

USER MANUAL

BrightBeats Mobile Wireless DMX Controller



Important Information

Warnings

- Connect this unit's power cord only to an AC outlet of the type stated in this Owner's Manual or as marked on the unit. Failure to do so is a fire and electrical shock hazard.
- Be sure to connect to an appropriate outlet with a protective grounding connection. Improper grounding can result in electrical shock.
- Do not allow water to enter this unit or allow the unit to become wet. Fire or electrical shock may result.
- Do not place heavy objects, including this unit, on top of the power cord. A damaged power cord is a fire and electrical shock hazard. In particular, be careful not to place heavy objects on a power cord covered by a carpet.
- Do not place a container with liquid or small metal objects on top of this unit. Liquid or metal objects inside this unit are a fire and electrical shock hazard.
- This unit is equipped with a dedicated ground connection to prevent electrical shock. Before connecting the power plug to an AC outlet, be sure to ground the unit. If the power cord has a three-pin plug, it will provide sufficient grounding so long as the AC outlet is grounded correctly.
- Do not scratch, bend, twist, pull, or heat the power cord. A damaged power cord is a fire and electrical shock hazard.
- Do not remove the unit's cover. You could receive an electrical shock. If you think internal inspection, maintenance, or repair is necessary, contact your dealer.
- Do not modify the unit. Doing so is a fire and electrical shock hazard.
- If lightning begins to occur, turn off the power switch of the unit as soon as possible, and unplug the power cable plug from the electrical outlet.
- If there is a possibility of lightning, do not touch the power cable plug if it is still connected. Doing so may be an electrical shock hazard.
- Use only the included power supply for this unit. Using other types may be a fire and electrical shock hazard.
- If the power cord is damaged (i.e., cut or a bare wire is exposed), ask your dealer for a replacement. Using the unit with a damaged power cord is a fire and electrical shock hazard.
- If you notice any abnormality, such as smoke, odor, or noise, or if a foreign object or liquid gets inside the unit, turn it off immediately. Remove the power cord from the AC outlet. Consult your dealer for repair. Using the unit in this condition is a fire and electrical shock hazard.
- Should this unit be dropped, or the cabinet be damaged, turn the power switch off, remove the power plug from the AC outlet and contact your dealer. If you continue using the unit without heeding this instruction, fire or electrical shock may result.

Cautions

- Keep this unit away from the following locations:
 - Locations exposed to oil splashes or steam, such as near cooking stoves, humidifiers, etc.
 - Unstable surfaces, such as a wobbly table or slope.
 - Locations exposed to excessive heat, such as inside a car with all the windows closed, or places that receive direct sunlight.
 - Locations subject to excessive humidity or dust accumulation.
- Hold the power cord plug when disconnecting it from an AC outlet. Never pull the cord. A damaged power cord is a potential fire and electrical shock hazard.
- Do not touch the power plug with wet hands. Doing so is a potential electrical shock hazard.
- To relocate the unit, remove the power plug from the AC outlet, and remove all connecting cables. Damaged cables may cause fire or electrical shock.
- When setting up the product, make sure that the AC outlet you are using is easily accessible. If some trouble or malfunction occurs, immediately turn off the power switch and disconnect the plug from the outlet. When you are not using the product for a long time, make sure to unplug the power cord from the wall AC outlet.
- If you know you will not use this unit for a long period of time, such as when going on vacation, remove the power plug from the AC outlet. Leaving it connected is a potential fire hazard.

Static Electricity precautions (ESD):

Even though the **Mobile Wireless** controller has built in protection for ESD discharge, damage can still occur. Care should be taken to ground your body before touching any of the connectors. The best method would be to touch some part of the chassis to discharge any voltage before working with it.

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Interference

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Mobile Wireless Exclusion of Certain Responsibility

Manufacturer, importer, or dealer shall not be liable for any incidental damages including personal injury or any other damages caused by improper use or operation of the Mobile Wireless.

Warranty Term

BrightBeats, LLC warrants each new product (except for batteries, spare parts or products BrightBeats, LLC does not manufacture) for a period of TWO (2) years from date of shipment to correct by repair or replacement any part defect due to faulty material or workmanship.

BrightBeats, LLC warrants for NINETY (90) days the battery pack in the controller.

