

# LeGion™

ULTIMATE POWER

## User Manual



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# 1 Introduction

## *Patents*

PLX Devices Inc. currently has patents pending on the intelligent battery metering hardware, firmware, and algorithms.

## *Warnings*

**Each Legion contains a Lithium Polymer (LiPo) battery. LiPo batteries are volatile. Improper handling of LiPo batteries can result in fire. Read ALL instructions before use.**

**Do not use this product and its accessories in any way other than specified by PLX Devices Inc. PLX Devices Inc. is not liable for accidents or damage caused by misuse of this product.**

**Do not tamper, disassemble, or modify this product. This may cause an accident, fire, electric shock, or product malfunction.**

## *Key Features*

1. 97% High Efficiency DC/DC Converter
2. Available Colors: White and Black
3. 10,000:1 Contrast Ratio OLED Display
4. 180 Degree Viewing Angle

## *Package Contents*

1. Legion Ultimate Power Main Battery Unit
2. USB Male A to Micro USB Retractable Cable
3. User Manual
4. Power On Jumper

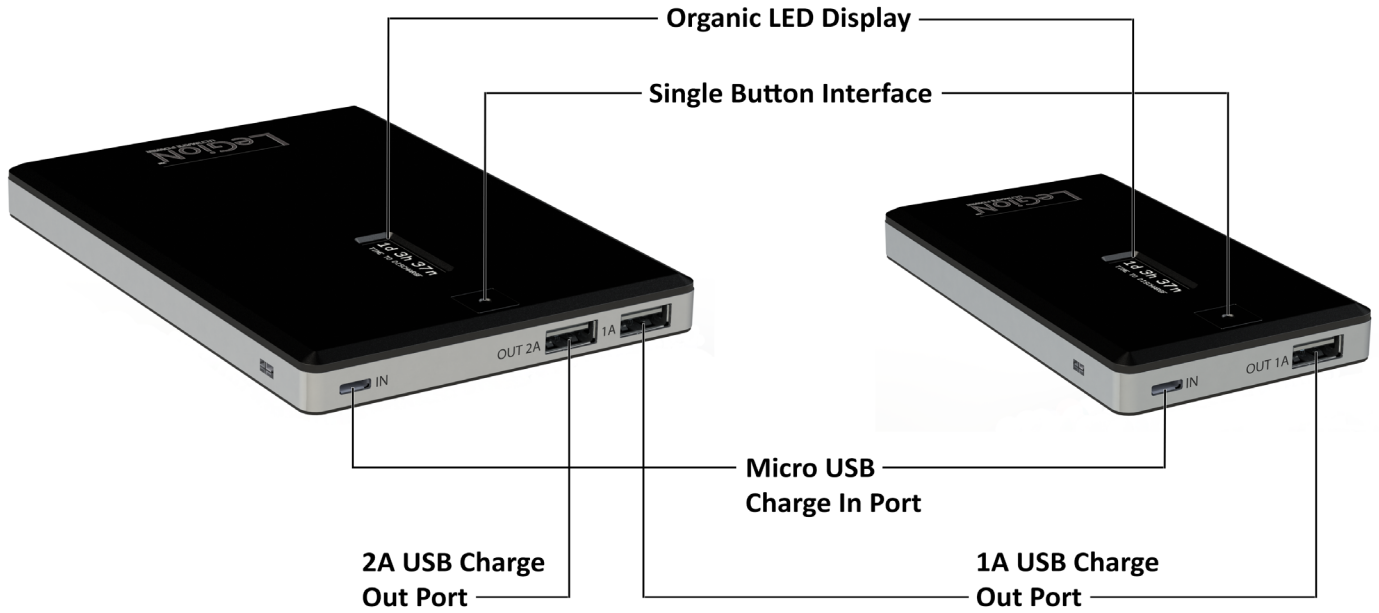


# 2

## Overview

Powered by 11000mAh  
Lithium Polymer Battery

Powered by 5500mAh  
Lithium Polymer Battery



### Accessories

Included Accessories



Charging Cable

Additional accessories that may be purchased at [www.plxdevices.com](http://www.plxdevices.com)



Large and Small Carrying Case



6-In-1 Charging Cable



## Intelligent OLED Display



Shows the percent charge remaining and the actual capacity remaining in mAh.



