BomeBox™ Quick Start Guide

The Bome Team thanks you for purchasing the BomeBox, a versatile MIDI and network connection and translation box.

Register your BomeBox

Please take the time to register your BomeBox at the following Internet URL:

https://www.bome.com/register

Registering will give you access to software, firmware updates and notifications related to your BomeBox.

Important Safety Instructions

Before using the BomeBox, thoroughly read the following instructions for important information needed for setting up and using your BomeBox safely. Keep this document in a safe place for further reference.

> ⚠ **WARNING**
> RISK OF ELECTRIC SHOCK
> DO NOT OPEN

This symbol is intended to alert you to the presence of important operating and maintenance instructions in the literature accompanying the product.

This symbol is intended to alert you to the presence of uninsulated dangerous voltage inside the enclosure that may cause personal injury.

WARNING: To reduce the risk of fire or electric shock, do not expose the device to rain, moisture, dripping or splashing liquids. No objects filled with liquids, such as drinking glasses, shall be placed on the device.

CAUTION: When using the device, make sure that connected cables cannot cause a trip hazard

- Make sure to understand and follow these instructions.
- Do not expose the BomeBox to water or moisture.
- Only clean the BomeBox using a soft, dry cloth.
- Never keep the BomeBox near any heat sources (e.g. radiators, stoves, amplifiers). Avoid direct exposure to sunlight.
- After exposure to cold temperatures, let the BomeBox warm up to room temperature before use.
- Before moving the BomeBox, remove all connected cables.
- Refer all servicing to qualified personnel. Do not open the BomeBox or attempt to disassemble or modify any internal parts.
- Do not use excessive force on buttons and connectors.
- Do not place heavy objects on top of the BomeBox.

Power Up!

There are multiple ways to power your BomeBox.

Micro USB

The port marked *USB Power* allows you to use a standard micro USB cable to power the BomeBox. *It is used for power only and does not allow for data transfer between the BomeBox and a computer or other USB host.*

Sources for Micro-USB power include:
- a powered USB hub
- an external cell phone power battery pack
- a Micro USB cable connected to a computer
- a standard cell phone charger

Power over Ethernet

With a Power over Ethernet (PoE) source like a PoE Ethernet Switch or a 48V PoE Injector, you can power the BomeBox via the *PoE In* port. PoE usually provides a more stable power supply than Micro-USB, especially when powering USB-MIDI devices using a passive hub.

Daisy Chaining

If your BomeBox is powered via PoE, you can use the *PoE Out* connector to power another BomeBox. You can power up to 3 BomeBoxes by PoE daisy chaining.

You can also use the USB type A port marked ⚬⟜ to power one other BomeBox. Do not daisy chain more than one BomeBox via USB.

Powering USB-MIDI Gear

The USB type A port ⚬⟜ provides a maximum of 1A to connected devices (depending on power supply). The BomeBox consumes up to 0.3A. If connecting devices with a sum of more than 1A, or if you have other power problems with USB-MIDI devices (e.g. unstable voltage), use a powered USB hub (which can also power the BomeBox!). When using PoE, the USB A port always provides full 1A with stable voltage.

First Steps

For configuring your BomeBox for the first time, the easiest approach is to use WiFi to access the Web Config.

Web Config Settings

The Web Config allows you to configure your BomeBox; set name and password; configure Ethernet and WiFi operation; setup MIDI ports and MIDI routes; connect it to other BomeBoxes; upload/manage/start MIDI Translator Pro projects to be executed on the BomeBox; create and restore backups; load new firmware.

Password

By default, the Web Config's password is the serial number from the sticker at the bottom of the BomeBox. The default WiFi password is empty. We recommend to change both passwords. Otherwise, it will be easy for anyone to change the settings!

WiFi

Press the *WiFi* button to enable the BomeBox wireless LAN. Once the WiFi LED is on, use a laptop, tablet, or smart phone to connect: select the SSID "BomeBox". In a web browser like Safari, Chrome, or FireFox, enter **192.168.153.1** in the address bar to connect to the Web Config (you can bookmark it).

