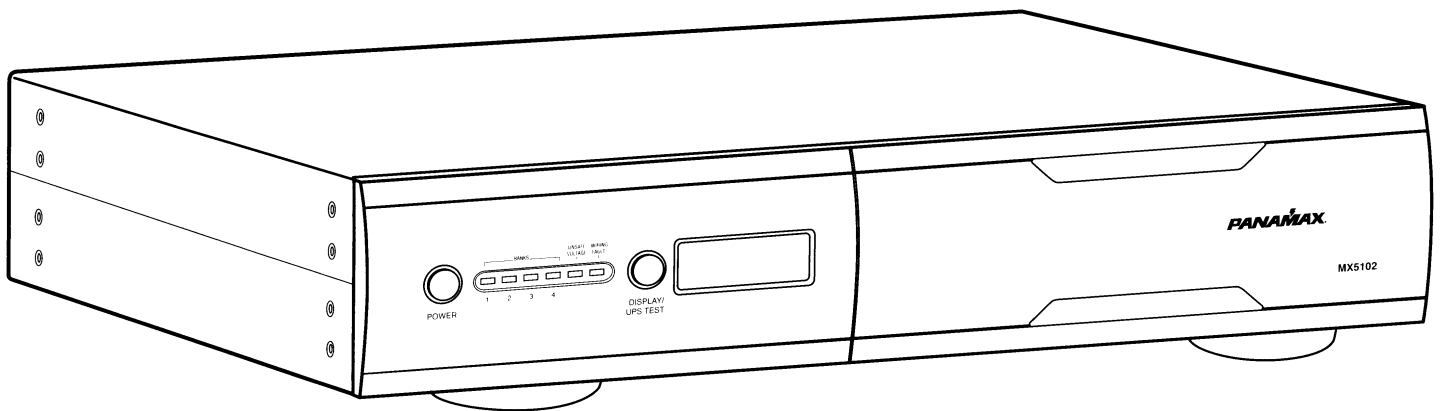


# MX5102 Instructions

A Complete Power Management, Surge Protection, and Battery Backup Solution



## Features:

- Surge Protection and AVM
- LiFT Noise Filtration
- Dual Learning IR Output Controls
- Rack Ears Included

**PANAMAX**

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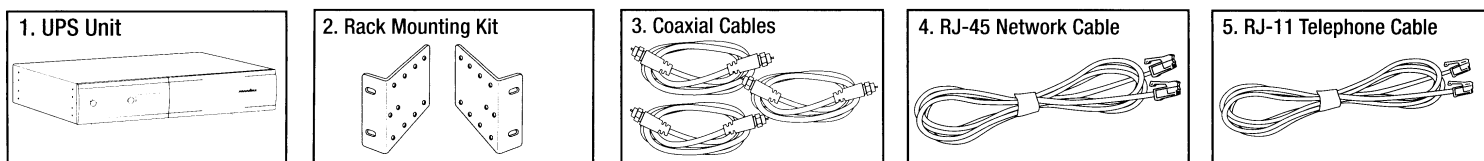
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## Before you begin unpacking inspect the MX5102 upon receipt.

In addition to this manual the box should contain the following:



## MX5102 Specifications

### AC Power

Line Voltage	120V, 60Hz
Total Current Capacity	12 A
Energy Dissipation	1800 Joules
Catastrophic Surge Circuit	Yes
Thermal Fusing	Yes

Overvoltage Shutoff, fast rise	150 ± 5 V
Overvoltage Shutoff, slow rise	132 ± 5 V
Undervoltage Shutoff	90 ± 5 V

### EMI/RFI Noise Filtration

Bank 1 EMI Filtration	66dB Max, 100kHz-2MHz
Bank 2 EMI Filtration	66dB Max, 100kHz-2MHz

### UPS Output

Voltage	120 ± 5% Simulated Sine Wave
Frequency	60 Hz ± 1%
UPS Output Capacity	600VA/360W @ 0.6pf
UPS Backup Time	3 minutes at full load
Transfer Time	< 10ms

Specifications are subject to changes due to product upgrades and improvements.

### DC Trigger Input

Jacks	3.5mm (1/8") mono mini-plug
Voltage and Polarity	3 - 18V DC, bidirectional
Current Requirement	4.6 mA @3V, 58 mA @18V

### LAN Circuits

Clamping Level	50V
Jacks	RJ-45
Wires Protected	8-Wires

### Telephone Circuit

Fuseless/Auto-resetting	Yes
Clamping Level	275V
Suppression Modes	Metallic & Longitudinal
Jacks	RJ-11
Wires Protected	2-Wire, Pins 4 & 5

### Cable and Satellite Circuits

HD 1080 i/p Ready	Yes
Bi-directional	Yes
Shielded	Yes
Clamping Level	75V
Frequency Range	0MHz - 2.2 GHz
Insertion Loss	< 0.5 dB
Connections	Female "F", Gold Plated

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# Important Safety Instructions

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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!** Risk of explosion if battery is replaced by an incorrect type.