BrightBeats, LLC warrants for NINETY (90) days any spare part it manufactures. On spare parts or products BrightBeats, LLC does not manufacture, BrightBeats, LLC will grant the same warranty given BrightBeats, LLC by its vendors. BrightBeats, LLC assumes no responsibility for damage or faulty performance caused by misuse, improper installation, careless handling or where repairs have been attempted by others.

This warranty is in lieu of all warranties or guarantees expressed or implied and no representative or person is authorized to assume BrightBeats, LLC any other liability with the sale of BrightBeats, LLC products.

Warranty Service

In order to request warranty service, you must receive a Return Material Authorization (RMA) number prior to return.

Return shipments must be visibly marked with the RMA number; the product must be returned (*shipping prepaid*).

Thank you for purchasing the BrightBeats Mobile Wireless DMX controller.

The **Mobile Wireless** controller has the following features:

- Lumen Radio CRMX spread spectrum wireless DMX module
- Full RGB LED color control
- DMX integration for output control
- 36 watts continuous output at 12 volts
- Internal rechargeable 2650 mAh NIMH battery
- Includes 60W USB-C charger and adapter cable
- 2-year warranty (Battery warranty is 90 days)

Setting up your system

Depending on what type of drums and LED's you have, the installation will vary. A typical system will consist of the **Mobile Wireless** controller, a trigger for the drum to be lit and a length of LED's.

Turning on and off the controller

To turn on: Press and hold the **I/O** button until the **main menu** is displayed.

To turn off: Press and hold the **I/O** button until **Shutdown** is displayed.

Input Connection

The input channel of the **Mobile Wireless** is a ¼ inch TRS jack. Only the tip and sleeve are used.



In general, the safe input range is from 0-12 volts. The input can be connected to various devices depending on how you wish to trigger the LED's. In addition to triggers, musical instruments, audio outs and similar devices can be used to trigger **but care must be taken not to overdrive the input or damage may occur.**

This system has also been tested with Roland VDrum controllers as well as 2Box. You can split the trigger output from a drum or cymbal with a "Y" cable and feed both the drum controller and the **Mobile Wireless**. If the drum is a dual zone with a TRS connector, you will have to choose which trigger to use from the splitter and make a custom cable that only connects to one of the outputs.

Trigger Placement

The **Mobile Wireless** input can be set to be very sensitive. This allows for many options when triggering. Typically triggers can be placed in the traditional way directly on the head of the drum or they can be placed on the shell of the drum if a stick-on model is used. The recommended location for live performances is directly on the drum shell with the only exception being the bass drum which should always be on the beater side head.

Every situation is different so a test should be conducted to determine the best method to achieve the desired response and to reduce cross triggering.

Output Connection

The output of the unit has a 4-pin XLR connector. It can drive up to 3.0 amps continuous and 3.5 amps intermittent at 12 volts for your LED's. This is a fully regulated output that will stay at 12 volts regardless of the battery level to give a consistent light output level on stage.

The pinouts are as follows:

- Pin 1: Red output (neg)
- Pin 2: Green Output (neg)
- Pin 3: Blue Output (neg)
- Pin 4: +12 volts



If you are making your own cables be sure to use the proper gauge to minimize voltage drop and have the ampacity to safely carry the current for your LED's!

DC Input (Charge Jack)

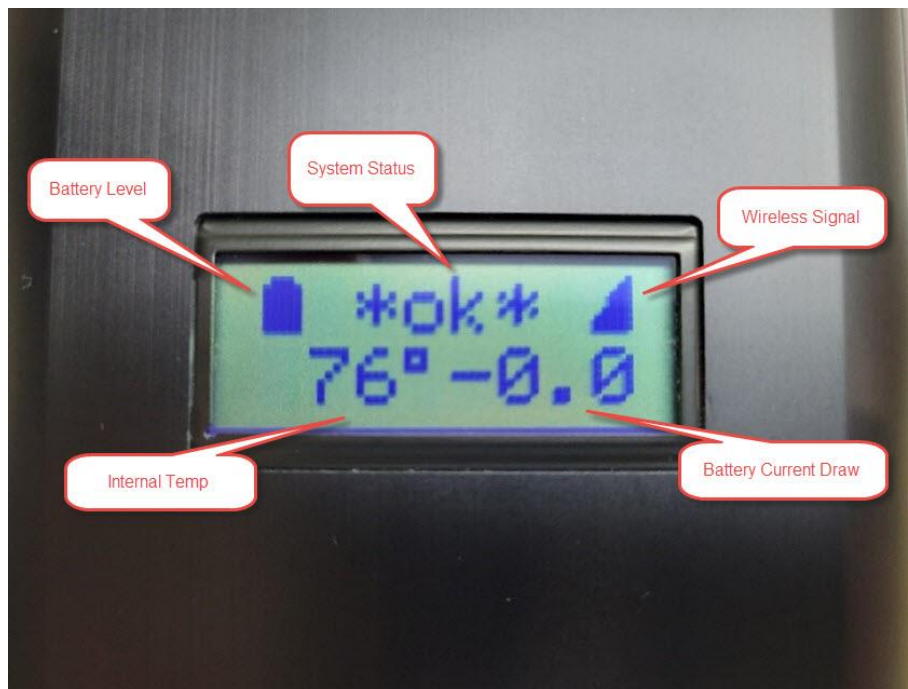
The DC input jack requires 20 volts DC and up to 4 amps maximum if both charging the batteries and driving the maximum length of LED's supported. It is not recommended to both charge and drive LED's at the same time since that will generate a lot of heat and will result in the charger shutting down due to battery temperature.

