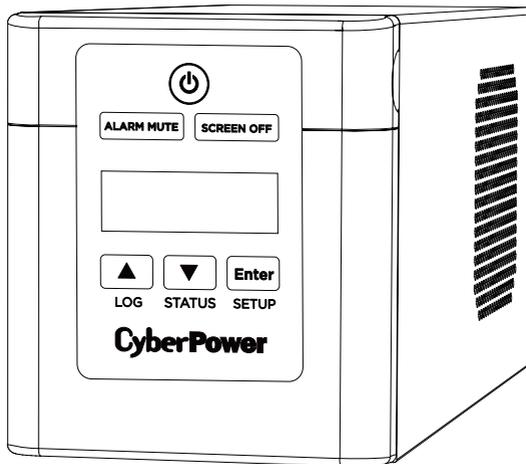


MEDICAL GRADE UPS SERIES M550L/M750L/M1100XL USER MANUAL



INTENDED USE OF UPS SYSTEM

CyberPower Medical Grade UPS systems are intended to support and protect non-medical and medical computer devices that require leakage current reduction, surge protection, voltage regulation, line noise filtering and battery backup during power outages and generator testing, both inside and outside patient care vicinities. CyberPower Medical Grade UPS Systems come with medical-grade receptacles and plugs that reduce the leakage.

Cyber Power Systems (USA), Inc.

PRODUCT REGISTRATION

Thank you for purchasing a CyberPower product. This UPS is designed to provide unsurpassed power protection, operation, and performance during the lifetime of the product. Please take a few minutes to register your product at: www.CyberPowerSystems.com/registration. Registration certifies your product's warranty, confirms your ownership in the event of a product loss or theft, and entitles you to free technical support. Register your product now to receive the benefits of CyberPower ownership.

IMPORTANT SAFETY WARNINGS

SAVE THESE INSTRUCTIONS - This manual contains important instructions that should be followed during installation and maintenance of the UPS and batteries..

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! For pluggable equipment, the socket-outlet shall be installed near the equipment and shall be easily accessible.

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! Hazardous live parts inside can be energized by the battery even when the AC input power is disconnected.

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

CAUTION! To avoid electric shock, turn off the unit and unplug it from the AC power source before servicing the battery.

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

CAUTION! Not for use in a computer room as defined in the Standard for the Protection of information Technology Equipment, ANSI/NFPA 75.

DO NOT USE FOR LIFE SUPPORT EQUIPMENT!

CyberPower Systems does not sell products life support applications. DO NOT use in any circumstance that would affect the operation and safety of life support equipment or patient care.

CAUTION! The Serial and USB ports of the UPS units allow the connection and communication with computers, and the connected computers shall comply with UL/ IEC standards.

CAUTION! Combined systems shall comply with the standard IEC 60601-1-1, safety requirements for medical electrical systems. Equipment which doesn't comply with UL 60601-1 shall be kept outside of patient environments, as defined in the standard.

DO NOT USE WITH OR NEAR AQUARIUMS!

To reduce the risk of fire or electric shock, do not use with or near an aquarium. Condensation from the aquarium can cause the unit to short out.

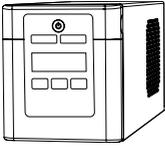
DO NOT USE THE UPS ON ANY TRANSPORTATION!

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

UNPACKING

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



(a) UPS unit



(b) User's manual



(c) Serial cable



(d) USB A+B type cable

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

AUTOMATIC VOLTAGE REGULATOR

The M550L/M750L/M1100XL 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 and decreases high utility power to a consistent and safe 120 volts.

DETERMINE THE POWER REQUIREMENTS OF YOUR EQUIPMENT

1. Ensure that the equipment plugged into the UPS does not exceed the UPS unit's rated capacity. 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.
2. There are many factors that can affect the amount of power that your electronic equipment will require. For optimal system performance keep the load below 80% of the unit's rated capacity.

HARDWARE INSTALLATION GUIDE

1. 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 16 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.

Note: This UPS is designed with a safety feature to keep the system from being turned on during shipment. The first time you turn the UPS on, you will need to have it connected to AC power or it will not power up.

