

MIDI Rocker LX User Guide

For Firmware Version 2.4. Date: 11/25/12



Thank you for your purchase of the MIDI Rocker LX. I hope it helps to take your Rock Band or Guitar Hero World Tour experience to the next level!

This guide is meant to help you get started using the MIDI Rocker LX. Be sure to check the website (www.ByteArts.com/midi_lx) for updated documentation, software and firmware. You can also check for updated information or ask for help at our Google Group, at <http://groups.google.com/group/midi-rocker>.

If you are using the MIDI Rocker LX with the special **Xbox Interface Option**, or the **MIDI OUT Option** be sure to read the special instructions for those options (included separately). If you want to use the MIDI Rocker LX to play guitar using a **Yamaha EZ guitar**, see the separate “EZ Guitar – LX User’s Guide”, available at www.ByteArts.com/midi_lx.

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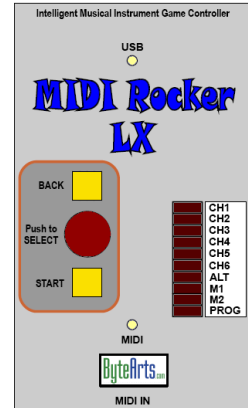
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Front Panel Controls and Lights

There are 3 buttons and 12 LEDs on the front of the MIDI Rocker LX. This chart gives an overview of what the buttons do in the different modes. *Program mode operation is described in detail on page 4.*

Button Functionality Chart

Button	Normal (Play) Mode Function	Program Mode Function
BACK button	Press – equivalent to BACK button on PlayStation controller, or the '-' button on the Wii. Hold down to press the "PS" button (same as the PS button on the PlayStation 3 controller).*	Hold down for 2 seconds to erase the current note map entry. Hold down for about 5 seconds to restore all note maps to factory defaults.
SELECT/Navigation button	Move left/right, up/down to navigate menus. Press to select a menu item (equivalent to hitting the green drum). Press and hold down to press the SELECT button (same as the SELECT button on the controller).* Hold LEFT to activate "sorting mode" (equivalent to holding down the kick pedal). Used to access the song sorting menu in Rock Band 2. Moving the navigation switch to the right, or pressing any other button will exit this mode. Hold RIGHT to activate "make setlist mode" (equivalent to holding down the X button). Used to make a setlist in the song sorting menu in Rock Band 2.	Move up/down to select a map entry or adjust a value. Move left/right to select a map number. Hold down SELECT to toggle between different program modes (editing a note map, adjusting the MIDI note velocity threshold, adjusting the note duration). See "Programming the MIDI Rocker LX" on page 4 for details.
	To change the game mode (which controller type the LX is emulating), hold RIGHT while plugging in the USB to switch to Guitar Hero mode, hold LEFT while plugging in the USB to switch to Rock Band mode.	
START button	Press – equivalent to START button on PlayStation controller or the '+' button on the Wii. Hold down for 2 seconds to enter Program mode (the PROG light will turn on).	Hold down for 2 seconds to exit program mode (the PROG light will turn off).



Lights

USB – indicates activity on the USB connection. This light will be on steady when operating normally. It will blink as the USB connection is being initialized or when the USB is in standby mode.

MIDI – indicates activity on the MIDI port. It will blink as MIDI notes are received.

NOTE: The USB and MIDI lights will both flash continuously when the MIDI Rocker LX is in firmware update mode (see "Updating the Firmware" on page 10.)

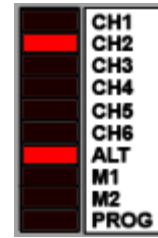
CH1-CH6 – these LEDs correspond to the "channels" or colored "notes" in the Rock Band or Guitar Hero World Tour game and will light up when a particular channel has been activated by receiving one of the programmed MIDI notes from your drum kit.

ALT – This will light up in conjunction with one of the channel LEDs (CH1-CH6) to indicate that an "alternate" channel is activated, such as one of the cymbals in Rock Band 2. (See the Channel Chart below).

M1, M2 – At startup, these are used to indicate the "game mode" (see "Starting Up" below), and after that, they indicate the active map number (see "Programming the MIDI Rocker LX" on page 4).

PROG – indicates when the MIDI Rocker LX is in program mode. (Program mode is used to assign MIDI notes to particular channels). It will also be on when the MIDI Rocker is connected to a PC running the GUI software (see "Using the GUI Software on page 8").

