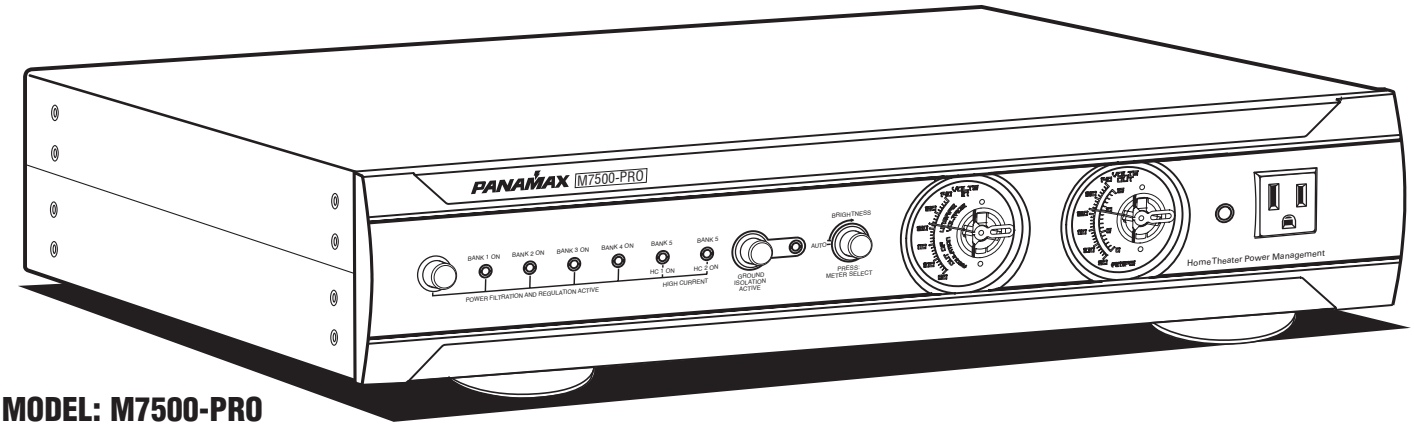
MAX® 7500-PRO

HOME THEATER POWER MANAGEMENT

Owner's Manual



MODEL: M7500-PRO

Thank you for purchasing this MAX® 7500-PRO Home Theater Power Management! You now own one of the finest line conditioning, regulating and power protection products on the market today. Over 30 years of power protection experience and more than 15 years of Audio/Video noise filtration experience were utilized during the development of this model.

The MAX® 7500-PRO has been specifically engineered to enhance the performance and life expectancy of high-end Audio/Video entertainment gear. The combination of our sophisticated power conditioning and the world's finest power protection has resulted in an Audio/Video power center that meets the power quality needs for each piece of equipment in your entertainment system.

This is truly a Firewall for Noise™! With power this clean, your audio/video or home theater system will finally be able to perform up to its full capabilities. Performance alone makes this a world-class product but we didn't stop there; its styling complements and completes even the most sophisticated Audio/Video showcase.

The Power Specialist Since 1975

PANAMAX®

INS7500 REV. C 9/06

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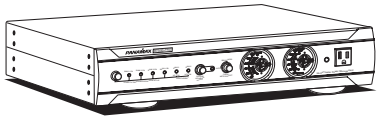
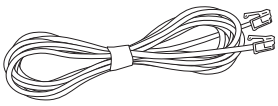
BEFORE YOU BEGIN

In addition to this owner's manual, items included with the MAX® 7500-PRO package are:

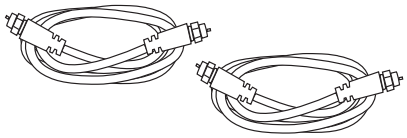
1 - MAX®7500-PRO



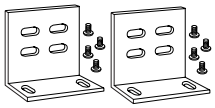
1 - RJ-11 telephone cable



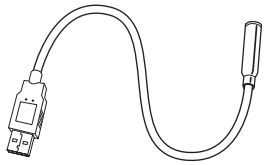
2 - Coax cables for satellite TV, cable TV, and/or antennas



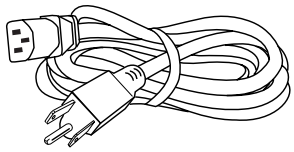
2 - Rack ears w/ screws for rack mounting option



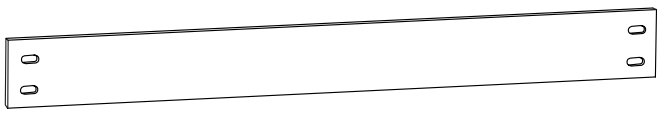
1 - LED convenience lamp



1 - IEC 320, 120V/15A detachable power cord



1 - Rack mount blank



If the M7500-PRO is installed in a rack, this "blank" must be installed directly below the M7500-PRO to ensure proper ventilation.

Please verify that you have received all these items. If not, contact Panamax.

IMPORTANT SAFETY INSTRUCTIONS

1. Read these instructions.

2. Keep these instructions.

3. Heed all warnings.

4. Follow all instructions.

5. WARNING: Do not use this apparatus near water. To reduce the risk of fire or electric shock, do not expose this apparatus to rain or moisture.

6. Clean only with dry cloth.

7. Do not block any ventilation openings. Install in accordance with the manufacturer's instructions. If the M7500-PRO is installed in a rack, this "blank" must be installed directly below the M7500-PRO to ensure proper ventilation.

8. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.

9.Do not defeat the safety purpose of the polarized or grounding type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.

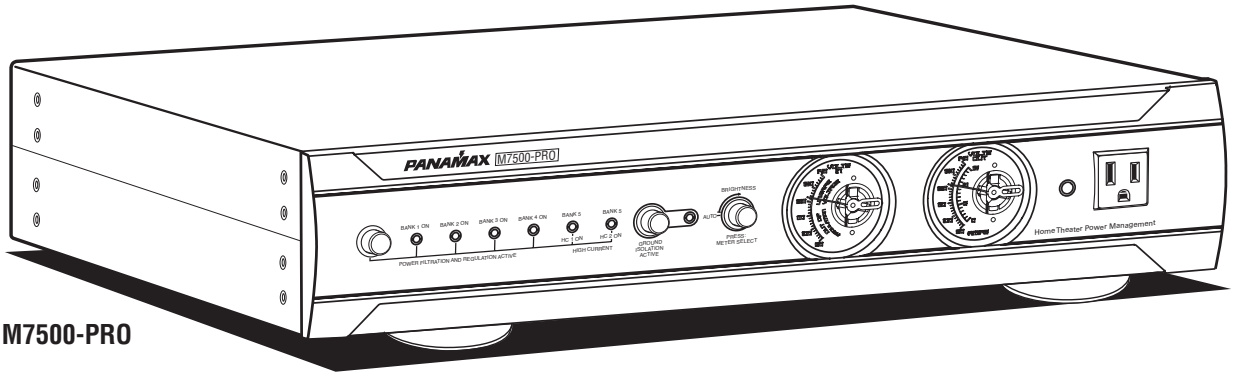
10. Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.

11. Only use attachments/accessories specified by the manufacturer.

12. Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.

13. Where the power cord is used as the main disconnect device, the disconnect device shall remain readily accessible.

14. This device must be connected to a main socket outlet with a protective earthing connection.



MODEL: M7500-PRO

The Power Specialist Since 1975

PANAMAX®

INTRODUCTION

Your Audio/Video components are constantly being bombarded by electromagnetic interference (EMI) and radio frequency interference (RFI) through their power cords. This contaminated power can affect analog and digital equipment and will degrade the overall performance of your entire system. Digital components can also introduce noise on their AC power lines, which can interfere with the performance of analog components. Common symptoms of contaminated power include pops, hisses, hums, visual artifacts, etc. Most power filtering devices will remove some of this interference but don't provide a comprehensive solution to the problem.