The WiFi default setting is *HotSpot* (DHCP server). For connecting to an existing WiFi router, set it up as a *WiFi Client*. Advanced users can set it to *WiFi Access Point*, relaying the wired Ethernet network. We recommend keeping it set to *HotSpot*.

Ethernet

The two Ethernet connectors on the BomeBox work as a 2-port Ethernet switch: it does not matter which one you use for connecting (except for PoE). By default, the BomeBox Ethernet is set up as DHCP client for connecting it to an existing network with DHCP router.

In the Web Config, you can reconfigure the Ethernet ports to act as DHCP master to provide naming and IP addresses to other connected DHCP clients – effectively replacing a router. Last, but not least, for advanced users, you can set up the Ethernet ports to use a fixed IP address.

Bome Network Tool

For Windows and macOS, you can download the free Bome Network Tool:

http://www.bome.com/products/bomenet

It gives you an icon in the tray (Windows) or menu bar (macOS), where you can create Network MIDI connections and invoke the web config directly.

Give your BomeBox a Name

One of the first things you should do is to name your BomeBox. When using multiple BomeBoxes, you will only be able to connect them if they have different names.

MIDI Connections

MIDI DIN Ports

The BomeBox provides a standard MIDI DIN input and output port, which can be routed to and from the other MIDI connections.

USB Port

The USB type A connector marked ⚬⟜ allows you to plug in and power your USB-MIDI gear. Use a USB hub to connect multiple USB-MIDI devices. If you encounter power issues, a powered USB hub will help, or using a PoE power supply.

MIDI Routes

By default, every MIDI port is routed to all other ports, except to itself. All available MIDI ports (MIDI DIN, plugged USB-MIDI devices, Network MIDI) can be routed using the MIDI Router in the Web Config. A route consists of a MIDI INPUT and a MIDI OUTPUT. A route will forward the MIDI stream received on that MIDI INPUT port to the route's MIDI OUTPUT port. This creates a MIDI Thru connection, allowing you to merge and duplicate

MIDI streams. You can save your current collection of routes as a Route Set and load back such Route Sets later on.

Network MIDI

The BomeBox implements the Bome Network MIDI protocol for low latency and low jitter MIDI connectivity from BomeBox to BomeBox and to computers. It does not currently support RTP-MIDI, but support is planned to be provided with a firmware update in the future. For a MIDI connection from a computer to a BomeBox, use the *Bome Network Tool* (see the above).

For setting up a Bome Network MIDI connection, make sure the two BomeBoxes (A and B) or BomeBox A and computer B are connected via Ethernet or WiFi, and that they both have different names. Then, go to the Network MIDI section in the Web Config of BomeBox A and click on the *Connect* button next to the name of B. In order to approve the connection, press the blinking *Pair* button on BomeBox B (or the pop-up on computer B). Alternatively, you can approve the connection in the Web Config of BomeBox B. Connections are maintained and remembered until manually disconnected or canceled.

MIDI Translator

For advanced users, you can load MIDI Translator Pro project files into the BomeBox on the MIDI Translator Configurations page in the Web Config. All MIDI actions, Rules, timer actions, preset actions, and MIDI Routes are executed exactly the same as MIDI Translator Pro running on a computer.

MIDI Aliases and ports are assigned by name. If a MIDI port matches an existing port or alias on the BomeBox, it is used directly. Otherwise, you can (and should) assign that alias on the MIDI Ports configuration to configure any unassigned MIDI Aliases.

In addition to any USB-MIDI devices plugged into the USB port, the following MIDI ports and aliases are available on the Bome-Box:

BomeBox DIN	The physical MIDI DIN port (input and output)
Network 1	Auto-Alias for the first Network MIDI port
Network 2...	Auto-Alias for the second Network MIDI port
USB 1	Auto-Alias for the first USB-MIDI device connected via USB
USB 2...	Auto-Alias for the second USB-MIDI device...

