M-AUDIO®

HAMMER 88

User Guide

English

M-AUDIO

User Guide (English)

Introduction

Box Contents

Hammer 88

USB Cable

Software Download Cards

User Guide

Safety & Warranty Manual

Support

For the latest information about this product (documentation, technical specifications, system requirements, compatibility information, etc.) and product registration, visit **m-audio.com**.

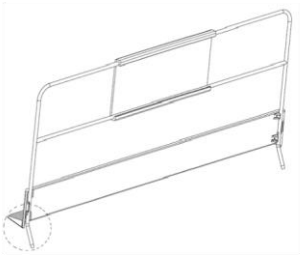
For additional product support, visit **m-audio.com/support**.

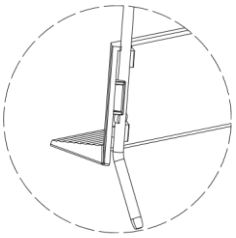
Step 1 Step 2 Detail

Quick Install

Setup

Music Rest:





1. Use the included USB cable to connect your Hammer 88 to an available USB port on your computer. If you are connecting to a USB hub, ensure that it is a powered hub. When connected properly, and when your computer is on, Hammer 88 will power on when the USB cable is connected to its rear panel.
2. Open your digital audio workstation (DAW).
3. You may need to open your DAW's Preferences and select Hammer 88 as the control surface or device. See your software's documentation for more information.

Recommended Installations

Software: We've included Pro Tools | First and Ableton Live Lite with your Hammer 88 so you can get started making music with professional software right out of the box. For Pro Tools | First, register your Hammer 88 on **m-audio.com**, and follow the Pro Tools | First install instructions in your User Account. For installing Ableton Live Lite, follow the instructions on the included Ableton Live Lite software download card. Also, visit **ableton.com** to check for any available software updates.

Editor Application: With the optional editor application, you can change the keyboard's settings and assignments from their default settings. This editor application can be downloaded from **m-audio.com**.

Virtual Instruments: Follow the instructions on the software download card for installing the included virtual instrument plugins. After installation, most DAWs will not load virtual instrument plugins automatically. In order

to access the virtual instrument plugins with Pro Tools | First and Ableton Live Lite, you will need to choose the plugin folder for the software to scan:

Pro Tools | First/AAX plugin folders:

Windows (32-bit):
C:\Program Files (x86)\Common Files\Avid\Audio\Plug-Ins

Windows (64-bit):
C:\Program Files\Common Files\Avid\Audio\Plug-Ins

Mac:
Macintosh HD/Library/Application Support/Avid/Audio/Plug-Ins

Ableton/VST Plugins:

Windows (32-bit):
C:\Program Files (x86)\VSTplugins

Windows (64-bit):
C:\Program Files\VSTplugins

Mac:
Macintosh HD\Library\Audio\Plugins\VST

To set your plugin folder in Ableton Live Lite:
1. Go to the **Preferences** menu.
2. Select the **File Folder** tab. Under **Plug-In Sources** click **Browse** and select the appropriate plugin folder.
3. After making your selection, the **Use VST Custom Plug-In Folder** button should be **ON**. If it is not, click the button to turn it on.
4. Exit the **Preferences** menu.

Getting Started

Please note that when you press a key on the keyboard, you will not hear any sound. This is because pressing a key causes the keyboard to send out MIDI data. MIDI data gives instructions on how a sound should play, but in order to actually hear that sound you need to configure your music software to read the MIDI data being sent from the Hammer 88 and play the sound back accordingly. This setup will more than likely entail going into an Options or Device Setup menu in your music software application and selecting the appropriate device. The Hammer 88 should appear under the name “Hammer 88” in the MIDI devices section of your music software application. Please consult the manual that came with your software for the proper setup procedure.