The MAX® 7500-Pro's Power Filtration System is the Complete Solution!

Digital Source Components or Display Devices:
The heart of the MAX® 7500-Pro is a 720 VA, Isolation Transformer that provides power to two outlet banks for your digital source components or displays. AC Regeneration through electromagnetic coupling between the primary and secondary windings of the transformer allows only clean, pure AC power to reach your equipment. None of the EMI/RFI contamination gets past the isolation transformer! In addition, any noise generated by your digital source components is isolated and prevented from reaching the rest of your equipment through their power cords.

Two different power modes, Isolated or Common Ground, are available as output from the isolation transformer. These are selected with the front panel Ground Isolation pushbutton. The outlet banks (3 and 4) of the isolation transformer utilize GFCI outlets to safely perform this function.

In the Common Ground mode, the ground pin of each outlet on banks 3 and 4 is connected to ground, as is the center tap of the isolation transformer. This gives you Balanced Power with a common ground reference.

In Isolated ground mode, the ground pin of each outlet on banks 3 and 4 is connected to the center tap of the isolation transformer, and is isolated from the common ground. This gives you Balanced Power with Ground Isolation to help eliminate annoying ground loops in your system.

Analog Components:
Two banks of independently filtered outlets (banks 1 and 2) are designed for your analog components. These outlet banks utilize "Balanced Double L" filter circuits which are far superior to any other design in filtering out all forms of electromagnetic and radio frequency interference in both common and normal modes. Cross-contamination between your components is also eliminated with this design.

High-Current Components:
One bank of individually switched outlets (bank 5) specifically addresses the unique power requirements of current hungry components such as amplifiers and powered subwoofers. These components rapidly draw large amounts of current to replenish their capacitors after thunderous bass notes. Line conditioners that utilize coils (inductors) in series with the AC power line can "choke" off this large in-rush current, thereby reducing the amplifiers' ability to operate at peak performance levels, resulting in a flat, dead sound. The MAX® 7500-Pro's high-current outlets are fed by noise filtration circuitry that does not utilize coils and provides full, unimpeded power for your amplifiers and powered subwoofers.

Other Convenience Features Enhance the Functionality:
Although the MAX® 7500-Pro's functionality revolves around regulation, noise filtration and power protection, many other exciting features enhance your overall entertainment experience, including:

• An analog, backlit voltmeter indicates the AC line voltage coming into your system.

• An analog, backlit combination meter in one mode shows the actual current draw of all your connected components, giving a visual reference as to how your system is functioning under a variety of conditions. In the second mode it indicates the regulated voltage output on banks 1 through 4.

• A front panel pushbutton controls the display of the combination meter, toggling between "Volts Out" and "Amps In"

• A front panel auto-brightness function that will dim all of the front panel LED's whenever the lights in the room are turned off to eliminate any bright lighting while you are enjoying a movie.

• A detachable rear panel LED convenience lamp simplifies system setup in low-light situations.

• An Always-On, convenience outlet on the front panel is for temporary AC connections.

As you read through the rest of this manual, you'll discover many more unique features. As home theater enthusiasts, we care about the quality of your listening and/or viewing experience. Our goals are to:

• Make power better (conditioning that allows your system to perform up to its full capabilities)

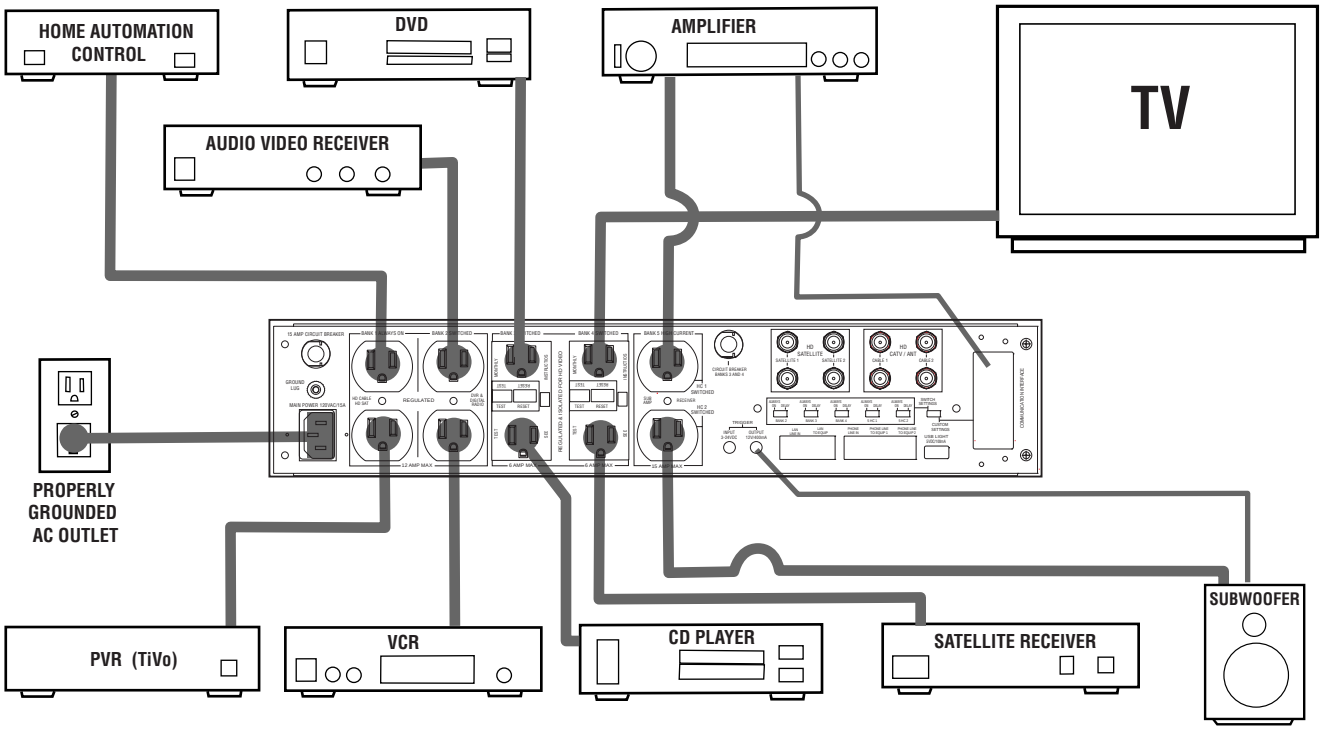
• Make power safer (protect your investment from damaging power disturbances)