CHANNEL CHART		
Channel Lights	Channel Function - Rock Band Mode	Channel Function – Guitar Hero Mode*
CH1	Red drum pad	Red drum pad
CH2	Yellow drum pad	Yellow cymbal
CH3	Blue drum pad	Blue drum pad
CH4	Green drum pad	Green drum pad
CH5	Kick pedal	Kick pedal
CH6	Hi Hat pedal (Rock Band 3)	Orange cymbal
CH2 + ALT	Yellow cymbal	-
CH3 + ALT	Blue cymbal	-
CH4 + ALT	Green cymbal	-



Example: Yellow Cymbal is active.

*Note: Guitar Hero mode is currently only available with the PlayStation version of the LX, or when using the MIDI OUT option with a Guitar Hero World Tour controller on the Wii.

Making the Connections

MIDI IN: Plug a MIDI cable from the MIDI OUT of your drum kit (or other instrument) into the MIDI IN on the MIDI Rocker LX.

USB Cable: Plug one end of the USB cable into the MIDI Rocker LX, the other into a USB port on your game console. You can plug and unplug the USB connection with the console turned on, but if you unplug it while playing a game, an error message may pop up in the game screen. You can use a USB hub if you need more connections.

Note: Some hubs (like the ones built into the guitar “dongles”) do not supply enough power and may not work with the MIDI Rocker. If you are experiencing any problems, try plugging the MIDI Rocker directly into the console, or use a powered hub.

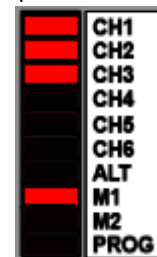
Starting Up

Once you've plugged both ends of the USB cable in and turned on the console, power will be supplied to the MIDI Rocker LX and it will go through its initialization routine. When it is first plugged in, the MIDI Rocker LX will sequence all the LEDs on and off one at a time so that you can check that they are working, and will then briefly turn on some LEDs to indicate its current settings as described below.

Initialization Display Legend

After it sequences all the LEDs on and off one at a time briefly, the MIDI Rocker LX will then briefly turn on some of the LEDs to indicate its current settings – all the LEDs will then be turned off once the initialization is complete.

LED	Description
M1	ON when MIDI Rocker LX is in Rock Band mode.
M2	ON when MIDI Rocker LX is in Guitar Hero World Tour mode. (Currently available on PlayStation only).
CH1-CH5	These LEDs will light up to indicate the current MIDI note velocity threshold setting. See “Changing the Velocity Threshold” for details. If none of these LEDs are on, it indicates the velocity threshold is set to 0. Each LED corresponds to a multiple of 20, so if the threshold is set to 60, 3 LEDs will be on.



Example: Rock Band mode, velocity threshold = 60.

*Please note: See “Changing the Game Mode” below for instructions on switching between modes.

Note: If both the USB and MIDI lights are blinking continuously, then the MIDI Rocker LX is in firmware update mode. See “Updating the Firmware” on page 10.

Changing the Game Mode

To change to “Guitar Hero” mode, hold the navigation switch to the RIGHT for about 5 seconds while plugging in the USB cable on the MIDI Rocker LX. To change it back to “Rock Band” mode, hold the switch to the LEFT while plugging in the USB. Each time you plug in the MIDI Rocker LX, it will remember which mode it was in last and stay in that mode until you change it.

If you play a Guitar Hero game with the LX in Rock Band mode, the MIDI Rocker LX will function as a Rock Band drum controller, and so the game will only show 4 note “lanes”, and there will be no orange cymbal in the game.

Programming the MIDI Rocker LX

Note Mapping Basics – Converting a MIDI Note to a Game Drum Channel

Every time you hit a pad or press a pedal on your drum kit, the drum brain sends out a MIDI Note Number. The MIDI Rocker LX receives this data, and then uses a “lookup table” to determine which game drum channel (or color) that note has been assigned to (if any). This lookup table is referred to as “note map” – it can either be programmed by connecting the MIDI Rocker LX to a Windows PC and using the GUI software, or by putting the MIDI Rocker LX into “program mode” and then playing notes on the drum kit.

The MIDI Rocker LX comes pre-programmed with a default note map already loaded and does not typically require any programming, but depending on your drum kit and how it is set up, you may need to change the programming, or you just may want to try out some different mappings.

For instructions on programming the MIDI Rocker LX using the Windows software, see the section titled “Using the GUI Software” on page 8.

