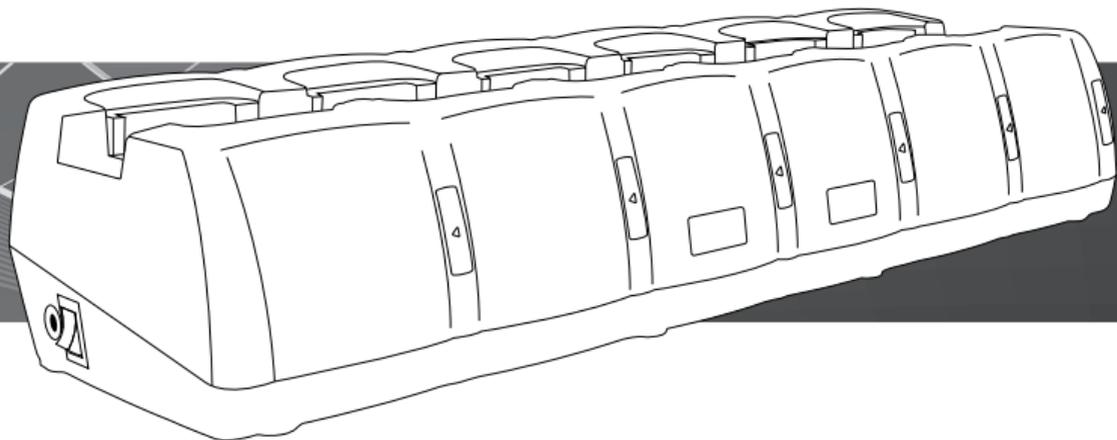


**ENDURA**<sup>TM</sup>

# Six Unit Rapid Charger

FOR RECHARGEABLE TWO-WAY RADIO BATTERIES



**User Manual**

Models EC6M / EC6M-V2



# ENDURA EC6M CHARGERS

## Table of Contents

<b>Topic</b>	<b>Page</b>
Introduction	1
Important (read before use)	2
Caution (read before use)	3
EC6M Features	5
Accessories For In-Vehicle Use	7
Replacing A Charging Pod	9
Charging A Battery	10
Fault Conditions & Advisements	12
Warranty And Service	16
Specifications	18
EC6M Accessories	19

## Introduction – EC6M Chargers

Thank you for purchasing an Endura™ EC6M charger. This User Manual covers two models: EC6M and EC6M-V2. Both models are designed for desktop use, but may also be installed in a vehicle with available accessories. The EC6M is compatible with nearly all Endura TWP charging pods and for those pods that are not compatible, the model EC6M-V2 is available. Feature differences for EC6M-V2 are noted in this manual where appropriate.

The EC6M is designed for charging two-way radio batteries whether on or off a radio. Based on the charging pod installed, it can rapid charge these battery chemistries: lithium ion (Li-Ion), lithium polymer (LiPo), nickel-metal hydride (NiMH), or nickel cadmium (NiCd).

If you wish to replace the charging pod in the future, check the model number on the product label (EC6M or EC6M-V2) to ensure the replacement pod selected is compatible with your model. For a complete list of charging pods available or to confirm pod compatibility, contact a Power Products dealer, visit [www.powerproducts.com](http://www.powerproducts.com), or call customer service at 800-529-1618.

### **Important**

1. Read all Caution statements below and this User Manual before attempting to charge a battery.
2. Check to make sure a charging pod compatible with your battery is properly installed before charging a battery or installing the charger in a vehicle.
3. Always charge new batteries completely before initial use. Recycle batteries when they can no longer be used. Do not discard unwanted batteries in the trash or incinerate. Batteries exposed to fire or excessive heat may explode.
4. For best battery performance, charge NiCd and NiMH batteries when they are fully discharged.

## Caution

1. Based on the pod selected, EC6M can charge Li-Ion / LiPo / NiMH / NiCd batteries. If the pod is marked for Li-Ion / LiPo only, do not attempt to charge NiMH / NiCd batteries. If the pod is marked for NiMH / NiCd only, do not attempt to charge Li-Ion / LiPo batteries. Do not use EC6M to charge batteries with other chemistries or batteries that do not have overcharge protection.
2. Use charger in areas protected from the weather. Do not expose the charger to rain, any liquids, or excessive moisture.
3. Do not attempt to charge a battery without first installing the appropriate charging pod. Use only charging pods designed for your EC6M. Disconnect charger from the power source before installing, adjusting, or removing the charging pod.
4. Make sure contacts in charging pod and on the battery are clean. Do not allow wire or metal objects to touch contacts in charging pod or any internal part of the charger.