**CAUTION!** The UPS must be connected to an AC power outlet with fuse or circuit breaker protection.

**DO NOT** plug the machine into an outlet that is not grounded. If you need to de-energize this equipment, turn off and unplug the UPS.

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

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

**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. No user serviceable parts inside.

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

**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 current contacts and cause the machine to short out.

**Note:** AC Power management devices, such as a UPS, have certain limitations with regard to reactive loads and wattage. The MX5102 has a handling capacity of 600VA or approximately 600 watts. Excessive power consumption beyond these specifications can affect battery life and performance.

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

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

To avoid electrical shock, a screwdriver must be used to remove screws to open battery cover before replacing battery. Must close battery compartment using screwdriver to tighten screws.

## NOTE TO CATV INSTALLERS

This reminder is provided to call attention to Article 820-40 of the NEC. That article provides specific guidelines for proper grounding. It specifies that the cable ground shall be connected to the grounding system of the building and as close to the point of entry as practical.

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## FCC Notice

### FCC Notice

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 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:

- (1)** Reorient or relocate the receiving antenna.
- (2)** Increase the separation between the equipment and receiver.

**(3)** Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

**(4)** Consult the dealer or an experienced radio/TV technician for help. Any special accessories needed for compliance must be specified in the instruction.

**CAUTION:** A shielded-type power cord is required in order to meet FCC emission limits and also to prevent interference to the nearby radio and television reception. It is essential that only the supplied power cord be used. Use only shielded cables to connect I/O devices to this equipment.

**CAUTION:** Any changes or modifications not expressly approved by the guarantee of this device could void the user's authority to operate the equipment.

# Key Features and Functions

## Sequential Start/Shutdown

Complex audio/video systems may be susceptible to voltage transients generated internally at start-up/shutdown if all of the equipment is powered on or off at the same time. This can cause speaker "thumps" which are not only annoying but can also damage the speakers and or trip product circuit breakers. The MX5102 is designed to eliminate these transients by providing a "start-up" delay for the High-Current outlets and a "shutdown" delay for the Switched Outlet Banks. This minimizes inrush current issues by allowing the components plugged into the Switched Outlet Banks to power-up and stabilize before any amplifiers and powered subwoofers are turned on. This sequence is reversed during shutdown. The amplifiers and powered subwoofers turn off, their power supplies drain, and then the equipment plugged into the Switched Outlet Banks are turned off.

## Voltage Sense Trigger

The MX5102 voltage sense trigger input uses a standard 3.5mm (1/8") mini-mono plug. This feature provides an ON/OFF trigger for the MX5102 using a Direct Current voltage signal. Many components such as pre-amplifiers and receivers have a DC trigger built in, and will transmit a constant power signal when turned on and in use. The presence of this power signal will turn on the MX5102's switched outlets. When the source component is turned off, the voltage trigger signal is also turned off and the MX5102's shutdown sequence is initiated. An AC Adapter of the appropriate voltage, plugged into a switched outlet, may also be used if a DC trigger is not built in. When in use the Voltage Sense Trigger overrides the function of the on/off power button.

## Battery Backup Outlet Bank

Today's audio/video systems include several components that greatly benefit from uninterrupted power. Cable boxes and satellite receivers take a substantial amount of time to recover all of the programming information after a power failure. DVRs can continue to record scheduled programs. Projection television bulbs can fail from thermal shock if the power is abruptly interrupted and the television cannot go through the proper cool down cycle. MX5102 includes a bank of 2 Uninterruptible Power Supply (UPS) outlets.

## Learning IR Control

The learning function lets you program MX5102 to send standby or shutdown commands to components such as DLP ceiling projectors or rear projection televisions. For example: if the power fails, the projector's lamp is turned off while battery back-up outlets continue to provide battery power to the projector's cooling fan. Proper shutdown is ensured and expensive lamps are protected from damage. The MX5102 can learn up to two discrete IR commands to send a single command to two devices, or to send a two-command macro to a single device.

## Automatic Over & Under Voltage Protection

Panamax's power monitoring circuitry constantly monitors the AC line voltage for unsafe voltage conditions such as momentary spikes or prolonged over-voltages and under-voltages (brownouts). These unsafe conditions pose a very dangerous threat to all electronic equipment within the home. If the MX5102 senses an unsafe power condition, it will automatically disconnect your equipment from the power to protect equipment from damage. When MX5102 disconnects from the power, the Battery Backup Outlets are switched to battery power.

- When subjected to a 6,000V (open circuit voltage) / 500A (short circuit current) surge, the MX5102 limits its voltage output to less than 330V peak, UL's best rating. The MX5102 will withstand, without damage, 10,000A surges, far exceeding the UL requirement of only 3000 Ampere surges.