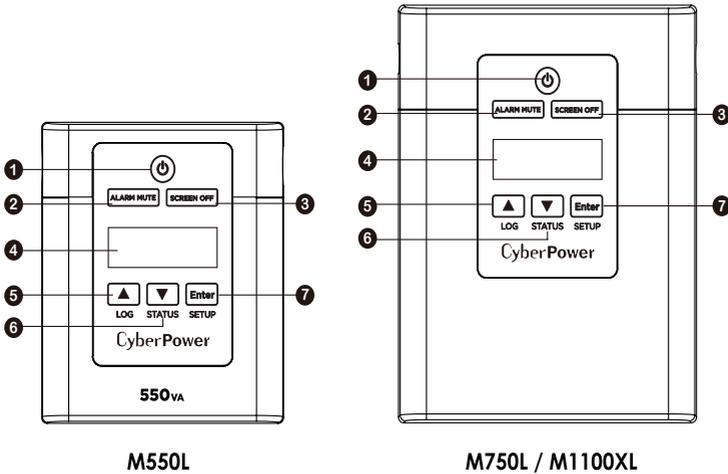
2. With the UPS unit turned off and unplugged, connect your computer, monitor, and any other peripherals requiring battery backup into the battery power supplied outlets. **DO NOT** plug a laser printer, paper shredder, copier, space heater, vacuum, sump pump or other large electrical devices into the "Battery and Surge Protected Outlets". The power demands of these devices may overload and damage the unit.
3. 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.
4. Press the power switch to turn the unit on. The Power On indicator 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.

- continued

INSTALLING YOUR UPS SYSTEM

- 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.
- Insure the wall outlet and UPS are located near the equipment being attached for proper accessibility.

BASIC OPERATION



FRONT PANEL

1. Power Switch / Power On Indicator

Used as the master on/off switch for equipment connected to the battery power supplied outlets.

2. Alarm Mute Button

Press the Alarm mute button to mute the alarm while it is beeping. Press the button for 2 seconds to enable / disable the buzzer.

3. Screen off Button

Press the Screen off button to light up / off the LCD. Press the button for 2 seconds to enable / disable the Auto Sleep function of the LCD.

4. LCD module display

The LCD display provides information on the UPS battery and power conditions and allows for customization of UPS operation.

5. Log/Up Button

For UPS log information, press the button for 2 seconds. This button is also used to scroll up.

6. Status/Down Button

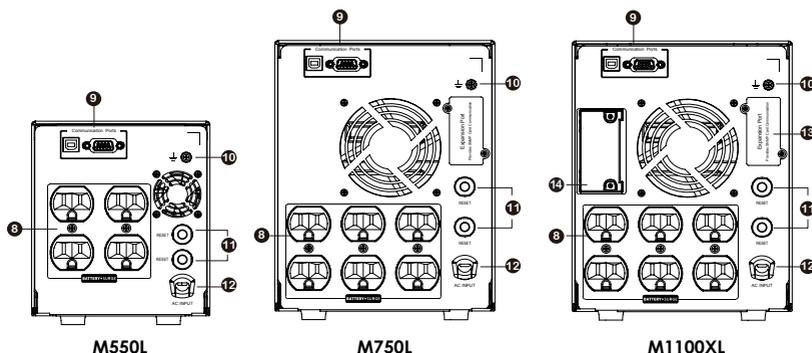
For UPS status information, press the button for 2 seconds. This button is also used to scroll down.

7. Setup/Enter Button

Press the Setup button for 2 seconds to enter setup menu and then select the functions for configuration.

For additional information on how to customize the UPS's operation, please refer to the LCD Function Setup Guide section below.

BASIC OPERATION - continued



BACK PANEL

8. Battery and Surge Protected Outlets (Hospital-Grade)

The unit has several battery powered and surge protected outlets (4 outlets for M550L and 6 outlets for M750L/M1100XL) 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.)

9. Serial/USB Ports to PC

The Serial and USB ports allow connection and communication between the personal-computer and the UPS unit.

Note: Only one port can be used at a time; when the USB is in use, the serial port will be disabled.

10. TVSS Ground

Use the Transient Voltage Surge Suppression Screw to ground the UPS.

11. Input / Output Circuit Breaker

Located on the back of the UPS, the circuit breaker provides overload and fault protection.

12. AC Input Power Cord

Heavy-duty power cord.

13. SNMP/HTTP Network Slot (For M750L and M1100XL)

Remove the cover panel to install an optional RMCARD to remotely monitor and manage your UPS over a network.

14. Extended Battery Connector (For M1100XL Only)

Use to connect the optional CyberPower external battery packs for extended runtime.

BATTERY WARNINGS

Follow the IMPORTANT SAFETY INSTRUCTIONS before servicing the batteries: Replacement of batteries located in an **OPERATOR ACCESS AREA**.