Network ports can also be accessed by name. A connection to a BomeBox with name "My other BB" will auto-create a MIDI port with name "My other BB".

LED's

Power	This LED indicates that the BomeBox is on. It is blinking during boot and during a firmware update.
Pair	Pair LED on: at least one Network MIDI connection is established. Blinking slowly: waiting for a remote BomeBox or computer to approve a connection (press to cancel). Blinking fast: another Network MIDI host wants to connect to this box (press to approve).
WiFi	On if WiFi is enabled. Press to enable or disable. It is blinking when transitioning between states.
PoE In	The left LED indicates network activity. The right LED indicates that it is powered via PoE.
PoE Out	The left LED indicates network activity. The right LED indicates that PoE power is available for powering another BomeBox.
MIDI IN	This LED indicates incoming MIDI data.
MIDI OUT	This LED indicates outgoing MIDI data.

Troubleshooting

Online User Support

In case of questions or problems, please consult our support team in the Q&A discussion forum:

> https://www.bome.com/support

Advanced Configuration

The advanced configuration (link can be found at the very bottom of the web config) will allow you to tune every aspect of the network configuration of your BomeBox. Please use with care, and only if you know what you are doing.

Network Reset

It's possible to misconfigure the BomeBox network setup and entirely lose connectivity. If that happens to you, you can prepare a USB thumb drive – **FAT formatted –** to reset the network settings. Copy an arbitrary text file to the root folder of the thumb drive, and rename it to:

> {serial}_reset_network.txt

where {serial} is the serial number of that BomeBox, as printed on the sticker at the bottom (e.g.: if the Serial Number of your BomeBox is 00012345 then the name of the file would be 00012345_reset_network.txt). Now attach that prepared thumb drive to the USB connector of the BomeBox and boot it. It should reset the Ethernet and WiFi settings to factory defaults. Don't forget to unplug the thumb drive!

Password Reset

If you have forgotten your password for the Web Config, you can reset it in a similar manner to resetting the network (see previous paragraph) by creating a file with the following scheme:

> {serial}_reset_password.txt

Environmental Information

Disposal of the Product

This product is subject to the provisions of the European directive 2002/96/EC. Should the product become damaged beyond repair, or if you wish to dispose of it, it must be disposed of separately from the municipal waste system via designated collection facilities appointed by the government or the local authorities. For countries outside of the European Union, observe the regulations of your area and country that relate to the disposal of electronic products.

RoHS Information

This product conforms, where applicable, to the European Union's Directive 2002/95/EC on Restrictions of Hazardous Substances (RoHS) as well as the following sections of California law which refer to RoHS, namely sections 25214.10, 25214.10.2, and 58012, Health and Safety Code; Section 42475.2, Public Resources Code.

FCC and IC Compliance Information

Contains FCC ID Z9W-CM2 and IC 11468A-CM2.

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

This class B digital apparatus complies with Canadian ICES-003. Cet appareil numérique de la classe B est conforme a la norme NMB-003 du Canada.

GNU Public License

The firmware of the BomeBox is based on the open source project OpenWRT, which is based on the Linux kernel. Most of that software is licensed under the GNU Public License (GPL) version 2. Consequently, we publish all source code modifications to OpenWRT and to the Linux kernel in an online repository hosted on github.com. You can use that repository to create an own firmware for the BomeBox. Note that this repository does not include BomeBox specific tools and scripts. Installing your own firmware requires SSH access.

To learn more, please follow these links:
OpenWRT: http://www.openwrt.org
Linux Kernel: https://www.kernel.org
GPL License v2:   http://www.gnu.org/licenses/gpl-2.0.html
BomeBox sources: https://github.com/bome/openwrt-bomebox

Disclaimer

Bome Software GmbH & Co. KG cannot be held responsible for damage or lost or destroyed data caused by improper use or modification of the product.

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