- If the magnitude of the surge is greater than the capacity of the surge protection components, the MX5102's Protect or Disconnect Circuitry will disconnect your equipment in order to protect it. The MX5102 will need to be repaired or replaced by Panamax if this occurs within the 3 yr. product warranty.

## Cable/Sat/Antenna Signal Protection

Coaxial protection circuits achieve optimum signal quality from our new coaxial protectors that have the smallest signal loss on the market - less than 0.5 db of attenuation from 0 MHz to 2.2 GHz. Our upgraded coaxial protection has been specifically designed to virtually eliminate signal loss. The clamping level of 75V will meet the demands of both cable and satellite voltage while minimizing exposure to damaging spikes and surges.

## Telephone Line Protection

Digital video recorders and satellite TV receivers require a telephone line connection for TV show scheduling and/or Pay-Per-View services. The MX5102 also provides surge protection for this line. One pair of RJ-11 telephone jacks is provided for this. The clamping level of the MX5102 telephone protector is 267 volts. This will allow typical ring voltage (90-130VAC) and operating battery voltage (-48DC) to pass through the circuit and still protect the modem in your satellite receiver from damage.

## LAN

Protection circuits for 10/100 baseT Ethernet lines. Incoming LAN line **MUST** be plugged into the LINE jack. Patch cord to the equipment **MUST** be plugged into the EQUIP jacks. 8 wire protection, 50V clamping.

## Isolated Banks: LiFT Technology EMI/RFI Noise Filtration with Isolation Between Outlet Banks:

Your audio/video components are constantly being bombarded by electromagnetic interference (EMI) and radio frequency interference (RFI) through their AC power source. This contaminated power can affect audio/video equipment and will degrade the overall performance of your entire system. Common symptoms of contaminated power include loss of picture detail, dull colors, pops, hisses, hums and visual artifacts. The MX5102 is designed to eliminate noise contamination, supply clean power to your system and provide noise isolation between the outlet banks so that any noise created by A/V components plugged into the MX5102 cannot contaminate the power going to equipment plugged into the other outlet banks of the MX5102.

## Linear Filtering Technology (LiFT)

For improving picture and sound quality nothing filters AC noise better. LiFT evenly eliminates noise across the entire bandwidth, ensuring peak audio and video performance by reducing harmonic distortion and improving the signal-to-noise ratio. With LiFT, you are assured consistent performance and the highest resolution from any audio or video playback system.

# Front and Back Panel Descriptions

## Power Switch

Press the power button to turn the unit ON or OFF.

## Unsafe Voltage Indicator

This LED will illuminate in red to warn the user that an unsafe voltage level is occurring.

## Meter Dimmer /UPS Test Button

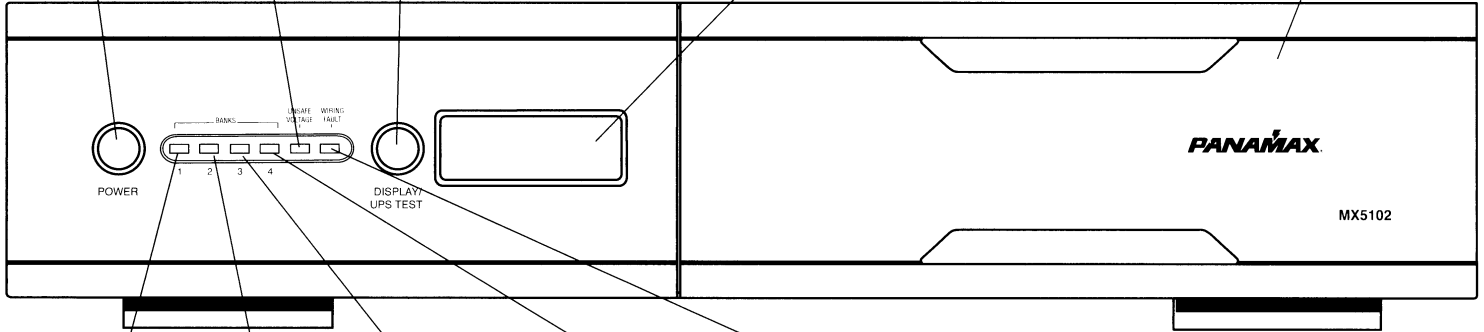
A quick press of the button will cycle the meter and front panel through several levels of brightness. Press and hold the button to initiate an UPS test cycle. During UPS mode, pressing the button will turn off the internal warning buzzer.

## Digital Voltmeter/UPS Status Display

During normal operation, the digital LED voltmeter indicates the incoming line voltage. If line voltage drops below 90VAC, or exceeds 132VAC, the Unsafe Voltage LED will flash, and during battery backup (UPS) mode the display will indicate the estimated minutes of battery backup time.

## Removable Battery Access Panel

Easy to remove for battery access and replacement.



