

ATOM

Instruction manual



ABOUT THE UNIT

Thank you for using our Atom portable power bank. This device can provide USB 5V, DC 12V and AC power to your appliance and portable electronic. For safety Atom has built in protection battery system and auto protection circuit. Before using this unit, please read the user manual carefully and retain for reference.



CHARGE ME NOW

Before using or storing, plug your ATOM into the wall until it is fully charged.

Keep your ATOM charged when not in use. For more tips and tricks on keeping your battery healthy, see the BATTERIES 101 section.

Important information.

- a) Keep the device away from object's that may cause a short circuit hazard. le large metal objects
- b) Don't heat the device, Place device in the fire, water and other liquid.
- c) Keep the device shaded from direct sun light when possible.
- d) Keep the device away from high humidity and dusty environments.
- e) Do not crush the device.
- f) Do not open, tamper with the device as this will void any warranty.
- g) Don't drop or subject the device to hard shock.
- h) Do not place heavy object's on the device.
- i) Keep out the reach of children.
- j) Do not cover the device with towels, clothing and other items.
- k) The unit may become hot when charging. This is normal. Use caution when handling.
- l) At the end of life use, scrap products in accordance with the local regulations.

PRODUCT PARAMETERS

Capacity	60,000mAh - 78,000mAh
(LWH)Dimension	200x65x165mm
Weight	Approx 2-2.1KG
Built-in battery cell	100% High quality lithium batter cells
Charging power	DC15V/4A
Charging time	DC 15V: 4-5 hours
USB output	USB1+USB2 5V-3.1A(Max), USB3+USB4 5V-3.1A(Max)
DC power	DC 9~12.6V/10A (Max)
AC power	AC100V/60H or 220V/50Hz. Pure sine wave output (IMPORTANT! AC output is customised according to different countries, areas. Please refer to the actual product)
AC Power	AC Continuous Power Output: 150W Peak Power Output:200W
Power indicator	Digital Display (UID)
Working temperature	-20°C-60°C
Circle life	>500 times
Accessories	1 x Portable power bank 1 x Home charger 1 x Instruction manual

PRODUCT DESCRIPTION



User Information Display.
AC/DC power indicator
Error indicator
Battery fuel gauge
Charging status

ON/OFF

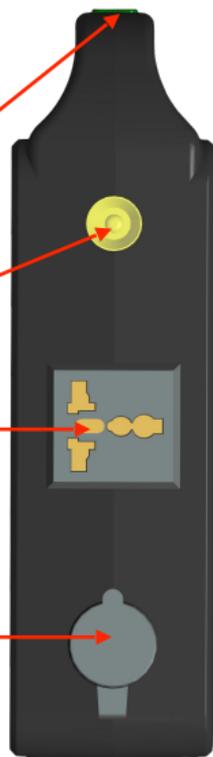
USB output x4
DC/Solar input
Charge input

Torch On/Off

LED Torch

AC Output

12V DC Output



PRODUCT INSTRUCTION

1) Provide power for DC12V and 5V USB appliances.

- a. Press the power ON/OFF switch for short time, the UID will become active. The device is now powering 12v and USB outputs.
- b. Auto power detection, if no device is connected to the 5v USB or 12v after 30 sec ATOM will auto power off or once the charging device is fully charged.

※ **Note:** Because the battery is chemical product, voltage drops with capacity, the DC output voltage of this product is in the range of 9~12.6V, the maximum output current is 10A. If the DC12V appliance you connect does not have the voltage stabilising function, when the DC voltage drops with the decline of battery voltage, it may cause the informal of appliance, please stop using it.

Provide power for AC output.

- a. Double Press the power ON/OFF switch, the UID will indicate the AC output is now being powered and AC will be indicated on the display. Double press the power On/Off button to turn AC power off. The AC power symbol will not be displayed.
- b. NOTE, the AC socket will continue to power until it is turned off via the on/off switch

※ The AC output rated power is 150W. If the appliance power is over 150W, do not try power the appliance.

※ The fan will work automatically for cooling when the working temperature is high.

Warning: Different countries require different voltage. Please read this manual carefully before using to minimise any dangerous hazards.

Recharging Atom.

- a. **Charge using the AC Adapter provided.** Connect the AC plug of standard charging adapter to the household AC socket, connect the DC plug of standard charging adapter with the DC input. Atom will now start to charge. The UID will display battery level % when the display read out is 100% the battery full, please remove the charger in time.
- b. **Solar charging** (if applicable). Connect the DC cable from the solar panel direct to the DC input on Atom. (IN) will flash on the UID indicating charging.

