

BriteBlox

Modular LED Marquee and Development System

Quick Start Guide

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Displayboard Setup

Start with one Displayboard, and make sure it is facing upward. It is upward when:

- The LED panel is facing toward you,
- The “LEDgoes.com” text is at the top, right-side up, and
- The manufacturer’s printing on the LED panel is also on the top, facing you.

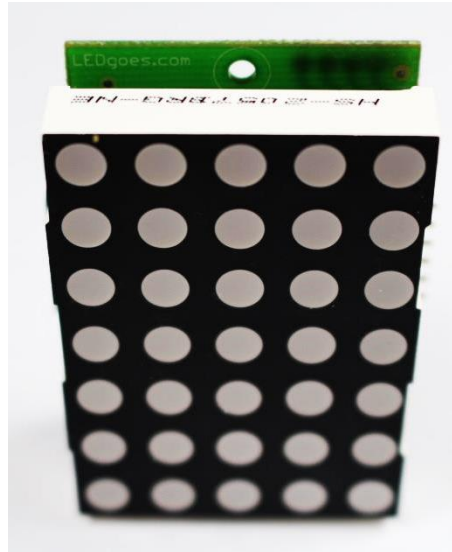


Fig. 1: Upright orientation of the BriteBlox Displayboard.

Make a single row of Displayboards.

- Plug in as many Displayboards as desired into a single horizontal row. (Multi-row marquees are covered in our regular User Guide.)
- Mate the six male pins on the right of one board with the six female pins on the left of the other board. Make sure all pins are connected properly.

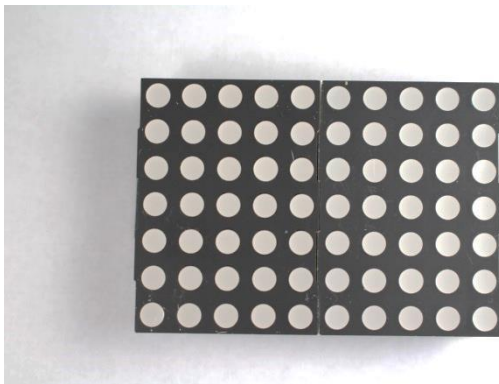


Fig. 2a: Boards are lined up properly.

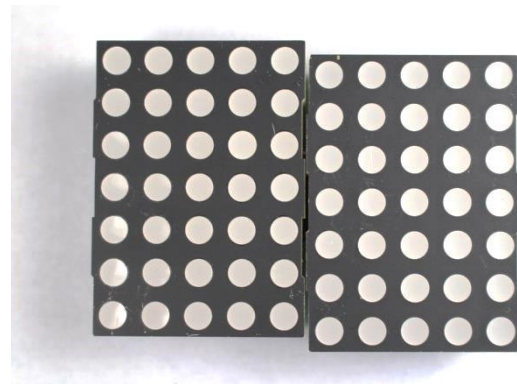


Fig. 2b: Boards are not lined up properly; notice the gap in the middle; also the boards are not flush horizontally.

Caution: The boards must be lined up evenly so that all pins between boards are connected. If the boards are uneven when powered on, they will seem to malfunction, and you risk corrupting the program loaded onto the two microcontrollers on the board.

Pin Naming Convention

This naming convention is standard for all boards.



Fig. 3: Pinout diagram for board connectors.

Auto-Addressing Setup

Your Displayboards can discover where they are in the marquee if you properly feed each side of the auto-addressing line (Pin 6) as specified below with 5 volts (5V) and Ground (GND). Also refer to Appendix A, “Jumper Settings.” Note that Wall POWAH v1.1 does not have jumpers; instead, refer to the “Wall POWAH” section.