• Enhance the pleasure you get from your A/V system

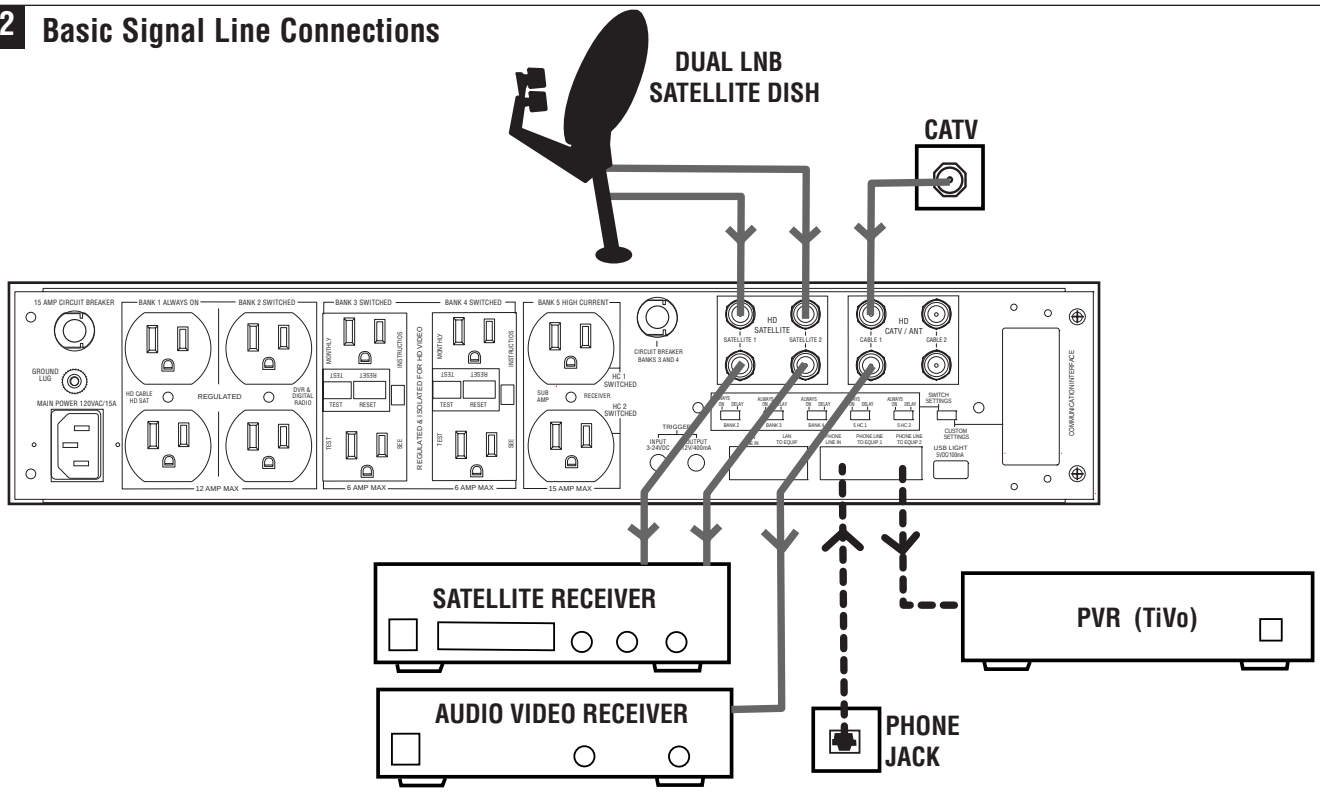
Thank you for choosing Panamax for your power quality needs. Please finish reading the instructions, install the MAX® 7500-Pro and enjoy the full potential of your entertainment system.

CONNECTION DIAGRAM

STEP 1 Typical AC Power, RS232 and 12V Trigger Connections



STEP 2 Basic Signal Line Connections



FEATURE OVERVIEW

1. Power Switch
Pushbutton; activates a turn-on or turn-off sequence for all outlets when depressed for two seconds.

2. Bank Status Indicators:
When on, indicates that the corresponding bank is on.

When off, indicates the corresponding bank is off.

When flashing, indicates the bank is in transition, either turning on or turning off.

3. Ground Isolation:
Controls the ground connection of banks 3 and 4.

When active these banks have Balanced Power with an isolated ground connection.

When not active these banks have Balance Power with a common ground reference.

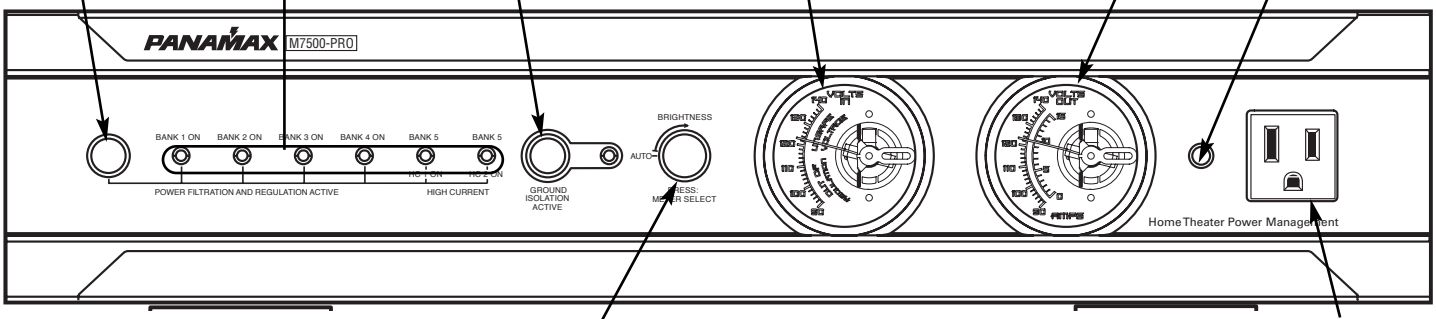
5. Voltmeter:
Backlit analog meter displays the incoming voltage between 90-140 VAC.

Integrated "Unsafe Voltage" indicator will flash after sensing an unsafe voltage and disconnecting all outlets.

Integrated "Out of Regulation" indicator will flash whenever the regulated output voltage is out of spec.

6. Combination Meter:
Displays the regulated output voltage, 90-140 VAC in one mode. Displays the Input Current draw, 1-15 Amps, in the alternate mode.

7. Ambient Light Sensor



4. Brightness Control/Meter Select:
When in the full/locked left position, auto brightness is engaged, and the front panel display will dim with the ambient light level. Rotating the knob to the right will increase the display brightness, and left will decrease the display brightness. Pressing this control will toggle the display of the second meter from "Volts Out" to "Amps In".

8: Convenience Outlet:
Provides a quick convenient way to plug in components such as camcorders and video game systems.

---

1. 15A Main Circuit Breaker: Opens in the event that equipment plugged into the MAX 7500 draws too much current. When white is visible, the breaker has opened. Reduce the load and push to reset.

2. Filtered Regulated Outlets (BANKS 1 & 2):
Four, Balanced Double L filtered outlets for low current analog audio components such as pre-amplifiers, receivers, VCR's and tape decks.

3. Isolated (Switched) Outlets (BANKS 3 & 4):
Four outlets provide complete isolation for digital source components such as DVD players or display devices like plasma TVs or DLP projectors. These outlets are completely isolated from the rest of the system.