Shows the amount of time (days:hours:minutes) remaining until Legion becomes empty.



Shows the amount of time (days:hours:minutes) remaining until Legion becomes fully charged.



Shows the health of your battery. Legion keeps track of your battery's wear and tear.



Shows the number of charge cycles, battery age, and battery temperature.



Shows the battery's voltage.



Shows the amount of current being charged or discharged in and out of Legion.



Shows the amount of power in Watts Legion is currently delivering to your device.

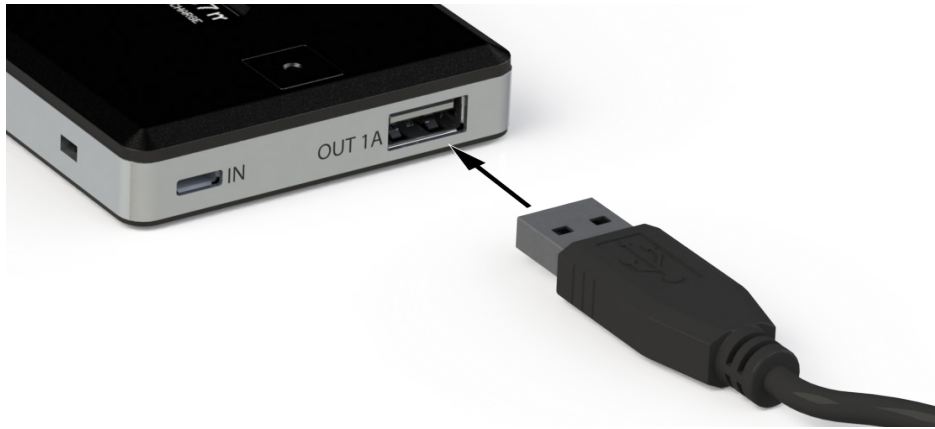
# 3 Operating Legion

## Charging Your Device

1. Connect the Micro USB end of the Retractable Cable into the port of the device you want to charge.

**NOTE:** The provided Retractable Cable is intended to only be used with devices that contain Micro USB ports. Devices with a different type of port will require their appropriate cable.

2. Insert the USB Male A end of the Retractable Cable into Legion's USB Charge Out Port.



**NOTE:** Connecting the cable improperly may cause serious damages to the device. Any damage caused by misuse is not covered by the warranty.

## Charging Your Legion

1. Connect the Micro USB end of the Retractable Cable into Legion's Micro USB Charge In Port.



2. Insert the USB Male A end of the Retractable Cable into a power source.

**NOTE:** Other cables can be used to charge Legion as long as the cable can connect to Legion's Micro USB Charge In Port.



## ***Toggle Menu***

To toggle through the menus, press and release the button located to the right of the Organic LED Display.

## ***About Legion Menus***

Four different menus may be displayed on Legion's Organic LED Display. These menus include Time Remaining, Battery Percentage, Electrical, and Health.

### **Time Remaining**

When the Time Remaining menu is selected, either the Time to Discharge or the Time to Charge will be displayed. Time to Discharge will be displayed if nothing is plugged into Legion or if Legion is charging a device. This simply tells you how much time is left before your Legion battery needs to be charged. Time to Charge will be displayed if Legion is being charged. This lets you know how much longer you need to charge your Legion battery for it to reach full capacity. Please note that the time remaining (Time to Discharge and Time to Charge) does not display the time remaining for your mobile device. The information displayed is information based solely on your Legion battery.

**NOTE:** Allow about 15 seconds for Legion to calibrate to the device when charging in or out.

### **Battery Percentage**

The Battery Percentage menu will display the percentage of your maximum battery capacity numerically and graphically. The remaining battery capacity will also be displayed in mAh.

### **Electrical**

The Electrical menu will cycle through three different screens: Voltage, Current, and Power. These screens will tell you the voltage of your Legion battery, and the current and power draw of your Legion battery.

**NOTE:** If nothing is connected to your Legion, you should expect to see a low current (0.05A or less).

### **Health**

The Health menu will alternate between two different screens: Condition and Charge Cycles/Temperature. The Condition screen will indicate what condition (New, Good, Ok, Poor, Bad, or Replace) your Legion battery is in. The other Health screen will display how many times Legion has been fully charged as well as the temperature of the battery in degrees Fahrenheit and degrees Celsius.