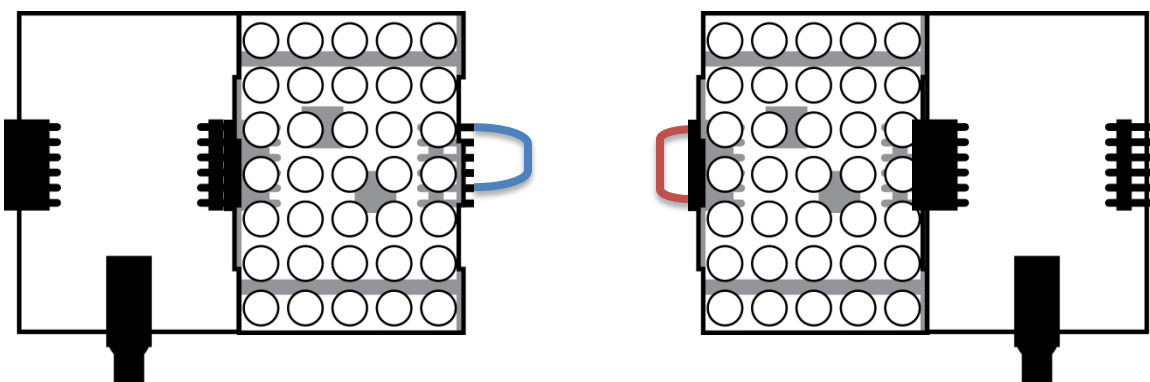


Fig. 4: Acceptable configurations to support auto-addressing.

Left: A Partnerboard is providing 5V to Pin 6 on the left side of the marquee, and a female jumper cable or shunt connects Pin 2 to Pin 6 on the rightmost Displayboard.

Right: A male jumper cable is connecting Pin 1 to Pin 6 on the leftmost Display-board, while a Partnerboard provides GND to Pin 6 on the right side of the marquee.

Partnerboard Setup

BriteBlox Displayboards and Partnerboards are designed to snap together for easy operation of an LED marquee of virtually any size or shape. Each marquee consists of one or more Displayboards, and additional facilities for power and communication. You can provide these extra facilities yourself, or add our Partnerboards which feature an identical shape and size to the Displayboards. Displayboards and Partnerboards can be mated together in any order, as long as certain precautions (called out below) are heeded.

Wall POWAH

- Plug the provided power brick into the wall.
- Connect the power brick's barrel-style plug into the Wall POWAH's barrel jack.
- Plug the Wall POWAH module into either side of a BriteBlox marquee.
- Make the accommodations for auto-addressing, if desired, as described above.
- Slide the switch right to turn the marquee on, and left to turn it off.

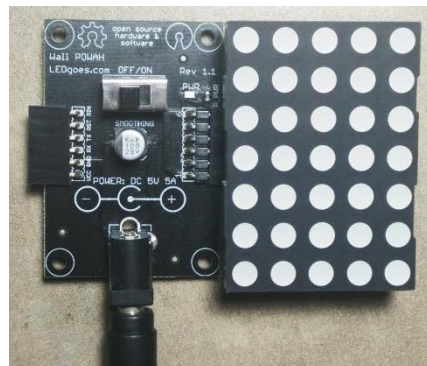


Fig. 5: Standard Wall POWAH & Displayboard arrangement.

In Wall POWAH v1.1, Pin 6 on the right side is permanently connected to 5V to facilitate the auto-addressing lines. Pin 6 on the left side is not connected to anything. Wall POWAH v1.1 is best suited on the left side of a BriteBlox marquee.

