

# RamCharger™ User's Guide

## About RamCharger

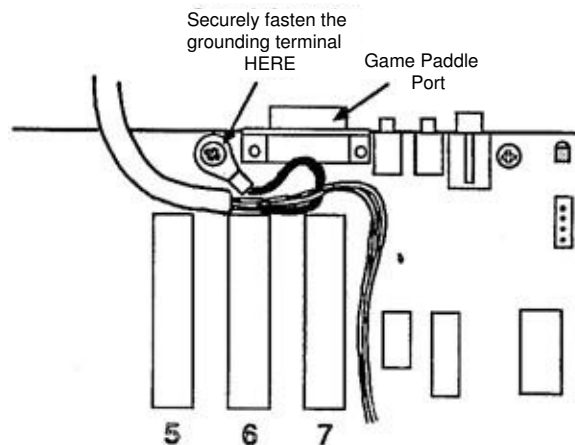
RamCharger's Battery Backup and Auxiliary Power Module provides constant, uninterruptable power to the memory on the RamFactor accessory card. Not only does the RamCharger protect the contents of RamFactor's memory during momentary and extended power outages, it also enables the RamFactor to be used as a non-volatile, bootable storage device! —Just like a disk drive, only much, much faster!

During normal operation, RamCharger charges its internal battery and supplies power to RamFactor's memory. The power supplied by RamCharger to the RamFactor's memory is isolated from the power supplied by the computer's power supply allowing the computer's power supply to be switched off without affecting the contents of RamFactor's memory. When the AC power to the RamCharger is interrupted, RamCharger instantly switches to battery power until AC power is restored. The RamCharger's heavy duty battery can maintain memory on a one megabyte RamFactor for over 5 hours! AC power will maintain RamFactor memory contents indefinitely.

## Installation

RamCharger installation is simple. Only a small Phillips (crosspoint) screwdriver is required. Follow these steps carefully:

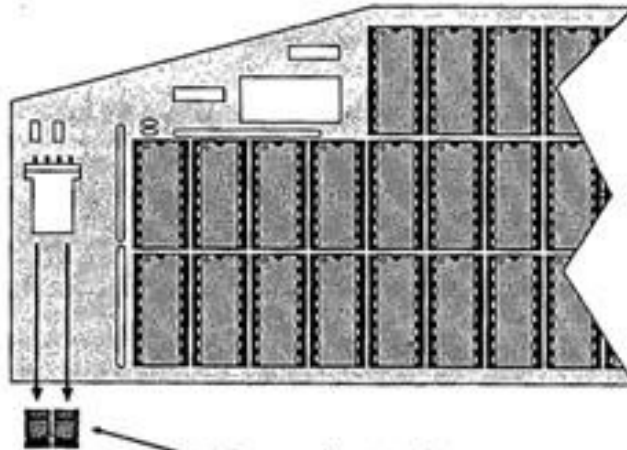
1. Turn the computer's power off. Leave the computer plugged in. (This provides an electrical path to discharge any static electricity.)
2. Remove the top cover from the computer. Discharge any static electricity on your body or clothing by touching the computer's power supply case.
3. Remove the RamFactor card.
4. Route the RamFactor power cable through a convenient port in the computer's back panel.



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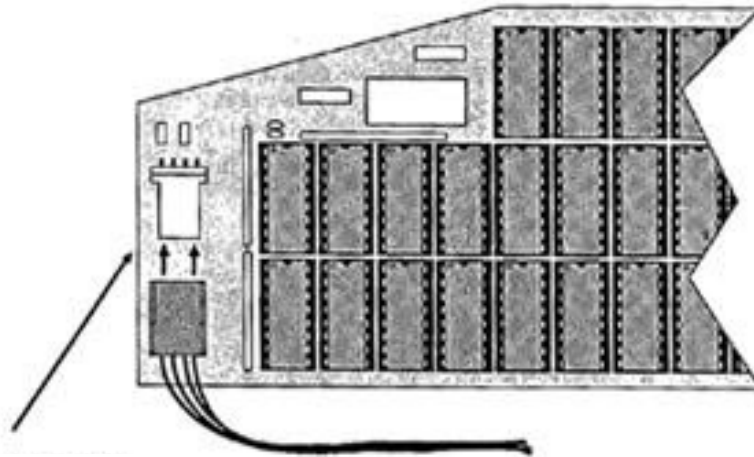
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5. Securely fasten the power cables grounding terminal to a convenient chassis screw. This cable **MUST** be grounded to the computers chassis.
6. Remove the two shorting jumper blocks from the power connector on the RamFactor card. Don't loose these jumper blocks. They will need to be reinstated if RamCharger is ever removed.



Remove these two jumpers

7. Connect the RamFactor power cable to the power connector on the RamFactor card. Look closely, this connector is keyed, it can be installed (easily) only one way.