**NOTE:** Please note that LiPo batteries operate better at lower temperatures.

## ***Sleep Mode***

To conserve battery power and battery life, Legion automatically turns off the Organic LED Display after 30 seconds of inactivity. Simply press and release the button to turn the display back on.



## Turning Your Legion ON and OFF

1. To turn your device ON for the first time, connect the provided jumper into the device. To turn the device ON from OFF, press and hold the button for a few seconds until the Organic LED Display turns on.



**NOTE:** The jumper must be installed in order for Legion to be operable.

2. To turn your device OFF, press and hold the button for a few seconds until the Organic LED Display turns off.

**NOTE:** If Legion is OFF and you connect it to a power source, Legion will turn ON and start charging. However, if Legion is OFF and you connect a device you would like to charge, it will not automatically turn ON. If Legion is ON and being charged, you may press and hold the button to turn off the screen and Legion will continue charging. However, if Legion is charging a device and you press and hold the button, Legion will turn OFF and stop charging your device.



# 4 Product Care and Maintenance

Your mobile battery device is a product of superior design and should be treated with care. The guidelines below will allow you to enjoy this product for years to come.

## *Storage*

Legion should be stored at room temperature in cool or shaded areas, ideally between 10°C (50°F) to 25°C (77°F). For long term storage (over 3 months), the voltage should ideally rest between 3.6 V to 3.9 V.

## *Battery Use and Safety*

Inspect Legion before and after every use as much as possible to ensure no physical damage or swelling of the product is evident. Such signs can be an indication of a dangerous problem with the battery that could lead to bodily injury, property damage, and product failure.

The battery in Legion is not intended to be replaced by the consumer. If you believe the battery is damaged or needs to be replaced, contact technical support at [www.plxdevices.com](http://www.plxdevices.com) for inspection and replacement information. Only qualified personnel should service this product. Faulty service may be dangerous and may invalidate any warranty applicable to the device.

### Exposure to Heat

Do not operate or store this product in or near a heat source, or under direct sunlight for extended periods of time. Excessive heat can damage the battery, and may even cause the battery to explode.

Never allow your Legion battery to overheat at any time. Temperatures exceeding 45°C (113°F) for greater than one hour can cause damage to the battery and may result in fire. Always inspect the battery if it has overheated, and do not reuse if you suspect it has been damaged in any way.

### Exposure to Liquid or Moisture

Do not expose this product to liquid or moisture. Liquids can get into and affect the internal components of the product, and moisture can lead to corrosion. This may result in product malfunction, fire, and/or electric shock. Even if Legion appears dry and operating normally after exposure, corrosion can still occur and pose a safety hazard.

Do not dry a wet or damp Legion with a heat source, such as a microwave oven or hair dryer.

### Charger Selection

Use ONLY battery chargers that are designed to charge LiPo batteries, capable of constant current and constant voltage charging. **DO NOT USE** Ni-Cd or Ni-MH chargers. Failure to use the proper charger may result in fire, personal injury, and/or property damage.

If at any time the product begins to balloon, swell, or smoke during charging or discharging, discontinue the



process immediately. Batteries that exceed 60 °C (140°F) during charge or discharge can and usually will become damaged and possibly catch on fire. Place the product in a safe, open area away from flammable materials for at least 15 minutes. Continuing to charge or discharge a battery that has begun to swell or smoke can result in fire. A battery that has ballooned or swollen must be removed from service immediately.

### Crash Damage

If a battery is damaged or punctured due to external force(s), quickly place the battery in a safe, open area away from flammable materials for at least 15 minutes.

If a battery leaks electrolyte or gas vapors, do not inhale the leaked material. Leave the area and allow the vapors to dissipate. Remove spilled liquid with an absorbent cloth and dispose the cloth.

If electrolyte from the damaged battery comes into contact with skin, wash the affected area(s) with soap and water immediately. If electrolyte comes into contact with your eye(s), flush out with generous amounts of water for 15 minutes and seek medical attention.

A battery that is physically damaged or punctured must be removed from service immediately with special care. See Crash Damage under the Disposal section for the proper disposal process.

