Output assigned.

Changing Setups:

A Setup can be changed from the Scanner Bar and piano keys, the front panel value control, or by MIDI program change. To change Setups using the Scanner Bar and Piano Keys, locate the Green LED above the lowest E flat. Cover this LED with your finger, and notice that it disappears and an LED appears above one of the piano's keys. By counting up from the low A, this corresponds to the current Setup number. Play another key to change to a different Setup. This allows easy access to

Setups 1-88. Changing Setups with the Value control is simply a matter of placing the cursor under the current Setup number and rotating the knob – clockwise to increase, counterclockwise to decrease. The PianoBar can also respond to MIDI Program Change commands – setting the base channel on which it responds is set in "Options" (p. 30); default is MIDI channel 16.

Changing Volume on Channels 1-4:

The Volume of channels 1-4 can be set by pressing the corresponding channel button below the display and using the Value knob to change the value. The Values are 1 to 10. This is useful for quick adjustment of a Setup's sounds during a performance. When in the Main Setup page, pressing a channel button "solos" that channel (turns off all other channels) as well as provides access to the volume adjustment for that channel. Be aware that if you are holding a note and press a channel button, that note will not turn off, because the MIDI channel it is on is deactivated

and can't receive the information that the note has been released. Simply put, don't use the Channel buttons while playing, or you are likely to get hung notes. If this does happen, pressing Escape will turn the hung notes off.

All Notes Off:

In case of stuck notes, in the Main Setup Page, the Escape button doubles as an "All Notes Off" button. All Notes Off is a MIDI command that does just that – turn off any notes that are on, on any active channels.

What is a Setup?

A Setup determines what happens to the PianoBar when a key on the Piano is played. A Setup can be configured to play the PianoBar's internal sounds, or send MIDI through the MIDI output. There is much more to what can be in a Setup. A Setup contains the following global parameters that are independent of the 16 MIDI channels:

- Setup Number
- Setup Name (accessed in the Library function)
- Effects: Reverb type, Chorus type (defined with the Effects function)
- Assignment of Controllers A through F: Continuous Controller Numbers, and their values. (defined with the Controllers function)
- Assignment of Pedals 1 to 3: CC Numbers (defined with the Controllers function)

A Setup also contains a number of parameters for each MIDI Channel. There are 16 MIDI channels supported, and each can be Setup differently resulting in complex Setups. These parameters are defined in the Channel Setup pages or the Channel Route function:

- Bank Select
- Program Number
- Volume
- Zone
- Velocity Curve
- Pan
- Transpose
- Reverb amount
- Chorus Amount
- MIDI sent to internal sounds, MIDI out, or both
- MIDI In off, routed to internal sounds, Scanner LEDs, or both.

There are three types of Setup: User, Card, and Factory. The current Setup on the Main Setup page has a super script character: u, c, or f, identifying these types of Setups.

User Setups are stored in locations 1-60. Changes made to these Setups are instantly remembered; no saving process is required. There is no "Factory Reset" feature for these Setups. Should you wish to return the PianoBar to the original settings, you will have to back these Setups to Library Cards (60 Setups require 3 Library Cards). Backing up the Setups is performed with the Library Function "Setups _ to _ Copy to _ to _" described on page 25 of the manual. Before copying Setups

to a Library Card, it must be formatted, done with the Library Function "Format Card". A 3-pack of Library Cards (part no. PB-LC-3PK) is available for $34.95.

Card Setups are in locations 61-80. These Setups are blank unless a PianoBar Card with Setups stored on it is inserted in the card slot on the front of the Control Module. To store Setups on a card, simply copy a Setup to a location from 61-80 with a formatted Library Card inserted in the Card slot.

Factory Setups are in locations 81-100. They are stored in permanent memory.

EDIT MENU

The Edit Menu is asked by pressing the Enter/Edit button when on the Main Setup Page. Getting back to the Main Setup page is done by pressing the Escape button. The Edit Menu looks like this:

O	l	u		L	i	b		C	h	n	S	e	t	u	p		C	n	t	r	l	r	s
E	f	f	e	c	t	s		C	h	n	R	o	u	t	e		O	p	t	i	o	n	s

Each item in the Edit menu is a different set of functions for the Piano Bar. There are a total of six edit functions:

- Library – abbreviated as "Lib"
- Channel Setup – abbreviated as "ChnSetup"
- Controllers – abbreviated as "Cntrlrs"
- Effects
- Channel Route – abbreviated as "ChnRoute"
- Options

The overall architecture is shown on page 19. To access any of the Edit functions, simply move the cursor using the Cursor buttons underneath the Function to be accessed and press Enter. Returning to the Edit Menu from any of the Functions is accomplished by pressing the Escape button.

LIBRARY

The Library Edit function is used to name and manage the location of Setups and Create Library Cards

There are a total of 10 Library functions. Placing the cursor under the function and rotating the Value control selects the different functions. The following are the functions and how they work:

Name:

0	1	u		P	l	a	y	e	r			P	i	a	n	o							
N	a	m	e																				

The Setup Name and Number are displayed, along with the current Library function, Name. With the cursor placed underneath the function, Press Enter/Edit to Begin naming the preset. Use the cursor buttons to move the cursor to the desired position and the Value control to change characters. Press escape when finished.

Copy to Setup:

0	1	u		P	l	a	y	e	r			P	i	a	n	o							
C	o	p	y		t	o		S	e	t	u	p	:	b	l	u							

This allows you to copy the current Setup to another one of the 80 user accessible memory locations. Copying to a setup between 61-80 copies the setup to a library card – if there is a library card plugged into the slot. First, select the desired destination location where the current Setup will be copied. With the cursor under the function, press Enter/Edit. The display will prompt to press Enter to complete the process or press Escape to cancel.

Swap with Setup:

0	1	u		P	l	a	y	e	r			P	i	a	n	o							
S	w	a	p		w	i	t	h		S	e	t	u	p	:	b	l	u					

This allows you to swap the current Setup with another. This is useful for organizing your Setups. First, select the Setup to swap locations. With the cursor placed underneath the function, Press Enter.

You will be prompted to press Enter to complete, or press Escape to cancel.

Clear this Setup:

0	1	u		P	l	a	y	e	r		P	i	a	n	o					
C	l	e	a	r		t	h	i	s		s	e	t	u	p					

This clears the memory of the current Setup and returns it to its default settings. With the cursor placed under the function, press Enter. The display prompts to press Enter to complete, or press Escape to cancel.