## Outlet Bank 1 Indicator

Illuminated blue when outlet bank 1 is always on.

## Outlet Bank 2 Indicator

Illuminated blue when outlet bank 2 is switched on.

## Outlet Bank 3 Indicator

Illuminated blue when outlet bank 3 is switched on.

## Outlet Bank 4 Indicator

Illuminated blue when outlet bank 4 is on.

## Wiring Fault Indicator

This LED will illuminate in red to warn the user that a wiring problem such as a bad/missing ground or reversed wiring exists within the AC receptacle. If illuminated, disconnect all equipment and contact an electrician to insure outlet is properly wired.

## Outlet Bank 4

Two always on, battery powered, surge protected outlets for connected equipment ensure temporary uninterrupted operation of connected equipment during a power failure.

## Outlet Bank 3

Two switched, high-current outlets controlled by the front panel Power Button or the DC Trigger input. Bank 3 has a 5 second turn on delay and turns off immediately. The High Current outlet provides power from a low impedance noise filtration circuit that does not limit the current to your equipment. Its output is noise isolated from all other outlet banks.

## Circuit Breakers for Overload Protection

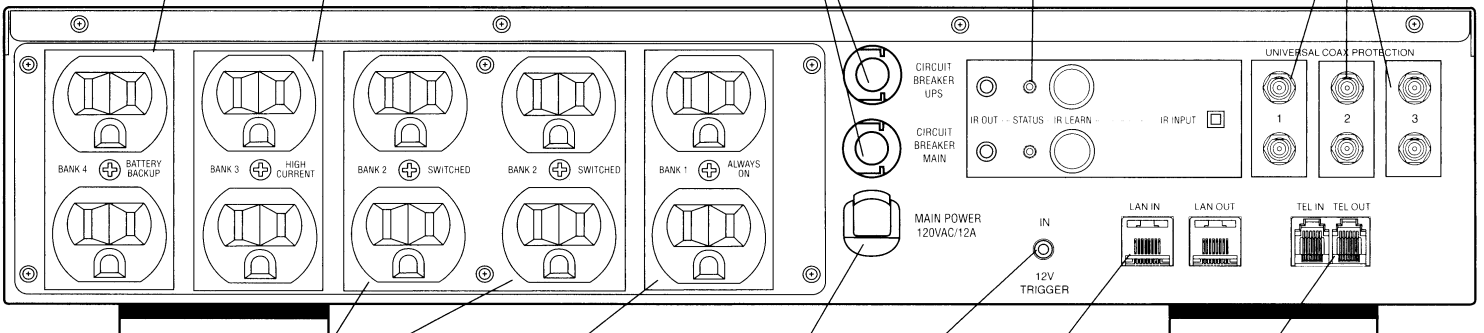
Resettable circuit breakers provide optimal overload protection.

## IR Control Section

Indicator LED's - Indicates status IR Output Jacks - Standard 1/8" (3.5mm) mono jack for connection to an IR flasher (IR flashers not included)

## Universal TV Coaxial Jacks

3 pairs of bidirectional protection circuits optimized for satellite, cable, and antenna TV signal lines.



## Outlet Bank 2

Four switched outlets with Linear Filtration Technology (LiFT) controlled by the front panel Power Button or the DC Trigger input. Bank 2 will turn on immediately and turn off after 5 seconds. Its output is noise isolated from all other banks.

## Outlet Bank 1

Two always on outlets with Linear Filtration Technology (LiFT). Power will only be turned off under a fault condition, or when the Power Button is switched off. Its output is noise isolated from all other outlet banks.

## AC Power Cord

Voltage Sense Trigger Output 3.5mm (1/8") Mini-Plug jack.

## LAN Jack

Protection circuit for one 10/100 baseT Ethernet line. Incoming LAN line MUST be plugged into the LINE jack. Patch cord to the equipment MUST be plugged into the EQUIP jacks. 8 wire protection, 50V clamping.

## Phone Jack

Protection circuit for one standard telephone or pay-per-view lines. Phone circuit is auto-resetting. Incoming phone cord MUST be plugged into the LINE jack. Patch cords to the equipment (satellite receiver, digital video recorder, telephone, etc.) MUST be plugged into the EQUIP jacks. 2-wire protection, 270V clamping.

# Installing Your MX5102

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**1.** The UPS outlets may be used immediately upon receipt. However, recharging the battery for at least four hours is recommended to ensure that the battery's maximum charge capacity is achieved. Charge loss may occur during shipping and storage. To recharge the battery, simply leave the unit plugged into an AC outlet. The unit will charge in both the ON as well as the OFF position.

**2.** With the unit OFF and unplugged, plug your equipment into the unit's rear panel AC outlets. DO NOT plug a space heater, vacuum cleaner, paper shredder or other large electrical device into the UPS outlets. The power demands of these devices will overload and possibly damage the unit.