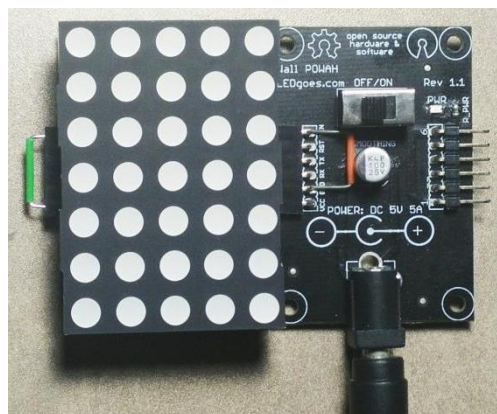
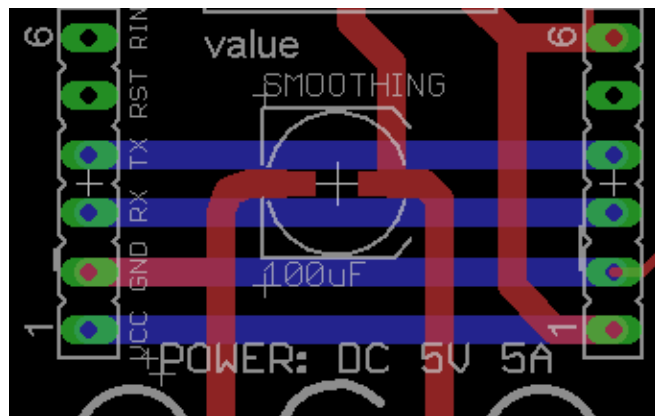


Fig. 6 (left): CAD drawing of Wall POWAH v1.1. Note that Pin 6 on the right is hard-wired to 5 volts.

Fig. 7 (right): With some hacking, Wall POWAH v1.1 can still facilitate auto-addressing from the right.

DANGER: Do not connect Pin 6 on the right side of Wall POWAH v1.1 directly to ground. This will cause an electrical short and could damage your products and/or pose a fire hazard. If you put another BriteBlox module to the right of Wall POWAH v1.1, double-check the jumper settings on that device if applicable.

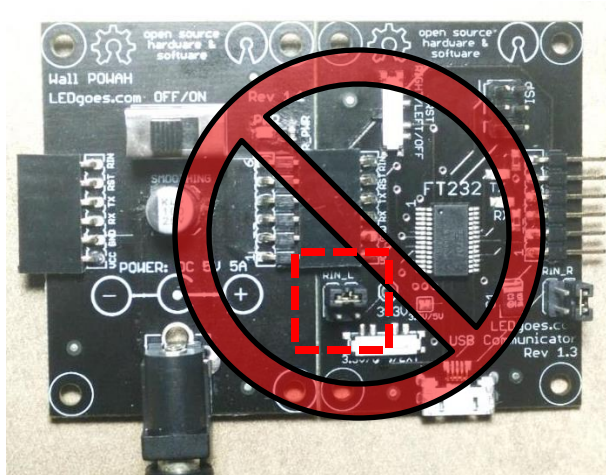


Fig. 8: **DANGER:** Because of the jumper configuration on the USB Communicator's left side, Pin 6 will go straight from 5V to Ground and cause a short. This could destroy products if not tended to immediately.

Battery POWAH

- Plug a battery into the JST connector of the Battery POWAH board.
- Plug the Battery POWAH module into either side of a BriteBlox marquee.
- Make the accommodations for auto-addressing, if desired, as described above.
- Slide the switch right to turn the marquee on, and left to turn it off.

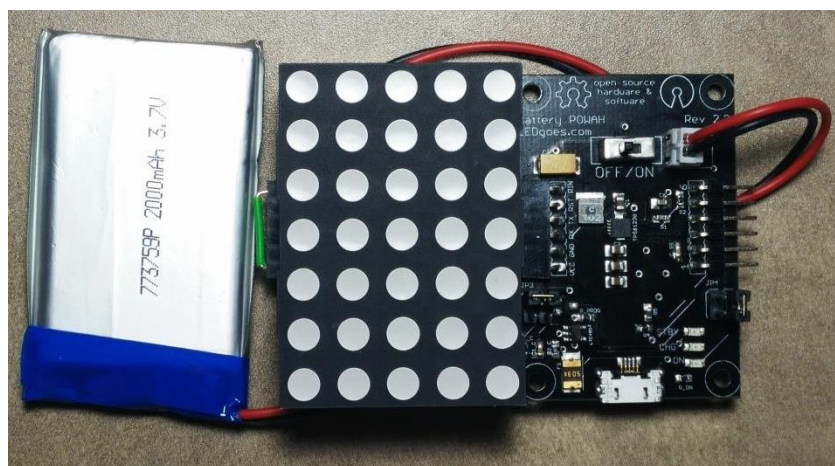


Fig. 9: A possible Battery POWAH and Displayboard arrangement.