Setups _ to _ Copy to _ to _:

S	e	t	u	p	s			1	u		t	o			1	u				
C	o	p	y	T	o			1	u		t	o			1	u				

This allows the copying of a range of Setups to another location range. Copying to a range between 61-80 will write those setups to the library card that is plugged into the library card slot. First, select the starting and ending Setups that you want to copy. Then select the destination range where the Setups will be copied. Move the cursor under the function and press Enter. The display will prompt for you to press Enter to complete, or Escape to cancel.

Setups A to B – Clear these Setups:

S	e	t	u	p	s			1	u		t	o			1	u				
C	l	e	a	r		t	h	e	s	e		s	e	t	u	p	s			

This allows the clearing of a range of Setups. Move the cursor under the function and press Enter. The display will prompt for you to press Enter to complete, or Escape to cancel.

Format Card:

```
| | | | | | | | | | | | | | | | |
| F | o | r | m | a | t | | C | a | r | d | | | | | |
```

Format Card is used to create a blank Library Card for storing your Setups. Any Setups present on the Card will be erased when this is performed, so be sure the card being formatted does not contain any valuable data before proceeding. With the cursor placed under the function, press Enter. The display prompts to press Enter to complete, or press Escape to cancel.

Make Remote Card, Make Scanner Card, Copy Card to Fixed:

These functions are used at the factory for diagnosis purposes only and are not used in operation of the PianoBar.

CHANNEL SETUP

The Channel Setup Function is where the bulk of editing is done to configure how the PianoBar sends MIDI information, and what the internal sounds are. The Channel Setup Function contains two pages. Use the Enter button to toggle between them unless the cursor is under the Zone parameter (in this case pressing Enter enables the selecting of the Zone for the current MIDI channel). The two pages look something like this:

```
| C | h | 1 | | s | | | O | : | O | O | 1 | | G | r | a | n | d | P | i | a | n | o |
| p | g | 1 | | V | o | l | : | + | 4 | | | M | i | d | i | : | a | l | l | | Z | o | n | e |
```

```
| C | h | 1 | | s | | V | e | l | : | / | | P | a | n | : | O | | | T | r | n | : | O | f | f |
| p | g | 2 | | R | e | v | e | r | b | : | O | | C | h | o | r | u | s | : | O | | |
```

The first item, **CH**, stands for MIDI Channel. With the cursor under this parameter, the Value control can be used to select the channel to configure. There are 16 MIDI channels. Each can have its own independent settings in the Channel Setup function. This parameter is on both page 1 and 2.

26

S stands for solo. When this character is capitalized, the current channel is soloed – which means it is the only channel that can be monitored. This parameter is on both pages 1 and 2.

0:1   Grand Piano refers to the bank, program number, and the program name of the sound selected for this channel. The General MIDI sound set is organized into 128 banks. Each bank has 128 Program numbers, but not all program numbers have a sound associated with them. The easiest way to select the sound assigned to a channel is to move the cursor under the name of the sound. Rotating the value knob changes the current sound, which are grouped according to type of sound, i.e. keyboards, guitars, winds, strings, etc. This way you can quickly select a type of sound you like and try variations without having to refer to a chart of banks and program numbers.

Vol: This sets the volume of the current channel sound.

Midi: This sets the routing of the MIDI signals generated by the Scanner Bar and Pedal Sensor for the current channel. Choose the internal sound engine, the external MIDI output, or both.

Zone: Each channel can be assigned a zone on the keyboard. This means that a sound can be assigned to a particular range of keys. With the cursor under this parameter, press Enter. The LEDs above the keys show the current zone boundaries, and the display now prompts you to play the keys that correspond to the desired zone boundaries. The keys must be played simultaneously to set the zone boundaries. Press escape when complete.

Vel: stands for velocity curve. This refers to the MIDI velocity value that is generated by the PianoBar when a note is played. The curves determine how the velocity of playing affects the loudness of the current channel sound. For instance some sounds, like organs, do not have a dynamic response to touch – this can be set by choosing a velocity

curve that is not affected by the velocity of your actual playing. There are 10 curves, their responses are displayed graphically.

Pan: This is the left/right balance of the sound assigned to the current channel.

Trn: This refers to the transposition of the sound assigned to the current channel. Transposition can be applied in semitones – up to 99 semitones up or down from the key being played.

Reverb: This is the amount of Reverb applied to the current channel sound.

Chorus: This is the amount of chorus applied to the current channel sound.

CONTROLLERS

A	#				S		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
V	a	l	:				B																

The Controllers function is used to assign up to 6 (displayed as A through F) MIDI CC numbers and values on up to 16 MIDI channels. The Controllers function is also for assigning the function of the 3 Pedal Controller inputs. The CC values are sent to either the PianoBar's internal synth, the external MIDI output, or both when a Setup is selected. MIDI CCs are typically used for setting the characteristics of a sound, such as the attack time, or the portamento speed. A MIDI CC message consists of a Number - which corresponds to a parameter that is to be changed, and a Value – which refers to how much that parameter is changed. The upper left hand corner displays the current Controller (A through F) or Pedal Controller (Pedal 1-3). For Controllers A through F, the MIDI CC Number is set (after the # symbol) and a Value is selected. Move the cursor under the Channels to enable this message to be sent to the internal synth, the external MIDI output, or both. For the Pedal Controllers, a MIDI CC Number is selected, and the position of the Expression pedal

28

connected to that Pedal Controller input determines the value sent. The Pedal Controllers can be used as real time controllers. A very useful application for this is to control the Volume of the PianoBar's sound with an Expression pedal.

EFFECTS

R	e	v	e	r	b		C	h	o	r	u	s							S
P	l	a	t	e			O	f	f										

Effects function assigns the global effects for each Setup. Choose Reverb type or Chorus type.
Reverb effects available are:
- Room 1
- Room 2
- Room 3
- Hall 1
- Hall 2
- Plate
- Delay
- Pan Delay

Chorus effects available are:
- Chorus 1
- Chorus 2
- Chorus 3
- Chorus 4
- Feedback
- Flanger
- Short Delay
- FB (Feedback) Delay

CHANNEL ROUTE

O	u		I	n		CH	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
I	n	t								I												

Channel Route is for configuring the PianoBar's MIDI input and viewing the Routing of the MIDI output.
Press Enter to switch between MIDI in and MIDI out. To Configure the PianoBar's MIDI input, move the cursor underneath the channel that you wish to configure. The Value control is used to select

whether the MIDI input is sent to the Internal sounds, the scanner bar LEDs, Both, or neither. When viewing the MIDI out Routing for a Setup, the settings can be viewed in this screen, but not changed. The routing of MIDI out is done on page 1 of the Channel Setup function.