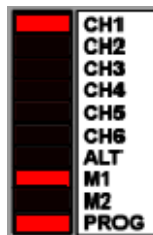
Multiple Note Maps

The MIDI Rocker LX stores two independent note maps. The currently active map number is indicated with the M1/M2 lights. If the M1 light is on, then map #1 is selected and all changes will be stored in that map. If the M2 light is on, then map #2 is selected. See “Changing Map Numbers” below for more information.

NOTE: When it first starts up, the MIDI Rocker LX will default to map #1 when in Rock Band mode, and to map #2 when in Guitar Hero Mode.

Entering Map Program Mode

To enter map program mode, hold down the START button for approximately 2 seconds. The PROG and CH1 LEDs will then come on, indicating that the MIDI Rocker LX is ready to program, with CH1 selected, as shown below:



Example: Program Map Mode (PROG), Channel 1 is selected (CH1), Map #1 selected (M1).

Exiting Program Mode

To exit program mode, simply hold down the START button again, and all the LEDs will turn off, indicating you are back in normal “play” mode.

Changing Map Numbers

While in map program mode you can push the navigation button to the LEFT or RIGHT to change the selected map number. The corresponding light (M1 or M2) will light up. When you exit program mode, the selected map will be active.

Programming a Note to a Channel

Push the Navigation button UP or DOWN to select a channel – the CH and ALT lights will illuminate to show which channel you have selected (refer to the following chart):

CHANNEL CHART		
Channel Lights	Rock Band Mode	Guitar Hero Mode
CH1	Red drum pad	Red drum pad
CH2	Yellow drum pad	Yellow cymbal
CH3	Blue drum pad	Blue drum pad
CH4	Green drum pad	Green drum pad
CH5	Kick pedal	Kick pedal
CH6	Hi Hat pedal*	Orange cymbal
CH2 + ALT	Yellow cymbal	-
CH3 + ALT	Blue cymbal	-
CH4 + ALT	Green cymbal	-

Note: Guitar Hero mode is only available on the PlayStation, or when using the MIDI OUT option.

* The Hi Hat pedal is only used in Rock Band 3, and is only used by the game to change the sound of the hi hat during drum fills. It is not a programmable note “channel”, but instead is toggled on/off depending on the position of your hi hat pedal. See page 8 for information on adjusting the hi hat threshold.

To assign a note to the selected channel, simply play the desired note (hit a pad) on your drum kit – the MIDI light should flash, and the selected CH light will blink, indicating that the note has been programmed to that channel. You can store multiple notes (up to 10 in the current firmware) to a given channel.

For example, you could assign both a Low Tom and High Tom drum pad to CH1 (the Red drum channel in Rock Band). Then, when you play the game, if you hit either the Low Tom or High Tom, the Red note will be played in the game.

Note: If the CH light doesn't blink, it means that the note you just hit has already been assigned to that channel. If the PROG light blinks, that means you have filled up all the available slots for that channel.

Special “ALT” (Rock Band Cymbal) Channels

The ALT light comes on in combination with one of the CH lights to indicate that you have selected one of the cymbal channels for use in Rock Band mode. There are 3 cymbal channels available: ALT+CH2 (Yellow), ALT+CH3 (Blue) and ALT+CH4 (Green). You can program each of these channels just like any other channel – typically you would assign your cymbals or high-hat pedal to these channels.

While playing drum fills in Rock Band 2 or greater, you will hear a distinct sound depending on whether you hit a pad which activates one of the regular pad channels (CH1 thru CH4), or one of the cymbal channels (ALT+CH2 thru ALT+CH4). During normal play (not during a drum fill), you play a note by hitting either the correct pad or cymbal. For example, to play a Blue note in the game, you hit either the pad assigned to the Blue channel (CH3) or the blue cymbal (ALT+CH3).

Note: You cannot program the extra cymbal channels while in Guitar Hero World Tour mode (the Guitar Hero “cymbals” use CH2 and CH6 instead).

Erasing a Channel

While in note map program mode, if you press and hold the BACK button, the PROG LED will blink off and back on, and all the notes assigned to the selected channel will be erased. If you continue to hold down the BACK BUTTON, the entire note map will be reset to its factory defaults.

Adjusting the MIDI Note Velocity Threshold

When you hit a pad on your drum kit, the drum brain sends out a MIDI note number, AND a “note velocity” number which indicates how hard you hit the pad. Sometimes when you hit a pad hard, the pads next to also get triggered, but at a lower velocity – this is called “crosstalk”. You can tell the MIDI Rocker to ignore all notes which are below a specified velocity by adjusting the MIDI Note Velocity Threshold.

