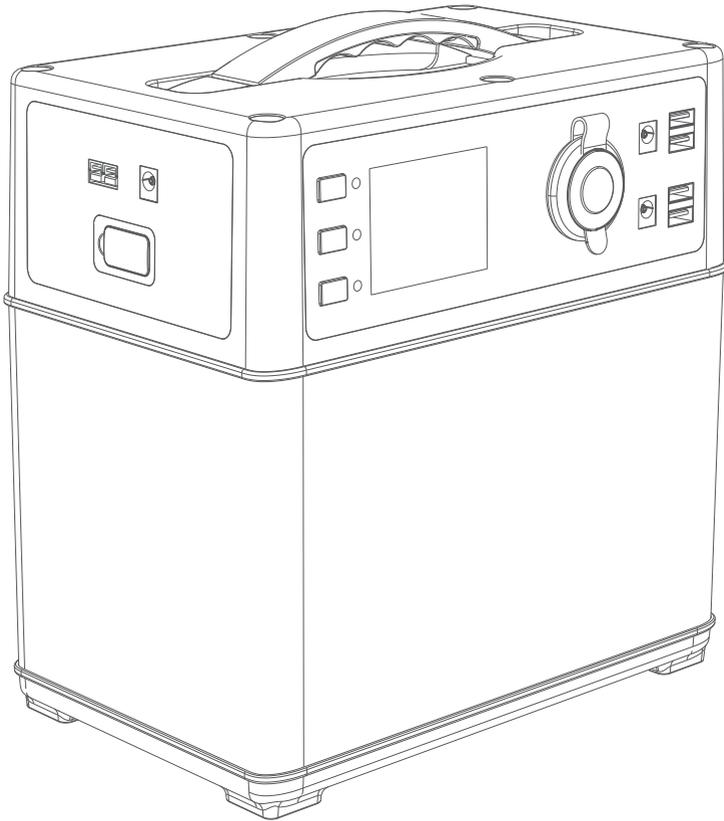


Rugged Power Pack

User Manual



CHARGE ME NOW

Before reading through the rest of the manual, plug your RPP into the wall AC outlet. The RPP should be charged when stored.

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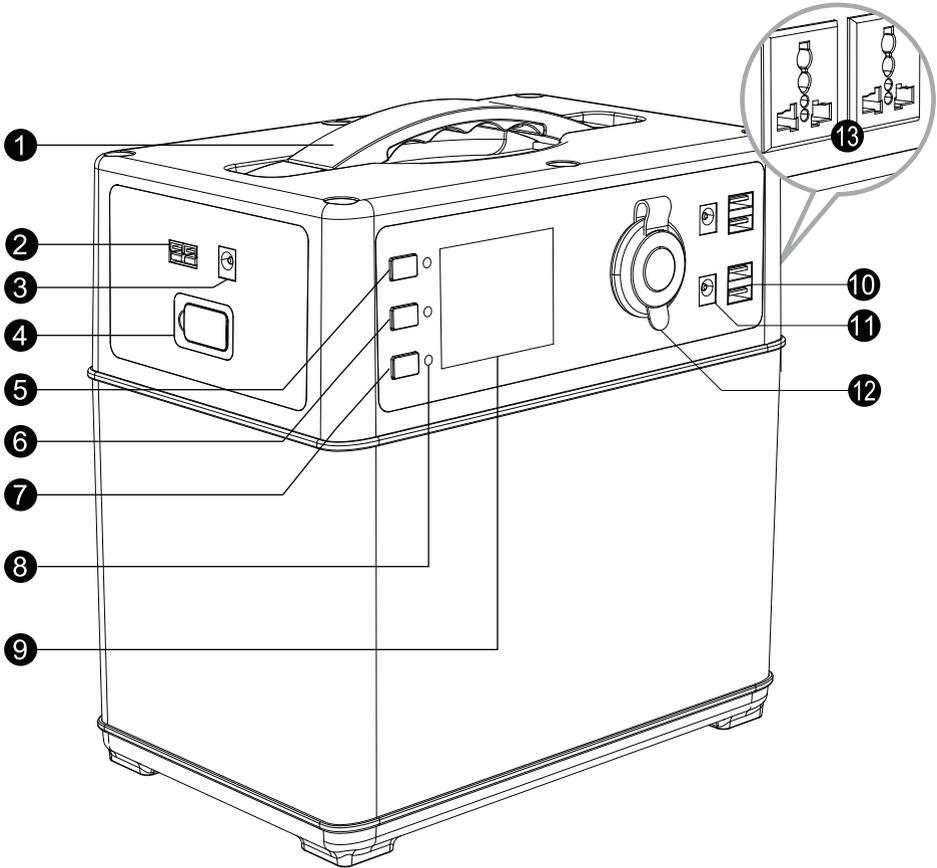
This product is designed to keep you powered while you're doing what you love. Whether you're climbing a mountain, living in your van while you travel the world, or camping in your backyard. Welcome to the solar life.

