

Panamax and Furman Product Recommendation Guide

Entry-Level Home Entertainment System	Intermediate Level Home Theater or Entertainment System	Elite Level Home Theater or Entertainment System	Premium Level Home Theater or Entertainment System	2 Channel / Audiophile / Dedicated Listening Room	Professional Level Dedicated Theater
					
Audio Receiver <i>Retail: \$124.99 - \$299.99</i>	Audio Receiver <i>Retail: \$300.00 - \$599.99</i>	Audio/Video Receiver (AVR) <i>Retail: \$600.00 - \$1,199.99</i>	Audio/Video Receiver (AVR) <i>Retail: \$1,200.00 - \$3,499.99</i>	Integrated Amp or Separates <i>Retail: \$2,000.00 - \$3,500.00</i>	Separates <i>Retail: \$3,500.00 and up</i>
<p>Good: Panamax PM8-AV Surge protection and filtration for improved picture and sound quality.</p> <p>Better: Panamax M8-AV Step-Up Advantages over PM8-AV: Greater protection from brownouts and wiring faults, superior audio/video performance.</p> <p>Best: Panamax MR4000 Step-Up Advantages over M8-AV: Complete protection and Level 2 Filtration for improved picture and sound.</p>	<p>Good: Panamax M8-AV Complete surge/spike/voltage protection and filtration for improved picture and sound quality.</p> <p>Better: Panamax MR4000 Step-Up Advantages over M8-AV: Complete protection and Level 2 Filtration for improved picture and sound.</p> <p>Best: Panamax MR4300 Step-Up Advantages over MR4000: Complete protection and Linear Filtration for improved picture and sound. Component class design with variety of convenience features.</p>	<p>Good: Panamax MR5100 Power Sequencing and Linear Filtration for improved picture and sound. High current outlets do not limit current to amps and subs. Component class design with variety of convenience features.</p> <p>Better: Panamax M5300-PM Step-Up Advantages over 5100-PM: Increased filtration, isolation, and convenience features. Includes rack mount ears and detachable cord.</p> <p>Best: Panamax M5400-PM Step-Up Advantages over M5300-PM: Voltage regulation delivers stable 120V output $\pm 5\%$.</p>	<p>Good: Furman Elite-15 PF i Complete protection and Linear Filtration for improved picture and sound. Power Factor Technology lowers impedance for greater bass, audio definition, and impact from amps and subs.</p> <p>Better: Furman Elite-20 PF i Step-Up Advantages over Elite-15 PF i: Increased current capacity (20A), Ultra Linear Filtration and power factor correction.</p> <p>Best: Furman IT-Reference 15i Step-Up Advantages over Elite-20 PF i: Symmetrically Balanced power and 100% isolation provide pristine performance for connected equipment. <i>(Note: 15A capacity).</i></p>	<p>Good: Furman Elite-20 PF i Complete protection and Ultra Linear Filtration for improved picture and sound. Power Factor Technology lowers impedance for greater bass, audio definition, and impact from amps and subs. <i>(Note: 20A capacity).</i></p> <p>Better: Furman IT-Reference 15i Step-Up Advantages over Elite-20 PF i: Symmetrically Balanced power and 100% isolation provide pristine performance for connected equipment. <i>(Note: 15A capacity)</i></p> <p>Best: Furman IT-Reference 20i Step-Up Advantages over IT-Reference 15i: Higher current capacity (20A). Greater filtration, isolation, and current reservoir yield highest level of picture and sound performance available.</p>	<p>Good: Furman IT-Reference 15i Complete protection and 100% isolated balanced power with Linear Filtration for uncompromised picture and sound. Power Factor Technology lowers impedance for greater bass, audio definition, and impact from amps and subs. <i>(Note: large systems may require multiple IT-Reference units due to current demands)</i></p> <p>Best: Furman IT-Reference 20i Step-Up Advantages over IT-Reference 15i: Higher current capacity (20A). Greater filtration, isolation, and current reservoir yield highest level of picture and sound performance available. <i>(Note: large systems may require multiple IT-Reference units due to current demands)</i></p>
For Complete Power Management, add:	For Complete Power Management, add:	For Complete Power Management, add:	For Complete Power Management, add:	For Complete Power Management, add:	For Complete Power Management, add:
Panamax MB850 or MX5102 <i>(MX5102 can substitute for M5100-PM or M5300-PM)</i> Provides battery backup for game consoles, control systems, DVRs, and digital media devices.	Panamax MB850 or MX5102 <i>(MX5102 can substitute for M5100-PM or M5300-PM)</i> Provides battery backup for game consoles, control systems, DVRs, and digital media devices.	Furman F1000-UPS Provides battery backup for game consoles, DVRs, and digital media devices. RS-232 for control system integration.	Furman F1500-UPS Provides battery backup for digital media devices. RS-232 for control system integration and BlueBOLT Compatible <i>(Note: large systems may require multiple UPS units due to current demands)</i>	Furman F1500-UPS Provides battery backup for digital media devices. RS-232 for control system integration and BlueBOLT Compatible <i>(Note: large systems may require multiple UPS units due to current demands)</i>	Furman F1500-UPS Provides battery backup for digital media devices. RS-232 for control system integration and BlueBOLT Compatible <i>(Note: large systems may require multiple UPS units due to current demands)</i>
		For Remote Management & BlueBOLT, add:	For Remote Management & BlueBOLT, add:		For Remote Management & BlueBOLT, add:
		Panamax M4315-PRO <i>(M4315-PRO can substitute for most components)</i> M5300-PM filtration level and protection. Remotely reboot and diagnose power problems.	Panamax M4320-PRO M5300-PM filtration level and protection. Remotely reboot and diagnose power problems. <i>(Note: 20A capacity)</i>		Panamax M4320-PRO M5300-PM filtration level and protection. Remotely reboot and diagnose power problems. <i>(Note: 20A capacity)</i>

Custom Installation Solutions

MIW-XT
Extend UPS and/or filtered power to remote locations. Code compliant with signal passthrough (plastic or metal back-box required).