**3.** Plug the MX5102 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. refrigerator, copier, etc.) Avoid using extension cords. If used, the extension cord must be UL or CSA Listed, minimum 14 AWG, 3-wire grounded, and rated for 15 Amps.

**4.** Press the latching button to turn the unit on.

**5.** The rear panel circuit breakers will open and power to the connected equipment will be turned OFF if an overload is detected. To correct this, turn the unit off, unplug one piece of equipment from the UPS outlets, wait 10 seconds, check to make sure that the circuit breakers are reset, and turn the unit on.

**6.** The UPS battery will automatically charge whenever the unit is plugged into an AC outlet.

**7.** To maintain optimal battery charge, leave the unit plugged into an AC outlet at all times. Note: To store the MX-5102 for an extended period, cover it and store with the battery fully charged. Recharge the battery every three months to ensure battery life.

## MX5102 Operation

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When power is lost or disconnected for an under/over voltage fault, Outlet Bank 4 will switch from utility power (power supplied from the power company) to battery power.

### Normal UPS Operation

The display will change from indicating input voltage to the estimated minutes of backup time. The IR output will activate to trigger required shutdown sequences in connected devices.

The internal buzzer will sound for 1 second in 5 second intervals. The buzzer can be turned off by pressing the Meter Dimmer/UPS Test Button.

After power is restored and stabilized, Outlet Bank 4 will automatically switch back to utility power.

### Low Battery Warning

When the battery gets down to 3 minutes of backup time: the display will flash and the internal buzzer will sound at a quick rate.

When the battery can no longer support the connected load, Outlet Bank 4 is shut off and the buzzer will sound for 5 seconds, one time.

### Overload Warning

When the load connected to Outlet Bank 4 exceeds 100% of the rated power:

The display will flash "OL" (overload)

The internal buzzer will sound at a quick rate

### To remedy the overload:

Reduce the load on Outlet Bank 4 by reconnecting one device to an available outlet in Outlet Bank1 (preferred) or Outlet Bank 2.

Press and hold the Meter Dimmer/UPS Test Button for 2 seconds to initiate a test of the battery backup. If the load has been reduced to an acceptable level, MX5102 will return to normal operation.

# MX5102 Advanced Operation

A connection to a UPS can benefit the volatile electronic memories found in High-End Home Theater equipment. The MX5102 takes this to the next level with a number of features designed specifically for AC Power back up applications.

## Patent Pending Learning IR Control

The learning IR function lets you program the MX5102 to send standby or shut-down commands to components such as DLP ceiling projectors. If the power fails, the projector's lamps are turned off while the UPS continues providing battery power to the projector's cooling fan. Proper shutdown is ensured and expensive lamps are protected from damage. Note: This function should only be used with discrete IR codes. Programming an On/Off toggle command could result in the equipment being turned ON during a power failure!

## IR Power Failure Operation

The MX5102 can learn two IR commands. The learned commands will be transmitted on both output jacks so you have the ability to control 2 different pieces of equipment or use a 2-step macro for one component.

1. After a power failure, the IR codes will be sent to both outputs after a 5 second delay. IR code 1 is sent first, followed by IR2 two seconds later.
2. There is no IR output after the power is restored to the system.

### IR LED Color & Status

Off Idle

Green, solid: Waiting to receive IR signal

Green, flashing: IR signal sampled

Red, flashing: Failed to learn IR signal

## To program IR output:

1. Press and hold the IR1 button for approximately 2 seconds.
2. When the IR1 LED turns solid GREEN, release the button (after approx. 2 seconds).

3. Point the remote control at the detector window and quickly press and release the appropriate button on the remote control. If no signal is received within 10 seconds, the programming mode is cancelled, the IR1 LED turns off and you will have to start over.

4. The IR1 LED flashes GREEN if the IR signal is sampled and stored in memory.

5. The IR1 LED will flash RED if the IR signal was not learned. Start over at Step 1.

6. Repeat steps 1-5 for IR2.

## To clear IR programming:

1. Press and hold the appropriate IR button, release after 2 sec.

2. The IR LED turns solid Green.

3. Press the button again. The IR code will be erased from memory and the LED will turn off.

## IR Output Test

1. An IR flasher must be connected to the UPS and in line-of sight to the IR receiver window of the equipment to be controlled in order to verify that the code was learned correctly.

2. Make sure that the component to be controlled is turned ON.

3. Press and release the IR button. The code for IR will be transmitted on both IR1 and IR2 outputs.

4. If you are testing a 2-step macro, be sure to press the second IR button to transmit that code.

5. If the learning process was successful, the controlled equipment should accept the IR command and turn off or go into standby mode.

6. Reprogram the IR command if the controlled equipment does not respond.

- a. Be sure that the batteries in the "teaching remote" are fresh and do not need to be replaced.

