

CPS1500AVR User's Manual

K01-0000502-00

IMPORTANT SAFETY WARNINGS

(SAVE THESE INSTRUCTIONS)

This manual contains important instructions that should be followed during installation and maintenance of the UPS and batteries. Please read and follow all instructions carefully during installation and operation of the unit. Read this manual thoroughly before attempting to unpack, install, or operate.

CAUTION! To prevent the risk of fire or electric shock, install in a temperature and humidity controlled indoor area, free of conductive contaminants. (Please see specifications for acceptable temperature and humidity range).

CAUTION! To reduce the risk of electric shock, do not remove the cover, except to service the battery. There are no user serviceable parts inside, except for the battery.

CAUTION! The battery can energize hazardous live parts inside even when the AC input power is disconnected.

CAUTION! The UPS must be connected to a grounded AC power outlet with fuse or circuit breaker protection. DO NOT plug the UPS into an outlet that is not grounded. If you need to de-energize this equipment, turn off and unplug the UPS.

CAUTION! To avoid electrical shock, turn off the unit and unplug it from the AC power source before servicing the battery or installing a computer component.

CAUTION! Not for use in a computer room as defined in the Standard for the Protection of Electronic Computer/Data Processing Equipment, ANSI/NFPA 75.

CAUTION! To reduce the risk of fire, connect only to a circuit provided with 20 amperes maximum branch circuit over current protection in accordance with the National Electric Code, ANSI/NFPA 70.

CAUTION! Do not dispose of batteries in a fire. The batteries may explode.

CAUTION! Do not open or mutilate batteries. Released electrolyte is harmful to the skin and eyes. It may be toxic.

CAUTION! DO NOT USE FOR MEDICAL OR LIFE SUPPORT EQUIPMENT! CyberPower Systems does not sell products for life support or medical applications. DO NOT use in any circumstance that would affect the operation or safety of any life support equipment, with any medical applications, or patient care.

CAUTION! DO NOT USE WITH OR NEAR AQUARIUMS! To reduce the risk of fire, do not use with or near aquariums. Condensation from the aquarium can come in contact with metal electrical contacts and cause the machine to short out.

DO NOT USE THE UPS ON ANY TRANSPORTATION! To reduce the risk of fire or electric shock, do not use the unit on any transportation such as airplanes or ships. The effect of shock or vibration caused during transit and the damp environment can cause the unit to short out.

INSTALLING YOUR UPS SYSTEM

INTRODUCTION

Thank you for selecting a CyberPower Systems UPS product. This UPS is designed to provide unsurpassed power protection, operation and performance during the lifetime of the product.

UNPACKING

Inspect the UPS upon receipt. The box should contain the following:

(a) UPS unit (b) User's manual (c) Rack mount brackets (d) Telephone cable (e) PowerPanel® Business Edition software Download Card (f) Serial interface cable (DB-9) (g) USB A+B type cable (h) Warranty registration card

***PowerPanel® Business Edition software is available on our website. Please visit www.cyberpower.com and go to the Software Section for free download.**

OVERVIEW

The CPS1500AVR UPS provides complete power protection from utility power that isn't always consistent. The CPS1500AVR features surge protection against power surges and maintenance free batteries for long lasting battery backup during power outages. In addition to ensuring consistent power to your computer system, the CPS1500AVR also includes software that will automatically shutdown your computer system during a utility power loss.

AUTOMATIC VOLTAGE REGULATOR

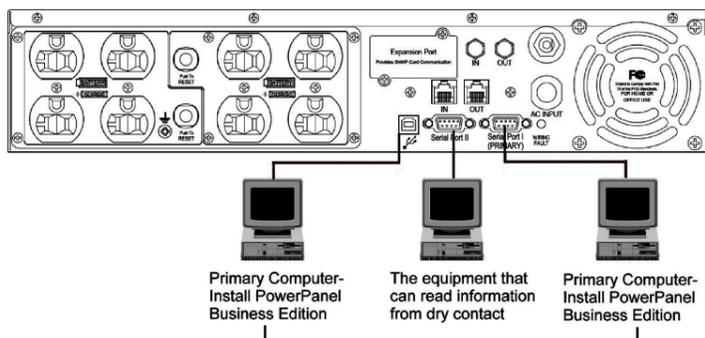
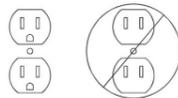
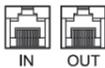
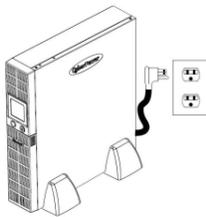
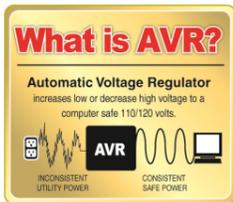
The CPS1500AVR stabilizes inconsistent utility power voltage to nominal levels that are safe for equipment. Inconsistent utility power may be damaging to important data files and hardware, but with Automatic Voltage Regulation (AVR), damaging voltage levels are corrected to safe levels. AVR automatically increases low utility power or decreases high utility power to a consistent and safe 110/120 volts.