CAUTION! Risk of explosion if battery is replaced by an incorrect type. Dispose of used batteries according to the instruction.

CAUTION! When replacing batteries, replace with the same number of the following battery:

CyberPower / RB1270X2E for the M550L,
CyberPower / RB1270X3A for the M750L,
CyberPower / RB1290X3B for the M1100XL.

Contact CyberPower Systems about replacement batteries.

CAUTION! Risk of Energy Hazard, 12V, maximum 9 Ampere-hour battery. Before replacing batteries, remove conductive jewelry such as chains, wristwatches 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.

BATTERY WARNINGS - continued

CAUTION! For UPS which is equipped with extended battery connector, only connect to CyberPower extended battery pack. Contact CyberPower Systems about extended battery pack.

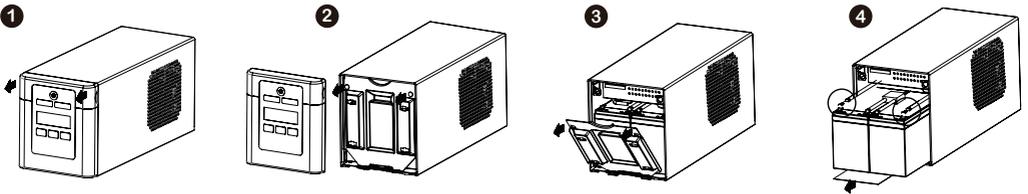
REMINDER: Batteries are considered HAZARDOUS WASTE and must be disposed of properly. Most retailers that sell lead-acid batteries collect used batteries for recycling, as required by local regulations.

BATTERY REPLACEMENT

BEFORE REPLACING THE BATTERY

1. Remove all watches, rings or other metal objects.
2. Only use tools with insulated handles.
3. DO NOT lay tools or other metal parts on top of battery or any battery terminals.
4. Wear rubber gloves and boots.

M550L



BATTERY REPLACEMENT PROCEDURE

STEP 1: Remove the front panel of the UPS.

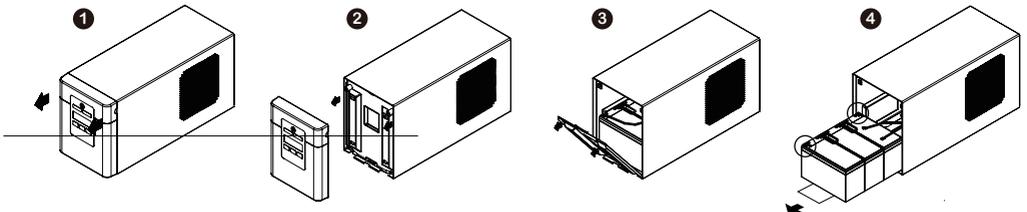
STEP 2: Remove two screws from the battery compartment cover.

STEP 3: Slide the cover completely off from the unit.

STEP 4: Disconnect the battery wires from the batteries and remove the batteries from the compartment. Insert the new battery pack. Connect the Red battery cable to Red connector on Battery pack and connect Black ones.

STEP 5: Assemble the battery compartment cover, screws and front panel in the reverse sequence of above steps. Recharge the unit for 16 hours to ensure the UPS performs expected runtime.

M750L / M1100XL



DEFINITIONS FOR ILLUMINATED LCD DISPLAY

STATUS MENU

- | | | |
|------------------|-----------------------|---------------|
| ➤ Operation Mode | ➤ Load Energy | ➤ Input |
| ➤ Load Power | ➤ Estimated Runtime | ➤ Output |
| ➤ Load VA | ➤ Battery Information | ➤ Date & Time |
| ➤ Load Amps | | |

LOGS MENU

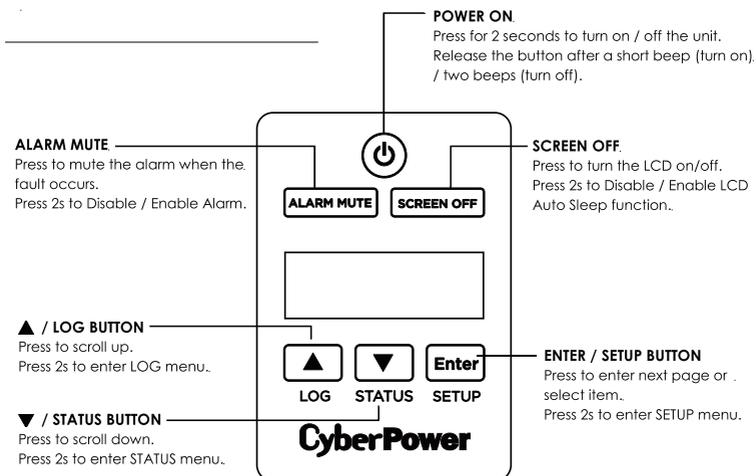
- | | | |
|----------------------------|------------------------|------------------------|
| ➤ Event- Transfer (X1-X10) | ➤ Last Battery Change | ➤ LCD Firmware Version |
| ➤ Event- Fault (F1-F10) | ➤ Next Battery Change | ➤ Serial Number |
| ➤ Model Name | ➤ UPS Firmware Version | |