## *Disposal*

Proper disposal of your Legion and its battery is an important aspect of product care and safety. To properly dispose the product, follow your municipal battery disposal guidelines. Visit your local electronics/hardware store for general instructions on proper disposal of mobile electronic devices with LiPo batteries.

For those in the United States, visit the following government website for more information on proper disposal procedures:

<http://www.epa.gov/epawaste/conservation/materials/ecycling/donate.htm>

Be aware that different states might have different laws regarding proper disposal of electronics and rechargeable batteries.

### Crash Damage

Extreme care must be taken when handling or transporting a damaged battery for disposal. It is best to place the damaged battery inside a fireproof container until it can be properly disposed.

PLX Devices, Inc. DOES NOT recommend disassembling the product and disposing/replacing the battery on your own accord. Disassembly of the product or battery can be dangerous if improperly handled.



# 5 Troubleshooting

## *Resetting Legion*

If Legion has an error or freezes, you may need to reset Legion to regain functionality.

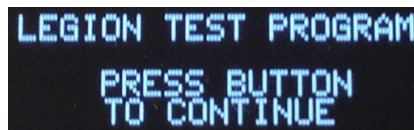
### Quick Reset

For a quick product reset, unplug and replug the jumper from the jumper port. This will restart the product and retain any ongoing data (such as remaining capacity of the battery and charge cycles).

### Factory Setting Reset

To reset the product to its factory setting:

1. Remove the jumper from the jumper port.
2. Press and hold down the button, and plug the jumper back in to the jumper port. You should see the following screen:



3. Remove the jumper from the jumper port once again.
4. Plug the jumper back in to the jumper port, and Legion should reset to factory conditions.
5. It is recommended to put Legion through one full charge cycle (fully charging the battery, fully draining the battery, and fully charging once more) before further use. Allowing Legion to execute one full charge cycle will permit Legion to calibrate itself for accurate subsequent readings.

**NOTE:** Performing a Factory Setting Reset will permanently reset the charge cycles value. However, the charge cycles value has no influence on the other functions of the product. It is the only data value that will be inaccurate if the product is functioning properly after a Factory Setting Reset.

## *Problem Charging Your Device*

If Legion is unable to charge your device:

1. Check to see if your device can be charged with a different power source using the same cable. If your device is not charging, the cable or the device itself might be the source of the problem.
2. If the device is charging normally with a different power source, connect Legion to the device using the same cable, and make sure Legion is turned ON. Legion is unable to charge devices while OFF.

**NOTE:** Legion can charge devices while in Sleep Mode.

3. If Legion is unable to turn ON or if the voltage reading is less than 3.4 V, recharge Legion's battery. Legion is unable to charge devices if the battery power is too low.



4. If your device is still not being charged and Legion is ON, unplug and replug the jumper to perform a quick reset.
5. If your device still does not charge after going through Steps 1 – 4 , visit [www.plxdevices.com](http://www.plxdevices.com), and contact us to speak to a support technician who can further assist you.

### ***Problem Charging Your Legion***

If you are unable to charge Legion:

1. Check to see if the charging cable is working properly by using the same charging cable to charge another device, using the same power source. If the other device is not charging, the charging cable or power source may be the problem.

**NOTE:** Make sure the power source provides constant voltage and constant current and the charging cable is designed to charge LiPo batteries. Using an inappropriate charging cable can be dangerous, and may result in product malfunction and fire.

2. If the other device is charging normally with the same power source, reconnect the charging cable to Legion. Legion and its display should turn ON.
3. If Legion does not turn ON, or if Legion is ON but is still not charging, unplug and replug the jumper from the jumper port. This should perform a quick reset and Legion should turn ON.
4. If Legion does not turn ON, or if Legion is ON but is still not charging, perform a Factory Setting Reset.
5. If Legion does not turn ON, or if Legion is ON but still does not charge, there might be a problem with Legion's hardware. Contact technical support at [www.plxdevices.com](http://www.plxdevices.com) for further assistance.

### ***Problem Turning Your Legion On***

If you are unable to turn your Legion on:

1. Check to make sure the jumper is installed. Legion cannot be powered on unless the jumper is installed.
2. Charge your Legion battery. Your Legion may not turn on if the battery power is too low.