HOW TO DETERMINE THE POWER REQUIREMENTS OF YOUR EQUIPMENT

1. Ensure that the equipment plugged into the outlets does not exceed the UPS unit's rated capacity (1500VA/900W for CPS1500AVR). If the rated capacities of the unit are exceeded, an overload condition may occur and cause the UPS unit to shut down or the circuit breaker to trip.

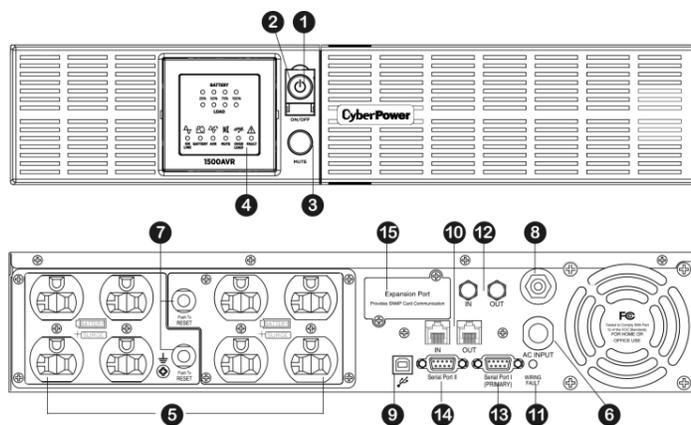
HARDWARE INSTALLATION GUIDE

- Your new UPS may be used immediately upon receipt. However, to ensure the battery's maximum charge capacity, it is recommended that you charge the battery for at least 8 hours. Your UPS is equipped with an auto-charge feature. When the UPS is plugged into an AC outlet, the battery will automatically charge whether the UPS is turned on or off..
- With the UPS unit turned off and unplugged, connect your computer, monitor, and any other peripherals requiring battery backup into the battery power supplied outlets. **DO NOT plug a laser printer, paper shredder, copier, space heater, vacuum, sump pump or other large electrical devices into the "Battery and Surge Protected Outlets". The power demands of these devices may overload and damage the unit.**
- To protect a fax, phone or modem, connect a telephone cable or network cable from the wall jack outlet to the IN jack of the UPS. Connect a telephone cable or network cable from the OUT jack of the UPS to a fax machine, telephone, modem, or network devices.
- Plug the UPS into a 2 pole, 3 wire grounded receptacle (wall outlet). Make sure the wall branch outlet is protected by a fuse or circuit breaker and does not service equipment with large electrical demands (e.g. air conditioner, copier, etc...). The warranty prohibits the use of extension cords, outlet strips, and surge strips.
- Press the power switch to turn the unit on. The Power On indicator light will illuminate and the unit will "beep". If an overload is detected, an audible alarm will sound and the unit will emit one long beep. To correct this, turn the UPS off and unplug at least one piece of equipment from the battery power supplied outlets. Make sure the circuit breaker is depressed and then turn the UPS on.
- To maintain optimal battery charge, leave the UPS plugged into an AC outlet at all times.
- To store the UPS for an extended period, cover it and store with the battery fully charged. While in storage, recharge the battery every three months to ensure battery life.
- Ensure the wall outlet and UPS are located near the equipment being attached for proper accessibility.
- Professional Rack Mount UPS provides one serial port, one dry contact port and one USB port to allow connection and communication between the UPS and computers or equipment. The USB port and Serial Port I (Primary) allow the shutdown of computer systems which are running PowerPanel® Business Edition Agent but only one of these ports should be used at a time with the USB port taking priority. When there is a power failure, the computer connected to either Serial Port I or the USB port will start to shut down after a user controlled delay based on the settings given to the software. Serial port II can be used to provide some basic information via a dry contact setup for equipment with that option.