- b. If "press & release" (Step 3 in Programming) doesn't work, try "press & hold" on the remote control button being taught to the UPS.

# Warranty Information

## Panamax Power Conditioner Limited Product Warranty

Panamax warrants to the purchaser of this Panamax audio/video component style power conditioner, for a period of three (3) years from the date of purchase, that the unit shall be free of defects in design, material or workmanship, and Panamax will repair or replace any defective unit.

## Upgrade Policy

Valid only in the United States and Canada

If your Panamax UPS sacrifices itself while protecting your connected equipment, you have an option to upgrade to the latest technology. Please go to our web sites [www.panamax.com](http://www.panamax.com) or contact Customer Relations at 800-472-5555 for details.

## 2 Year Battery Warranty

Please contact Panamax Customer Service for information regarding battery replacement and 2-year Battery Warranty.

## Panamax Power Conditioner Limited Connected Equipment Protection Policy

It is the policy of Panamax that it will, at its election, either replace, pay to replace at fair market value, or pay to repair, up to the dollar amount specified below, equipment that is damaged by an AC power, cable, telephone, or lightning surge while connected to a properly installed Panamax power conditioner. To be eligible for compensation, repair and/or replacement, the power conditioner must show signs of surge damage or that it is operating outside of design specifications, relative to its surge protection capability, and under all of the circumstances failed to protect your connected equipment.

**MX5102: \$5,000,000**

## THE CONNECTED EQUIPMENT POLICY IS SUBJECT TO THE FOLLOWING CONDITIONS AND LIMITATIONS

### 1. ORIGINAL OWNERSHIP REQUIREMENT:

Panamax's connected equipment policy extends to the original purchaser of the Panamax product only and is non-transferable. Original purchase receipts must accompany any product return or claim for connected equipment damage.

**2. PROPER INSTALLATION:** Panamax AC protectors must be directly plugged into a properly grounded 3-wire AC outlet. Extension cords\*, non-grounded two prong adapters, or other non-Panamax surge products must not be used. Building wiring and other connections to protected equipment must conform to applicable codes (NEC or CEC). No other ground wires or ground connections may be used. All wires (including, e.g., AC power lines, telephone lines, signal/data lines, coaxial cable, antenna lead-ins) leading into the protected equipment must first pass through a single Panamax protector designed for the particular application. The protector and the equipment to be protected must be indoors in a dry location, and in the same building. Panamax installation instructions and diagrams must be followed.

**3. NOTIFICATION:** You must notify Panamax within ten days of any event precipitating request for product replacement or payment for connected equipment damage. A return authorization (RA) number must first be obtained from the Panamax Customer Relations Department at [www.panamax.com](http://www.panamax.com)\*\* before returning the protector Panamax. At this time, you must notify Panamax if you believe you have a claim for damaged connected equipment. Once you obtain an RA number, please mark the number on the bottom of the unit and pack it in a shipping carton/box with enough packing material to protect it during transit. The RA number must also be clearly marked on the outside of the carton. Ship the unit Panamax. Please note that you are responsible for any and all charges related to shipping the unit to Panamax. If connected equipment damage was indicated on your RA request, Panamax will mail you claim kit to be completed and returned within 30 days. A connection diagram of your system will be required as part of the claim kit. Be sure to note its configuration before disconnecting your equipment.

**4. DETERMINATION OF FAILURE:** Panamax will evaluate the protector for surge damage. The Panamax protector must show signs of surge damage or must be performing outside (>10%) of design specifications relative to its surge protection capability. Opening the enclosure, tampering with, or modifying the unit in any way shall be grounds for an automatic denial your request for payment. Panamax, after evaluating all information provided, will determine whether or not your request is eligible for payment. If the surge protector shows no signs of AC power or signal line surge damage and is working within design specifications, Panamax will return the unit to you with a letter explaining the test results. Exceptions: If a dealer or installer replaces the protector for the customer, replacement will be returned to the dealer installer; or if the protector is a pre-1996 model, it will be replaced; or, for a Canadian customer, the protector will be replaced. Panamax reserves the right to inspect the damaged connected equipment, parts, or circuit boards. Please note that you are responsible for any and all charges related to shipping the damaged equipment to Panamax. Panamax also reserves the right to inspect the customer's facility. Damaged equipment deemed uneconomical to repair must remain available for inspection by Panamax until the claim is finalized.

### 5. REQUEST PAYMENTS:

Once Panamax has determined that you are entitled to compensation, Panamax will, at its election, either pay you the present fair market value of the damaged equipment, or pay for the cost of the repair, or send you replacement equipment, or pay the equivalence of replacement equipment.

**6. OTHER INSURANCE/WARRANTIES:** This coverage is secondary to any existing manufacturer's warranty, implied or expressed, or any insurance and/or service contract that may cover the loss.