In Battery POWAH v2.2, Pin 6 on either side can output 5V or GND as desired. This will facilitate auto-addressing and could come in handy if this module will be used in other projects. Simply use the jumpers as specified in Appendix A, “Jumper Settings.”

DANGER: Do not connect any devices to Pin 6 of Battery POWAH v1.1 that will provide opposite voltage without some sort of resistance in between. This will cause an electrical short and could damage your products and/or pose a fire hazard. Double-check the jumper settings.

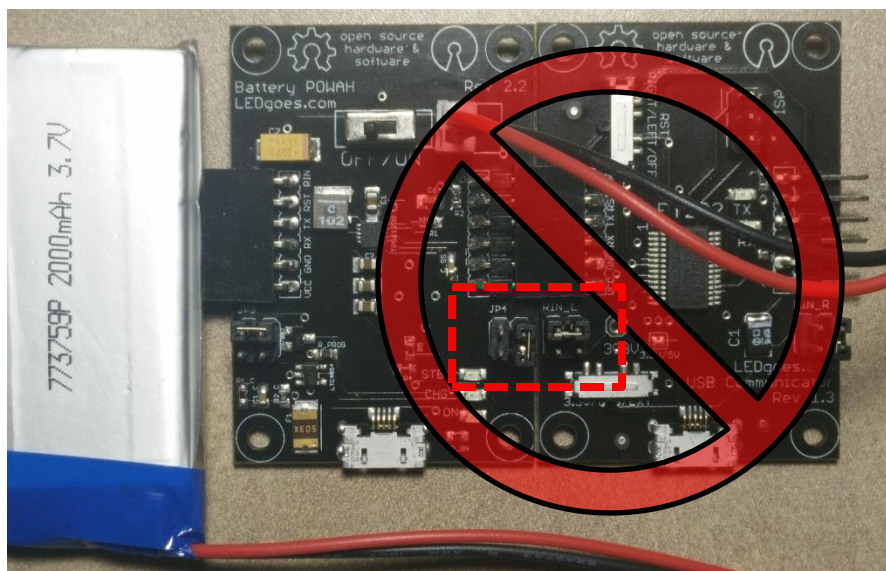


Fig. 10: **DANGER:** As noted before, do not let Pin 6 go straight from 5V (as on the right side of Battery POWAH) to Ground (as on the left side of USB Communicator). Your battery could cause serious damage if this happens and its protection circuit fails. Besides, why would you use Battery POWAH with another Partnerboard that can provide power anyway? (Answer: you shouldn't.)

DANGER: Follow all precautions for safe handling and disposal of Lithium Ion batteries. Failure to do so will create a significant fire and explosion hazard and could destroy your products. Please read our precautions at http://www.ledgoes.com/?page_id=171.

Charging the Battery

To recharge the battery,

- Make sure the Battery POWAH board is turned OFF.
- Plug the battery into the JST connector of the board, as shown above.
- Do not plug in any other devices besides the one battery to the board.
- Plug a Micro USB cable from a PC or cell phone charger or other Micro USB-compatible charger into the Micro USB port on the board.
- The green “CHG” light will illuminate.
- When charging is finished, the “STBY” light will illuminate.

CAUTION: It is not supported to charge a battery at the same time as the Battery POWAH board is ON. Try this at your own risk.

USB Communicator

This device can provide both power and communication, thus rendering Wall POWAH unnecessary for short marquees.

- To power a marquee, make sure the bottom switch is set to 5V, and make sure the top “RST” switch is set to OFF.