OPTIONS

```
D S P : 7   L a g C o m p : 2   T u n e : o f f
P C : 1 2 7   L E D T R A C K   B a s e C h : 1
```

Options are global functions, independent of the Setups. The following are the descriptions of the Options:

- DSP: Display viewing angle
- LagComp: adds a delay to the MIDI signal to align the start of a MIDI event with the hammers striking the keys.
- Tune: Globally tunes the sound engine +/- 100 cents.

- PC: switches between 0 to 127 and 1 to 128 Program Change numbering schemes.
- LED TRACK: The word TRACK indicates that the Scanner Bar's LEDs light up when the key under it is played. With the cursor underneath this, use the value knob to turn the LED tracking off. The word track changes to lowercase.
- Base CH: Base Channel for PianoBar to receive Program Change commands.

4. ABOUT MIDI

For those who know MIDI, you may want to skip this section and go to the next. However, if you are new to MIDI or a bit rusty, this section is for you. A complete tutorial on MIDI is beyond the scope of this program. We recommend The MIDI Manual, by David Huber, published by Butterworth-Heinemann.

MIDI is an acronym for Musical Instrument Digital Interface. It is a communication standard by which aspects of a musical performance can be recorded or transmitted between electronic musical devices, such as synthesizers, in order to trigger sounds, alter sounds, begin sequences of events, and so on.

Musical performances consist of the SOUND of the Music being performed, as well as the ACTIONS of the musician on his instrument that produce the sound. MIDI translates the ACTIONS that a musician takes when he/she performs a piece of music into data that represent them. For instance – When you play a key on a piano you start a musical event – a note. MIDI defines the beginning of a new note a "NOTE ON" message. Similarly, when you release a key, that musical event ends. MIDI defines the end of a note as "NOTE OFF". This allows for two very important functions:

- A NOTE ON produced on a MIDI keyboard can be sent to a different MIDI device to play a sound.
- A NOTE ON message can be recorded and played back in MIDI compatible software, without recording the sound of the performance. Thus the ACTIONS of the performance are recorded and can be played back or edited.

There are many more aspects to MIDI than just a NOTE ON Message, for instance, every NOTE ON has a VELOCITY value. Velocity corresponds to how fast a key is pressed down which usually, as in a Piano, corresponds to the loudness of the note that sounds.

MIDI also allows for more than one instrument to sound at the same time, as in an ensemble or an orchestra. A single MIDI cable can send messages on up to 16 channels at a time, allowing for up to 16 different "instruments" to sound at once. A General MIDI synthesizer (like the sounds in the Control Module) contains a standard set of sounds that are arranged in a standard list, called a bank. Each bank has 128 sounds, called Programs. A MIDI message called a "Program change" message allows the selection of one of these sounds. A Program change message consists of a Channel number, and a program number. Furthermore, most synthesizers have more than 128 sounds, so MIDI allows for multiple banks – up to 128.

A sound played by MIDI can be varied after it is started, just like on many acoustic instruments. Performance effects such as vibrato can be applied using a type of message called "Continuous Controller", or CC for short. A MIDI CC message consists of a CC Number, from 0-127, which identifies the type of change that is to be made to the sound, then a value from 0 to 127 that determines the amount of the change to the sound. Types of changes include changes to the Volume (CC#7) and Pan or Left Right position (CC#10). Some MIDI CC numbers are specified to do particular musical functions, others are not. A list of the MIDI CCs that the PianoBar's sound engine responds to is included in Appendix B.

MIDI messages can be recorded by a computer program called a Sequencer, which records MIDI data. The MIDI data can be played back into a MIDI device and will sound like the original performance. Because MIDI data is a representation of a musical performance, it is easy to edit MIDI events in a sequencer, or to display them as notes on a staff – like sheet music. Programs such as Sibelius® combine MIDI recording as well as sophisticated notation capability in order to aid with composition.

MIDI's capabilities are vast – and the power of adding MIDI capability quickly to an acoustic

piano with the PianoBar will open many creative doors to pianists and composers who explore the possibilities.

CREATING YOUR OWN SETUP

The following will walk you through the steps to creating your own Setups with two examples. The first example is a simple 1-layer Setup with Expression Pedal control of the Volume. The second example walks you through some of the more advanced features of the PianoBar.

Example 1 – String Ensemble

A common accompaniment to an acoustic piano sound in music is the sound of a string ensemble. The characteristics of this sound are that it starts somewhat slowly, sustains as long as a note is played (as opposed to a piano tone which fades out) and fades out somewhat slowly.

Step 1 – Clear Setup
- First, we will create a default Setup. Choose a Setup that you don't plan on using.

- Press the Enter/Edit button. Move the cursor under "Lib" and press Enter.
- Move the Cursor under "Name". Use the Value control to advance through the functions until you reach "Clear this Setup".
- Move the cursor under and press Enter. The display will prompt you to press Enter for Yes, or Escape for No – press Enter.
- The Setup will now contain all the default settings.

Step 2 – Name Setup
- Now let's go ahead and name this Setup. With the Cursor moved under the "Clear this Setup", use the Value control to
go back to the "Name" function.
- Move the cursor under the Setup Name, which should be blank. Use the Value control to select the first Character – "S" – then move the cursor to the next character and select a "t". Repeat this until you have spelled "String Ensemble".
- Press Escape to return to the Edit Menu.

Step 3 – Channel Setup
- Now it's time to get the sound we're after. Move the cursor under Channel Setup and press Enter.
- Move the cursor underneath the name of the sound, which should be "Grand Piano".
- Use the Value control to scroll through the sounds until you reach "String Ens 1"

Step 4 – Effects
- Let's add some Reverb to our String Ensemble sound. Press Enter. You will now see page 2 of the Channel Setup function. Move your cursor under the Reverb amount, and increase this to 5
- Press Escape, Move the cursor to "Effects" and press Enter.
- Move the cursor under Reverb. Use the Value to select "Hall1"

You have now created a simple 1-layer Setup.