## Caution (continued)

5. Do not remove the charger's housing or make any modification to the charger.
6. Use only the power supply or DC power accessories specified for EC6M. If a replacement is required, see section **EC6M Accessories**. Use of other power supplies or DC power accessories may damage the charger or batteries you may be attempting to charge.



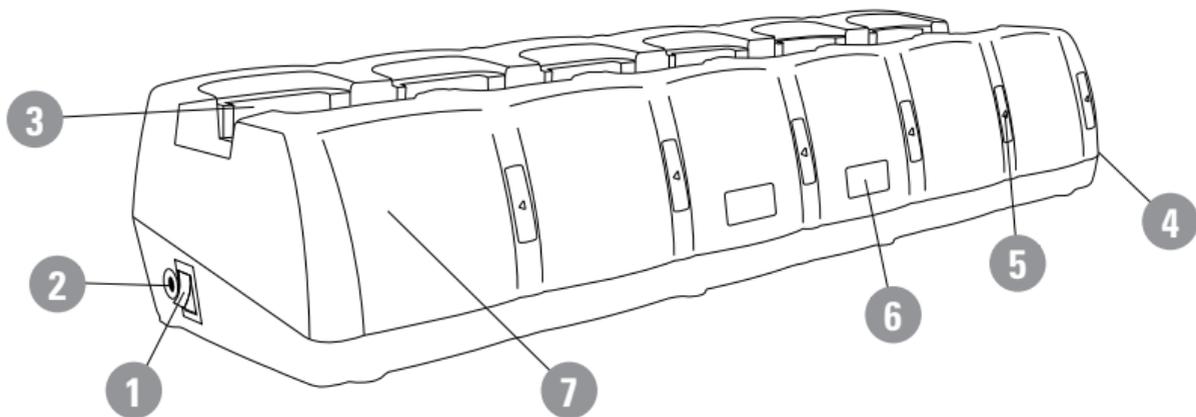
**CAUTION:** TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER. NO USER SERVICEABLE PARTS ARE INSIDE. REFER ANY SERVICING TO QUALIFIED SERVICE PERSONNEL.



The exclamation point within the triangle is a warning sign alerting you of important instructions accompanying the product.

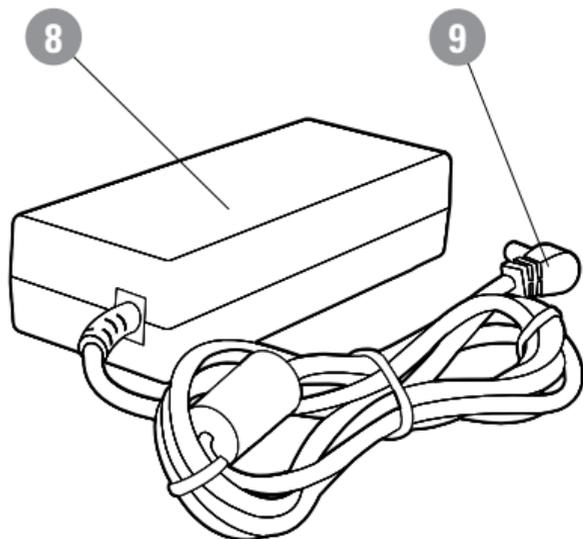
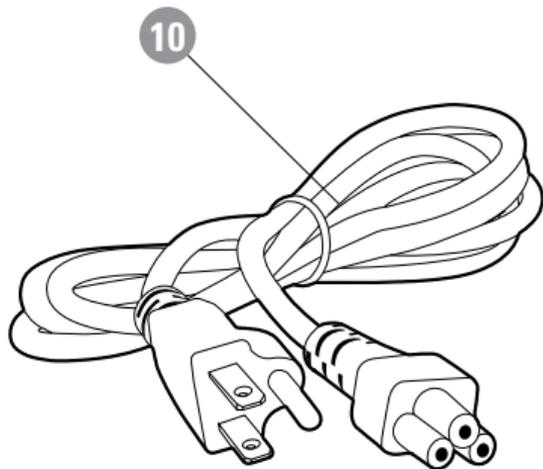
## EC6M Features

1. Power on / off switch.
2. DC power connection port – for AC to DC power supply or TWC6M-VPA.
3. Removable charging pod – shown for one position only.
4. DC power connection port.
5. Charge status LED – shown for one position only.
6. Status LED information – also see bottom label.
7. Charger base.