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Congrats on your solar RPP portable power supply, a plug-and play generator for emergencies, camping, or wherever you need power. With 400 watt-hours of power, you can keep laptops, lights, appliances, and refrigerators going for hours longer.

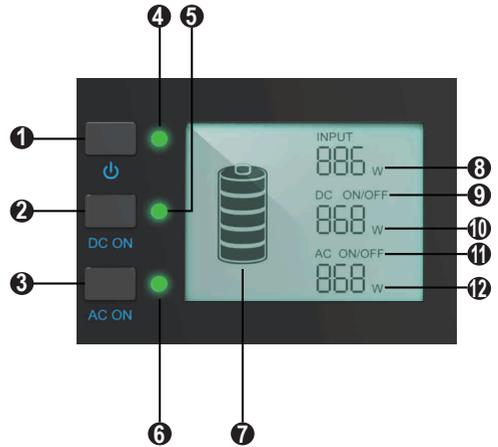
1. Get To Know Your Gear



- 1. Handle
- 2. Solar Charging Port
- 3. Car/Adapter Charging Port
- 4. Car Jump Starter Output
- 5. Main Power On/Off Button
- 6. DC On/Off Button
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- 8. Power On/Off Indicators
- 9. LCD Display
- 10. USB Outputs
- 11. DC12V Output for LED Lamp
- 12. DC12.6V Car Cigarette Output
- 13. AC Outputs

1. Main Power On/Off Button
2. DC On/Off Button
3. AC On/Off Button
4. Main Power On/Off Indicator
5. DC On/Off Indicator
6. AC On/Off Indicator
7. Battery Capacity
8. Charging Power
9. DC ON/OFF
10. DC Output Power
11. AC ON/OFF
12. AC Output Power



2. Unpacking

Before opening the package, please check if the packaging is damaged. After unpacking, please check if product appearance is damaged or there is missing parts. If so, please contact us.

RPP accessories are as follows.

No.	Item	Quantity
1	Rugged Power Pack	1
2	AC Wall Charger	1
3	Car Charging Cable	1
4	Solar Charging Cable	1
5	Jump Starter Alligator Clip Cable	1
6	User Manual	1
7	Warranty Card	1

Unpacking your RPP



AC Charger



Car Charging Cable



Solar Charging Cable

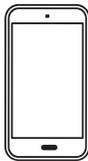


Jump Starter Alligator Clip Cable

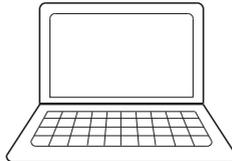
3. What it Powers



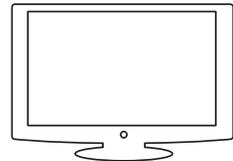
LAMP
100+ Hours



Smartphone
30+ Recharges



LAPTOP 5 Recharges



TV 3 Hours

4. Charging Your RPP

■ Charge Me Now

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

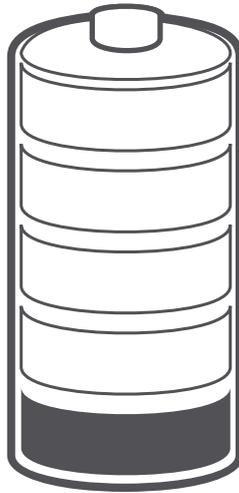
Note: NEVER charge your RPP with solar panels and a wall charger at the same time.