Ableton Live Lite Setup

1. First, connect Hammer 88 to an available USB port on your computer using the supplied USB cable, and launch Ableton Live Lite.
2. Next, open the Ableton Live Lite **Preferences** window. Choose your **Audio Device** in the **Audio** tab. This will be dependent upon the audio interface that you are using.

   MAC: Select **Live > Preferences**
   PC: Select **Options > Preferences**

3. Select the **MIDI / Sync** tab. Within the **MIDI Ports** section, adjust the settings as seen below: Next to **Input: Hammer 88**, toggle the **On** button in the **Track** and **Remote** columns.
   Next to **Output: Hammer 88**, toggle the **On** button in the **Track** and **Remote** columns.
4. Close the **Preferences** window.
5. To add an instrument or plugin to Ableton Live Lite in order to generate sound, in the **Categories** column, choose **Instruments** or **Plug-ins**.
6. In the **Name** column just to the right of the Categories column, locate the Instrument or Plug-in of your choice. **Click-and-drag** the instrument to a MIDI track in Ableton Live Lite to load the instrument. The Instrument can now be triggered with Hammer 88.

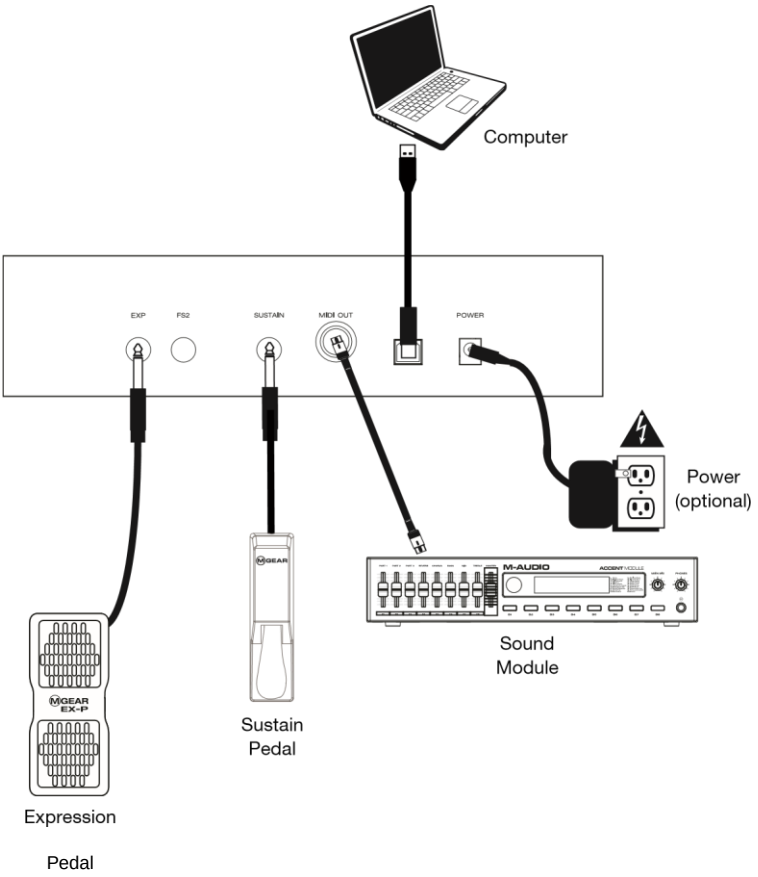
Pro Tools | First Setup

1. Connect Hammer 88 to an available USB port on your computer using the supplied USB cable, and launch Pro Tools | First.
2. Open or Create a Project.
3. Select the **Setup** pulldown menu and open **MIDI Input Devices**. Enable **MIDI Input** from the Hammer 88 by clicking the box next to the Hammer 88.
4. Select the **Setup** pulldown menu and open **Playback Engine**. Choose your audio device from the **Playback Engine** pulldown menu.
5. To create a new Instrument track, select the **Track** pulldown menu and select **New**.
6. In the **New** pulldown menu, select **Stereo**, and then **Instrument Track**.
7. In the newly created track, add an Insert to your track by clicking in your track's Inserts A-E and selecting **Multichannel Plugin > Instrument** and select the instrument you would like to use, such as Xpand!2 (Stereo). The plugin can now be triggered with Hammer 88.