Let's make another Setup, this time let's use some of the PianoBar's powerful MIDI possibilities to make a 3-layer Setup that illustrates the use of Zones, Panning, Transposing, Velocity Curves, and Controllers.

Example 2 – Bass and Vibe Space

Step 1 – Clear Setup
- First, we will create a default Setup. Choose a Setup that you don't plan on using.
 - Press the Enter/Edit button. Move the cursor under "Lib" and press Enter.
- Move the Cursor under "Name". Use the Value control to advance through the functions until you reach "Clear this Setup".
- Move the cursor under and press Enter. The display will prompt you to press Enter for Yes, or Escape for No – press Enter.
- The Setup will now contain all the default settings.

Step 2 – Name Setup
- Now let's go ahead and name this Setup. With the Cursor moved under the "Clear this Setup", use the Value control to go back to the "Name" function.

- Move the cursor under the Setup Name, which should be blank. Use the Value control to select the first Character – "B" – then move the cursor to the next character and select a "a". Repeat this until you have spelled "Bass and Vibe Space".
- Press Escape to return to the Edit Menu.

Step 3 – Building the Layers

- First we'll configure Channel 1. Move the cursor under Chn Setup and press Enter.
- Move the cursor underneath the name of the sound. Use the Value control to scroll through the names, until you reach "Vibraphone".
- Move the cursor underneath "Zone" and press Enter. The display now prompts you to "Play Zone boundaries", which means the highest and lowest note of the Zone. The boundary notes must be played at the same time. Let's set this Zone to extend from the D flat below middle C to the highest note on the piano. Play these two notes simultaneously and then press Escape.

- Move the cursor back to "Midi: int" and press Enter – page 2 of Channel Setup will now be displayed.
- Move the cursor under the "Pan" setting, and use the Value control to increase the pan to R6.
- Move the cursor under Reverb amount and set it to 7. Press Enter to return to Page 1.
- Move the cursor under the Channel. Use the Value control to increase the Channel number to Channel 2.

- Now we'll set up Channel 2. Move the cursor underneath the name of the sound. Use the Value control to scroll through the sounds until you reach "Acoustic Bass".
- Move the cursor underneath "Zone" and press Enter. Play the C 1 octave below middle C and the lowest A simultaneously to set the Zone boundaries. Press Escape.
- Move the cursor back to "Midi: int" and press Enter – page 2 of Channel Setup will now be displayed.

- Move the cursor under the "Pan" setting, and use the Value control to decrease the pan to L6.
- Move the cursor under the Channel. Use the Value control to increase the Channel number to Channel 3.

- On to Channel 3! So far we have a Bass sound panned to the Left from the Low A to the C an octave below middle C, and a Vibraphone sound panned to the right above that. Let's add a synthesizer sound that fades in a perfect fifth above the note played as the Vibraphone fades out, and features portamento, or glide, in between the notes. Further more this layer will only come in when the piano is played with more velocity.
- Move the cursor underneath the name of the sound. Use the Value control to scroll through the sounds until you reach "Warm Pad".
- Move the cursor underneath "Zone" and press Enter. Play the D flat below middle C and the highest note on the piano simultaneously and then press Escape.

- Move the cursor back to "Midi: int" and press Enter – page 2 of Channel Setup will now be displayed.
- Move the cursor under the Velocity curve. Use the Value Control to advance to the 6th Velocity curve (_/) which means this sound will begin to be heard at medium velocities.
- Move the cursor to the Transpose setting. Use the Value control to increase the number displayed to +7. This makes the sound pitched 7 semitones, or a perfect fifth, higher than the note played.
- Press Escape to return to the Edit menu
- Finally, we will add portamento to Channel 3's "Warm Pad" with the Controllers function – this will require programming two MIDI CC messages. Move the cursor underneath the Controller function and press Enter.
- Move the cursor next to A#. Use the Value control to increase the number displayed to 65. This is the MIDI CC number for turning portamento in or off.
- Advance the cursor to the Value. Use the Value control to increase the MIDI CC value to 64. This is the Value that turns portamento on.

-Advance the cursor to the Channel 1 location it should say "B". Use the Value control to turn this off. Move the cursor to the Channel 3 location set this to "I" for internal.

- Now, move the cursor back to the "A#". Use the Value control to change this to "B#".

- Move the cursor to the right of "B#" and increase the MIDI CC number to 5. This corresponds to the MIDI CC number for portamento rate.

- Move the cursor to the MIDI CC Value. Use the Value control to change this to 64.

-Advance the cursor to the Channel 1 location it should say "B". Use the Value control to turn this off. Move the cursor to the Channel 3 location set this to "I" for internal.

Now we're done! Now you have learned how to make a complex Setup.

Appendix A
MIDI IMPLEMENTATION CHART

Moog Music Inc.   **9/30/03**

Moog PianoBar   MIDI Implementation Chart

Function…		Transmitted	Recognized	Remarks
Basic Default		**1-16**	**1-16**	Memorized
Channel Changed		**1-16**	**1-16**	Memorized
Mode	Default	**1-4***	**1-4***	*user selectable
	Messages	**O**	**O****	**All Notes Off
	Altered	**X**	**X**	
Note		**0-127***	**0-127**	
Number	True Voice	**21-108**	**0-127**	
Velocity	Note On	**O**	**O**	*value is 64
	Note Off	**O***	**X**	
After		**X**	**X**	
Touch				
Pitch Bend		**X**	**O**	

Control Change	O*	O**	*0-127 ** 0-2,5-7,10,11, 64-67,71- 78,80,81,91,93, 100,101 (RPN) 120,121,123,126, 127
Program Change	O	O	
True #	0 –127	0 –127	
System Exclusive	O	O	
System Common	X	X	
System Real Time	X	X	
Aux Messages	X	X	
Notes			

Mode 1: Omni On, Poly   **Mode 2: Omni On, Mono**   **O: Yes**
Mode 3: Omni Off, Poly   **Mode 4: Omni Off, Mono**   **X: No**

Appendix B – User and Factory Setup Chart

The Setups provided in the PianoBar include useful basic sounds and interesting layered sounds. The following is a chart of the sounds used in the Setups and a brief description for reference. The first 60 Setups are user definable, feel free to use these setups as a springboard for your own creations.