BASIC OPERATION

DESCRIPTION



- Power Switch**
Used as the master on/off switch for equipment connected to the battery power supplied outlets.
- Power On Indicator**
This LED is illuminated when the utility power is normal and the UPS outlets are providing power, free of surges and spikes.
- MUTE Button**
Press the button for 3 seconds to disable the audible alarm (beeps once) or enable (beeps twice) the audible alarm.
- LED status Indicators**
The LED indicators show the status of the UPS, including Battery capacity, Load capacity, On Line, On Battery, AVR mode, Silent mode, Overload and Fault. For more information please review the "Definitions for Illuminated LED Indicators" section below.
- Battery and Surge Protected Outlets**
The unit has eight battery powered/surge suppression outlets for connected equipment to ensure temporary uninterrupted operation of your equipment during a power failure. **(DO NOT plug a laser printer, paper shredder, copier, space heater, vacuum, sump pump or other large electrical devices into the "Battery and Surge Protected Outlets". The power demands of these devices may overload and damage the unit.)**
- AC Input Power Cord**
Heavy-duty, extra long power cord.
- Output Circuit Breaker**
Resettable circuit breakers provide output optimal overload protection.
- Input Circuit Breaker**
Resettable circuit breakers provide input optimal overload protection.
- USB Port**
The USB port allows connection and communication between the USB port on the computer and the UPS unit.
- Communication Protection Ports**
Communication protection ports will protect any standard modem, fax, telephone line, network or Ethernet connection (RJ11/RJ45).
- Wiring Fault Indicator (red)**
This LED indicator will illuminate to warn the user that a wiring problem exists, such as bad ground, missing ground or reversed wiring. If this is illuminated, disconnect all electrical equipment from the outlet and have an electrician verify the outlet is properly wired. The unit will not provide surge protection without being plugged into a grounded and properly wired wall outlet.
- Coax/Cable/DSS Surge Protection**
The Coax/Cable/DSS surge protection ports will protect any cable modem, CATV converter, or DSS receiver.
- Serial Port I (Primary)**
The serial port allows connection and communication between the UPS and the computer.
- Serial Port II (Dry Contact)**
Dry contact produces information for equipment that can utilize dry contact signals.
- Expansion Port**
Remove the cover panel to install an optional RMCARD provides remote monitoring and management of your UPS over a network.

REPLACING THE BATTERY

Replacement of batteries located in an OPERATOR ACCESS AREA.

- When replacing batteries, replace with the same number of the following battery: CyberPower / RB1270X4F for the CPS1500AVR. Contact CyberPower Systems about replacement batteries.
- CAUTION!** Risk of Energy Hazard, 24 V, maximum 18 Ampere-hour battery. Before replacing batteries, remove conductive jewelry such as chains, wrist watches, and rings. High energy conducted through these materials could cause severe burns.
- CAUTION!** Do not dispose of batteries in a fire. The batteries may explode.
- CAUTION!** Do not open or mutilate batteries. Released material is harmful to the skin and eyes. It may be toxic.
- CAUTION!** Risk of electrical shock, refer to instruction manual before replacing the battery.
- CAUTION!** A battery can present a risk of electrical shock and high short circuit current. The following precautions should be observed when working on batteries: (1) Remove watches rings, or other metal objects. (2) Use tools with insulated handles

CAUTION - RISK OF EXPLOSION IF BATTERY IS REPLACED BY AN INCORRECT TYPE. DISPOSE OF USED BATTERIES ACCORDING TO LOCAL REGULATIONS.

BATTERY REPLACEMENT PROCEDURE:

- Remove the right side front panel.
- Remove four screws from battery compartment cover and remove the cover completely off the unit.
- Disconnect the black and red cable
- Insert the new battery pack. Assemble the screws, cover, cable and front panel in the reverse sequence of above steps.
- Install the replacement batteries by connecting the red wire and black wire to the same color wires from the battery pack. Recharge the unit for at least 8 hours to ensure the UPS performs expected runtime.

REMINDER: Batteries are considered **HAZARDOUS WASTE** and must be disposed of properly. Most retailers that sell lead-acid batteries collect used batteries for recycling, as required by local regulations.