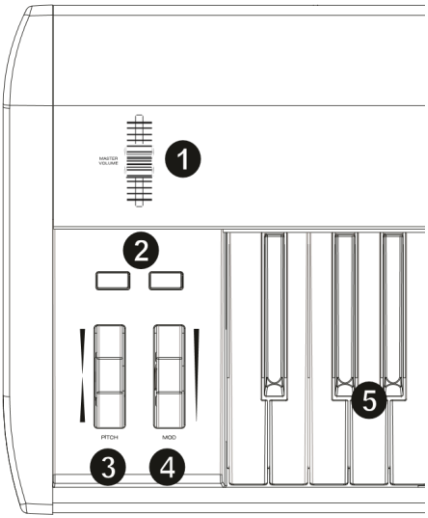
Note: Windows users will need either an external soundcard (such as the M-Track 2X2) or a low-latency ASIO driver.

Connection Diagram

Items not listed under ***Introduction*** > ***Box Contents*** are sold separately.

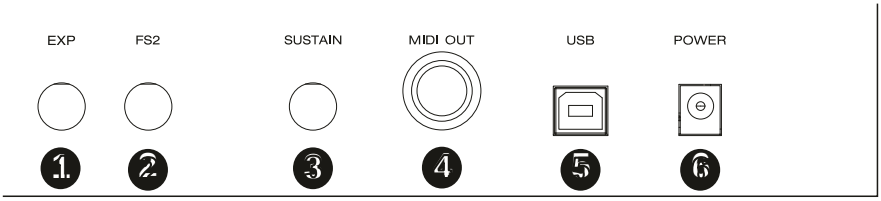

Computer
EXP
FS2
SUSTAIN
MIDI OUT
POWER
Power
(optional)
Sound
Module
Sustain
Pedal
Expression
Pedal

Top Panel



1. **Master Volume Fader:** The fader sends standard messages to control volume and can also be assigned to different effects such as pan (balance), attack, reverb, chorus, etc. using the downloadable Hammer 88 editor application. The factory default setting for this fader is CC#7 Volume. The fader is fully assignable to CC, Aftertouch, and Pitchbend messages.
2. **+/– Buttons:** These buttons can be assigned to Program, Octave/Transpose, CC, and MMC messages. By default, these buttons are assigned to change the Octave/Transpose up or down.
3. **Pitch Bend Wheel:** This wheel creates expressive changes in performances by raising and lowering pitch. Rolling the Pitch Bend wheel upward will raise an instrument's pitch whereas rolling it downward will lower the pitch. The upper and lower pitch bend limit is determined by settings on your hardware or software synthesizer, and usually not by the Pitch Bend wheel on Hammer 88 itself. Typically, this can be either a half note or an octave up/down. Use the Hammer 88 software editor to limit the range of the wheel, as well as change its assigned MIDI message. This wheel is spring mounted and will return to the center detent position when released. The Pitch Bend wheel is an assignable controller capable of sending a variety of MIDI messages other than pitch bend data.
4. **Modulation Wheel:** This wheel is used to add expression to performances by changing the intensity of certain effects. By default, most synthesizers assign this wheel to control vibrato (change in pitch) or tremolo (change in volume) although it is usually possible to reassign the function of this wheel through the instrument's control panel. Rolling the Modulation Wheel upward will increase the modulation effect, while rolling downward will reduce the effect. The Modulation Wheel is an assignable controller capable of sending a variety of MIDI messages other than Modulation data. The factory default setting for the wheel is CC#1 Modulation. The modulation wheel is fully assignable to CC, Aftertouch, and Pitchbend messages.
5. **Velocity-sensitive Keyboard:** The velocity-sensitive, weighted keyboard is the primary method of sending Note On/Off and velocity data when performing. The keybed can also be split or layered to control multiple sounds.