When in program mode, if you press and hold the SELECT button for 2 seconds (by pushing down on the navigation button), you will enter Threshold Velocity editing mode. While in this mode, the PROG and ALT lights will stay on, and both M1 and M2 will be off.

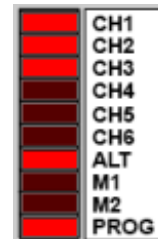
You can also adjust the Velocity Threshold using the GUI software (see page 8).

By pressing the UP or DOWN on the navigation button you can decrease or increase the current note velocity setting. The CH lights will light up to indicate the current threshold value setting. Each light that is on indicates an increment of 20, so if 3 lights are on, the threshold is 60.

Note: The velocity of a MIDI note ranges from 1 (a very light tap) to 127 (a hard hit).

	Velocity Threshold						
	0	20	40	60	80	100	120
CH1							
CH2							
CH3							
CH4							
CH5							
CH6							

Example: Velocity Edit Mode, Velocity = 60.



If you hold down the BACK button, the threshold will get reset to 0. If you hold down the SELECT button, the MIDI Rocker LX will go to Note Duration edit mode (see below). If you hold down the START button, it will go into play mode.

Adjusting the Note Duration

Each time a MIDI note is received by the MIDI Rocker LX it checks to see if that note is mapped to one of the channels – if it is, then the MIDI Rocker sends data to the game console to let it know that the channel is activated. This data has to be repeated for a certain period of time, or the game console may miss or ignore it. However, if the data is repeated too many times, then the console may miss it when a series of notes are played in rapid sequence, since the note data may overlap.

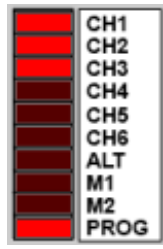
Tests have shown that a note duration of 30ms or 40ms (milliseconds) works with most games and consoles, but some users have reported the need to adjust the duration to 50ms in some cases (mostly on the Wii). You can check for updated information or ask for help at our Google Group, at <http://groups.google.com/group/midi-rocker>.

To adjust the note duration, you press and hold the START button for 2 seconds to enter Map Program Mode, then press and hold the SELECT button for 2 seconds to enter Threshold Velocity edit mode, then press and hold the SELECT one more time to enter Note Duration edit mode. While in this mode, the PROG light will stay on, and the M1, M2, and ALT lights will be off. You can also adjust the note duration using the GUI software (see page 8).

You can change the note duration by press the navigation switch UP or DOWN. The CH lights will illuminate to indicate the current duration value, as shown in the chart below. You can only change the value from 10-50ms.

	Note Duration [ms]				
	10	20	30	40	50
CH1	■	■	■	■	■
CH2	■	■	■	■	■
CH3	■	■	■	■	■
CH4	■	■	■	■	■
CH5	■	■	■	■	■
CH6	■	■	■	■	■

Example: Duration Edit Mode,
Duration = 30.



Playing With the MIDI Rocker LX

Once the MIDI Rocker LX has been programmed, you simply need to put it into play mode and you are ready to rock out on the drums! Hit a pad on your drum kit and you should see the MIDI light blink, and if the MIDI note generated by that pad has been programmed to a channel you will see the corresponding channel light flash. If one note has been assigned to multiple channels, then all the channels assigned to that note will be activated.

Switching Maps

Quick Change Feature: With version 1.7 firmware and later, you can change maps while in normal play mode by holding the navigation switch in the UP position and pressing the BACK button. Firmware 1.7 and greater also has support for changing maps “on the fly” when ever a certain MIDI note is received. You can enable and set up this option using the GUI software.

On earlier versions, if you want to switch to a different map, press and hold START to go into program mode, then press Left or Right on the navigation button to select another map (the M1/M2 lights will indicate which map is active), then hold down the START button to exit program mode.

Navigating Game Menus

You can use the Up/Down/Left/Right navigation button, and the START, SELECT and BACK buttons to navigate the game menus and control the console.

Activating the “Sort Menu” in Rock Band

When using a game drum controller with Rock Band, you can press and hold the kick pedal to activate the “sort menu” when selecting a song in the game. Since there is no way to “hold down” a kick pedal on a real drum kit, you instead can hold the navigation switch to the LEFT to activate this function.

Activating the “Make Setlist” feature in Rock Band

When using a game drum controller with Rock Band, you can press and hold the X button to activate the “make a setlist” feature in the song selection menu. On the MIDI Rocker LX, hold the navigation switch to the RIGHT to activate this function.