CYBERPOWER GREENPOWER UPS™ TECHNOLOGY

Advanced Energy-Saving Patented Bypass Technology

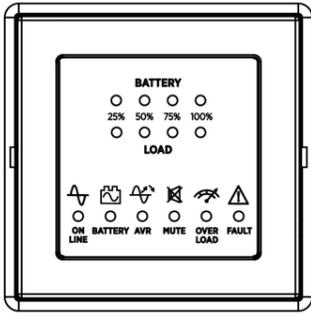
CyberPower's patented GreenPower UPS™ with Bypass Technology reduces UPS energy costs by up to 75% compared to conventional UPS models. Even when utility power is normal, conventional UPS models constantly pass power through a transformer. By contrast, under normal conditions the advanced circuitry of a GreenPower UPS™ bypasses the transformer. As a result, the power efficiency is significantly increased while decreasing waste heat, using less energy, and reducing energy costs.

When an abnormal power condition occurs, the GreenPower UPS™ automatically runs power through its transformer to regulate voltage and provide "safe" power. Since utility power is normal over 88% of the time, the GreenPower UPS™ operates primarily in its efficient bypass mode.

The GreenPower UPS™ is also manufactured in accordance with the Restriction on Hazardous Substances (RoHS) directive making it one of the most environmentally-friendly on the market today.



DEFINITIONS FOR ILLUMINATED LED INDICATORS



Display	Status	Description
<p>BATTERY</p> <p>○ ○ ○ ○</p> <p>25% 50% 75% 100%</p>	Battery Capacity	The LED shows the approximate capacity of internal battery (in 25% increments). During a severe brownout or blackout, an alarm sounds (two short beeps followed by a pause) to indicate the UPS is operating from its internal batteries. During a prolonged brownout or blackout, the alarm will sound continuously to indicate the UPS's batteries are nearly out of power. You should save files and turn off your equipment immediately or allow the software to shut the system down.
<p>LOAD</p> <p>○ ○ ○ ○</p> <p>25% 50% 75% 100%</p>	Load Capacity	The LED shows the approximate output load level (in 25% increments) of the UPS battery outlets.

Icons	Status	Description
	Line mode	This LED illuminates when the UPS is supplying utility power to connected equipment..
	Battery mode	This LED illuminates when the UPS is operating from its internal battery. The LED will flash when the unit cannot detect the internal battery or the battery is completely worn out.
	AVR mode	This LED illuminates whenever your UPS is automatically correcting low AC line voltage without using battery power. This is a normal, automatic operation of your UPS, and no action is required on your part.
	Mute	This LED illuminates whenever the UPS is in silent mode. The buzzer does not beep during silent mode until the battery reaches low capacity.
	Overload	This LED illuminates and an alarm sounds to indicate the battery-supplied outlets are overloaded. To clear the overload, unplug some of your equipment from the battery-supplied outlets until the icon turns off and the alarm stops.
	Fault	This LED illuminates if there is a problem with the UPS. Contact CyberPower Systems for further help and support.

TROUBLESHOOTING

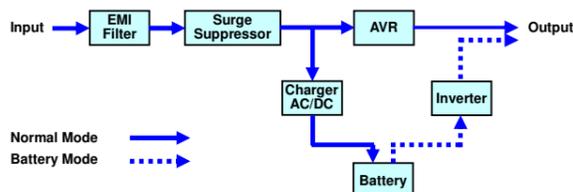
Problem	Possible Cause	Solution
Full-time surge protection outlets stop providing power to equipment.	Circuit breaker has tripped due to an overload.	Turn the UPS off and unplug at least one piece of equipment. Wait 10 seconds, reset the circuit breaker by depressing the button, and then turn the UPS on.
The UPS does not provide expected runtime.	Battery not fully charged.	Recharge the battery by leaving the UPS plugged in.
	Battery is slightly worn out.	Contact CyberPower Systems about replacement batteries.
The UPS will not turn on.	The on/off switch is designed to prevent damage by rapidly turning it off and on.	Turn the UPS off. Wait 10 seconds and then turn the UPS on.
	The battery is worn out.	Contact CyberPower Systems about replacement batteries.
	Mechanical problem.	Please contact CyberPower Systems.
PowerPanel® Business Edition is inactive.	The USB cable is not connected.	Connect the USB cable to the UPS unit and an open USB port on the back of the computer.
	The unit is not providing battery power.	Shutdown your computer and turn the UPS off. Wait 10 seconds and turn the UPS on. This should reset the unit.