Rear Panel



1. **Expression Pedal Input:** This input is to be used with an expression pedal (such as the M-Audio EX-P, sold separately) for adding expressive changes during performances. The M-Audio EX-P Expression Pedal uses a 1/4" TRS connector and is set to normally open (pedal up). The factory default setting of this input is CC#11 Modulation. The expression pedal input is fully assignable to CC, Aftertouch, and Pitchbend messages.
2. **1/4" FS2/Soft Pedal Input:** This input accepts a soft pedal, such as the M-Audio SP-2 pedal which uses a 1/4" TS connection, to soften the notes and modify the tonal quality. The soft pedal input is fully assignable to MIDI note numbers, Program Change messages, CC, or MMC messages using the Hammer 88 editor.
3. **Sustain Pedal Input:** This input accepts a momentary-contact foot pedal (such as the M-Audio SP-2, sold separately). When pressed, this pedal which has a 1/4" TS connector, will sustain the notes you are playing without having to keep your fingers pressed down on the keys.
   Note: The polarity of the sustain and expression pedals is determined by the keyboard upon startup. When Hammer 88 is powering up, the sustain pedal is assumed to be in the "up" (Off) position. It is important that the sustain pedal is not pressed during startup, otherwise the pedal will reverse its operation, and notes will sustain when the pedal is not pressed.
   Note: For an all-in-one solution for connecting pedals to the Soft Pedal and Sustain Pedal inputs, check out the SP-Dual. The SP-Dual is M-Audio's 2-pedal solution with the ability to connect to the Soft Pedal and Sustain Pedal inputs on your Hammer 88.
4. **MIDI Out Port:** This standard 5-pin MIDI connector transmits MIDI data to any compatible device such as a hardware synthesizer, sound module, or drum machine.
5. **USB Port:** The USB port delivers power to the keyboard and transmits MIDI data when connected to a computer.
6. **Power Input:** This input accepts an optional third party power supply. A power supply must be connected when using Hammer 88 in stand-alone mode (when triggering external hardware synths). Use a USB cable to power Hammer 88 when connecting to a computer to trigger software synths.

All controls listed in this section are fully assignable to different message types via the Hammer 88 editor application.

Octave Shift/Transposing

The **-/+** buttons are used to shift the keyboard up or down in one octave increments, to extend the range of playable notes. The **+** button shifts upward while the - button shifts downward.

Transpose is the secondary function of these two buttons and can be accessed by pressing both buttons simultaneously, then pressing the **+** or **–** button in the direction you would like to transpose. For example, in this mode, pressing the **+** button shifts the keyboard upward by one half-step (semitone). As a result, note F3 becomes F#3. Pressing the **–** button shifts the keyboard downward by one half-step (F3 becomes E3).

Zone

The **keyboard** can be divided into 1–4 "zones." When zones are active, each zone can send its controls' MIDI messages over its own MIDI channel.

Tip: This feature is great for dividing your Hammer 88 keyboard between different virtual instruments or synthesizers. For example, you can create two zones, each using a different MIDI channel, and play and control two virtual instruments simultaneously—one with each half of the keys.

The Zone function specifies which MIDI channel, Key range, and octave/transpostion a Zone will use when transmitting MIDI data. Assigning each Zone to its own MIDI channel allows you to play up to 4 different sound programs on a connected synthesizer or virtual instrument.

Assigning a Hammer 88 control to a Zone MIDI channel causes that control to transmit MIDI data on the same MIDI channel as the corresponding Zone. To set or change the MIDI channel for a keyboard Zone, use the Hammer 88 editor application.