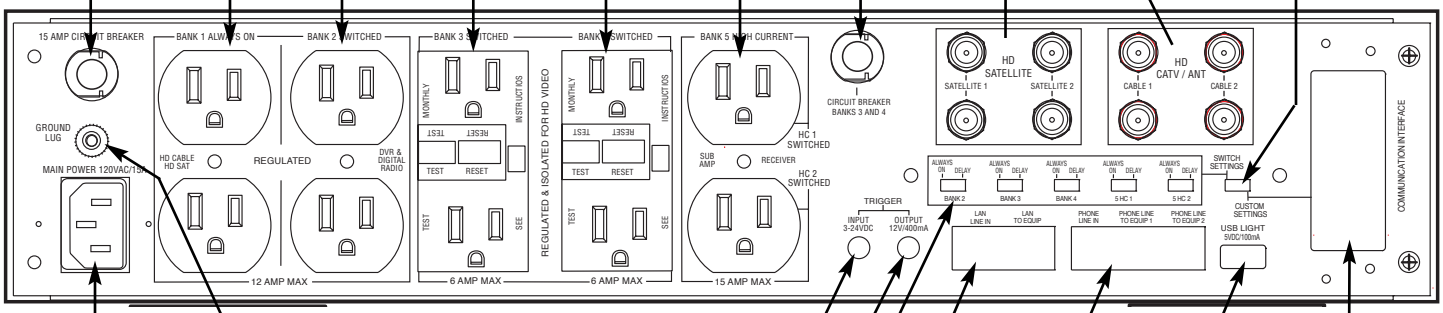
4. High Current Outlet Bank (BANK 5): Two delayed outlets designed for high current components such as amplifiers and powered subwoofers. The current available to connected equipment is not limited by the noise filtration components.

5. Isolated Outlets Circuit Breaker:
Opens in the event that equipment connected to the Isolation Transformer Outlets exceeds 6 Amps current draw. When white is visible, the breaker has opened. Reduce the load and push to reset.

6. Satellite Coax Jacks:
Two pairs of F-Connectors optimized for Satellite TV signal line protection. Bi-directional

7. CATV Coax Jacks:
One pair of F-Connectors optimized for Cable TV, Antenna or Cable Modem signal line protection. Bi-directional

8. Settings Option: Two-position slide switch. Switch settings selects the use of the five switches to configure the outlets for delayed or always-on operation. Custom settings selects the stored configuration in non-volatile memory for the outlets trigger source and delays. See Page 10-15 for details.



9. IEC Main Power Receptacle:
Detachable power cord connects to this receptacle.

10. Ground Lug: Provides a common grounding point for equipment with separate ground leads

11. DC Trigger Input:
3.5mm (1/8") Mini-Plug jack. Connect to a remote trigger device that uses a DC voltage signal to initiate a startup/shutdown sequence.

12. DC Trigger Output: 3.5mm (1/8") Mini-Plug jack. The M7500-Pro generates its own 12VDC trigger to control another device.

13. Outlet Delay Switches:
Two-position slide switches. Allows for the user to configure each bank for delayed turn-on/turn-off or always-on operation.

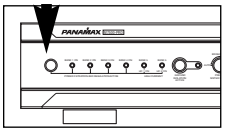
14. LAN:
In/Out connections for Ethernet.

15. Telephone Jacks:
1 In & 2 Out connections for telephone line or pay-per-view line protection.

16. Lamp Receptacle: USB jack. The convenience lamp included with the M7500-Pro is to illuminate the rear panels of other components during setup.

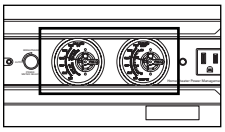
17. Communications Interface: RS232 interface for custom configuration and/or home automation control. Contact Panamax for availability of alternate TCP/IP interface.

FEATURE DETAILS

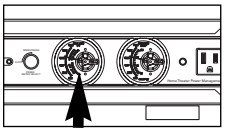


Power Switch and LED Indicator: Momentary Pushbutton (non-latching); activates a turn-on or turn-off sequence for all the outlet banks.

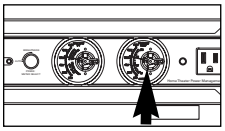
Press and hold the button for 2 seconds to initiate a turn-on or turn-off sequence.



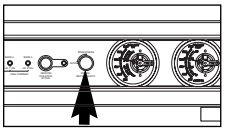
Meters: The analog meters are backlit to provide the ability to view readings in a dark room. LEDs (light emitting diodes) are used in order to provide durability and long life.



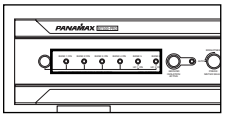
The **Voltmeter** samples the incoming voltage from the wall outlet and provides a visual representation of the available power. The Voltmeter is active between the under-voltage and over-voltage shutoff thresholds (90-140V).



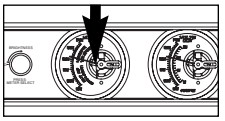
The **Combination Meter** has two display modes controlled by the integrated push button on the brightness control potentiometer. In one mode, the meter will display "Volts Out" and samples the voltage output from the regulation circuit (90-140V). In the second mode, the meter displays "Amps". This amperage reading is measuring the total current drawn by the MAX 7500-Pro and its connected equipment (0-15A).



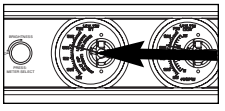
The **Brightness Control** consists of a rotary potentiometer with an integrated switch in the left-most position. When the knob is turned to the full left position and the switch is engaged, the unit enters "auto brightness" mode. In this mode the brightness of the display is automatically adjusted in response to ambient light.



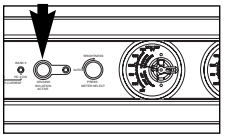
Bank Status Indicators: When on, indicate that the corresponding bank is on. When off, indicate the corresponding bank is off. When flashing, indicate the bank is in transition, either turning on or turning off.



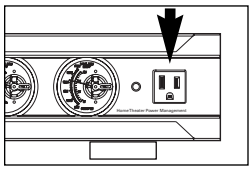
Unsafe Voltage: Red LED. Under normal voltage conditions, this light stays off. When this light is flashing, it indicates an under-voltage or over-voltage condition. In an under or over voltage condition, power will be disconnected from all outlets to protect your connected equipment.



Out of Regulation: Yellow LED. This indicator will flash whenever the voltage on the regulated outlets gets out of range.

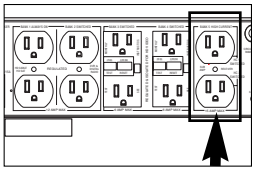


Ground Isolation: Control the ground connection of banks 3 and 4. When active these banks have Balanced Power with an isolated ground connection. When not active these banks have Balance Power with a common ground reference.

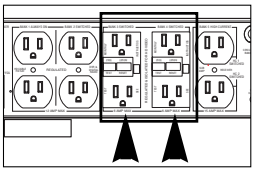


Convenience Outlet:
A single outlet on the front panel of the Max 7500-Pro provides an easy-to-reach power source for electronic equipment typically used on a part time basis. Such equipment includes anything from video game systems to camcorders.
The convenience outlet provides clean, protected power for your sensitive electronic equipment. This outlet is Always-On and will continually supply a steady source of power. It is important to remember that power will be disconnected only in the event of an unsafe voltage condition.

Sequential Startup/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. The MAX 7500-Pro is designed to enable custom startup/shutdown



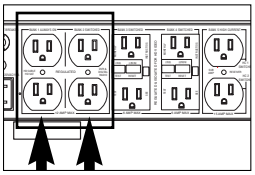
Bank 5 High-Current Outlets:
The two individually-switched high-current outlets allow amplifiers and powered subwoofers to work to their full potential. When the movie thunders with a terrific explosion or when the music reaches a climactic crescendo, an amplifier has to rapidly draw large amounts of current to replenish its capacitors. Traditional line conditioners impede this current draw, in effect, starving an amplifier and resulting in a flat, dead sound. The High-Current Outlet Bank provides clean, filtered power to amplifiers but has no current limiting components to impede performance.



