



Owner's Reference

Owner's Reference Stellar S300 and M700 Amplifiers

Instructions for Use



Stellar S300 and M700 Power Amplifiers™

4826 Sterling Drive, Boulder, CO 80301

PH: 720.406.8946 support@psaudio.com www.psaudio.com

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Rev A



Introduction

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Important Safety Instructions



Read these instructions
Heed all warnings
Follow all instructions



WARNING. TO REDUCE THE RISK OF FIRE OR ELECTRICAL SHOCK, DO NOT EXPOSE THIS APPARATUS TO RAIN OR MOISTURE.

Clean only with a dry cloth.

Do not place flammable material on top of or beneath the component.

All PS Audio components require adequate ventilation at all times during operation. Rack mounting is acceptable where appropriate.

Do not remove or bypass the ground pin on the end of the AC cord unless absolutely necessary to reduce hum from ground loops of connected equipment. This may cause RFI (radio frequency interference) to be induced into your playback setup. All PS products ship with a grounding type plug. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.

Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus. Unplug this apparatus during lightning storms or when unused for long periods of time.

When making connections to this or any other component, make sure all components are off. Turn off all systems' power before connecting the PS Audio component to any other component. Make sure all cable terminations are of the highest quality.

There are no user serviceable fuses inside this product.

THERE ARE NO USER-SERVICEABLE PARTS INSIDE ANY PS AUDIO PRODUCT. REFER ALL SERVICING TO QUALIFIED SERVICE PERSONNEL

Please contact your authorized dealer, distributor, or PS Audio if you have any questions not addressed in this reference manual.

PS Audio® is a registered trademark of PS Audio Inc., and is restricted for



The exclamation point within a triangle is intended to tell the user that important operating and servicing instructions are in the papers with the appliance.



The lightning flash with arrowhead within a triangle is intended to tell the user that parts inside the product are a risk of electric shock to persons.





Introduction

Owner's Reference Stellar S300 and M700 Amplifiers

Congratulations on your choice of a Stellar power amplifier. Stellar proudly represents our company's commitment to honoring music and preserving its magic. Every effort to put musical performance above any other consideration has been lavished upon these products. They are personal. PS Engineer Darren Myers put his heart and soul into these designs and he's rightly proud of the results.

Stellar's design imperative was to produce a truly musical sounding power amplifier that proudly competed with any amplifier under \$5,000. Myers took the challenge and set to work on a new concept—a hybrid that would combine the best of today's technology with time-honored techniques leveraging PS Audio's forty plus years of experience.

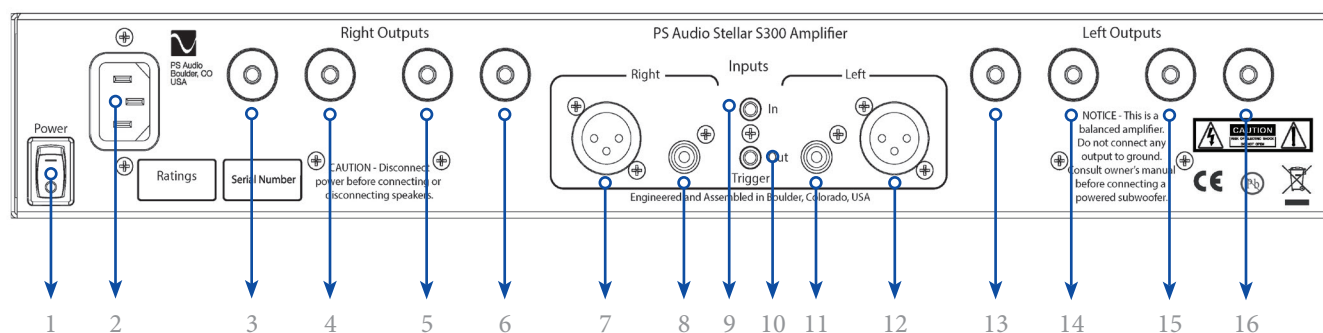
The results are extraordinarily musical. Even from the earliest prototype we knew the Stellar power amplifier series was going to be something special. Stellar amplifiers never draw attention to themselves, a rare quality in amplifiers of any price.

Combine the Stellar power amplifier with its mate, the extraordinary Stellar Gain Cell DAC for a complete system. The synergy between these two units is remarkable.

Each Stellar product is hand-built in our Colorado facility. We take great pride in what we build, how it sounds, and how the end user is treated. We're PS Audio, and making music and keeping our customers happy and thrilled is what we're all about.