Assigning Controls to the Omni Channel

The Omni channel is used when assigning controls like pitch bend, sustain, or modulation to control parameters of multiple zones at the same time. For example, if you have the 2 zones split but would like the sustain pedal to send the sustain message to both zones, you would assign the sustain pedal to the Omni channel.

Using the editor software, you can assign controls. You can select one of the standard MIDI channels (**01**– **16**); global MIDI channel (**Global**), or omni MIDI channel (**Omni**).

Channel Assign

The Channel Assign function assigns a control on Hammer 88 to a specific MIDI channel. When assigned to channel "0", the control will transmit on the Global MIDI channel. To assign a wheel, fader, or pedal inputs to a MIDI channel, use the Hammer 88 editor application.

Pedal Inputs and Buttons

Trigger/Momentary CC Values

When standard CC numbers are assigned to one of the Pedal inputs, they will momentarily switch from one value when not being pressed, to another value when pressed. The Pedal inputs are already configured to send trigger/momentary values by default, ensuring it activates the sustain effect when pressed and deactivates it when the pedal is released. The buttons can also be set to trigger/momentary values. Each of the buttons will light up **blue** briefly when pressed. To set or change the trigger/momentary values for the Pedal inputs or buttons, use the Hammer 88 editor application.

Assigning the +/– Buttons to Octave/Transpose

To get into transpose mode, press and hold the **–/+** buttons and then press the button for the transposition direction you would like.

Octave:

Each button will light up **dim red** to indicate a shift of one octave in either direction or **bright red** for a shift of two octaves in either direction.

Transpose:

+1 Green dim 1
+2 Green dim 2
+3 Green fully lit
+4 Blue dim 1
+5 Blue dim 2
+6 Blue fully lit
+7 White dim 1
+8 White dim 2
+9 White fully lit
+10 Yellow dim 1
+11 Yellow dim 2
+12 Yellow fully lit

-1 Green dim 1
-2 Green dim 2
-3 Green fully lit
-4 Blue dim 1
-5 Blue dim 2
-6 Blue fully lit
-7 White dim 1
-8 White dim 2
-9 White fully lit
-10 Yellow dim 1
-11 Yellow dim 2
-12 Yellow fully lit

Toggle CC Values

It is possible to set a toggle value for the Pedal inputs or **–/+** buttons, causing it to send one value when pressed, and another value when pressed again. One CC value can be assigned to the **–** button, and a separate CC value can be assigned to the **+** button. Use the Hammer 88 editor application to assign and edit the controls on the keyboard.

When set to **CC Latch**, the buttons will light up in the following way:

- When the **–** button's first program is selected, the **–** button will be **blue** and **dimly lit**.
- When the **–** button's second program is selected, the **–** button will be **blue** and **brightly lit**.
- When the **+** button's first program is selected, the **+** button will be **blue** and **dimly lit**.
- When the **+** button's second program is selected, the **+** button will be **blue** and **brightly lit**.

Program Change, Bank LSB, & Bank MSB

The Pedal inputs and **–/+** buttons can be configured to send a multi-part message, consisting of a Program Change, Bank MSB, and Bank LSB message when pressed. This is useful to select preset sounds from a specific bank on a connected synthesizer or virtual instrument. When set to **Program**, the buttons will light **white** temporarily when pressed. To set the Pedal inputs or **–/+** buttons to send combined Program Change, Bank MSB, and Bank LSB Messages, use the Hammer 88 editor application.

CC Increment/Decrement

It is possible to configure the Pedal inputs and **–/+** buttons to increase or decrease a value each time it is pressed. This is useful if you want to step through values one by one each time a pedal or button is pressed.

Each pedal will only increment or decrement its own parameter value. In other words, assigning one pedal to increment a parameter and another to decrement the same parameter will cause the first pedal to send values such as 1, 2, 3, etc. Pressing the second pedal will send values such as 127, 126, 125, etc, and will not decrement from where the first pedal left off (for example 2, 1, 0).