- Attach the USB Communicator to a PC using a Micro USB cable.
- Make the accommodations for auto-addressing, if desired, as described above.
- Mate the USB Communicator evenly with either side of your marquee.

In USB Communicator v1.3, Pin 6 on either side can output 5V or GND as desired. This will facilitate auto-addressing and could come in handy if this module will be used in other projects. Simply use the jumpers as specified in Appendix A, “Jumper Settings.”

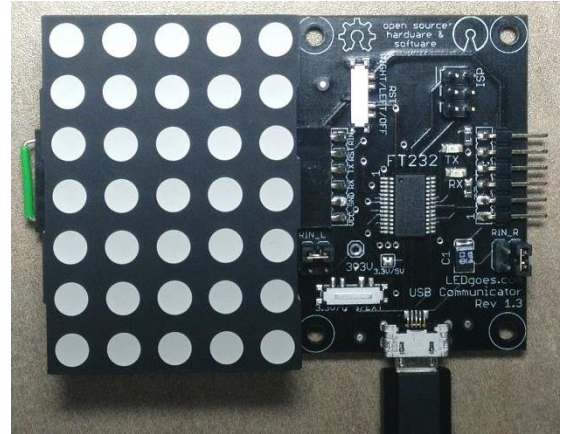


Fig. 9: A possible Battery POWAH and Displayboard arrangement.

DANGER: Do not connect any devices to Pin 6 of USB Communicator v1.3 that will provide opposite voltage without some sort of resistance in between. This will cause an electrical short and could damage your products and/or pose a fire hazard. Double-check the jumper settings.

Wireless Communicator

- Attach the Wireless Communicator to either side of a BriteBlox marquee.
- Pair with the “BritebloxBT” device on your PC or smartphone (pairing code: 1234).
- Note that the radio is configured for a speed of 9600 bps. You will need this for the BriteBlox PC Tools and most serial terminals.

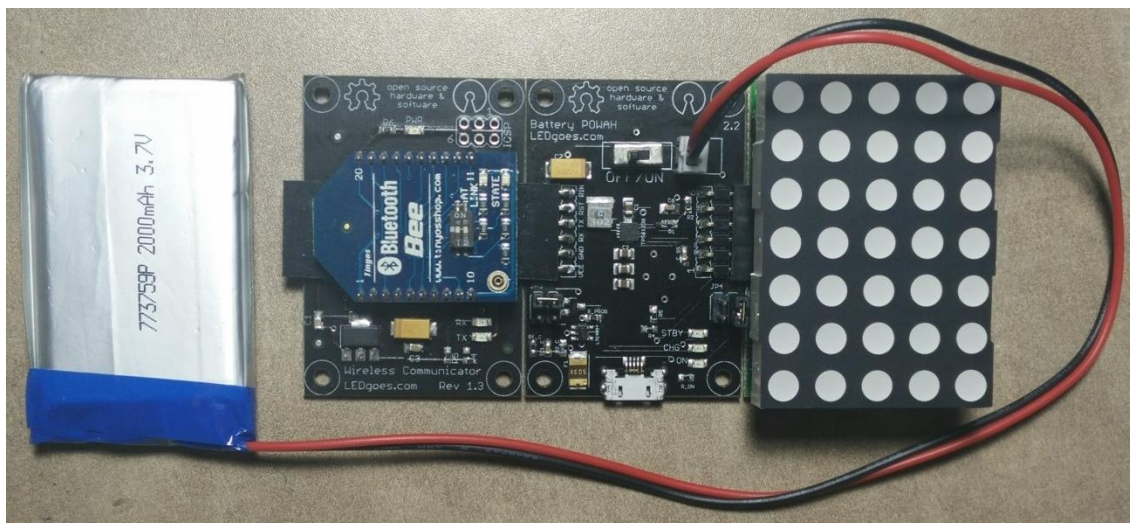


Fig. 12: One possible Wireless Communicator arrangement with a Displayboard and Battery POWAH module. You could use it with Wall POWAH, but that would wreck the “wireless” setup.