■ LCD Battery Display

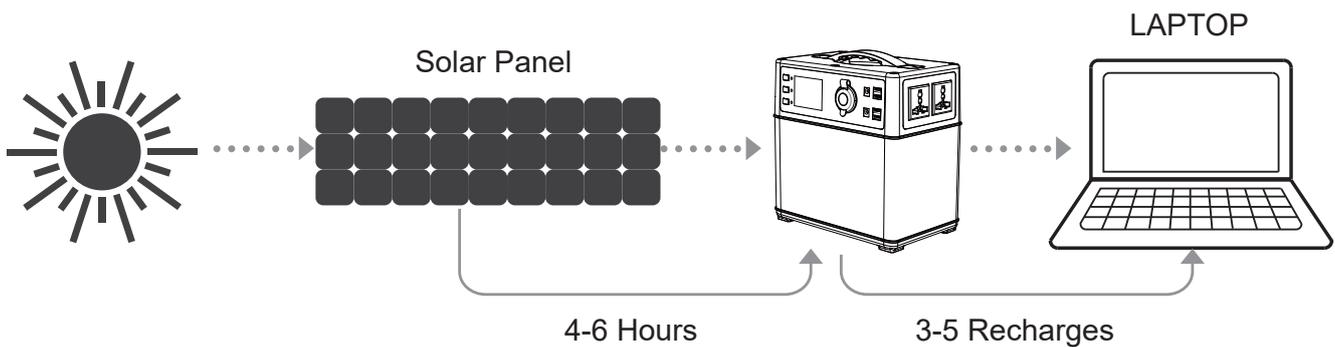
The LCD Battery Display indicates the charge level. There are 5 segments of the battery, approximating 20%-40%-60%-80%-100% capacity. During usage, segments will disappear from the display, indicating the remaining capacity. When charging your RPP, you will notice a battery segment blinking at a 1 second interval. This indicates the current charge status and the number

under INPUT shows the real-time charging power. Once it is fully charged, all battery segments will be lit and remain solid.

Charge your RPP when there is only one battery segment!



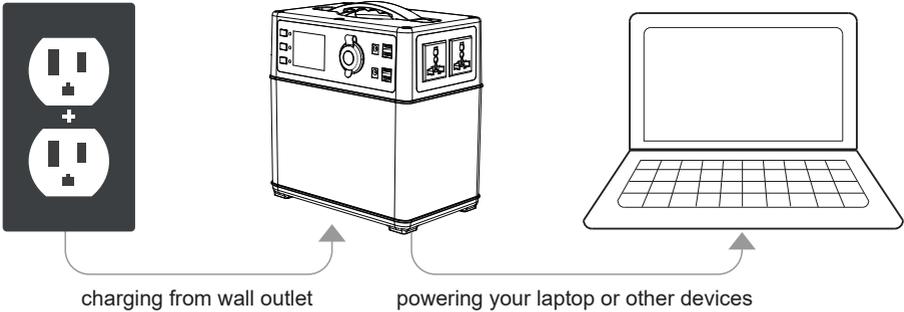
■ Charging from Solar



1. Power on your RPP by press main power button for 2 seconds.
2. Place your solar panel where it will get as much direct sunlight as possible.
3. Connect the solar panel by solar charging cable, then insert the Anderson plug into one of the INPUT ports on the left side of the RPP. You will know the RPP is charging when the number below INPUT on LCD changes and the battery segments in the LCD BATTERY DISPLAY are blinking. The RPP is fully charged when all battery segments stop blinking and remain solid.
4. You can also connect the RPP to other brands of solar panels using the Power-Pole port.
5. You can chain multiple Solar Panels together to reduce solar recharge times. Your RPP is capable of taking in 120W of solar charging power. But the solar panel voltage should be from 14V to 40V, like 18V, 36V, etc.
6. NEVER charge your RPP with solar panels and a wall charger at the same time.
7. The charging will stop when the RPP is fully charged, controlled by the advanced built-in battery management system.