- c. **Vehicle Charging.** ATOM can be charged using a 12v-24v vehicle input using a suitable vehicle cable (sold separately).

User Information Display (UID)

Display	Status
## %	Current remaining battery level
IN - Flashing	Atom Charging
USB 12V	Power to USB & 12V
2.1A	USB Device Connected @ 2.1A
AC On	AC output active

PRODUCT APPLICATION.

- a) This product is built using high quality original lithium ion battery's, meaning it durable with no memory effect but high-capacity. However, we still recommend you to operate in the range of 10 °C ~30 °C, to obtain the optimal charging capacity;
- b) When charging, in order to avoid interference, please stay away from TV, radio and other equipment
- c) If the device has not been used for a long time, please disconnect the charger cable and store it.
- d) Some portable devices may need to be set in charge mode to charge, see the corresponding equipment manual for more information
- e) **In order to extend the life of product (lithium battery), it is best to charge within 3 months, and charge at least once within 6 months.**

Recycle.

Always return your used electronic products, batteries, and packaging materials to

dedicated collection points. This way you help prevent uncontrolled waste disposal and promote the recycling of materials.

Battery information.

Your device has an internal, non-removable, rechargeable battery. Do not attempt to remove the battery, as you may damage the device.

The battery can be charged and discharged over 500 times, but it will eventually wear out.

After service repair,

- We provide 12 month warranty against defective parts or materials.
- For repairs or refunds take your purchase receipt within the 12 month period to your local Powapacs retailer.
- DO NOT OPEN or attempt to repair this device.
- After service range: Defective performance when normal use.
- Damage caused from misuse is not covered under the warranty.
- Powapacs are not responsible for return of the device for warranty repairs.

Note the following damage is out of after service repair:

1, When the device is defective through misuse but not limited to,
Damage to the appearance.

Dropped.

Overloading the circuit,.

Compression deformation.

Opening of the device.

2, When the device is damaged by,

Fire.

Water.

Corrosive substances.

3, When the device is damaged by over standard voltage load.

IMPLIED WARRANTIES

THE LIMITED WARRANTY STATED HEREIN IS IN LIEU OF ALL OTHER EXPRESS WARRANTIES. IN NO EVENT SHALL ANY IMPLIED WARRANTIES, INCLUDING BUT NOT LIMITED TO ANY WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR NON-INFRINGEMENT, EXTEND BEYOND THE APPLICABLE WARRANTY PERIOD IDENTIFIED IN THE PARAGRAPH ABOVE. Some states do not allow limitations on how long an implied warranty lasts, so the above limitation may not apply to you. This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

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EDUCATION,

BATTERIES 101: ATOM utilises the latest and greatest in battery technology to accompany you on all life's adventures. The versatile and lightweight Lithium Ion, is robust and powerful, we've compiled some helpful tips to keep your ATOM batteries working their best.

i. Batteries need exercise.

The best thing for any battery is to use it. Don't leave the battery sitting without being charged for extended periods of time. If you will be storing the ATOM, make sure it's fully charged before you put it away.

ii. The "Battery Memory" myth.

Thanks to old Nickel-Cadmium (NiCd) batteries, there's a myth running around that you should completely drain your batteries before plugging them in for a recharge, called "deep cycling". Although true with NiCd batteries, the typical batteries you'll find in most of your gear today, including the advanced lithium batteries used in your ATOM, require no such draining. In fact, you should avoid deep cycling your batteries – it does more harm than good in most cases.

iii. The "Stadium Effect".

The stadium effect occurs when recharging your batteries. You'll notice your battery quickly filling up in the beginning, then slowing down noticeably when trying to charge up the last several percentages. Think of how quickly a stadium fills up when the doors first open – there are hundreds of open seats so it's easy to find the one you want. Eventually there are only a few open seats here and there and people have to manoeuvre around to find the spot they want and filling those seats takes longer. The same theory applies to recharging batteries. It's easy for energy to flow in and take up empty space in the beginning, and as time goes on and there is less space available, it takes longer for the energy to fill in the holes.

iv. Read the manual. Yeah, it might be a long read, but the manual is the best place to find the dos and don'ts for the battery in your specific device. Reading your manual will ensure you're taking steps to keep your batteries happy and healthy.

Storage and Downtime Maintenance

Having your ATOM connected to a power source, like a solar panel or wall plug, between adventures or while in storage keeps its battery healthy and topped up. This prolongs battery life and will ensure your ATOM is charged and ready to go all day, every day.