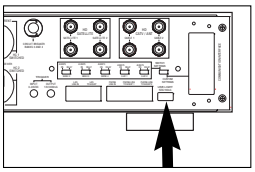
Bank 3 or 4 Isolated/Regulated Outlets:
2 individually switched banks are fed power through the heart of the MAX 7500-Pro, the Isolation Transformer. These outlets should be used for digital components such as DVD players or display devices like Plasma TVs or DLP projectors.

Pure, clean power is obtained by using the isolation transformer to regenerate the AC current. The power from a typical wall outlet is contaminated with electromagnetic (EMI) and radio frequency (RFI) interference (noise) picked up by the power lines between the power utility's generating plant and the wall outlet. This contaminated power feeds the isolation transformer's primary windings and is regenerated (through electromagnetic induction) as clean power on the isolated secondary windings. The outlets are connected to the secondary windings, which have no physical connection to the primary windings. This is True Isolation! Not only will it isolate your digital source equipment from contaminated power, but also prevent any noise generated in the digital components from flowing back to other connected equipment.

FEATURE DETAILS (continued)

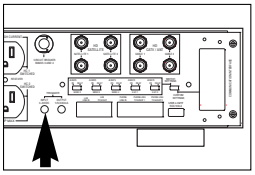


Banks 1 and 2 Regulated Outlets:
Two individually switched banks are fed through separate "Balanced Double L" noise filtration circuits. These circuits are designed to eliminate the AC contamination that is most detrimental to the performance of analog or video components like stereo receivers, VCRs or televisions. The two dedicated filters are carefully engineered to provide power filtration and inter-component "noise isolation" for both "common-mode" (line/neutral-to-ground) and "normal-mode" (line-to-neutral) EMI/RFI. This means that high-frequency interference will be drastically reduced not only from the incoming power but also from equipment plugged into the other outlet banks, regardless of what "mode" it occurs in. Even equipment with ungrounded, 2-blade plugs, receives clean power.

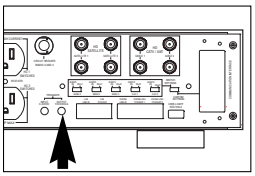


Convenience Lamp:
The convenience lamp included with your MAX® 7500-Pro plugs into an industry standard USB jack on the rear panel. Its purpose is to provide better visibility of other components and their A/V connections during system setup. **Warning:** The USB jack only provides power. The lamp will be ON whenever it is plugged in. ***DO NOT*** use this jack for other USB devices.

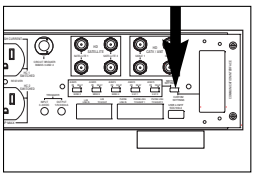
DC Triggers:



Input Trigger:
This feature provides an ON/OFF trigger for the MAX 7500-Pro using a DC voltage control signal. Many components such as pre-amplifiers and receivers have a 12VDC trigger built-in, and will transmit a constant power signal when turned on and in use. This power signal will initiate the startup or shutdown sequence of the MAX 7500-Pro outlet banks. An AC adapter of the appropriate voltage, plugged into a switched outlet on the receiver, may also be used if a 12V trigger is not built in.

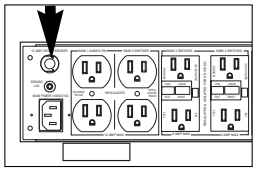


Output Trigger:
The MAX 7500-Pro generates its own 12VDC remote signal to control other components. In its default state, this output turns ON ten seconds after the Input Trigger receives a signal and OFF when the input trigger signal is turned off. This output also uses a standard 3.5mm mono mini-plug jack.

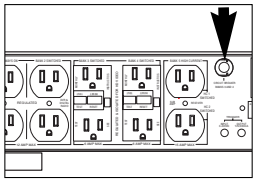


Modes of Operation:
The MAX 7500-Pro offers two modes of operation selected using the "Switch Settings/Custom Settings" switch. In the **Switch Settings** mode all of the outlet delays are configured for either Always On or Delayed operation using the five two-position slide switches.

In the **Custom Settings** mode all of the outlet delays as well as the trigger sources for each individual bank operate from the configuration that has been programmed into the EEPROM of the unit through the communication interface on the rear panel. Refer to the section titled "Max Pro Series Communication/Configuration Specifications" for complete details on configuring this mode of operation.

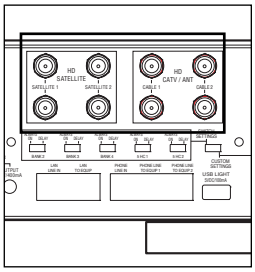


Circuit Breakers:
There are two separate circuit breakers on the back panel of the MAX 7500-Pro. The **main circuit breaker** will trip only if the total current draw exceeds the maximum current rating (15A). This means that collectively, all outlets must draw more than 15 Amps before the circuit breaker will trip.



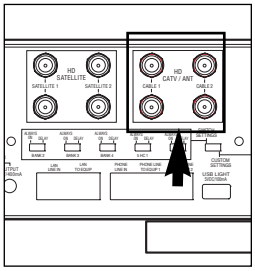
There is also a **6 Amp circuit breaker** to protect the 720 VA Isolation Transformer and its circuitry. The Isolation Transformer provides pure power for digital source components, which require very little current to operate at peak performance.
Please note: ***Do not plug high-powered amplifiers or powered subwoofers into the Bank 3 or 4 Outlets. Their current requirements may exceed the 6 Amp limit and cause the circuit breaker to trip.***

Coaxial Line Protection:



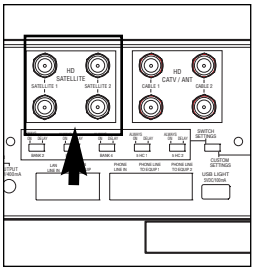
All coaxial cable sheaths from outdoors must be grounded to the building grounding electrode system where they enter the building (per applicable NEC/CEC code). A driven ground rod is not adequate.

Panamax's exclusive SignalPerfect™ Technology provides application specific protection for your satellite and cable TV equipment. The satellite connections are for coaxial cables connected to a DBS (single or dual LNB) satellite dish. The CATV connection is for a non-amplified rooftop antenna or cable TV line. Alternatively, it may be used to protect the equipment plugged into the MAX 7500-Pro from "backdoor" surges in situations where the video signal is run to another room for a 2nd television.

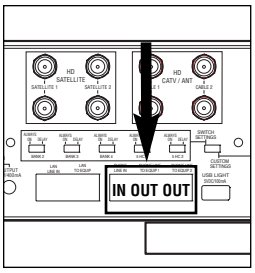


Cable TV (Including HDTV) & Cable Modems:
TV tuners operate at approximately 500 millivolts (1/2 volt) and utilize the frequency spectrum of 50 MHz to 950 MHz. Digital cable boxes and cable modems typically operate at slightly higher voltages while cable modems utilize the frequency range below 50 MHz. The clamping level of the MAX 7500-Pro's CATV protection circuitry is 1400 millivolts (1.4 volts). The circuitry is shielded to prevent interference and has been optimized to have less than 1dB of signal loss throughout the entire frequency range up to 950 MHz.

FEATURE DETAILS (continued)

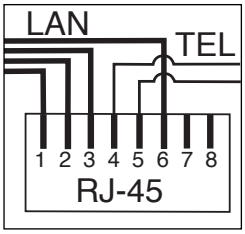


Satellite TV:
Satellite dish LNBs can require up to 24 volts to operate and utilize the frequency range of 950 MHz to 2.2 GHz. The clamping level of the MAX 7500-Pro's satellite protection circuitry is 25 volts, just 3 volts above the maximum operating voltage. The circuitry is shielded to prevent interference and has been optimized to have less than 1dB of signal loss throughout the entire 950 MHz to 2.2 GHz range.