Setup#	Name	Channel Bank:Pgm# Name	Channel Bank:Pgm# Name	Channel Bank:Pgm# Name	Channel Bank:Pgm# Name	Description
1u	Virtual Player Piano	ch1 0:1 Grand Piano1	ch2 0:1 Grand Piano1			Set up to use with Sibelius® for creating piano scores. ch 1 and ch 2 split at f below middle c
2u	String Bean	ch1 0:49 String Ens1	ch2 0:50 String Ens2			Basic string section sound – nice with slow sustained chords
3u	Organic	ch1 127:12 Elec Orgn4	ch2 127:15 Pipe Orgn 3	ch3 0:17 Drawbar Orgn		Electric organ sound
4u	Good Vibes	ch1 0:12 Vibraphone	ch2 0:11 Music Box	ch3 0:79 Whistle		Vibes sound with extra sparkle and sustain
5u	Electric Piano	ch1 0:6 El. Piano 2	ch2 127:7 Elec Piano4			Subtle combination with acoustic piano, but adds depth to the sound
6u	Brass Knuckles	ch1 127:25 Syn Brass 1	ch2 0:62 Brass Section	ch3 0:61 French Horn		Bright brassy sound

7u	Warm Pad	ch1 0:90 Warm Pad	ch2 8:51 SynStrings3	ch3 0:76 Pan Flute		Warm sound with a slow attack, good with slow, sustained chords
8u	Flutey	ch1 0:73 Piccolo 1	ch2 0:76 Pan Flute			Nice flute sounds with echo
9u	Vocal Ease	ch1 0:53 Choir Aahs	ch2 0:54 Voice Oohs	ch3 127:35 Choral		Smooth choir sound
10u	Bells	ch1 127:47 Bell Singer	ch2 0:9 Celesta	ch3 0:15 TubularBells		Sparkly bell sound
11u	Caribbean	ch1 0:115 Steel Drums	ch2 0:109 Kalimba	ch3 0:79 Whistle		Steel drums with extra sustained sound
12u	Ravi	ch1 0:105 Sitar	ch2 0:105 Sitar	ch3 0:27 Jazz Guitar		Sitar sounds – for morning or evening raga
13u	Electric Harpsichord	ch1 0:7 Harpsichord	ch2 0:7 Harpsichord	ch3 0:7 Harpsichord		Harpsichord sounds – doubled and transposed for extra thickness
14u	Mallet Head	ch1 0:13 Marimba	ch2 127:105 Marimba	ch3 0:14 Xylophone	ch4 0:14 Xylophone	Multi-layered mallet percussion sound
15u	Synth Strings	ch1 0:51 SynStrings1	ch2 8:51 SynStrings3	ch3 0:52 SynStrings2		Synthetic String sound – great with sustained chords
16u	Cosmic Whistling	ch1 127:110 Whistle 2	ch2 127:109 Whistle 1			Whistle sound with portamento and lots of echo

17u	Sweet Harp	ch1 0:47 Orc Harp	ch2 127:59 Harp 2			Nice harp sound – play arpeggiated chords with this one
18u	Accordionly	ch1 0:24 Tango Accord	ch2 127:16 Accordion	ch3 8:22 Italian Accordion		Big accordion sound
19u	Organism	ch1 127:11 Elec Orgn3	ch2 0:19 Rock Organ	ch3 8:17 DetunedOrg	ch4 0:18 Perc Orgn	Big organ sound with vibrato, echo
20u	Voices in the Mist	ch1 0:89 New Age	ch2 0:101 Brightness	ch3 0:93 Bowed Pad		Pretty breathy sound
21u	Bass and Strings	ch1 0:49 String Ens 1	ch2 0:50 String Ens 2	ch3 0:33 Acoustic Bass		Bass up to an octave below middle C, Strings above that
22u	Bass and Vibes	ch1 127:98 Vibe 1	ch2 127:99 Vibe 2	ch3 0:33 Acoustic Bass		Bass up to an octave below middle C, Vibes above that
23u	Bass and Voices	ch1 0:54 Voice Oohs	ch2 0:53 Choir Aahs	ch3 0:35 Picked Bass	ch4 0:33 Acoustic Bass	Bass up to an octave below middle C, Choir above that
24u	Bass and Organ	ch1 0:19 Rock Organ	ch2 127:9 Elec Orgn1	ch3 0:18 Perc Orgn	ch4 0:33 Acoustic Bass	Bass up to an octave below middle C, Organ above that
25u	Bass and Smooth Pad	ch1 0:90 Warm Pad	ch2 127:36 Glasses	ch3 0:36 FretlessBass		Bass up to an octave below middle C, Smooth pad above that

26u	Bass and Brass	ch1 8:63 SynBrass2	ch2 127:96 Brass Sect 1	ch3 0:33 Acoustic Bass	ch4 0:38 Slap Bass2	Bass up to an octave below middle C, Brass above that
27u	Bass and Strings 2	ch1 0:46 PizzStrings	ch2 0:50 String Ens 2	ch3 0:33 Acoustic Bass	ch4 0:43 Cello	Bass and deep Cello up to an octave below middle C, Pizzicato and sustained strings above that
28u	Bass&Vibes&MutedHorn	ch1 0:12 Vibraphone	ch2 0:13 Marimba	ch3 0:60 Mute Trumpet	ch4 0:33 Acoustic Bass	Bass up to an octave below middle C, Vibes above that to 3 octaves above middle C, then muted trumpet
29u	Bass and Bells	ch1 127:100 Syn Mallet	ch2 9:15 Carillion	ch3 127:33 Fantasy	ch4 0:33 Acoustic Bass	Bass up to an octave below middle C, Bells above that – can make the piano sound very "honky-tonk"
30u	Bass and Echo Flute	ch1 0:73 Piccolo 1	ch2 127:109 Whistle 1	ch3 127:109 Whistle 1	ch4 0:36 Fretless Bass	Bass up to an octave below middle C, Flute with echo above that
31u	Bass and Synth Sweep	ch1 2:103 Echo Pan	ch2 0:96 Sweep	ch3 0:95 Halo Pad	ch4 0:33 Acoustic Bass	Bass up to an octave below middle C, Synth sound with slow attack and sweeping filter above that