■ Charging from the Wall

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

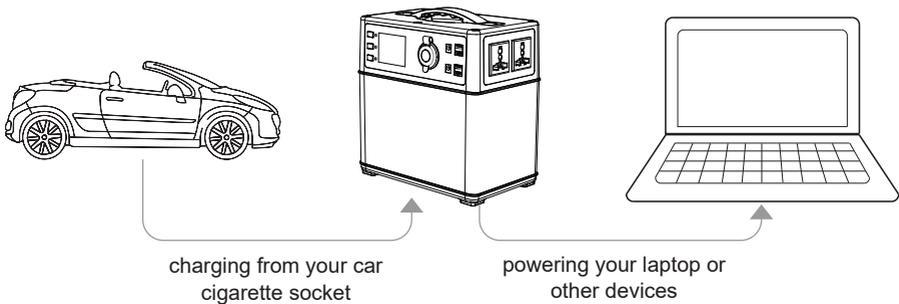


Using the included AC Wall Charger, plug your RPP into any wall outlet. You will know the RPP is charging when battery segments in the BATTERY DISPLAY are blinking and the number below INPUT on LCD changes.

The RPP is fully charged when all battery segments stop blinking and remain solid. The RPP should recharge from the wall in 6-8 hours. It will stop charging when the battery is full.

The AC wall charger comes in two pieces. Connect the two pieces by plugging the cable into the box.

■ Charging from Your Car



Use the car charging cable, plug one end to your car cigarette socket and the other end to your RPP. You will know the RPP is charging when battery segments in the BATTERY DISPLAY are blinking and the number below INPUT on LCD changes.

5. Using your RPP

■ What to power from your RPP

USB: Smartphones, MP3 Players, Digital Cameras, E-readers, Tablets, etc.

DC 12V 6mm Ports: Two ports for LED lights mainly

DC 12.6V Car Socket: Car on-board Fridges, 12V appliances, etc.

AC: Laptops, Cameras, Display Monitors, Appliances, etc.

■ How to use your RPP

1. Press the main POWER button for 2 seconds to turn on your RPP, then the power indicator and LCD will light up.
2. Press the DC power button under the main POWER button for 2 second to power DC device. Press the AC power button under DC power button for 2 second to power AC device. When not using certain ports, make sure to turn them off to conserve power.
3. You will know if it's powering devices when the numbers under DC ON/OFF and AC ON/OFF on the LCD change. The numbers indicate the amount of power your devices are pulling from the RPP.
4. Plug in your gear for power anywhere life takes you.
5. Press the AC ON, DC ON, main POWER button for 2 seconds to shut down the AC output, DC output and system respectively.
6. When the main POWER button is on, but DC power button and AC power button are off, the system will shut down automatically in 10 minutes. You need to press the main POWER button for 2 seconds again to turn it on.
7. The system will shut down when the battery capacity is lower than its 10%.
8. Always remember to shut the product down if you are not using it.
9. If possible, keep your RPP fully charged before storing it.

■ Best-Use Strategy

When charging gear with your RPP, take note of the LCD Battery Display. If you plug in devices that drain a high power (a refrigerator), the charge level of your RPP can drop very quickly and you may not get exactly 400Wh. If you're recharging devices that draw power more slowly (a small TV), you will get closer to 400Wh from your RPP. If you're experiencing shorter runtimes, you may want to check the device's power requirements, see TROUBLESHOOTING for help.

■ Cold Weather Usage

Cold temperatures (below freezing) can impact the RPP's battery capacity.

If you'll be living off-grid in sub-zero conditions, you can drain power from RPP. But never charge your RPP in sub-zero conditions, which will damage the lithium ion battery and battery capacity may not be recovered.

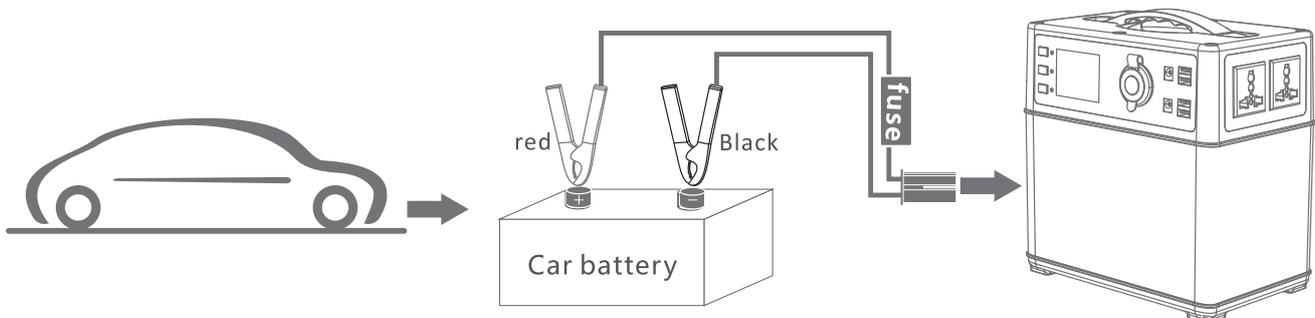
Low Temperature Charging Protection: when there is charging input in sub-zero conditions, the system will stop charging automatically; and resume charging when the temperature is over 5°C.