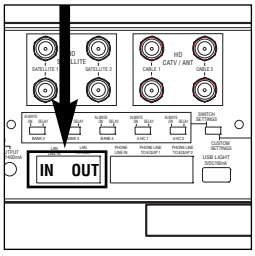


Telephone Protection:
This unit provides protection to one telephone Line In (RJ-11), and incorporates a built-in splitter to Equipment 1 (RJ-11) and Equipment 2 (RJ-11).

Satellite TV receivers and DVR's (digital video recorders) require telephone line connections for subscription services. The MAX 7500-Pro provides surge protection for this line. The circuitry utilizes auto-resetting PTCRs and solid-state SIDACtors for reliability and unsurpassed protection. The clamping level of the MAX 7500-Pro's telephone protector is 260 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 or DVR from damage.



To protect a telephone jack:
Connect a telephone cable from the wall jack outlet to the Line In (RJ-11) jack on the MAX 7500-Pro, then connect a second telephone cable from either the Equipment 1 (RJ-11) or Equipment 2 (RJ-11) jack on the MAX 7500-Pro to the equipment's phone jack. An RJ-11 connector with a minimum of 26 AWG conductors needs to be used when connecting to the telephone jacks.



To protect a LAN line:
Connect a network cable from the wall jack to the MAX 7500-Pro Line In
(RJ-45) jack, then connect a second cable from the Equipment (RJ-45) jack on the MAX 7500-Pro to the network device jack.

Please Note:
The protection circuitry will not work if the phone lines are reversed. The incoming phone cable must be connected to the **"LINE"** jack and the cable to the audio/video equipment must be connected to the **"EQUIP"** jack.

AC Surge Protection:
When the MAX 7500-Pro is subjected to a high voltage surge, its voltage output is limited to a safe level and the high levels of surge current are diverted away from the connected equipment.

• When subjected to a 6,000V (open circuit voltage) / 500A (short circuit current) surge, the MAX 7500-Pro limits its voltage output to less than 330V peak, UL's best rating.

• If the magnitude of the surge is greater than the capacity of the surge protection components, the MAX 7500-Pro's Protect or Disconnect Circuitry will disconnect your equipment in order to protect it.

Patent Pending Over/Under Voltage Protection:
The MAX 7500-Pro constantly monitors the AC line voltage for unsafe voltage conditions such as prolonged over voltages and under voltages (brownouts). These unsafe conditions pose a very dangerous threat to all electronic equipment within the home. If the MAX 7500-Pro senses an unsafe power condition, it will automatically disconnect your equipment from the power to protect equipment from damage. Once the voltage returns to a safe level, the MAX 7500-Pro will automatically reconnect the power.

If the line voltage exceeds the over voltage threshold or falls below the under voltage threshold, the MAX 7500-Pro will perform the following tasks until line voltage returns to a safe level:

1. *Voltage reaches an unsafe high level and the (Automatic Voltage Monitoring) AVM Circuitry* ***disconnects.***
2. *Voltage reaches a safe level and AVM Circuitry automatically* ***reconnects.***
3. *Voltage reaches an unsafe low level and AVM Circuitry* ***disconnects.***
4. *Voltage reaches a safe level and AVM Circuitry automatically* ***reconnects.***

TECHNICAL SPECIFICATIONS

GENERAL

Dimensions.....17" W x 12.75" D x 3.5" H, (4.1" H including feet)
Weight.....36 lbs.

AC CIRCUIT PROTECTION AND FILTRATION

AC POWER:

Line Voltage.....120V, 60Hz
Regulation Range.....100V-135V
Regulated Output.....120V ± 2V
Total Current Capacity.....15 A
Surge Suppression Rating.....330V
Protection Modes..... L - N, L - G, N - G
Initial Clamping Level.....200V
Energy Dissipation.....2670 Joules
Peak Impulse Current.....162,000Amps
Catastrophic Surge Circuit .....Yes
Thermal Fusing.....Yes
Over-voltage shutoff.....142 VAC ± 5VAC
Under-voltage shutoff.....90VAC ± 2 VAC
Ground Fault Circuit Interrupter (GFCI).....Banks 3 & 4

EMI/RFI NOISE FILTRATION:

Banks 1-4.....100 dB, 100 KHz ± 2 MHz
Bank 5.....60 dB, 100 KHz ± 2 MHz

USB LIGHT

Voltage.....5VDC
Current.....100mA

DC TRIGGER INPUT

Jacks.....3.5 mm mono mini-plug
Voltage and Polarity.....3-24V DC bidirectional
Current Requirement.....4.6 mA @3V, 58mA @24V

DC TRIGGER OUTPUT

Voltage.....<12V
Current.....<400 mA
Short-circuit protection.....Yes
Delay on output.....10 seconds

LAN CIRCUIT

Clamping Level.....8V ± 2V
Jacks.....RJ-45
Wires Protected.....4-Wires, pins 1, 2, 3 & 6

TELEPHONE CIRCUIT

Fuseless/Auto-Resetting.....Yes
Clamping Level.....260V
Capacitance.....30pf (approx.)
Suppression Modes.....Metallic & Longitudinal
Connections.....RJ-11
Protected.....2-Wires, Pins 4 & 5

SATELLITE TV CIRCUIT

Bidirectional.....Yes
Shielded.....Yes
Clamping Level.....25V
Attenuation.....<1 dB from 950MHz - 2.05GHz
<2.4db @ 2.2GHz
Connections.....Female F, Gold Plated

CABLE TV CIRCUIT

Bidirectional.....Yes
Shielded.....Yes
Clamping Level.....1.4V
Attenuation.....<1 dB up to 950MHz
Shielded.....YES
Connections.....Female F, Gold Plated

Design and specifications subject to change without notice due to product improvement.

MAX PRO-SERIES Communication/Configuration Specifications

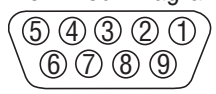
1. OVERVIEW

The M7500-PRO has a RS232 interface that allows it to communicate with a wide variety of equipment as well as enable custom operating configurations to be programmed into the unit.

The purpose of this document is to outline the command set used to communicate with the M7500-PRO.

Commands and responses are in the form of ASCII character strings terminated with ASCII 13, line feed (ASCII 10) or NULL (ASCIØ).

DB9 Pinout Diagram



PIN NO.	SIGNAL
1	-
2	RECEIVE DATA
3	TRNSMIT DATA
4	-
5	GROUND
6	-
7	-
8	-
9	-

2. PORT SETTINGS

Baud Rate: 9600bps
Data Bits: 8
Start Bits: 1
Stop Bits: 1
Flow Control: None
Null modem cable not required.