Pressing the PS (PlayStation) Button

To get the same effect as pressing the PS button on a PlayStation 3 controller, press and hold the BACK button for 2 seconds.

Using the GUI Software

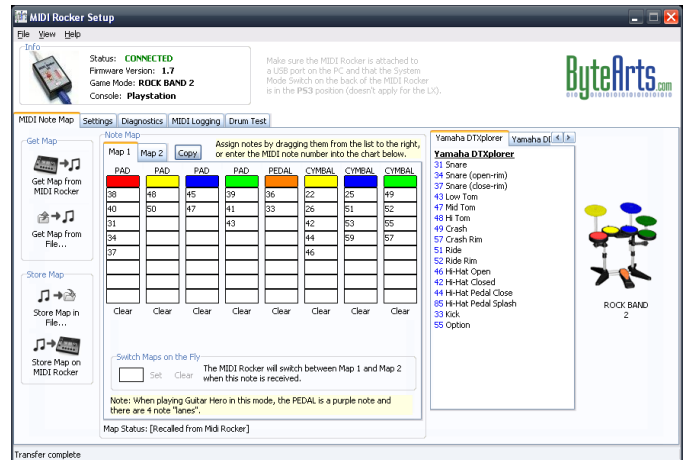
You can use the GUI software on a Windows PC to quickly and easily save and recall note mappings and change other parameters. Here's a quick overview of how to use it:

1. Download and install the software from the website (www.ByteArts.com/midi_lx/index.htm).
2. Plug the MIDI Rocker LX into a USB port on the PC.
3. Run the software (go to the Windows Start menu, and look under "All Programs → Byte Arts → MIDI Rocker GUI").
4. The GUI software should detect the MIDI Rocker and display the firmware version number, and game mode (Rock Band or Guitar Hero).

Multiple tabs are displayed near the top of the window, click on a tab to select a "page":

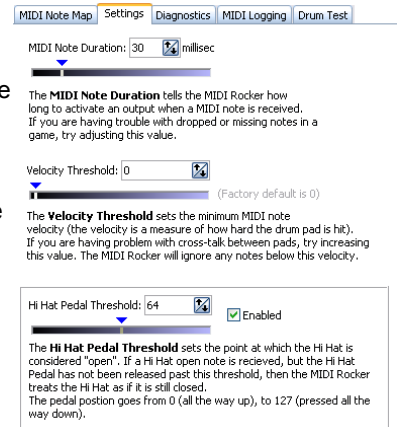
Note Map Page

- Press the "Get Map from MIDI Rocker" button to upload the current note maps from the MIDI Rocker into the software, or press the "Get Map from File" to retrieve maps saved on the PC*. Also, be sure to check out the **MIDI Rocker Google Group** at <http://groups.google.com/group/midi-rocker> where other users have shared their map files.
- Select a "Map tab" to display the desired map.
- To assign a note to a button, either enter that note number into a slot underneath the desired channel, or drag and drop a note from the chart into the desired slot.
- Press the "Store Map on MIDI Rocker" button to store the maps in the MIDI Rocker's memory. The next time you plug the MIDI Rocker into the console, the stored maps will be used. Press the "Store Map in File..." button to save the maps in a file on the PC.



Settings Page

- On the **Settings** page is the **MIDI Note Duration** setting. This setting tells the MIDI Rocker how long to "pulse" an output when an assigned MIDI note is received. This pulse will simulate a drum hit on the game drum controller. If the time is too short, then the game software won't recognize the drum hit, but if it is too long, then long sequences of fast notes may not be played correctly. See Adjusting the Note Duration on page 6 for more details.
- Also on the **Settings** page is the **Velocity Threshold** setting. Any notes received by the MIDI Rocker which are less than this velocity will be ignored.
- In firmware version 1.9 and later, you will see the **Hi Hat Pedal Threshold** setting. This lets you fine-tune the behavior of the hi hat pedal. Click on the "Enable" check box and then set the value to a number between 0 and 127 to adjust the Hi Hat Pedal position at which the Hi Hat is considered to be closed. You may need to use the MIDI Logging feature on the Diagnostics page to view the Hi Hat pedal data and determine the desired value. When enabled, the MIDI Rocker will look for note numbers 26 and 46 (hi hat open and hi hat open rim) and automatically convert those to note number 44 when the pedal is pushed past the threshold value.



Diagnostics Page

- The **Diagnostics** page lets you check the functionality of the switches on the MIDI Rocker. Simply press a button and check the on-screen indicator.