Low Temperature Discharging Protection: in -20°C conditions, the system will stop AC and DC output and shut the product down in 15 seconds automatically; and system can output again when temperature is over-10°C .

■ Storage and Downtime Maintenance

1. Please fully charge your RPP before storage and fully recharge your RPP every 3 months and store it in a cool, dry place.
2. If the system shuts down automatically because of lower battery capacity(10%), please recharge it within 2 months. Otherwise, the battery capacity won't be recovered.
3. Failure to maintain your RPP by following these steps will result in battery damage which voids the product warranty.

■ Emergency Car Jump Start



1. Make sure the power is over 80% (four battery segments on).
2. Make sure the clamps on the jump starter cable are not broken.

How to Jump Start

1. Clamp the red clip to car battery positive pole and the black clip to the battery negative pole.
2. Plug the other end of jump start cable into your RPP.
3. Turn the key to start your car as normal.
4. After starting, remove the cable from this product first, then remove red and black clip.

Notice

1. Before starting, make sure the red and black clips are clamped tightly to car battery poles and keep the two clips apart.
2. It is strictly prohibited to connect the red and black clip together.
3. Please keep away from the engine when starting the car to avoid any physical injury that may be caused by the car engine running.
4. Please remove the battery clips from the car battery within 30 seconds after engine has started.
5. Please check the battery capacity before every re-start.(Make sure the power is over 80% (four battery segments on)
6. People who are not familiar with this product (especially children) are strictly prohibited to use the car starting function.

6. Technical Specifications

	Item		Specification
Approx. Charge Times	AC	Wall Charger (70W)	6~8 hrs
	DC	Car Charger (48W)	10~20 hrs
	Solar	Solar Charger(120W)	4~6 hrs
	Charging Voltage		14V~40V
Output	AC	Output Voltage	100/110/120V AC±3%
		Output Frequency	50/60Hz ± 0.5Hz
		Output Power	300W (Pure Sine Wave)
		Peak Output Power	600W
	DC	4×USB Port	2×5V,2.1A & 2×5V,1A
		1×12.6V Car Port	120W
		2×DC 6mm Port	2×12V,3A
Jump Starter	Starting Current		200A~400A@12V

Battery	Battery Type		Lithium ion
	Battery Cell		Li-ion 18650
	Battery Capacity		400Wh
	Battery Voltage		9V~12.6V
General	Dimension		9.1 × 5.8 × 9.3 in
	N.W.		12.3 lbs
	Warranty		Please Refer to the Warranty Card
	Environment	Charge	0~45°C
		Discharge	-10°C ~60°C
Humidity		10%~90%	

Note: Solar charging and AC charging should not be used at the same time!

7. Frequently Asked Questions

■ What type of battery is in my RPP?

Your RPP uses a 11.1V 36Ah lithium ion battery pack, similar size like Tesla Motor EV battery cell. Li-ion battery is much smaller and lighter than normal SLA battery and also cycles much longer than normal SLA or AGM battery's. Li-ion batteries last longer if you do not drain them completely.

■ How do I know if my RPP is charged?

To check the charge level of your RPP, refer to the LCD Battery Display. When lit up, you'll see a battery outline with five segments, indicating the current charge level. You can turn on the Battery Display by pushing the Main POWER button. It is OK to use your RPP even when it's not fully charged.

■ How do I know if my device will work with the RPP?

First, you'll need to determine the amount of power your device requires. This may require some research on your end, a good Google search or examining the user guide for your device should suffice.