SETUP MENU

- | | | |
|-------------------|-----------------------|-------------------|
| ➤ Utility Power | ➤ LCD Auto Sleep | ➤ Self-Test |
| ➤ MIN O/P Voltage | ➤ Cycling Display | ➤ Alarm Test |
| ➤ MAX O/P Voltage | ➤ Low Battery Warning | ➤ Date & Time |
| ➤ Sensitivity | ➤ Battery Change Date | ➤ Language |
| ➤ Audible Alarm | ➤ Auto Self-Test | ➤ Back to Default |

LCD FUNCTION SETUP GUIDE

BUTTON DESCRIPTION



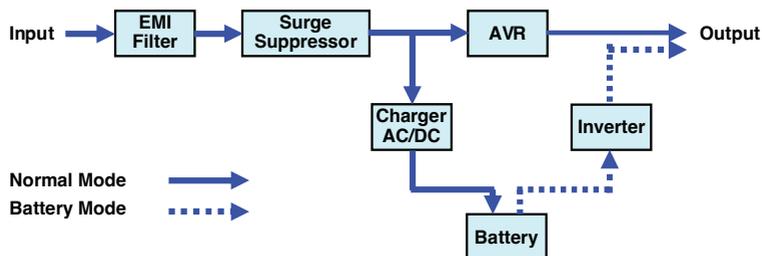
LCD FUNCTION SETUP GUIDE

Function	Options	Default	Description
O/P Voltage Range			
Utility Power	Normal Good Poor (Custom)* ESC	Normal	This determines when the UPS will switch to Battery Mode. If the utility power is Good, the unit will go to Battery Mode more often. If the utility power is Poor, the unit will go to Battery Mode less often to tolerate the utility power fluctuations.
MIN O/P Voltage	97~106V	102V	If the utility voltage is usually low and the connected equipment can work with this condition, you can set the output voltage range lower to avoid UPS going to AVR Mode too often.
MAX O/P Voltage	127~136V	131V	If the utility voltage is usually high and the connected equipment can work with this condition, you can set the output voltage range higher to avoid UPS going to AVR Mode too often.
Sensitivity			
Sensitivity	Medium High Low ESC	Medium	If the connected equipment can tolerate more power events, select Low Sensitivity. The UPS will go Battery Mode less often. If the connected equipment cannot tolerate power events, select High Sensitivity. The UPS will go Battery Mode more often.
Audible Alarm			
Alarm	Enable Disable ESC	Enable	If "Disable" is selected, the unit will mute all alarms except for overload condition.
Display Menu			
LCD Auto Sleep	Never After 1 minutes After 5 minutes After 10 minutes ESC	After 1 minute	If Auto Sleep is selected, the LCD display will shut off after 1/5/10 minutes if no activity.
Cycling Display	Never After 10 seconds After 20 seconds After 30 seconds ESC	After 20 seconds	If the buttons are not touched in 10/20/30 seconds, it will start cycling the UPS information. In Status Menu, press Enter button once can also enter or leave cycling mode.

LCD FUNCTION SETUP GUIDE

Function	Options	Default	Description
Battery Menu			
Low Battery Warning	0~1800s	300s	The audible alarm will sound when the remaining runtime is less than the value selected.
Extended Battery*	0~2	0	Set up the quantity of the extended batteries. * Only M1100XL supports Extended Battery.
Battery Change Date	Jan / Feb / Mar / Apr / May / Jun / Jul / Aug / Sep / Oct / Nov / Dec 2000~2099	---/---	Optional setup information. User can select the install date of new batteries.
Test Menu			
Self-Test?	No Yes	No	If Yes is selected, the UPS will perform a self-test.
Auto Self-Test On Startup	Yes No ESC	No	If Yes is selected, the UPS will perform a self-test when startup.
Auto Self-Test Frequency	Never Every week Every 2 weeks ESC	Never	Set up the frequency of Auto Self-Test.
Alarm Test?	Short Test Continuous Test ESC	---	This option tests the alarm's audible warning and LED indicators to insure they are normal.
Other Setup			
Date & Time	yyyy/mm/dd hh:mm	---/--/-- :--:--	Set up year/month/day, hour/minute.
Language	English German French	English	Set up the Language.
Back to Default?	No Yes	No	Restores the UPS factory default settings.