### 7. EXCLUSIONS: THE PANAMAX CONNECTED EQUIPMENT PROTECTION POLICY DOES NOT APPLY TO:

Service charges, installation costs, reinstallation costs; setup cost; diagnostic charges; periodic checkups; routine maintenance; loss of use of the product; costs or expenses arising out of reprogramming or loss of programming and/or data; shipping charges or fees; service calls; loss or damage occasioned by fire, theft, flood, wind, accident, abuse or misuse, and products subject to manufacturer's recall or similar event.

**8. DISPUTE RESOLUTION:** Any controversy or claim arising out of or relating to Panamax's Connected Equipment Protection Policy, or the alleged breach thereof, shall be settled by arbitration administered by the American Arbitration Association under its Commercial Arbitration Rules. You may file for arbitration at any AAA location in the United States upon the payment of the applicable filing fee. The arbitration will be conducted before a single arbitrator, and will be limited solely to the dispute or controversy between you and Panamax. The arbitration shall be held in any mutually agreed upon location in person, by telephone, or online. Any decision rendered in such arbitration proceedings will be final and binding on each of the parties, and judgment may be entered thereon in a court of competent jurisdiction. The arbitrator shall not award either party special, exemplary, consequential, punitive, incidental or indirect damages, or attorney's fees. The parties will share the costs of arbitration (including the arbitrator's fees, if any) in the proportion that the final award bears to the amount of the initial claim.

**9. GENERAL:** If you have any questions regarding the product warranty or the connected equipment protection policy, please contact the Panamax Customer Relations Department at [www.panamax.com](http://www.panamax.com). The Limited Product Warranty and Connected Equipment Policy herein supersede all previous warranties and/or Connected Equipment repair/replacement policies.

THE LIMITED PRODUCT WARRANTY IS THE ONLY WARRANTY PROVIDED WITH THIS PANAMAX PRODUCT AND ANY OTHER IMPLIED OR EXPRESSED WARRANTIES ARE NON-EXISTENT.

This warranty may not be modified except in writing, signed by an officer of the Panamax Corporation.

\* The use of a Panamax extension cord or equivalent (UL or CSA listed, minimum 14AWG, 3-wire grounded) will not invalidate the warranty.

\*\* Forms are available on the Panamax web site for requesting RAs and opening a claim for connected equipment damage.

### Warning Notice

#### WARRANTY LIMITATION FOR INTERNET PURCHASERS

Panamax products purchased through the Internet do not carry a valid Connected Equipment Protection Policy unless purchased from an Authorized Panamax Internet Dealer! Authorized Panamax Internet Dealers have sufficient expertise to insure warranty compliant installations. For a list of Authorized Panamax Internet Dealers go to [www.panamax.com](http://www.panamax.com).

**CAUTION:** Audio/Video, computer and/or telephone system installations can be very complex systems, which consist of many interconnected components. Due to the nature of electricity and surges, a single protector may not be able to completely protect complex installations. In those cases, a systematic approach using multiple protectors must be employed. Systematic protection requires professional design. AC power, satellite cables, CATV cables, A/V signal line cables or telephone/network lines entering the system that do not pass through a Panamax surge protector will render the Panamax connected equipment protection policy null and void. For additional information on how to protect your system, please contact Panamax before connecting your equipment to the surge protector.

More detailed information is available at [www.panamax.com](http://www.panamax.com).

If you have any questions regarding these requirements, please contact Customer Relations.