## EC6M Features (continued)

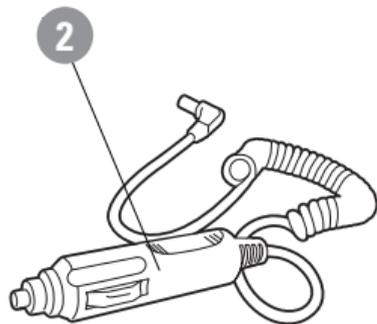
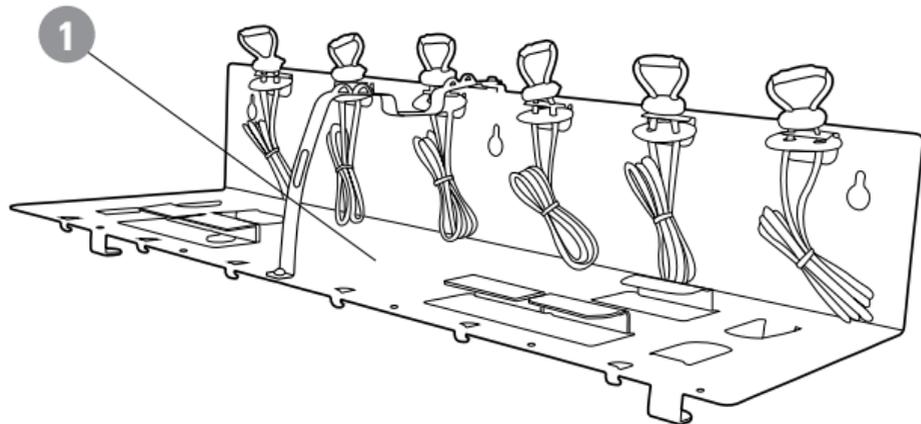
8. AC to DC power supply (TWC6M-PS).
9. DC power plug – connects to charger.
10. Power cord to connect power supply to AC outlet.



## Accessories For In-Vehicle Use

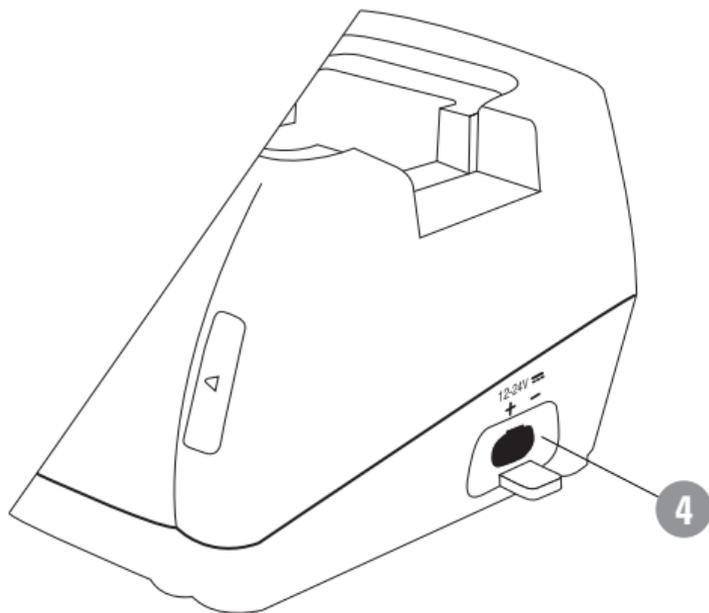
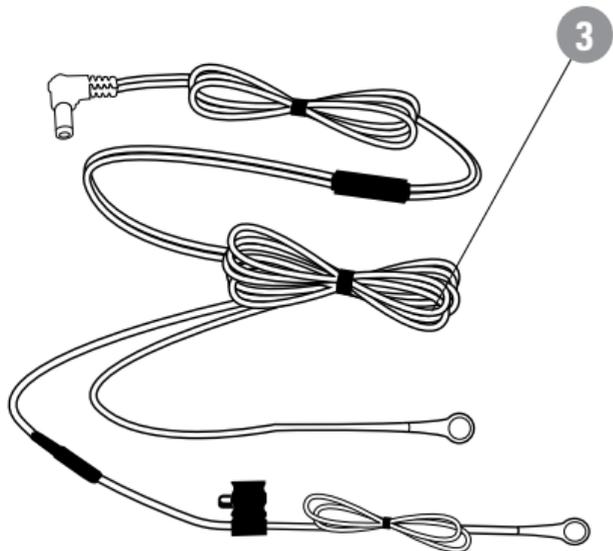
The items below are available for EC6M and allow the charger to be used in a vehicle.