If you can't keep your ATOM plugged into a power source during storage, fully-charge your ATOM every 3 months and store it in a cool, dry place. Failure to maintain ATOM by following these steps can result in battery damage which will void the product warranty.

Solar Panel (If Applicable)

How do solar panels work?

Solar panels work by converting the sun's energy into electricity for storage or immediate use. The more of the sun's rays a panel is receiving the more energy it will be able to create. Solar panels are working at their optimum efficiency when the panels are pointed directly at the sun. However, the sun is a constantly moving object changing its angle in the sky throughout the day and as seasons change.

Which is the Best Angle for Solar panels?

The best angle for your solar panels will depend upon your location and when you want your solar panels to be most efficient. At solar noon, which is exactly halfway between sunrise and sunset, the energy from the sun is at its greatest so the solar panels should be positioned to take advantage of this time.

At solar noon in the UK, the sun is due south, which is why solar panels are normally installed on south facing walls or roofs. It varies across the UK, in London in June it is typically around forty degrees off vertical, but this will be different in other cities. In Manchester, it is more in the region of thirty five degrees.

So when do I need to angle my solar panel?

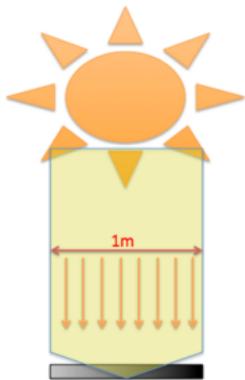
The angle of the sun in the sky depends on both the season and your location on the earth:

In winter the sun is lower in the sky. In summer the sun is higher in the sky.

And the closer you live to the equator (i.e. the lower your latitude), the higher the sun is in the sky all year round.

So you may think that calculating the optimum angle for the panels is going to be really complicated... Luckily it is actually dead simple, take a look at the example below.

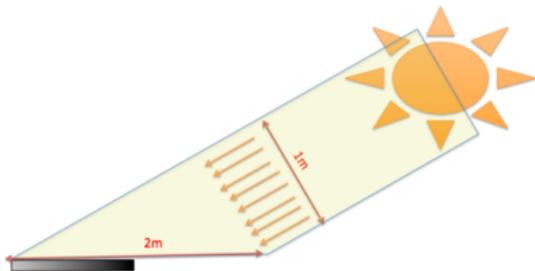
Does the amount of tilt matter?



Yes – the tilt of your solar panels will affect how much power they produce because the tilt will affect how much sunlight you capture.

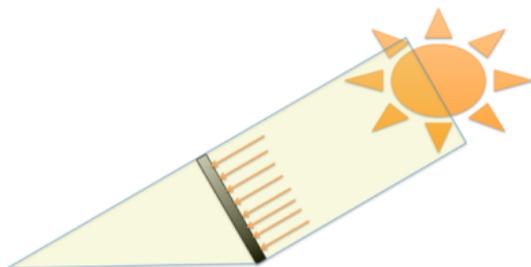
Consider a solar panel flat on the ground that is 1m wide.

When the sun is high in the sky (e.g. at midday in summer), then a 1m wide shaft of sunlight will be completely captured by that solar panel:



Now, if the sun is at an angle of 30° from horizontal, that same 1m wide shaft of light actually is spread out over 2m when it hits the ground:

The flat solar panel, in this example, will only get half the sunlight, and therefore produce half the energy compared to the sun being directly overhead.



The solution in this example is of course, to tilt the panel by 60° so that it captures all the sunlight:

Solar Panel Top Tips

- If you use a crystalline panel, don't forget that even the shadow of a thin wire can make a difference to the power output. Make sure as many cells as possible are in full sun.
- Solar panels will work behind glass, but with limitations. They are designed for direct sunlight, so if you put a panel behind glass or a plastic window its efficiency will be reduced. It may take up to three times as long to provide the same charge to a battery if you put the panel behind a window, even if it's in full sun.
- If you invest in a solar panel, make sure it's positioned to take advantage of the midday sun, which is the strongest. This is almost directly overhead in summer, but lower in the southern part of the sky at other times of the year. Angling your panel towards the sun will increase the energy it generates outside of the summer months.
- The power you generate from your solar panel will only be as good as the condition of your units battery, so it's worth looking after your devise
- The power generated by a solar panel is direct current (DC), so if you want to use it to power something that would normally plug into a home-style three-pin 230V socket you'll need to convert it to alternating current (AC). For this you'll need an inverter.