**PANAMAX**

MODEL - MX5102

DOC. NO. IWS00850\_EN REV. A

Effective Date 1/8/09

INS00850-EN REV. D 4/09

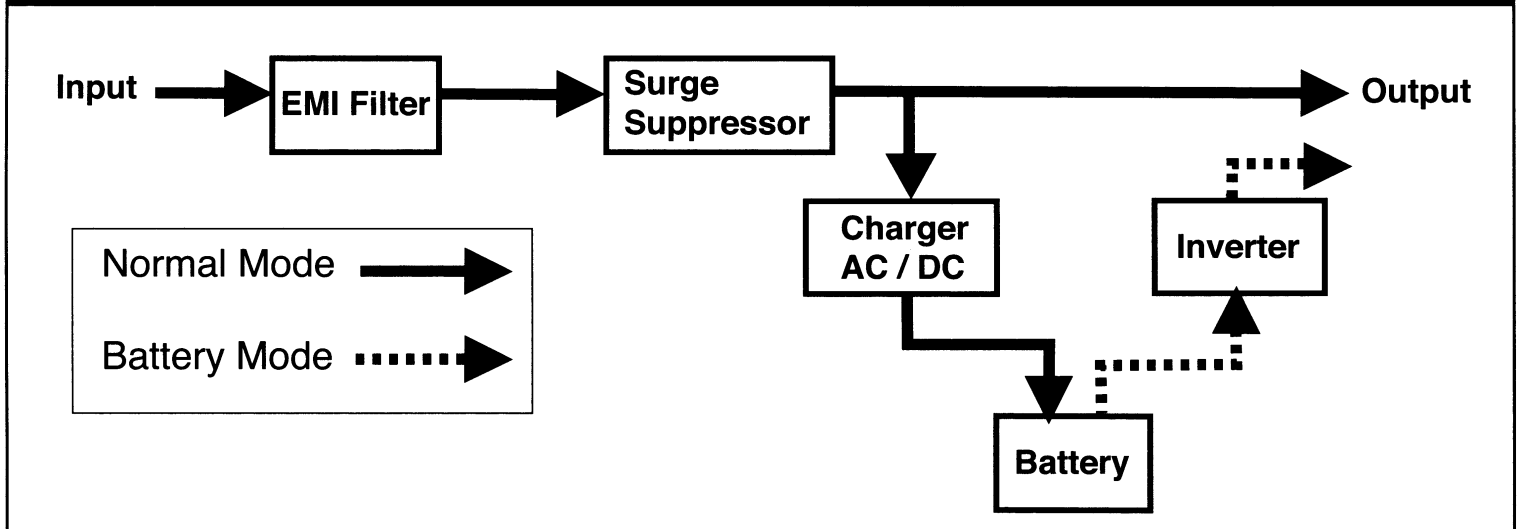


## ADDITIONAL TECHNICAL INFORMATION:

Panamax MX5102 is intended to be installed in a dry indoor environment with a maximum ambient temperature of 0 – 40°C (32 – 104°F) and that is free of conductive contaminants.

## NOTICE TO SERVICE PERSONNEL ONLY:

### SYSTEM FUNCTIONAL BLOCK DIAGRAM



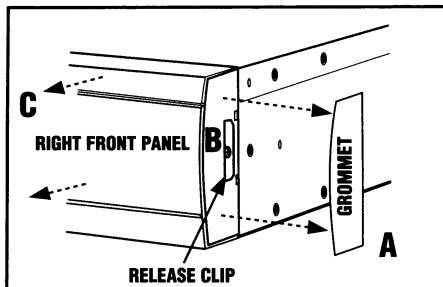
When replacing batteries, replace the two batteries with the following: BB Battery, Part Number **HR1234W**, rated **12V, 34W**

**CAUTION:** RISK OF ENERGY HAZARD: 12V, maximum 9 Ampere-hour batteries. Before replacing batteries, remove conductive jewelry such as chains, wrist watches and rings. High energy through conductive materials could cause severe burns.

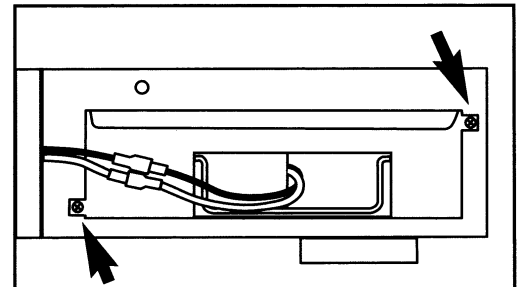
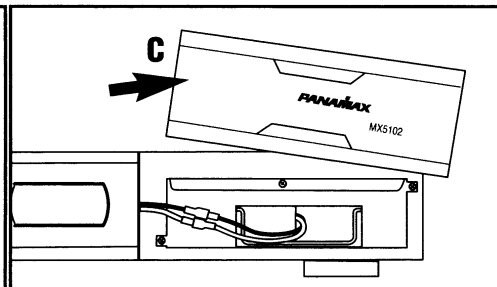
**CAUTION:** DO NOT dispose of batteries in a fire. The batteries may explode.

**CAUTION:** DO NOT open or mutilate batteries. Released material is harmful to the skin and eyes and may be toxic.

## Battery Replacement Procedure

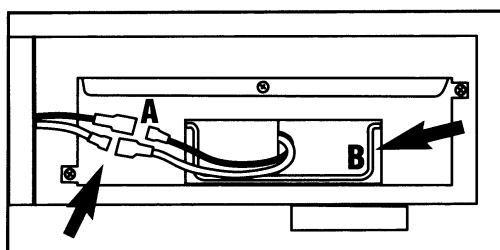


**1.** Remove the grommet (A) from the right side of the right front panel then push up on the release clip (B) and remove panel (C).



**2.** Remove the two screws.

**CAUTION:** To avoid electrical shock, a screwdriver must be used to remove screws to open battery cover before replacing battery. Must close battery compartment using screwdriver to tighten screws.



**3.** Disconnect the cables (A) and pull battery pack out with swivel handle (B).

**4.** In reverse order of steps 1 - 3, slide new battery pack into the unit, replace the screws, reconnect the cables and replace front panel and grommet.

**5.** Recharge the unit for 4-8 hours to ensure the UPS performs expected runtime.

**PANAMAX**

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INS00851-MX5102-D, PMX ADDENDUM