MIDI Logging Page

- The **MIDI Logging** page can be used to see what MIDI data is being transmitted from the drums to the MIDI Rocker. Check the “Enable Logging” option and then play a note on the attached MIDI device to see the MIDI data. It will display both “Note On” and “Note Off” data along with the associated note velocities and the time interval (in milliseconds) between events. All notes are logged, even notes with a velocity less than the current threshold setting. There are also options to log the hi hat pedal position data, and to ignore the “Note Off” data (note off data is normally not significant for a drum).

Drum Test Page

- The **Drum Test** page lets you test out your mappings and drum set. It basically shows you the real-time view of how the game console will see the data from the MIDI Rocker. You can hit pads on your drums and see how they show up in the game without having to actually connect to the game console. There is a hit counter so you can see how many times a particular pad has been activated, and a “waterfall” display which displays a scrolling history of which note lanes have been activated.

Updating the Firmware

From time to time firmware updates are made available in order to add new features or fix bugs. Your MIDI Rocker is shipped with the latest firmware already installed and so you don't normally need to install an update. You can check for information on the latest firmware and software versions at www.ByteArts.com/midi_lx/index.htm or on the **MIDI Rocker Google Group** at <http://groups.google.com/group/midi-rocker>.

MIDI Rocker Firmware Update Procedure

The following instructions show how to update or load a different version of the firmware on the MIDI Rocker LX.

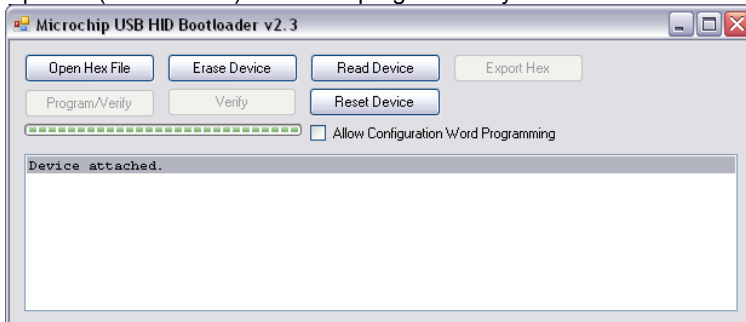
NOTE: The firmware update procedure results will erase any note mappings or other settings (such as the **velocity threshold** or **note duration**) that you have changed, so you will need to reprogram those settings afterwards. You can save your note maps in a file using the GUI, and then recall the file and write the map to the MIDI Rocker afterwards. *You have to manually restore the note duration and threshold values.*

Step 1. Put the MIDI Rocker LX in Update Mode

To enter update mode on the MIDI Rocker LX, press and hold the START and BACK buttons while plugging it into the USB on the PC – continue to hold the START and BACK buttons down until the USB and MIDI lights start flashing. The Windows "New Hardware Found" wizard may pop-up – simply select the defaults (press the OK button) at each step and Windows will install the required software (no special drivers are needed).

Step 2. Run the HID Bootloader

1. Run the "updater program". Go to the Windows Start menu, and look under "All Programs->Byte Arts->Firmware Updater (HID Version)". Run this program and you'll see a window like this:



Click on the "Open Hex File" button and browse to the firmware folder (C:\Program Files\Byte Arts\Firmware) and open the firmware file. There are several varieties of firmware available, depending on which console you want the MIDI Rocker to work with. Here is a list of the current firmware files:

Firmware File	Description
MRLX_PS_Vxx.hex	Use this firmware with the MIDI Rocker LX and a PlayStation (PS2 or PS3). (xx = the firmware version number, e.g. "MRLX_PS_V14" is version 1.4).
MRLX_Wii_Vxx.hex	Use this firmware with the MIDI Rocker LX and a Wii .
MRLX_XB-RB1_Vxx.hex	Use this firmware for the MIDI Rocker LX with the Xbox Interface Option and a Rock Band 1 drum controller.
MRLX_XB-RB2_Vxx.hex	Use this firmware with the MIDI Rocker LX and the Xbox Interface Option for a Rock Band 2 drum controller.
MRLX_MidiOut_Vxx.hex	Use this firmware when using the MIDI OUT option with the Wii .
MRLX_MidiOut_Xbox_Vxx.hex	Use this firmware when using the MIDI OUT option with the Xbox .

2. Next, click on the "Program/Verify" button and wait for the magic to happen (about 10-20 seconds).
3. Press the "Reset Device" button and the MIDI Rocker will re-initialize itself. You can now exit the updater program and run the GUI software to test it out and load saved maps.