The Wireless Communicator can be placed anywhere in the marquee without affecting auto-addressing because Pin 6 passes through from one side to the other.

Sanity Check

- With the auto-addressing properly in place, turn on your two-panel marquee.
- The marquee should look like one of the three pictures below:

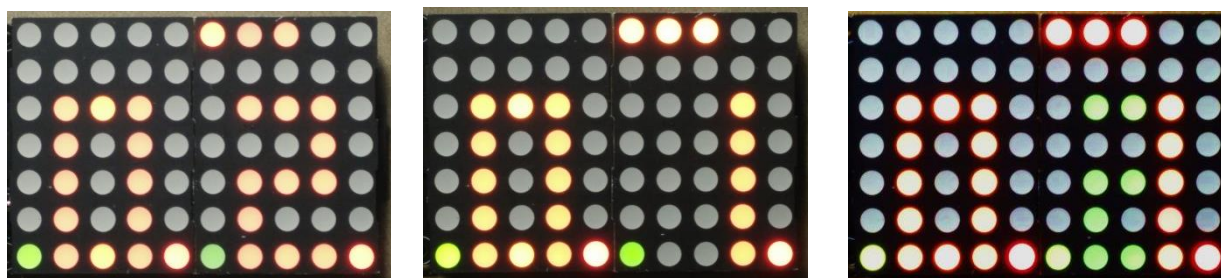


Fig. 13: You will see one of these three numerical readouts shortly after turning on the power to a two-panel marquee with auto-addressing enabled.

The first panel should read “0”, and the second panel should read “1” or “2” with three dots on top. (It is OK if one color appears to show “1” and the other color shows “2”.) If your panels do not look like either of the three pictures above, please consult the regular manual for troubleshooting advice.

Using the BriteBlox PC Tools (Windows/Mac/Linux)

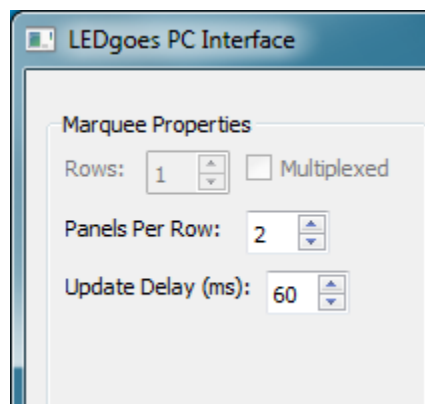
Find our latest software and documentation on GitHub: <https://www.github.com/openbrite>. You can download source code and installers for various operating systems from GitHub. You can also find installers and drivers at our home page, <http://www.ledgoes.com>.

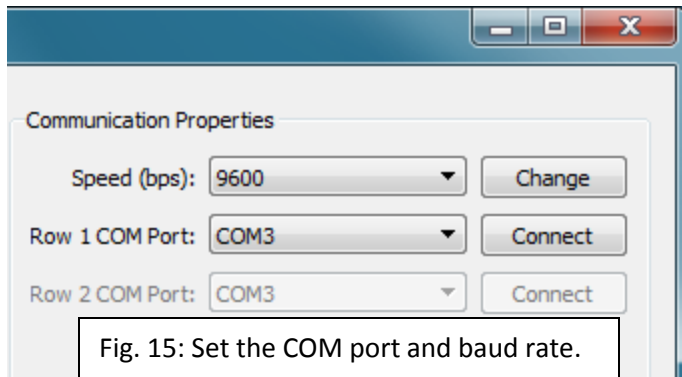
The BriteBlox PC Tools are designed to be robust, supporting many marquee shapes and many types of text or animation input. To display scrolling text on the Briteblox marquee:

- Begin by defining the parameters of your marquee. Enter how many rows are in the matrix, and how many panels per row there are, in the fields at the top left.