When set to **CC Inc**/**Dec**, each of the buttons will light up **blue** briefly when pressed. The **+** button will only increment and the **–** button will only decrement. Press **+** to increment to the value of 127 and then pressing the **–** button will decrement the value of 126. Furthermore, pressing the **–** send values such as 127, 126, 125, etc, and will decrement from where the **+** button left off (for example 125, 126, 127.). Use the Hammer 88 editor application to change these messages.

Toggle Program Values

Using the Hammer 88 editor application, it is possible to set a toggle value for the Pedal inputs and **–/+** buttons, causing it to send one value when pressed, and

another value when pressed again. This means that one value is sent the first time it is pressed, and another value is sent the next time it is pressed again.

When toggle/latching values are assigned to the **–** and **+** buttons, they will each trigger between two program values per button (these can also be assigned to 2 separate channels). This means that one set of Program values can be assigned to the **–** button, and a separate different set of Program values can be assigned to the **+** button.

When set to **Program Latch**, the buttons will light up in the following way:

- When the **–** button's first program is selected, the **–** button will be **white** and **dimly lit**.
- When the **–** button's second program is selected, the **–** button will be **white** and **brightly lit**.
- When the **+** button's first program is selected, the **+** button will be **white** and **dimly lit**.
- When the **+** button's second program is selected, the **+** button will be **white** and **brightly lit**.

Program Change Increment/Decrement

Using the Hammer 88 editor application, it is possible to configure the Pedal inputs or **–/+** buttons to send an Increment (increase) or Decrement (decrease) Program Change message each time it is pressed. When one pedal is configured to increment through sound Programs (such as, 1, 2, 3, etc.), and another to decrement through them (such as, 127, 126, 125, etc.), the second pedal will not decrement from where the first pedal left off (for example, 2, 1, 0). This is in contrast to the buttons. The **+** button will only increment and the **–** button will only decrement. Pressing **+** to increment to the value of 127 and then pressing the **–** button will decrement the value to 126. Furthermore, pressing the **–** sends values such as 127, 126, 125, etc, and will decrement from where the **+** button left off (for example, 125, 126, 127). When set to **Program Inc**/**Dec**, each of the buttons will light up **white** briefly when pressed.

MMC

The **–** and **+** buttons can be assigned to send a MMC (MIDI Machine Control) message. MMC is a transport control protocol that is used to remotely control some recording hardware and DAWs. When set to **MMC**, the **–** button will send a **Stop** message and the **+** button will send a **Play** message. The **–** and **+** buttons will be lit **red** while stopped and **green** while playing.

Editing Controls Using the Editor Application

For full details on editing controls, see the separate Hammer 88 Preset Editor User Guide on **m-audio.com**.

Troubleshooting

General

Here are answers to common questions you may have when using your Hammer 88 keyboard:

Problem 1: My M-Audio hardware suddenly stopped working after having performed fine since installation.
Solution 1: Switch off the unit and let it sit for 10 seconds. Then restart your computer and try again.

Problem 2: I have plugged a sustain pedal into my M-Audio keyboard, but it works opposite as to what I'm expecting.
Solution 2: The polarity of the sustain pedal is calculated by the keyboard when it is powered on. When Hammer 88 is powered on, the sustain pedal is assumed to be in the OFF position. If you want the sustain pedal to be off when it is not depressed, make sure the pedal is not depressed when you power on Hammer 88.

Problem 3: When I press a key, there is a delay before I hear any sound.
Solution 3: This delay is known as latency. Latency with MIDI signals is due to the software application you are using. MIDI data is simply control data. The MIDI data is read by your software. The software then completes a large number of complex calculations in order to produce the sound you hear—all this takes time.
We strongly recommend a proper audio interface. Refer to **m-audio.com** for a selection of options. If you already have an adequate audio interface, try reinstalling the latest drivers for the audio interface, or try reducing the buffer sizes of the audio drivers.

m-audio.com