The included USB-C charger is 60 watts and will only support charging the unit and driving a short length of LED's simultaneously.

The included USB-C cable is a special cable (USB-C to 5.5x2.5mm) that will supply 20 volts at up to 3 amps.

LCD information display

The LCD display provides a quick way to see the system health and to also change settings. The main or "top" menu is displayed below.



Software configuration

All software settings are stored in non-volatile flash. The menu navigation buttons are on the top panel.

**** Changes are not saved until you exit all the way to the main or “top” menu. Be sure to exit to the top menu before powering off the unit or changes will not be saved!**



Channel Input Gain (Trigger Gain)

Trigger sensitivity setting. The higher the setting the more sensitive the trigger will be. From the home screen press **Enter**. On the next screen press enter again with **Input** highlighted.



LV is displayed with a percentage. The higher the percentage the more sensitive the trigger will be.



Pressing **Enter** again allows you to adjust the setting with the up and down keys. When finished, press **Esc** to save the setting. Pressing **Esc** again will exit the current menu.

Trigger gain can make a huge difference in responsiveness from the LEDs. When adjusting the trigger input levels, try to set them so that they are just slightly **above** the point at which they trigger. Try playing different things and see if you get the response you like. Setting the input higher will give a different response depending on what is being played and how the output settings are configured. When triggers are placed directly on the drumheads, they can trigger multiple times due to the head resonating. This is mostly undesirable. This can either be controlled by reducing the gain or a better solution would be to put triggers on the drum shell closer to the top head. This tends to be the best way to trigger the LEDs unless it's a low volume situation. The only exception to this is the bass drum which tends to work better with the trigger on the beater head.

Output Settings

From the home screen press **Enter**.



Now scroll down to Output and press **Enter** again with Output highlighted.



Several menu options are available:

- R** Red LED level (Ignored when DMX is enabled)
- G** Green LED Level (Ignored when DMX is enabled)
- B** Blue LED Level (Ignored when DMX is enabled)
- H** Hold Time
- F** Fade Speed
- F EN** Enable LED Fading (Ignored when DMX is enabled)

Channel Hold Time

This sets how long the LED's will remain lit after a strike is detected. If the fade is enabled on the channel it will start to fade out AFTER this timer expires.

Hint: For very fast snare rolls set the hold time to 1 or 2% and disable fading to get quick bright flashes.

Channel Fade Speed

Sets how fast the LEDs fade out AFTER the hold time setting expires. The higher the value, the faster the LEDs will fade out.

Lots of different combinations can be achieved with these settings. You can also use the fade to achieve a color blend during the fade. If you set one color level at 100% brightness and then set the others at a lower percentage, the LEDs at the lower brightness setting will fade out first leaving the higher ones fading out last.

Wireless Radio

The **Mobile Wireless** controller includes one of the most advanced CRMX radio modules available. The CRMX radio module is manufactured by [Lumen Radio](#). This section covers how to program and use this module. To view or change the link configuration go to the radio menu.

From the home screen press **Enter**.



Now scroll down to **Radio** and press **Enter** again with **Radio** highlighted. If the unit is already linked to a transmitter, it will display **Link OK** as below.



If you wish to unlink the unit, press **Enter** on this screen and a confirmation will be displayed to unlink. If the controller is not linked to any transmitter, it will display **NO Link**.