COMMANDS

The following are commands that can be made to the M7500-PRO. <CR> = Carriage Return (Enter Button)

Command String		Action	Response
1.1	**!BUTTON_ON<CR>**	Changes the status of the front panel button to ON. Has the same effect as if someone pressed the front panel button for 2 seconds.	**$BUTTON = ON<CR>**
1.2	**!BUTTON_OFF<CR>**	Changes the status of the front panel button to OFF. Has the same effect as if someone pressed the front panel button for 2 seconds.	**$BUTTON = OFF<CR>**
1.3	**!ALL_OFF<CR>**	Turns off all outlets including those designated as always on. Turn off is immediate with no delay. Terminates any running turn on or turn off sequence. Overrides the DC trigger input. Changes the status of the front panel button to OFF.	**$BUTTON = OFF<CR>**
1.4	**!ALL_ON<CR>**	Turns on all outlets. Turn on is immediate with no delay. Terminates any running turn on or turn off sequence. Overrides the DC trigger input. Changes the status of the front panel button to ON.	If successful: **$BUTTON = ON<CR>** If over-voltage fault: **$PWR = OVERVOLTAGE<CR>** If under-voltage fault: **$PWR = UNDERVOLTAGE<CR>**
1.5	**!SWITCH bank state<CR>** bank = {1, 2, 3, 4, HC1, HC2, TRIGOUT} state = {ON, OFF} Example: !SWITCH 2 ON<CR> (turns on outlet bank 2)	Turns a specific outlet bank or the trigger output on or off. Switching is immediate with no delay.	If bank or state are invalid, **$INVALID_PARAMETER<CR>** If bank and state are valid, and no fault exists, a confirmation message is sent. Refer to §3.1 If over-voltage fault:**$PWR = OVERVOLTAGE<CR>** If under-voltage fault: **$PWR = UNDERVOLTAGE<CR>**

MAX PRO-SERIES Communication/Configuration Specifications (continued)

Command String		Action	Response
1.6	**!SET_BRIGHT x<CR>** **x = {10 -100}** Example: **!SETBRIGHT 75<CR>** (sets meter brightness to 75%)	Sets the voltmeter, ammeter and LED brightness to x%	If x is valid, **$BRIGHTNESS = x<CR>** If x is invalid, **$INVALID_PARAMETER<CR>**
1.7	!SET_TRIGGER **bank triggersourc**e<CR> **bank** = { 1, 2, 3, 4,HC1, HC2, TRIGOUT} **triggersource** = { NONE, BUTTON, TRIGIN} where NONE = Outlet bank is always ON, trigger output is OFF (RS232 only) BUTTON = Trigger on front panel button. TRIGIN = Trigger on DC input trigger Example: !SET_TRIGGER 3 TRIGIN<CR> (sets bank 3 to be controlled by the DC trigger input only)	Assigns the trigger(s) for an outlet bank or DC trigger output. These trigger settings are only used with the unit isset in CUSTOM SETTING mode. See Page 4 for more information.	If bank and triggersource are valid, **$TRIGGER FOR bank = triggersource<CR>** If bank or triggersource are invalid, **$INVALID_PARAMETER<CR>**
1.8	!SET_DELAY **bank ondelay offdelay<CR>** **bank** = { 1, 2, 3, 4,HC1, HC2, TRIGOUT} **ondelay** = { 0-240 } (seconds) **offdelay** = { 0-240 } (seconds) Example: !SET_DELAY 4 5 1<CR> (sets bank 4 turn-on delay to 5 sec. and turn-off delay to 1 sec.)	Assigns the turn on and turn off delays for an outlet bank or DC trigger output. These delay settings are only used with the unit is set in CUSTOM SETTINGS mode. See Page 4 for more information	If **bank, ondelay** and **offdelay** are valid, $DELAY FOR **bank = ondelay offdelay**<CR> If **bank, ondelay** or **offdelay** are invalid, $INVALID_PARAMETER<CR>

Command String		Action	Response
1.9	!SET_FEEDBACK **mode**<CR> **mode** = { ON, OFF }	Sets the feedback to ON (unsolicited) or OFF (polled). When ON, a message will be sent to the controller every time the status of an input (i.e. trigger), output (i.e. outlet) or power state (i.e. overvoltage) changes. If feedback is OFF, the controller must request feedback.	If **mode** = ON, $FEEDBACK = ON<CR> If **mode** = OFF, $FEEDBACK = OFF<CR> If **mode** is invalid, $INVALID_PARAMETER<CR>
1.10	!SET_LINEFEED **mode**<CR> **mode** = { ON, OFF }	Controls the linefeeds (ASCII: 10d, 0Ah) sent with each response. When ON, each response will end with a linefeed. When OFF, all responses will not end with a linefeed.	If **mode** = ON, $LINEFEED = ON<CR> If **mode** = OFF, $LINEFEED = OFF<CR> If **mode** is invalid, $INVALID_PARAMETER<CR>
1.11	!RESET_ALL<CR>	Resets all of the custom configuration settings (i.e. triggers, delays, meter brightness, feedback mode, & linefeed mode) to their original factory settings listed below. Resets the configuration below: TRIGGER FOR 1 = BUTTON TRIGGER FOR 2 = BUTTON TRIGGER FOR 3 = BUTTON TRIGGER FOR 4 = BUTTON TRIGGER FOR HC1 = BUTTON TRIGGER FOR HC2 = BUTTON TRIGGER FOR TRIGOUT = TRIGIN DELAY FOR 1 = 000,005 DELAY FOR 2 = 001,004 DELAY FOR 3 = 002,003 DELAY FOR 4 = 003,002 DELAY FOR HC1 = 004,001 DELAY FOR HC2 = 005,000 DELAY FOR TRIGOUT = 005,000 BRIGHTNESS = 100 FEEDBACK = ON LINEFEED = ON	$FACTORY SETTINGS RESTORED<CR>

QUERIES

Query		Description	Response
2.1	?ID<CR>	Request that the unit identify itself.	$PANAMAX<CR> $MAX 74/7500-PRO<CR> $FIRMWARE **revision**<CR>
2.2	?TRIGSTAT<CR>	Request the on/off status of the front panel button and input trigger.	if front panel button is ON, $BUTTON = ON<CR> if front panel button is OFF, $BUTTON = OFF<CR> if input trigger is ON, $TRIGIN = ON<CR> if trigger input is OFF, $TRIGIN = OFF<CR>
2.3	?OUTLETSTAT<CR>	Request the on/off status of the outlet banks and output trigger.	$BANK1 = **status**<CR> $BANK2 = **status**<CR> $BANK3 = **status**<CR> $BANK4 = **status**<CR> $HC1 = **status**<CR> $HC2 = **status**<CR> $TRIGOUT = **status**<CR> **status** = { ON, OFF }
2.4	?POWERSTAT<CR>	Request the status of the input voltage.	if input voltage is within limits, $PWR = NORMAL<CR> during overvoltage, $PWR = OVERVOLTAGE<CR> during undervoltage, $PWR = UNDERVOLTAGE<CR> during recovery, $PWR = RECOVERY<CR>
2.5	?VOLTAGE<CR>	Request the line voltage.	If 140V > Vin > 90: $VOLTAGE = xxx<CR> where xxx is the input line voltage expressed in decimal format. If the voltage is less than 100, the hundreds digit is represented with a 0. For example, a line voltage of 92VAC would be expressed as: $VOLTAGE = 092<CR> If Vin > 140V: $VOLTAGE = OVERVOLTAGE If Vin < 90V: $VOLTAGE = UNDERVOLTAGE
2.6	?CURRENT<CR>	Request the input current draw.	$CURRENT = xxx<CR> where xxx is the input current expressed in decimal format. If the current is less than 10, the tens digit is represented with a 0. For example, a current of 3.3A would be expressed as: $CURRENT = 03.3<CR>
2.7	?HELP<CR>	Request a list of all commands and queries.	Transmit a listing of all commands and queries.