Fig. 14: Set the number of rows & panels per row.

- Set the communication port on the top right of the window.





If you do not see your communication module,

- Go to the “Settings” menu.
- Uncheck “Show Only LEDgoes Communicators.”
- Select “Refresh COM Ports” from the Settings menu.

If these steps do not help you find the correct COM port to select, consult the manual.

Caution: Most PCs are able to run the marquee at top supported speed (500 kbps). However, the Wireless Communicator only supports 9600 bps from the factory. The baud rate you choose will influence the scroll rate of the LED matrix.

- Click the “Connect” button next to the COM port you wish to activate.

Once you have clicked “Connect”, the message " :: AWAITING MESSAGES " will scroll by on the panels to indicate successful connection.

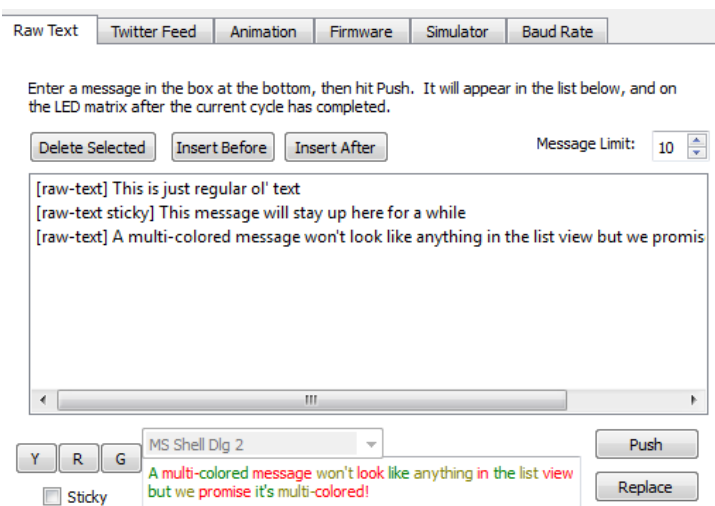


Fig. 16: The “Raw Text” view features several tools for manipulating text on the marquee.

To enter your own messages:

- Write a message in the text field at the bottom of the screen.
- Color your messages with the “R”, “Y”, and “G” (for Red, Yellow, and Green) buttons next to the rich text window.
- When you are satisfied with the message content, click the “Push” button. The message will appear in the list box, and eventually on the marquee if it is turned on and connected.

To stop your matrix, click “Disconnect” which will only appear if you are currently connected. After disconnecting, the message on your matrix will freeze in place. You must remove power to clear the board.

Using the BriteBlox Mobile Tools

Please consult our website <http://www.ledgoes.com>, and <https://www.github.com/openbrite> (our GitHub page) for the latest software and documentation for the BriteBlox Mobile Tools.

- Turn on the Wireless Communicator module.
- In your mobile device’s settings area, pair with the “BritebloxBT” or “BluetoothBee” module. The pairing code is 1234.
- Open the Briteblox app, and hit the “Connect to Bluetooth Serial” button.
- Select the Wireless Communicator (BritebloxBT or BluetoothBee) from the list. If it does not appear in the list, hit the “Scan for devices” button, then select the device.
- Once the status text field shows “Connected” and the Bluetooth Bee is illuminating a solid bright blue LED, enter a message in the text field.
- Hit the “Send” button to watch the message scroll by on the marquee.

CAUTION: The BriteBlox Mobile Tools user interface is subject to change.

Additional Support

Questions? Comments? Email us at nerds@openbrite.com. Find us on Twitter at @LEDgoes_display, or on Facebook at <https://www.facebook.com/LEDgoes.display>.

Appendix A: Jumper Settings

Partnerboards that provide power (except for early Wall POWAH) feature the capability to control what goes to Pin 6 through the use of jumpers. Below is an explanation of what each possible jumper setting will cause Pin 6 to become.