Linking with CRMX transmitters is very easy. Just push the link button on your transmitter and the unlinked controller will automatically link to the transmitter.

Antenna info

The included antenna is a 2.4 GHZ SMA-Male stub antenna with about 3.5db of gain. This should be good for most close-range applications.

DMX Settings

DMX provides full control of the **Mobile Wireless** from lighting software or hardware. For the unit to respond to DMX commands it must be enabled in the software.

From the home screen press **Enter**.



Now scroll down to **DMX** and press **Enter** again with **DMX** highlighted.



From here you can press **Enter** on each option and toggle the DMX status and channel.

DMX channels explained:

RGB Strike level: Sets the color for each output when the drum is struck and for the duration of the fade if enabled.

Trigger Enable: Allows the trigger to be turned on or off remotely allowing the drummer to have the LED's trigger only during the parts of the show they want them to. When the DMX channel is set above 128 the trigger is enabled. Fade timing settings must be configured on the **Mobile Wireless** unit.

Fade Enable: Turns the LED fade option on or off for the LED output. When the DMX channel is set above 128 the fade is enabled.

RGB Constant Level: Sets the output color for the drum when idle (no hit detected on the trigger)

The **Mobile Wireless** uses 8 DMX channels. The channel map is below:

Description	DMX ch
CH1 R Strike Level	1
CH1 G Strike Level	2
CH1 B Strike Level	3
Ch1 trig enable (>128 = ON)	4
Ch1 Fade enable (>128 = ON)	5
Ch1 R Constant Level	6
Ch1 G Constant Level	7
Ch1 B Constant Level	8

Saving or recalling settings from flash memory

Up to nine locations can be used to save controller settings for different drums/songs etc. To save or recall settings scroll down to **Backup** from the **main menu** and press **Enter**.

Next, scroll down to **Restore** or **Save** and press **enter** on the desired function.



Change the location number, if needed, and press **Enter** to confirm.



Software version and factory reset

To check the software version and serial number:

From the main menu, scroll down to **System** and press enter.

On the next menu, select **Info** and press enter.



Should a system update be needed, the controller would need to be sent back to BrightBeats to have it updated.

Factory Reset

To perform a factory reset of all settings (this does not change stored settings in flash backup profiles):

From the main menu scroll down to **System** and press enter.

On the next menu, select **Reset** and press enter.

Confirm the reset.

Battery and Charging Information

The **Mobile Wireless** internal battery is a Nickel Metal Hydride battery pack. The amount of run time from a full charge will vary but as a general guide, a fully charged battery at room temperature will give about 30 minutes of always on full LED output at 3 amps (36 watts) for 30 minutes. If you are varying the output color and brightness you will get a much longer run time.

The controller has several built-in safeguards to prevent the battery from being abused and shortening its life. The battery temperature, voltage and current draw are all monitored in real time and some of that information is displayed on the screen.

When a problem is detected, the main part of the display will change from ***OK*** to the following:

!AMPS! The battery is being overloaded. Reduce the number of LED's connected to the controller.
!BATT! The battery is almost completely discharged. Automatic shutdown will start soon.
!TEMP! Internal controller temperature is too high (140F or above). Automatic shutdown will start.

****Heat is the enemy of your battery. Never store the controller in a hot car or leave it in direct sunlight for long periods. If the controller is not in use for a long time, the battery should be charged every 3-4 months.**

Charging information

Charging the battery should be done with the controller **turned on** and the battery cool to the touch. A warm or hot battery will not charge fully or may not charge at all since the battery temperature is monitored by the system.

If the battery pack is too hot to charge a **"T"** will be displayed in the upper left corner of the display. Disconnect the charger and let the controller cool for a while before reconnecting.

****The battery will charge if the controller is turned off, but the battery gauge will be inaccurate since the chip that monitors battery level is shut down to avoid draining the battery. If this does occur, it will not affect the controller's function.**

When the charging cable is connected and the charger starts to charge the battery, the display will show a plug icon in the top left and the display will show **+2.0** for the charge rate.



When the battery is about 95% charged the charger goes into **“Top off”** mode. This will be indicated by a **To** icon displayed in the top left of the display. The battery charge current will also be very low. If the charge current goes down to zero or very close to zero, then the battery charge is complete. A typical full charge takes 2.5 hours.



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