MIW-POWER-PRO-PFP
Delivers safe, protected AC power to flat panel displays, ceiling mounted video projectors and powered sub-woofers.

MIW-SURGE-1G
High quality, in-wall surge protection for residential or commercial applications.

PLUGLOCK-PFP
Prevent space hogging wall warts from falling out. 5 outlets with thumb screws and straight plug.

D10-PFP
Add 10 outlets to any rack mount system. 15A circuit breaker & straight plug.

Power Management 101 - Technology and Applications

Problem: Electrical - AC Transient Spikes	Problem: Brownouts and Over-voltages	Problem: AC Line Noise	Problem: Unstable AC Voltage Conditions	Problem: AC Blackouts	Problem: Current Compression	Problem: Ground Hum
Definition and Cause: Extremely brief increases in delivered AC voltage and current (spike). Caused by lightning (most severe) or, far more commonly, spikes caused by the utility substation and major appliances switching on and off	Definition and Cause: Brownouts are commonly caused by overuse on the grid or utilities temporarily cutting back on available power. Over voltages are commonly caused by wiring faults within a home, generators, or downed power lines.	Definition and Cause: AC line distortion caused by radio frequency interference, electro-magnetic interference, and signals induced into the AC line by electronic components and switch mode power supplies.	Definition and Cause: Voltage consistently or intermittently outside of the "ideal" range of 115V-125V. Caused by many factors, including: utility adjustment for peak demand, faulty utility delivery, or large variances in load on grid.	Definition and Cause: Short or extended interruptions in power (0 Volts delivery). Commonly caused by faults in transmission infrastructure or downed power lines in a storm or accident.	Definition and Cause: Restricted or insufficient electrical current for power amplifier's power supplies. Instantaneous current is required to reproduce audio dynamics. When current is limited or "compressed," the amplifier's ability to fully reproduce dynamics is compromised.	Definition and Cause: Buzzing – Video Hum Bars Presence of circulating AC noise currents (ground loop). Caused by the voltage difference on two or more system component grounds when compared to the AC line or neutral.
Effect on A/V Equipment: Lightning can destroy an entire system with one strike. The multiple daily AC spikes slowly break down sensitive circuits, causing lockups, decreased performance, and premature equipment failure.	Effect on A/V Equipment: When subject to extended periods of voltage under 90V or over 140V, components can sustain permanent damage or fail completely.	Effect on A/V Equipment: Compromised picture and sound quality due to the masking of high definition audio/video signals. Higher levels manifest as audible clicks, pops, radio interference, or visual "snow".	Effect on A/V Equipment: AC Voltages outside the ideal range can cause component power supplies to overheat, while others will exhibit unreliable behavior and compromised performance.	Effect on A/V Equipment: Failure of data storage (media hard drives), loss of data stored in volatile ("flash") memory. Failure of components that need a fan to cool after use (such as projectors).	Effect on A/V Equipment: Anemic, weak audio reproduction, even with premium components. Causes audio to sound muddy, losing definition, bass extension, and visceral impact.	Effect on A/V Equipment: Compromised picture and sound quality at low noise levels due to masking of audio/video signals. Higher levels manifest as 60-cycle audible "hum" or rolling horizontal lines on video.
Solution:	Solution:	Solution:	Solution:	Solution:	Solution:	Solution:
Surge and Spike Protection	Extreme Voltage Protection Panamax: AVM Furman: EVS	Linear Noise Filtration	AC Voltage Regulation	Battery Backup / UPS	Power Factor Technology	Symmetrically Balanced Isolated Power
						
System Benefit: Protection from small to catastrophic events, resulting in improved reliability, longevity and performance.	System Benefit: Maximized system life due to protection from extreme or catastrophic voltage events.	System Benefit: Increased audio and video performance, increased reliability of digital components.	System Benefit: Increased component reliability and longevity. <i>(Note: the majority of residences do not need voltage regulation)</i>	System Benefit: Protection from data loss and increased longevity of components such as bulb-based projectors.	System Benefit: Amplification equipment can "tap" current reservoir when needed, resulting in uncompromised audio reproduction.	System Benefit: The most comprehensive hum elimination and filtration solution available, resulting in maximum audio/video performance.
Available in:	Available in:	Available in:	Available in:	Available in:	Available in:	Available in:
All Panamax and Furman power management products.	Panamax and Furman select SKUs.	All Panamax and Furman power management products. Typically, superior filtration is found as you move up in price point.	Panamax M5400-PM Panamax MB850 Panamax MB1000 Panamax MB1500 Furman SPR-20i Furman F1000-UPS Furman F1500-UPS	Panamax MB850 Panamax MX5102 Panamax MB1000 Panamax MB1500 Furman F1000-UPS Furman F1500-UPS	Furman Elite-15 PF i Furman Elite-20 PF i Furman IT-Reference 15i Furman IT-Reference 20i	Furman IT-Reference 15i Furman IT-Reference 20i