32u	Synth Bass and Lead	ch1 127:45 Doctor Solo	ch2 1:81 Square	ch3 1:82 Saw	ch4 127:29 Syn Bass 1	Bass up to an octave below middle C, Synth lead sound above that
33u	Bass and Elec Guitar	ch1 0:31 Distorted Guitar	ch2 8:31 Feedback Gtr	ch3 8:29 Funk Guitar	ch4 0:35 Picked Bass	Bass up to an octave below middle C, clean guitar attack with feedback swell above that
34u	Bass and Reeds	ch1 0:70 English Horn	ch2 0:72 Clarinet	ch3 127:85 Oboe	ch4 0:36 Fretless Bass	Bass up to an octave below middle C, blended woodwind sounds above that
35u	Bass and Toy Piano	ch1 8:32 Gtr Feedback	ch2 8:32 Gtr Feedback	ch3 0:10 Glockenspiel	ch4 127:68 Elec Bass 2	Bass up to an octave below middle C, sparkly toy piano above that
36u	Bass and Pan Flute	ch1 127:111 Bottleblow	ch2 0:76 Pan Flute	ch3 127:44 Echo Pan	ch4 127:65 AcoustBass1	Bass up to an octave below middle C, Pan Flute above that
37u	Bass and E Piano	ch1 127:5 Elec Piano 2	ch2 127:4 Elec Piano 1	ch3 127:4 Elec Piano 1	ch4 127:71 Fretless 1	Bass up to an octave below middle C, heavily chorused electric piano above that
38u	Bass and Accordion	ch1 127:16 Accordion	ch2 0:22 Fr Accordion	ch3 8:22 It Accordion	ch4 127:68 Elec Bass2	Bass up to an octave below middle C, accordion above that

39u	Bass and Pipe Organ	ch1 0:21 Reed Organ	ch2 127:13 Pipe Orgn 1	ch3 0:20 Church Organ	ch4 0:36 FretlessBass	Bass up to an octave below middle C, pipe Organ above that
40u	Bass and Bell Strings	ch1 0:50 String Ens 2	ch2 127:36 Glasses	ch3 127:33 Fantasy	ch4 0:33 Acoustic Bass	Bass up to an octave below middle C, Strings layered with Bells above that
41u	Zen Garden	ch1 8:108 Taisho Koto	ch2 0:108 Koto	ch3 0:107 Shamisen	ch4 127:107 Sho	Japanese instruments layered together for a bright plucked sound
42u	Kalimba Pad	ch1 0:109 Kalimba	ch2 127:100 Syn Mallet	ch3 0:101 Brightness	ch4 0:55 Synth Voices	Kalimba (thumb piano) layered with vocal sounding pad
43u	Steel&Wood&Warmth	ch1 0:26 Steel Guitar	ch2 8:27 Hawaiian Gtr	ch3 0:96 Sweep	ch4 0:14 Xylophone	Layered sound with acoustic guitar, xlophone and sustained synth
44u	Cool Copland	ch1 0:50 String Ens 2	ch2 0:51 SynStrings 1	ch3 127:36 Glasses	ch4 127:35 Choral	Sustained string/choral sound with layers transposed in 5ths
45u	Guitar Fantasy	ch1 0:29 Muted El Gtr	ch2 8:29 Funk Guitar	ch3 0:32 Guitar Harmonics	ch4 8:32 Gtr Feedback	Clean guitar attack with feedback and harmonics fading in
46u	Full Orchestra	ch1 0:48 Timpani	ch2 0:49 String Ens 1	ch3 0:62 BrassSection	ch4 8:49 Orchestra	Timpani in the left hand, strings and brass in the right, full orchestra all across for a big orchestra sound

47u	Toy Piano	ch1 0:9 Celesta	ch2 0:10 Glockenspiel	ch3 127:100 Syn Mallet	ch4 0:113 Tinkle Bell	Bell-like and sparkly like a toy piano
48u	Bright and Funky	ch1 0:82 Saw Lead	ch2 127:20 Clavi 1	ch3 127:22 Clavi 3	ch4 127:21 Clavi 2	Clavinet mixed with synth lead
49u	Electric Groove	ch1 0:33 Acoustic Bass	ch2 0:5 El. Piano 1	ch3 0:50 String Ens 2	ch10 0:26 TR-808 Set	Funky drum machine in the left hand with bass, and electric piano in the right – top 2 octaves of the piano have a string ensemble sound
50u	Fusion Combo	ch1 0:29 Muted El Gtr	ch2 0:12 Vibraphone	ch3 0:35 Picked Bass	ch10 0:33 Jazz Set	Drum Set in the left hand with bass guitar, guitar sounds and Vibes in the right hand
51u	Slow Harpsichord	ch1 0:7 Harpsichord	ch2 127:17 Harpsi 1	ch3 127:18 Harpsi 2	ch4 0:7 Harpsichord	Harpsichord sounds, but with very slow attack times, so they fade in. Really pretty with sustained chords
52u	Slow Growth 1	ch1 127:109 Whistle 1	ch2 127:110 Whistle 2	ch3 0:84 Chiff	ch4 0:76 Pan Flute	Slowly fading in with flutelike timbres, great with sustained chords

53u	Floating Atmosphere	ch1 127:38 Atmosphere 1	ch2 0:100 Atmosphere 2	ch3 0:32 Gtr Harmonics	ch4 0:32 Gtr Harmonics	Guitar-like atack with nice "floating" harmonics fading in
54u	Floating Bells	ch1 127:47 Bell Singer	ch2 0:93 Bowed Pad	ch3 127:36 Glasses	ch4 0:10 Glockenspiel	Pretty sustaining bell-like timbre
55u	Long Time Growth	ch1 8:81 Sine	ch2 8:81 Sine	ch3 8:81 Sine	ch4 8:81 Sine	4 pure tones layered with different transpositions (root, $4^{th,}$ 5th) inner voices fade in slowly
56u	Smooth Background	ch1 127:108 Shakuhachi	ch2 0:52 SynStrings 2	ch3 0:51 SynStrings 1	ch4 0:96 Sweep	Nice pad sound for playing sustained chords
57u	Very Electric	ch1 127:21 Clavi 2	ch2 127:40 Funny Vox	ch3 127:69 Slap Bass 1	ch4 127:31 Syn Bass 3	Bright and bold lead sound
58u	On the Mountain	ch1 0:124 Bird Tweet	ch2 127:108 Shakuhachi	ch3 8:81 Sine	ch4 0:51 SynStrings 1	Pretty pastoral pad with almost subliminal bird song
59u	Reedy	ch1 0:65 Soprano Sax	ch2 0:66 Alto Sax	ch3 0:71 Bassoon	ch4 0:70 English Horn	Nice blended woodwind sound
60u	Did We Break It!	ch1 9:126 Burst Noise	ch2 8:126 Starship	ch3 2:128 Laser Gun	ch4 5:125 Wind Chime	Wild sound effect!
81f	String Bean	ch1 0:49 String Ens1	ch2 0:50 String Ens2			Basic string section sound – nice with slow sustained chords
82f	Organic	ch1 127:12 Elec Orgn4	ch2 127:15 Pipe Orgn 3	ch3 0:17 Drawbar Orgn		Electric organ sound