Additional troubleshooting information can be found under "Support" at www.Cyberpower.com

TECHNICAL SPECIFICATIONS

Model	CPS1500AVRa
Capacity	1500VA / 900W
Nominal Input Voltage	120Vac
Input Frequency	47 – 63 Hz (Auto-sensing)
On-Battery Output Voltage	120Vac ± 5%
On-Battery Output Wave Form	Simulated Sine Wave
Operating Temperature	+ 32°F to 104° F / 0° C to 40° C
Size (W x H x D)	17.25" x 3.5" x 15.75"
Weight	50.5 lbs / 22.9 kg
Battery Type	RB1270X4F
Typical Battery Recharge Time	8 hours from total discharge
Typical Battery Life	3 to 6 years, depending on number of discharge/recharge cycles
Recommended Battery	Sealed Maintenance Free Lead Acid Battery
Safety Approvals	UL1778 / cUL / CSAC22.2 No.107, FCC DOC Class B

SYSTEM FUNCTIONAL BLOCK DIAGRAM



Limited Warranty and Connected Equipment Guarantee

Read the following terms and conditions carefully before using the CyberPower CPS1500AVR (the "Product"). By using the Product you consent to be bound by and become a party to the terms and conditions of this Limited Warranty and Connected Equipment Guarantee (together referred to as this "Warranty"). If you do not agree to the terms and conditions of this Warranty, you should return the Product for a full refund prior to using it.

Who is Providing this Warranty?

CyberPower Systems (USA), Inc. ("CyberPower") provides this Limited Warranty.

What Does This Warranty Cover?

This warranty covers defects in materials and workmanship in the Product under normal use and conditions. It also covers equipment that was connected to the Product and damaged because of the failure of the Product.

What is the Period of Coverage?

This warranty covers the Product for three years and connected equipment for as long as you own the Product.

Who is Covered?

This warranty only covers the original purchaser. Coverage ends if you sell or otherwise transfer the Product.

How Do You Get Warranty Service?

1. Before contacting CyberPower, identify Your Product model number, the Purchase Date, and each item of Connected

Equipment (E.G. Computer tower, Computer Monitor, Ink Jet Printer, Cable Modem, etc).

2. Visit our web site at <http://www.cpsww.com/support> or Call us at (877) 297-6937.

3. If your product requires warranty service you must provide a copy of your dated purchase receipt or invoice.

How Do You Open A Connected Equipment Claim?

1. Call us at (877) 297-6937 or write to us at Cyber Power Systems (USA), Inc., 4241 12th Ave. E., STE 400, Shakopee, MN 55379, or send us an e-mail message at claims@cpsww.com for instructions, within 10 days of the occurrence.
2. When you contact CyberPower, identify the Product, the Purchase Date, and the item(s) of Connected Equipment. Have information on all applicable insurance or other resources of recovery/payment that are available to the Initial Customer and Request a Claim Number.
3. You must provide a dated purchase receipt (or other proof of the original purchase) and provide a description of the damage to your connected equipment.
4. Pack and ship the product to CyberPower and, if requested, the item(s) of Connected Equipment, a repair cost estimate for the damage to the Connected Equipment, and all claim forms that CyberPower provides to you. Show the Claim Number on the shipping label or include it with the product. **You must prepay all shipping costs, you are responsible for packaging and shipment, and you must pay the cost of the repair estimate.**

How Long Do I Have To Make A Claim?

All claims must be made within ten days of the occurrence.

What Will We Do To Correct Problems?

CyberPower will inspect and examine the Product.

If the Product is defective in material or workmanship, CyberPower will repair or replace it at CyberPower's expense, or, if CyberPower is unable to or decides not to repair or replace the Product (if defective) within a reasonable time, CyberPower will refund to you the full purchase price you paid for the Product (purchase receipt showing price paid is required).

If it appears that our Product failed to protect any equipment plugged into it, we will also send you forms for making your claim for the connected equipment. We will repair or replace the equipment that was damaged because of the failure of our Product or pay you the fair market value (NOT REPLACEMENT COST) of the equipment at the time of the damage. We will use Orion Blue Book, or another a third-party valuation guide, or eBay, craigslist, or other source to establish that amount. Our maximum liability is limited to \$300,000 for the CPS1500AVR.

Who Pays For Shipping?

We pay when we send items to you; you pay when you send items to us.