Second, you will need to check the capacity for the individual output ports. For example, the AC port is monitored by an inverter that allows for 300W of continuous power. This means if your device is pulling more than 300W for an extended period of time, the RPP's inverter will shut off. Finally, once you know your device is compatible, you'll want to determine how long you'll be able to power your gear from the RPP. Here's a quick lesson as below.

■ Here are some common devices and their watt-hour requirements:

Devices powered by RPP

Smartphone (8~10Wh) 30+ Recharges

Tablet (25~42Wh) 7+ Recharges

Laptop (50Wh) 5+Hrs

Desktop Computer (100W) 2~3 Hrs

Mini Fridge (30~60W) 4~10Hrs

32" LCD TV (98~156W) 2~4Hrs

Vacuum Cleaner (200~300W) 1~2Hrs

Blender/Processor (200~300W) 1~2Hrs

So when you're deciding on what to power from your RPP, do some research into your device's wattage consumption.

There is 400Wh battery built inside. But when the device draws big power near 300W, the discharge capacity rate is about 90%. Also, there will be energy loss when battery's DC power transferred to AC power and different loads also influence the transfer efficiency.

Why the transfer efficiency is only 90% when drawing big from battery?

- 1) Lengthen battery cycle life
 - 2) Make sure long term storage won't cause battery damage after using
- Certainly, low power consumption will drain more energy.

The computational formula of theoretical discharge capacity as below.

discharge capacity = nominal capacity x depth of discharge x transfer efficiency = 400Wh x 0.9 x 0.86 = 309.6Wh.

NOTE: the real discharge capacity may be a little different with the ideal value.

NOTE: The AC output power value in LCD maybe not very accurate, specially when power consumption is low.

8. Troubleshooting

If your devices are not recharging from your RPP, follow these steps:

1. Make sure the Main POWER button is turned on.
2. Ensure the Output Port has been turned on. The green LED light on the power button should be lit up.
3. Check the Battery Display. If it is at 20% or below, charge your RPP.
4. Verify your device is suitable for use with the RPP. All of the RPP output ports have their own max power capacity. Check the RPP's Tech Specs to ensure your device is compatible.

If you are still experiencing trouble with your RPP after checking and troubleshooting as below form, please call our Customer Service Center.

Failure Code	Failure Cause	Troubleshooting
E01	Over-temperature protection	Check the ambient temperature if higher than 45°C . Output will start again when RPP cools down.
E02	Battery Over Voltage Protection	Disconnect the charger and restart it
E03	Battery Damage Protection	Contact the Customer Service Center
E04	1st Battery String Over-Voltage	Disconnect the charger and restart it
E05	2nd Battery String Over-Voltage	Disconnect the charger and restart it
E06	3rd Battery String Over-Voltage	Disconnect the charger and restart it
E07	1st Battery String Low Voltage	Charge it and restart it after it's fully charged
E08	2nd Battery String Low Voltage	Charge it and restart it after it's fully charged
E09	3rd Battery String Low Voltage	Charge it and restart it after it's fully charged
E10	Low Temperature Discharging Protection	Unit will work when ambient temperature is above -10°C
E11	Battery Low Voltage Protection	Charge it and restart it after it's fully charged
E12	Inverter Over Current Protection	Disconnect loads and restart the RPP
E13	Inverter Over Load Protection	Disconnect loads and restart the RPP
E14	Inverter Short-Circuit Protection	Disconnect loads and restart the RPP
E16	Charging Over Voltage Protection	Check if the input voltage is above the rated specs
E17	Low Temperature Charging Protection	Check if the ambient temperature is lower than 0°C

E19	12.6V,10A Output Over Current Protection	Disconnect loads and restart the RPP
E20	12.6V,10A Output Over Load Protection	Disconnect loads and restart the RPP
E21	12V,3A Output Over Current Protection	Disconnect loads and restart the RPP
E22	12V,3A Output Over Load Protection	Disconnect loads and restart the RPP
E23	USB 5V No.1 Output Over Current Protection	Disconnect loads and restart the RPP
E24	USB 5V No.2 Output Over Current Protection	Disconnect loads and restart the RPP

9. Contact

Should you have any technical questions, please contact us at (800-330-8678). The following information is needed:

1. Purchase Date
2. Failure Code

Please give us a statement of how the failure happened and failure details. Thanks in advance.