83f	Good Vibes	ch1 0:12 Vibraphone	ch2 0:11 Music Box	ch3 0:79 Whistle		Vibes sound with extra sparkle and sustain
84f	Electric Piano	ch1 0:6 El. Piano 2	ch2 127:7 Elec Piano4			Subtle combination with acoustic piano, but adds depth to the sound
85f	Brass Knuckles	ch1 127:25 Syn Brass 1	ch2 0:62 Brass Section	ch3 0:61 French Horn		Bright brassy sound
86f	Warm Pad	ch1 0:90 Warm Pad	ch2 8:51 SynStrings3	ch3 0:76 Pan Flute		Warm sound with a slow attack, good with slow, sustained chords
87f	Flutey	ch1 0:73 Piccolo 1	ch2 0:76 Pan Flute			Nice flute sounds with echo
88f	Vocal Ease	ch1 0:53 Choir Aahs	ch2 0:54 Voice Oohs	ch3 127:35 Choral		Smooth choir sound
89f	Bells	ch1 127:47 Bell Singer	ch2 0:9 Celesta	ch3 0:15 TubularBells		Sparkly bell sound
90f	Caribbean	ch1 0:115 Steel Drums	ch2 0:109 Kalimba	ch3 0:79 Whistle		Steel drums with extra sustained sound
91f	Ravi	ch1 0:105 Sitar	ch2 0:105 Sitar	ch3 0:27 Jazz Guitar		Sitar sounds – for morning or evening raga
92f	Electric Harpsichord	ch1 0:7 Harpsichord	ch2 0:7 Harpsichord	ch3 0:7 Harpsichord		Harpsichord sounds – doubled and transposed for extra thickness
93f	Mallet Head	ch1 0:13 Marimba	ch2 127:105 Marimba	ch3 0:14 Xylophone	ch4 0:14 Xylophone	Multi-layered mallet percussion sound

94f	Synth Strings	ch1 0:51 SynStrings1	ch2 8:51 SynStrings3	ch3 0:52 SynStrings2		Synthetic String sound – great with sustained chords
95f	Cosmic Whistling	ch1 127:110 Whistle 2	ch2 127:109 Whistle 1			Whistle sound with portamento and lots of echo
96f	Sweet Harp	ch1 0:47 Orc Harp	ch2 127:59 Harp 2			Nice harp sound – play arpeggiated chords with this one
97f	Accordionly	ch1 0:24 Tango Accord	ch2 127:16 Accordion	ch3 8:22 Italian Accordion		Big accordion sound
98f	Organism	ch1 127:11 Elec Orgn3	ch2 0:19 Rock Organ	ch3 8:17 DetunedOrg	ch4 0:18 Perc Orgn	Big organ sound with vibrato, echo
99f	Voices in the Mist	ch1 0:89 New Age	ch2 0:101 Brightness	ch3 0:93 Bowed Pad		Pretty breathy sound
100f	Bass and Strings	ch1 0:49 String Ens 1	ch2 0:50 String Ens 2	ch3 0:33 Acoustic Bass		Bass up to an octave below middle C, Strings above that

Appendix C –Sound Chart (Banks and Program Numbers)

PC	Bank 0	Bank 1	Bank 2	Bank 3	Bank 4	Bank 5	Bank 6	Bank 7	Bank 8	Bank 9	Bank 16	Bank 127
1	Grand Piano1											Acoustic Piano 1
2	Bright Piano1											Acoustic Piano 2
3	El. Grand Piano1											Acoustic Piano 3
4	Honky-tonk Piano											Elec Piano 1
5	El. Piano 1								Detuned EP 1			Elec Piano 2
6	El. Piano 2								Detuned EP 2			Elec Piano 3
7	Harpsichord								Coupled Harpsichord			Elec Piano 4
8	Clavinet											Honky Tonk
9	Celesta											Elec Org 1
10	Glockenspiel											Elec Org 2
11	Music Box											Elec Org 3
12	Vibraphone											Elec Org 4
13	Marimba											Pipe Org 1
14	Xylophone											Pipe Org 2
15	Tubular Bells								Church Bell	Car-illion		Pipe Org 3
16	Dulcimer											Accordion
17	Drawbar Organ								Detuned Organ 1			Harpsi 1

18	Perc. Organ								Detuned Organ 2			Harpsi 2
19	Rock Organ											Harpsi 3
20	Church Organ								Church Organ 2			Clavi 1
21	Reed Organ											Clavi 2
22	French Accordion								Italian Accordion			Clavi 3
23	Harmonica											Celesta 1
24	Tango Accordion											Celesta 2
25	Acoustic Guitar(Nylon)								Ukulele			Syn Brass 1
26	Acoustic Guitar (Steel)								12-str guitar		Man-dolin	Syn Brass 2
27	Jazz Guitar								Hawaiian Gtr			Syn Brass 3
28	Clean Elec Guitar								Chorus Gtr			Syn Brass 4
29	Muted Elec Guitar								Funk Gtr			Syn Bass 1
30	Overdriven Guitar											Syn Bass 2
31	Distortion Guitar								Feedback Gtr			Syn Bass 3
32	Guitar Harmonics								Gtr Feedback			Syn Bass 4
33	Acoustic Bass											Fantasy
34	Finger Bass											Harmo Pan
35	Picked Bass											Chorale