QUERIES (continued)

Query		Description	Response
2.8	?LIST_CONFIG<CR>	Request a list of all configurable parameters and current settings.	$TRIGGER FOR 1 = **triggersource**<CR> $TRIGGER FOR 2 = triggersource<CR> $TRIGGER FOR 3 =**triggersource**<CR> $TRIGGER FOR 4 = **triggersource**<CR> $TRIGGER FOR HC1 = **triggersource**<CR> $TRIGGER FOR HC2 = **triggersource**<CR> $TRIGGER FOR TRIGOUT = **triggersource**<CR> $DELAY FOR 1 = **ondelay offdelay**<CR> $DELAY FOR 2 = **ondelay offdelay**<CR> $DELAY FOR 3 = **ondelay offdelay**<CR> $DELAY FOR 4 = **ondelay offdelay**<CR> $DELAY FOR HC1 = **ondelay offdelay**<CR> $DELAY FOR HC2 = **ondelay offdelay**<CR> $DELAY FOR TRIGOUT = **ondelay offdelay**<CR> $BRIGHTNESS = x<CR> $FEEDBACK = x<CR> $LINEFEED = x<CR>

RESPONSES AND WARNING MESSAGES

If unsolicited feedback is enabled, the following warning messages will be transmitted under the conditions outlined in their description.

Condition		Message
3.1	Outlet bank or trigger output changes (on/off) state.	$BANK1 = **status**<CR> $BANK2 = **status**<CR> $BANK3 = **status**<CR> $BANK4 = **status**<CR> $HC1 = **status**<CR> $HC2 = **status**<CR> $TRIGOUT = **status**<CR> **status** = { ON, OFF }
3.2	When either the front panel button or input trigger (on/off) status changes, a status message is sent to the controller.	if front panel button is ON, $BUTTON = ON<CR> if front panel button is OFF, $BUTTON = OFF<CR> if input trigger is ON, $TRIGIN = ON<CR> if trigger input is OFF, $TRIGIN = OFF<CR>
3.3	Input voltage rises above the overvoltage threshold.	$PWR = OVERVOLTAGE<CR>

RESPONSES AND WARNING MESSAGES (continued)

Condition		Message
3.4	Input voltage falls below the undervoltage threshold.	$PWR = UNDERVOLTAGE<CR>
3.5	Input voltage falls within safe operating range following an over-voltage or under-voltage condition.	$PWR = RECOVERY<CR>
3.6	Upon leaving the recovery mode following an over-voltage or under-voltage condition.	$PWR = NORMAL<CR>

TROUBLESHOOTING

My power cable does not reach the wall outlet. Can I use any extension cord to make it reach?

No, Panamax extension cords are the only extension cords that you can use while keeping your warranty valid.

The provided coax or telephone jumper cables are not long enough to reach my equipment. Can I use other cables?

Yes, any length cable of the same type is fine.

There is an audible buzz/hum coming from my Max 7500-Pro. What is the cause of this and how do I make it go away?

This can be caused by certain appliances; most commonly lamps with High-Low dimmer switches and some room heaters, which use only half of the AC sine wave. These appliances distort the AC wave through a small DC bias placed on the AC supply. Some custom audio equipment-especially amplifiers with toroidal power transformers, may react unfavorably to this distortion, and buzz. The Max 7500-Pro's isolation transformer will remove this waveform distortion and protect the loads plugged into the bank 3 and 4 outlets. If the distortion is bad, you may actually hear the Max 7500-Pro buzzing slightly as it works to correct the AC power. The best way to stop the buzz is to find the source of the disturbance (most likely a quartz lamp) and plug it into a different branch circuit. Panamax Technical Support will be glad to help you if you have any questions about this.

The 6 Amp, Isolation Transformer circuit breaker continually trips. What is the problem?

The four Isolation Transformer outlets share the 720 VA Isolation transformer for their power source. The connected equipment plugged into the four outlets are drawing more than 6 Amps collectively, causing the circuit breaker to trip. These four outlets are designed specifically for low-current, digital source components. Check to see if you have connected a high current amplifier or subwoofer to the Isolation Transformer Outlets. If so, unplug the high current components and plug them into the High Current Outlet Bank.

Some banks are not switching ON or OFF with the MAX 7500-Pro. How can I fix this?

These outlets may be set as either delayed or always-on outlets. The 2-position switches on the back panel control this. Change the setting of this switch from always-on to delayed. This will allow the corresponding banks to be switched on/off.

I connected the LED Convenience Lamp and the lamp will not work. What is the problem?

Check to see if the MAX 7500-Pro is in an unsafe voltage condition by looking to see if the unsafe voltage indicator is flashing. If the indicator is flashing, then wait until voltage is back to normal and the light will turn back on. If the unsafe voltage indicator is OFF and the light is still not on, call Panamax Customer Service for help.

The Power Specialist Since 1975
PANAMAX®

INS07500 Rev A 9/06

Panamax, Inc. 1690 Corporate Circle, Petaluma, CA 94954

Toll Free: (800)472-5555 Tel: (707) 283-5900 Fax: (707) 283-5901 www.panamax.com

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. For product replacement see "NOTIFICATION" below.

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 systemic approach using multiple protectors must be employed. Systemic protection requires professional design. AC power, satellite cables, CATV cables, telephone/network lines or any other signal lines entering the system that do not pass through this surge protector may 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.

WARNING NOTICE
Panamax products purchased through the Internet do not carry a valid Product Warranty or Connected Equipment Protection Policy unless purchased from an Authorized Panamax Internet Dealer and the original factory serial numbers are intact (they must not have been removed, defaced or replaced in any way). 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**

More detailed information is available at **www.panamax.com**

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

Panamax Power Conditioner Limited Connected Equipment Protection Warranty

Valid only in the United States and Canada.

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. Panamax must determine that the power conditioner shows signs of surge damage or is operating outside of design specifications, relative to its surge protection capability, and under all of the circumstances failed to protect your connected equipment.

M4300-EX:	$5,000,000
M5300-EX:	$5,000,000
M5510-Pro:	$5,000,000
M4310:	$5,000,000
M5400-EX:	$5,000,000
ML4200:	$5,000,000
M4400:	$5,000,000
M5410:	$5,000,000
M5100-EX:	$5,000,000
M5500-EX:	$5,000,000
M7500-PRO:	$5,000,000

THIS WARRANTY IS SUBJECT TO THE FOLLOWING CONDITIONS:

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 leadins) 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 a request for product replacement or payment for connected equipment damage. A return merchandise authorization (RMA) number must first be obtained from the Panamax Customer Relations Department at **www.panamax.com/support** ** before returning the protector to Panamax. At this time, you must notify Panamax if you believe you have a claim for damaged connected equipment.

Once you obtain an RMA 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 RMA number must also be clearly marked on the outside of the carton. Ship the unit to 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 RMA request, Panamax will mail you a 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 of your request for payment. Panamax, after evaluating all information provided, shall 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 and notifying you of the rejection of your claim. Exceptions: If a dealer or installer replaces the protector for the customer, a replacement will be returned to the dealer or 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: 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 warranty, please contact the Panamax Customer Relations Department at www.panamax.com/support. This warranty supersedes all previous warranties. THIS IS THE ONLY WARRANTY PROVIDED WITH THE PROTECTOR 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 RMAs and opening a claim for connected equipment damage.

Effective Date 06/05 Q01L0049 Rev. A

Product Upgrade Program

Valid only in the United States and Canada

If your Panamax power conditioner sacrifices itself while protecting your connected equipment, you have an option to upgrade to the latest technology. Please go to our web site www.panamax.com/rma or contact Panamax Customer Relations at **800-472-5555** for details.