SYSTEM FUNCTION BLOCK DIAGRAM



TROUBLESHOOTING

Problem	Possible Cause	Solution
Circuit breaker button is projecting from the back of the unit.	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 pressing the button in, and then turn the UPS on.
The UPS does not perform expected runtime.	Batteries are not fully charged.	Recharge the battery by leaving the UPS plugged in.
	Batteries are worn out.	Contact CyberPower Systems about replacement batteries.
The UPS will not turn on.	The on/off switch is designed to prevent damage from rapidly turning it off and on.	Turn the UPS off. Wait 10 seconds and then turn the UPS on.
	The unit is not connected to an AC outlet.	The unit must be connected to a 120V 50/60Hz outlet.
	Batteries are worn out.	Contact CyberPower Systems about replacement batteries.
	Mechanical problem.	Contact CyberPower Systems for repair.
PowerPanel® Business is inactive.	The USB/serial cable is not connected.	Connect the USB/serial cable to the UPS unit and an open USB/serial port on the back of the computer. You must use the cable that came with the unit.
	The USB/serial cable is connected to the wrong port.	Check the back of the computer for an additional USB/serial port. Move the cable to this port.
	The serial cable is not the cable that came with the unit.	Please use the serial cable that came with the unit for the software.

TECHNICAL SPECIFICATIONS

Model	M550L	M750L	M1100XL
Capacity (VA)	550	750	1100
Capacity (Watts)	440	600	880
INPUT			
Input Voltage Range	90Vac - 150Vac		
Input Frequency Range	50/60Hz ± 3Hz Auto-sensing		
Input Plug Type	NEMA 5-15P		
OUTPUT			
Output Receptacles	NEMA 5-15R (Hospital Grade)		
Output Voltage	120Vac ± 5%		
Output Frequency	50/60Hz ± 1%		
Output Waveform	Simulated Sine Wave		
Transfer Time (Typical)	< 10ms		
Overload Protection	Internal Current Limiting, Circuit Breaker		
SURGE PROTECTION AND FILTERING			
Lightning / Surge Protection	Yes		
BATTERY			
Replaceable Battery Pack	RB1270X2E	RB1270X3A	RB1290X3B
Extended Runtime	No	No	Yes (Max. 2)
Sealed Maintenance Free	Yes		
Recharge Time (Typical)	8 Hours		
WARNING DIAGNOSTICS			
Indicators	LCD Display, LED Indicators (Power On)		
Audible Alarms	On Battery, Low Battery, Overload, UPS Fault		
ENVIRONMENTAL			
Operating Temperature	32 °F to 104 °F (0 °C to 40 °C)		
Operating Relative Humidity	0 to 95% Non-condensing		
Storage Temperature	5 °F to 113 °F (-15 °C to 45 °C)		
Storage Relative Humidity	0 to 95% Non-condensing		
MANAGEMENT			
Connectivity Ports	(1) USB Port, (1) Serial Port		
Software	PowerPanel® Business		
PHYSICAL			
Dimensions (WxHxD)	5.4" x 6.4" x 13.7"		6.7" x 8.7" x 17"
Weight (lb/kg)	30.1lbs	52.8lbs	54.0lbs
SAFETY			
Max. Current Leakage	< 100µA		
Conformance Approvals	UL1778 (CSA C22.2 No 107.3), UL60601 tested , FCC Part15 Class 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.

Canadian Compliance Statement

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

LIMITED WARRANTY AND CONNECTED EQUIPMENT GUARANTEE

Please visit www.CyberPowerSystems.com for a copy of the Limited Warranty and Connected Equipment Guarantee.

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@cyberpowersystems.com.



Customer Support is available on our website.

Visit CyberPower at www.cyberpower.com to get more information.

WARNING: This product can expose you to chemicals including bisphenol A (BPA) and styrene, which is known to the State of California to cause reproductive harm and cancer. For more information, go to www.P65Warnings.ca.gov.