1. Mounting bracket with integrated tie-down straps and fasteners (EC6M-MB).
2. Vehicle power adapter (TWC6M-VPA).



## Accessories For In-Vehicle Installation (continued)

3. Hardwire kit (TWC6M-HW).
4. Vibration tolerant DC power connection port for TWC6M-HW.



## Replacing A Charging Pod

The charging pod is made from quality materials and designed to provide years of service when properly used. In most cases, the charging pod will only be replaced when you want to use the charger with a different battery.

Follow these steps to change the charging pod:

1. Obtain a charging pod made specifically for EC6M or EC6M-V2. Confirm that the charging pod is compatible with the battery you want to charge.
2. Unplug the charger from its power source.
3. The charging pod is secured to the base with a single screw. To remove, turn the locking screw on the bottom of the charging pod counter-clockwise until it no longer holds the pod. Lift the charging pod from the charging base.
4. Insert the replacement charging pod into the charger base and secure with the locking screw. Do not over tighten the screw.
5. Inspect the charging contacts to ensure they are clean and unobstructed.
6. Connect the power supply or vehicle power adapter to the charger. You are now ready to charge a battery compatible with the charging pod.

## Charging A Battery

1. Confirm that the charging pod and battery are compatible.
2. Connect the charger to power with the power supply included.
3. Place the battery to be charged in the charging pod. The battery may also be charged while attached to the radio.
4. When a battery is placed in the charging pod and while charging, the status LED will illuminate RED with no flashing to indicate normal charging.
5. If the status LED is red and flashes, a fault has been detected. The flash pattern represents a specific fault condition. If the status LED is orange (solid or flashing), an advisement is being provided. See section **Fault Conditions & Advisements** for details.
6. When the battery is charged to 80% of capacity, the status LED will change to GREEN and begin to flash. It is recommended that the battery be charged to at least 80% capacity before use.
7. The charge status LED will illuminate GREEN with no flashing when the battery is fully charged.

## Charging A Battery (Continued)

8. After removing a fully charged battery, the charge status LED will illuminate ORANGE for a few seconds. Allow the charge status LED to go off before placing another battery in the charging pod.
9. The EC6M is designed to charge batteries with a temperature monitoring circuit when the battery temperature is between 0°C and 45°C (32° F – 113° F); batteries outside this temperature will not be charged. EC6M-V2 is designed to charge batteries without a temperature monitoring circuit or with a temperature monitoring circuit that is not compatible with EC6M and therefore cannot provide cold and hot battery monitoring. For both EC6M and EC6M-V2, the ambient temperature should be 5°C - 40°C (41° F - 104° F) while charging a battery.
10. To prevent battery damage, use EC6M-V2 to charge your battery: (A) when the battery is above freezing (0°C / 32° F) or (B) when the battery is not excessively warm to the touch (below 45°C / 113° F).

## Fault Conditions & Advisements

When the charge status LED flashes RED, a fault condition exists. A fault condition requires immediate attention. When the status LED is solid or flashes ORANGE, you are receiving an advisement about the battery.

The flash patterns for fault conditions are as follows:

LED Pattern	Fault Description	EC6M	EC6M-V2
Flashes RED 1 Time	Indicates (A) low voltage battery failure or (B) battery has a short circuit. If (A), the battery's voltage is below the minimum level required and cannot be charged. If (B), the battery is defective and should be recycled. This warning is provided after the pre-charge stage is completed.	●	●

## Fault Conditions & Advisements (continued)

LED Pattern	Fault Description	EC6M	EC6M-V2
Flashes RED 2 Times	Indicates battery contact is “open” and current is not passing through the (+) and (-) contacts on the battery. This warning is provided after the initial diagnostic stage is complete. Check charging pod to confirm compatibility with battery.	●	●
Flashes RED 3 Times	Battery temperature is 45°C (113° F) or above. Charging has terminated, remove battery from charger. Have battery checked by a qualified technician.	●	

## Fault Conditions & Advisements (continued)

The flash patterns for advisements are as follows:

LED Pattern	Advisement	EC6M	EC6M-V2
Solid ORANGE (Battery removed.)	Brief reset period for charger after battery is removed. Allow the LED to go off before inserting another battery.	●	●
Solid ORANGE (Battery inserted.)	Indicates (A) battery is too cold or (B) charger is performing a temperature diagnostic when the battery is inserted. If (A), the battery temperature is 0°C (32° F) or below and charging is delayed for up to two hours. Battery is monitored and charging resumes once it is above freezing. Monitoring terminates if the battery temperature remains below freezing for two hours. Remove battery and reinsert once battery reaches room temperature. If (B), battery type requires additional time to determine its temperature. This is generally completed within a few minutes after insertion.	●	

## Fault Conditions & Advisements (continued)

LED Pattern	Advisement	EC6M	EC6M-V2
Flashes ORANGE 1 Time	Battery temperature remains at 0°C (32° F) or below after two hours of monitoring. Remove battery from charger and allow it to warm.	●	
Flashes ORANGE 2 Times	Indicates charging complete, but battery is under charged. Battery voltage is below minimum level required. This warning is provided after the rapid charging stage is complete.	●	●

## Warranty And Service During Warranty

Endura EC6M chargers are made from high quality materials and designed to provide years of reliable service. The following warranty applies:

Power Products Unlimited, Inc. (PPU) warrants this product to be free from defects in workmanship and materials for one-year from date of purchase by the end user. This warranty applies to the original purchaser and is void if the product has been altered, misused, damaged, neglected, or if repair is required because of normal wear and tear. This is the only warranty made by PPU. In no event will PPU, its affiliates, subsidiaries, related entities, or their respective directors, officers, or employees, be liable for any damages beyond repair or replacement as described above, including without limitation, indirect, incidental, or consequential damages. For service under warranty, return the product along with dated proof of purchase to the retailer where purchased or to Power Products. If returning directly to Power Products, follow these instructions:

## **Warranty And Service During Warranty (continued)**

- Send to Power Products – Warranty Service Department, 2170 Brandon Trail, Alpharetta, GA 30004. For your protection, we recommend you obtain proof of delivery for your shipment.
- Include with your product, dated proof of purchase, your name and daytime telephone number, and return address (street address only; return shipments cannot be made to a P.O. Box).
- All items sent become the property of Power Products and will not be returned.

## Specifications (EC6M / EC6M-V2)

Dimensions (W x L x H)	509 x 148 x 91 mm / 20.0 x 5.8 x 3.6 inches
Weight	1.4 kg / 3.1 lbs. (charger only)
Compatible Chemistries	Li-Ion / LiPo / NiMH / NiCd (based on pod selected)
Ambient Operating Temperature	5° C - 40° C / 41° F - 104° F
Power Supply (TWC6M-PS)	100V – 240V AC / 50 Hz – 60 Hz / 2.0A
Charger Input <sup>A</sup>	12V-24V DC / 5.4A (minimum)
Charge Rate <sup>B</sup>	900 mA (10.6V-13.5V)
Approvals	FCC <sup>C</sup> / BC <sup>D</sup> / DOE <sup>E</sup> / CE

Specifications subject to change without notice.

(A) Applies to EC6M. Charger input for EC6M-V2 is 4.8A (minimum). (B) Applies to EC6M. Charge rate for EC6M-V2 is 700 mA. (C) Complies with FCC Rules, Part 15, Subpart B, Class B 2016, ANSI C63.4:2014. (D) Complies with California Energy Commission CEC-400-2011-005. (E) Complies with U.S. Department of Energy 10 CFR, Part 430, PC3 and 4. This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

## EC6M Accessories

Part Number	Description	Information
TWC6M-PS	Power supply. (Included with EC6M / EC6M-V2.)	UL listed. Input: 100-240V, 50-60 Hz, 2.0A. Output: 15.0V, 6.0A.
TWC6M-PC	Power cord to connect TWC6M-PS to AC power. (Included with EC6M / EC6M-V2.)	Length 5.0'. U.S. type plug.
TWC6M-VPA	Heavy duty vehicle power adapter.	Length: 24.0" (cord relaxed). Replaceable fuse, 6A.
TWC6M-HW	Hardwire kit for in-vehicle installation.	Length: 13.0'. Components and cable rated to 15A.
EC6M-MB	Mounting bracket. (For wall mounting or in-vehicle use.)	Dimensions: 20.2" x 6.6" x 3.9" (W x L x H).
TWC12M-PSRB	Rubber bushing for DC power connection port. (Included with EC6M / EC6M-V2.)	Insert until flush with housing. Pull tab to remove when replacing.





Endura Chargers By Power Products  
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