# 6 Technical Specifications

## Legion 5500mAh

Battery	Lithium Polymer 5500mAh
Charge Output	USB Female A 5.0V Single 1A (5500mAh)
Charge Input	Micro USB 5.0V
Display	High Contrast OLED 128 x 32 Pixels
Human Interface	1 Push Button
Operating Temperature	0 – 45 Deg Celsius
Storage Temperature	-10 – 45 Deg Celsius
Physical Dimensions	2.43 x 4.32 x 0.52” (6.17 x 10.97 x 1.33cm)
Weight	4.4oz
Enclosure	Magnesium, ABS Plastic
Intellectual Properties	PLX proprietary intelligent battery monitoring and metering.
Power Supply	Processor controlled high efficiency DC/DC Boost with low power sleep
Fail Safe	Temperature monitoring, overcharge protection, short circuit and current over-draw protection
Meters	Voltage, Current (in/out), Power, Actual Capacity, Charge Status, Temperature, Age, Time to Empty, Time to Charge, Health

## Legion 11000mAh

Battery	Lithium Polymer 11000mAh
Charge Output	USB Female A 5.0V Dual 1A, 2A (11000mAh)
Charge Input	Micro USB 5.0V
Display	High Contrast OLED 128 x 32 Pixels
Human Interface	1 Push Button
Operating Temperature	0 – 45 Deg Celsius
Storage Temperature	-10 – 45 Deg Celsius
Physical Dimensions	3.7 x 5.33 x 0.52” (9.39 x 13.53 x 1.33cm)
Weight	9oz
Enclosure	Magnesium, ABS Plastic
Intellectual Properties	PLX proprietary intelligent battery monitoring and metering.
Power Supply	Processor controlled high efficiency DC/DC Boost with low power sleep
Fail Safe	Temperature monitoring, overcharge protection, short circuit and current over-draw protection
Meters	Voltage, Current (in/out), Power, Actual Capacity, Charge Status, Temperature, Age, Time to Empty, Time to Charge, Health



**TERMS OF USE** – PLX Devices Inc. does not guarantee product functionality with any third party device. Implementation and integration of the PLX products with any other device(s) must be done at your own risk.

**LIMITED WARRANTY** – PLX Devices Inc. warrants this product to be free from defects for 1 year from the date of purchase. If applicable, non-serviceable items are excluded from stated warranty. Serviceable goods must be determined by PLX Devices to be defective before any warranty or replacement is issued. PLX Devices' obligation under warranty shall be limited to repairing or replacing, under the discretion of PLX Devices, any part proven defective. This warranty is limited to the repair or replacement of parts in the manufactured good and the necessary labor done to affect its repair or replacement.

**SERVICE UNDER WARRANTY** – In the unlikely event that your PLX Devices hardware should fail during the warranty period, a Return Material Authorization number (RMA) must be first retrieved from PLX Devices Customer Support. Support can be contacted through email: [rma@plxdevices.com](mailto:rma@plxdevices.com) or by phone: 408-745-7591. All serviceable goods must be packaged securely with proof of purchase, RMA number, with all shipping charges prepaid and shipped to PLX Devices Inc. Goods returned under warranty must be received by PLX Devices Inc. within (10) business days after the RMA number has been issued. Goods received after this period is subject to fees for the service of repair or replacement. All repaired or replaced items shall be warranted for the remainder of the original product warranty.

**RETURNS AND RESTOCKING FEE** – All returns must be within 30 days of receipt. A 15% restocking fee will apply to applicable PLX Devices products returned for refund. All returns are to be packed in original condition including packaging, documentation, manuals, and accessories. Returns that do not include all the accessories and components may be returned to the customer or charged on a per item basis. The customer assumes responsibility for product until receipt at PLX Devices Inc. Shipping via an insurable carrier is recommended. Any unauthorized shipping charges will be billed to the customer or shipment will be refused.

**DISCLAIMER** – PLX Devices Inc. shall not be liable for direct, special, incidental, or consequential damages resulting from any legal theory including, but not limited to, lost profits, downtime, goodwill, damage, injury to persons, or replacement of equipment and property due to improper installation, integration and/or misuse of any PLX Devices Inc.'s product(s). This warranty applies to the original purchaser of product and is non-transferable. All implied warranties shall be limited in duration to the said 1 year warranty period.