What isn't covered by the warranty?

1. This Warranty does not cover any software that was damaged or needs to be replaced due to the failure of the Product or any data that is lost as a result of the failure or the restoration of data or records, or the reinstallation of software.
2. This Warranty does not cover or apply to: misuse, modification, operation or storage outside environmental limits of the Product or the equipment connected to it, nor for damage while in transit or in storage, nor if there has been improper operation or maintenance, or use with items not designed or intended for use with the Product, such as laser printers, appliances, aquariums, medical or life support devices, etc.

What are the Limitations?

The sole and exclusive remedies of the Initial Customer are those provided by this Warranty.

1. This Warranty does not apply unless the Product and the equipment that was connected to it were connected to properly wired and grounded outlets (including compliance with electrical and safety codes of the most current electrical code), without the use of any adapters or other connectors.
2. The Product must have been plugged directly into the power source and the equipment connected to the Product must be directly connected to the Product and not "daisy-chained" together in serial fashion with any extension cords, another Product or device similar to the Product, surge suppressor, or power tap. Any such installation voids the Limited Warranty.
3. The Product and equipment connected to it must have been used properly in a suitable and proper environment and in conformance with any license, instruction manual, or warnings provided with the Product and the equipment connected to it.
4. The Product must have been used at all times within the limitations on the Product's VA capacity.

The Product was designed to eliminate disrupting and damaging effects of momentary (less than 1ms) voltage spikes or impulses from lightning or other power transients. If it can be shown that a voltage spike lasting longer than 1ms has occurred, the occurrence will be deemed outside the rated capabilities of the Product and the Limited Warranty is void. CyberPower Does Not Cover or Undertake Any Liability in Any Event for Any of the Following:

1. Loss of or damage to data, records, or software or the restoration of data or records, or the reinstallation of software.
2. Damage from causes other than AC Power Line Transients, spikes, or surges on properly installed, grounded and code-compliant 120 volt power lines in the United States and Canada; transients, surges or spikes on standard telephone land lines, PBX telephone equipment lines or Base 10T Ethernet lines, when properly installed and connected. (This exclusion applies, for example, to fluctuations in data transmission or reception, by CATV or RF transmission or fluctuations, or by transients in such transmission.)
3. Damage from any circumstance described as excluded above with respect to the Product.
4. Damages from fire, flood, wind, rain, rising water, leakage or breakage of plumbing, abuse, misuse or alteration of either the product or the Connected Equipment.
5. CyberPower excludes any liability for personal injury under the Limited Warranty and Connected Equipment Guarantee. CyberPower excludes any liability for direct, indirect, special, incidental or consequential damages, whether for damage to or loss of property [EXCEPT FOR (AND ONLY FOR) the specific limited agreement of CyberPower to provide certain warranty benefits regarding "Connected Equipment" under this Warranty], loss of profits, business interruption, or loss of information or data. NOTE: Some States or Provinces do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation may not apply to you.
6. The Product is not for use in high-risk activities or with aquariums. The Product is not designed or intended for use in hazardous environments requiring fail-safe performance, or for use in any circumstance in which the failure of the Product could lead directly to death, personal injury, or severe physical or property damage, or that would affect operation or safety of any medical or life support device (collectively, "High Risk Activities"). CyberPower expressly disclaims any express or implied warranty of fitness for High Risk Activities or with aquariums. CyberPower does not authorize use of any Product in any High Risk Activities or with Aquariums. **ANY SUCH USE IS IMPROPER AND IS A MISUSE OF THE PRODUCT.**

Where Can I Get More Information?

The application of the United Nations Convention of Contracts for the International Sale of Goods is expressly excluded.

CyberPower is the warrantor under this Limited Warranty.

For further information please feel free to contact CyberPower at CyberPower Systems (USA), Inc. 4241 12th Ave E., STE 400, Shakopee, MN 55379; call us at (877) 297-6937; or send us an e-mail message at claims@cpsww.com.

CAN ICES-3 (B)/NMB-3(B)

FCC Compliance Statement 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.

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment to an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help

Warning: Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Important: A shielded power cord/cable must be used in order to meet FCC emission limits and prevent interference to the nearby radio and television reception. Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

CyberPower Systems encourages environmentally sound methods for disposal and recycling of its UPS products. Please dispose and/or recycle your UPS and batteries in accordance to the local regulations of your state.

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