Connect RamCharger  
battery cable here

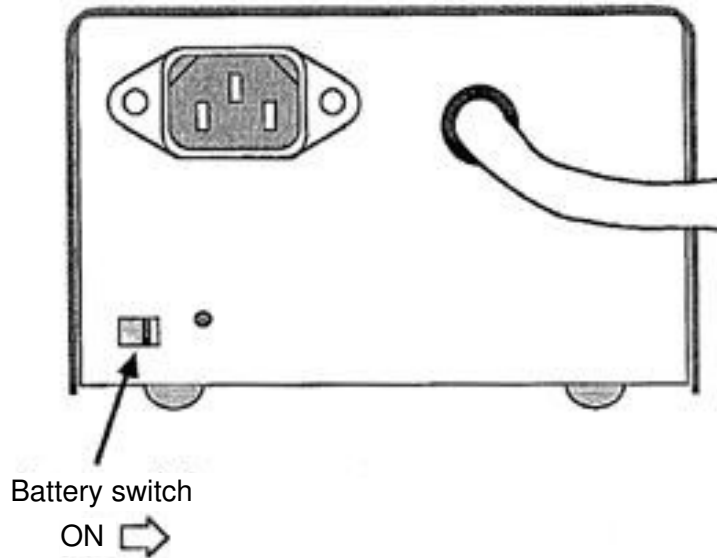
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8. Reinstall the RamFactor card. Check your work carefully, make sure all circuit cards and connectors are securely seated and that all cables are not pinched or kinked.
9. Replace the computer's top cover.
10. Plug the AC power cord into the receptacle on the back of the RamCharger Module and into a three prong, grounded, 120V AC wall receptacle.

**IMPORTANT:** Make sure to plug the RamCharger Module into a power receptacle that is NOT likely to be inadvertently switched off.

11. Switch the Battery Power switch on the back panel of the RamCharger Module to the ON position.



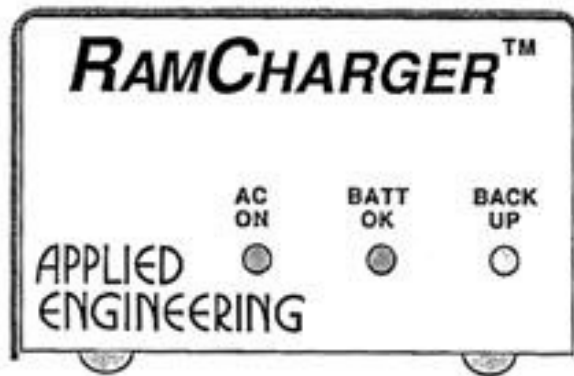
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### RamCharger Operation

Once the RamCharger has been properly installed, there is no further action required, other than to occasionally monitor the status of the three indicator lights on the front panel of the RamCharger module. Here's a description of each of the indicator lights:

- AC ON** This light should be ON whenever the RamCharger module is connected to 120V AC power. (240V AC modules are available.) If the module is plugged into an AC outlet and the AC ON indicator is OFF, first check the AC power outlet, then the internal RamCharger fuse. This is a fast-acting, 1AGC, 1 ampere fuse. (Radio Shack part number 270-1273). Be sure to unplug the module before removing its cover.
- BATT OK** This light should be ON whenever the battery power switch is ON and the battery is sufficiently charged. If the battery has been discharged, it will take about 24 hours to recharge when connected to the RamFactor card. The recharging time can be cut to 12 hours by switching the battery switch to the OFF position.
- BACKUP** When the BACKUP light is illuminated, RamCharger has sensed that the power to the computer has been turned OFF. If the AC power to RamCharger is not interrupted, the RamCharger is in Auxiliary Power Mode, providing power to RamFactor from its AC power supply. RamCharger automatically switches to Battery Backup Mode when its AC power source is removed.



### Battery Power Switch

The only RamCharger control available to the user is the battery power switch, located on the back of the RamCharger module. During normal operation, with the RamCharger module under AC power, the battery switch should remain in the ON position. (To the RIGHT, as viewed from the rear of the module.) Moving the switch to the OFF position will disconnect the battery power from RamFactor. The RamCharger battery charger will continue to charge the battery as long as AC power is present. The switch should be OFF when RamCharger is unplugged for an extended period.

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### Battery Replacement

Under normal operating situations, the RamCharger battery will last for many years. The battery may need to be replaced if it has been discharged several times and will not maintain an adequate charge. Applied Engineering recommends that you return the RamCharger module to your dealers service department for battery replacement. The dealer will have the necessary test equipment required to test the RamCharger and install a new battery if necessary.

RamCharger uses one 8 volt, 2.6 ampere-hour, maintenance-free gel-cell battery. Applied Engineering purchases large quantities of these batteries and can offer them to you at a substantial discount. Applied Engineering also supplies the two 12" x 3/16" cable ties, used to secure the battery to the RamCharger chassis. Please call (214) 241-6060.

Here's how to replace the battery:

1. Unplug the AC power cord from the RamCharger module.
2. Remove the four Phillips screws securing the top of the RamCharger case.
3. Using wire cutters or heavy duty toenail clippers, snip the two cable ties holding the battery to the chassis.
4. Disconnect and discard the old battery. (DO NOT incinerate!)
5. Install the new battery. Secure the battery to the chassis using the two 12" x 3/16" cable ties. Clip the excess length of cable tie.
6. Connect the red battery lead to the positive (+) terminal, the black lead to the negative (-) terminal.
7. Reinstall the top of the RamCharger case. Installation is complete.