36	Fretless Bass										Glasses
37	Slap Bass1										Sound Track
38	Slap Bass 2										Atmosphere
39	Synth Bass 1								Synth Bass 3		Warm Bell
40	Synth Bass 2								Synth Bass 4		Funny Vox
41	Violin										Echo Bell
42	Viola										Ice Rain
43	Cello										Oboe 2001
44	Contrabass										Echo Pan
45	Tremolo Strings										Doctor Solo
46	Pizzicato Strings										School Daze
47	Orchestral Harp										Bell Singer
48	Timpani										Square Wave
49	String Ensemble 1								Orchestra		Str Sect 1
50	String Ensemble 2										Str Sect 2
51	Synth Strings 1								Syn Strings 3		Str Sect 3
52	Synth Strings 2										Pizzicato
53	Choir Aahs										Violin 1
54	Choir Oohs										Violin 2
55	Synth Voice										Cello 1
56	Orchestra Hit										Cello 2
57	Trumpet										Contra-bass

58	Trombone									Harp 1
59	Tuba									Harp 2
60	Muted Trumpet									Guitar 1
61	French Horn									Guitar 2
62	Brass Section						Brass 2			Elec Gtr 1
63	Synth Brass 1						Syn Brass 3			Elec Gtr 2
64	Synth Brass 2						Syn Brass 4			Sitar
65	Soprano Sax									Acou Bass 1
66	Alto Sax									Acou Bass 2
67	Tenor Sax									Elec Bass 1
68	Baritone Sax									Elec Bass 2
69	Oboe									Slap Bass 1
70	English Horn									Slap Bass 2
71	Bassoon									Fretless 1
72	Clarinet									Fretless 2
73	Piccolo									Flute 1
74	Flute									Flute 2
75	Recorder									Piccolo 1
76	Pan Flute									Piccolo 2
77	Blown Bottle									Recorder
78	Shakuhachi									Pan Pipes
79	Whistle									Sax 1
80	Ocarina									Sax 2
81	Lead 1 (Square)	Square						Sine		Sax 3
82	Lead 2 (Sawtooth)	Saw								Sax 4
83	Lead 3 (Calliope)									Clarinet 1

84	Lead 4 (Chiff)											Clarinet 2
85	Lead 5 (Charang)											Oboe
86	Lead 6 (Voice)											English Horn
87	Lead 7 (fifths)											Bassoon
88	Lead 8 (Bass+Lead)											Harmonica
89	Pad 1 (New Age)											Trumpet 1
90	Pad 2 (Warm)											Trumpet 2
91	Pad 3 (Polysynth)											Trombone 1
92	Pad 4 (Choir)											Trombone 2
93	Pad 5 (Bowed)											Fr Horn 1
94	Pad 6 (Metallic)											Fr Horn 2
95	Pad 7 (Halo)											Tuba
96	Pad 8 (Sweep)											Brs Sect1
97	FX 1 (Rain)											Brs Sect 2
98	FX 2 (Soundtrack)											Vibe 1
99	FX 3 (Crystal)											Vibe 2
100	FX 4 Atmosphere											Syn Mallet
101	FX 5 (Brightness)											Wind Bell

102	FX 6 (Goblins)										Glock
103	FX 7 (Echoes)		Echo Pan								Tube Bell
104	FX (Sci-fi)										Xylophone
105	Sitar										Marimba
106	Banjo										Koto
107	Shamisen										Sho
108	Koto							Taisho Koto			Shaku-hachi
109	Kalimba										Whistle1
110	Bagpipe										Whistle 2
111	Fiddle										Bottle Blow
112	Shanai										Breathpipe
113	Tinkle Bell										Timpani
114	Agogo										Melodic Drum
115	Steel Drums										Deep Snare
116	Woodblock							Castanets			Elec Perc 1
117	Taiko Drum							Concert BD			Elec Perc 2
118	Melodic Tom							Melo Tom			Taiko
119	Synth Drum							808 Tom	Elec Perc 1		Taiko Rim
120	Reverse Cymbal										Cymbal
121	Guit. Fret Noise	Gt Cut Noise	String Slap								Castanets
122	Breath Noise	Fl. Key Click									Triangle
123	Seashore	Rain	Thun-der	Wind	Stream	Bubble					Orchestra Hit

124	Bird Tweet	Dog	Horse Gallop	Bird2							Telephone
125	Telephone Ring	Tele-phone Ring 2	Door Creak	Door Clo-sing	Scratch	Wind Chime					Bird Tweet
126	Helicopter	Car Engine Start	Car Break	Car Pass	Car Crash	Police Siren	Train	Jet Take off	Starship	Burst Noise	One Note Jam
127	Applause	Laugh-ing	Screa-ming	Punc h	Heart-beat	Foot-step					Water Bell
128	Gunshot	Mach-ine Gun	Laser Gun	Explo-sion							Jungle Tune

Appendix D – MIDI CC Numbers
MIDI CC (Continuous Controller) Chart

MIDI CC#	Description
0	Bank Select MSB
1	Mod Wheel – default is vibrato
2	Breath Controller – default is 17 (not used)
5	Portamento time
6	Data Entry: provides data to RPN and NRPN
7	Volume
10	Pan (64 is center)
11	Expression
64	Sustain Pedal
65	Portamento On/Off
66	Sostenuto Pedal
67	Soft Pedal
71	Filter Resonance
72	Envelope Release time
73	Envelope Attack Time
74	Filter Cutoff Frequency
75	Envelope Decay Time

76	Vibrato Rate
77	Vibrato Depth
78	Vibrato Delay
80	Reverb type
81	Chorus Type
91	Reverb level
93	Chorus level
100	RPN High Byte (value=0 for RPN, followed by CC 101 value 0-2, CC 6 value 0-127)
101	RPN Low Byte (Value 0=Pitch Bend Amount, 1= Fine Tuning, 2= Coarse tuning) followed by CC6 for RPN value
120	All Sound Off
121	Reset all Controllers
123	All Notes Off
126	Mono On
127	PolyOn

Appendix E - Service and techsupport info

The PianoBar should serve you well for a long time without trouble. If the unit develops a fault, you can contact techsupport@moogmusic.com, or phone 800-948-1990 for assistance. We ask that you have a detailed explanation of your problem, and that you have sought assistance from this manual or our online support. If the unit is determined to be defective, for units sold in the US, an RMA (return materials authorization) number will be issued and the product can then be returned to the factory for service. Warranty service will be provided only in the case that the unit suffers a defect in materials or workmanship. Moog Music reserves the right to refuse Warranty service if, after inspection, the unit appears to have been damaged by misuse, such as dropping the unit.

All PianoBar materials ©2003 Moog Music Inc.
Specifications subject to change without notice

Moog Music Inc.
554C Riverside Dr.
Asheville NC USA 28801
800-948-1990
www.moogmusic.com