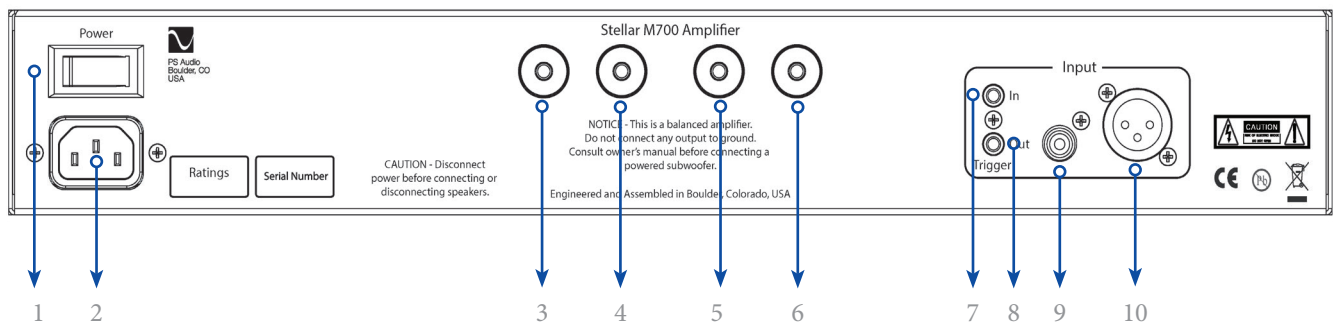


Stellar S300 Stereo Amplifier Rear Panel View



- | | | | |
|---|-------------------------------|----|---------------------------------|
| 1 | Main Power Switch | 9 | 5 Volt - 12 Volt Trigger Input |
| 2 | AC Power Input | 10 | 5 Volt - 12 Volt Trigger Output |
| 3 | Negative Right Speaker Output | 11 | Single Ended Left Input |
| 4 | Positive Right Speaker Output | 12 | Balanced Left Input |
| 5 | Negative Right Speaker Output | 13 | Negative Left Speaker Output |
| 6 | Positive Right Speaker Output | 14 | Positive Left Speaker Output |
| 7 | Balanced Right Input | 15 | Negative Left Speaker Output |
| 8 | Single Ended Right Input | 16 | Positive Left Speaker Output |

Stellar M700 Mono Amplifier Rear Panel View



- | | | | |
|---|-------------------------|----|---------------------------------|
| 1 | Main Power Switch | 6 | Positive Speaker Output |
| 2 | AC Power Input | 7 | 5 Volt - 12 Volt Trigger Input |
| 3 | Negative Speaker Output | 8 | 5 Volt - 12 Volt Trigger Output |
| 4 | Positive Speaker Output | 9 | Single Ended Input |
| 5 | Negative Speaker Output | 10 | Balanced Input |



Owner's Reference

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Location	Once your Stellar Amp is unpacked, you'll need to find a convenient place to set it. We recommend floor mounting on a platform or shelf mounting as close to the speakers as possible. If the source equipment (preamp or DAC) is far away from the Stellar, it is recommended to use balanced interconnects if possible. Placement of the Stellar is important from several aspects: proper cooling and best audio practices. Make certain wherever you place the Stellar there is adequate ventilation space above and below the unit.
Power Cables	Once you have chosen the location for the Stellar you can use the supplied AC power cable to connect it to the AC power or you can use an aftermarket power cord. Power cords make a difference and we do not recommend using the supplied power cord for critical listening or long term use. We strongly recommend the use of a PS Audio PerfectWave® Power AC cable or any excellent aftermarket power cable for best results as it is always preferable to feed your equipment with the best power cables possible. Choosing an excellent power cable will make a significant performance improvement over the stock power cable.
Country Specific AC Voltages	The Stellar, as with all PS Audio products, is country specific to its incoming AC voltage. This means the units can only be operated at its preset voltages, such as 230 for most of Europe and Asia, 100 volts for Japan and 120 for the US and other similar countries. Immediate damage can occur if you try and power the Stellar with a voltage it was not designed to operate on.
Cables Matter	Connecting cables matter. Carefully choose your speaker cables and connecting cables to the equipment. Our preference for input cables is balanced, XLR type, but well built single ended RCA cables are fine as well. Speaker cables can make or break the performance of an amplifier and great care should be taken in using only the best match for your loudspeakers and Stellar amplifier.
Connect the Speaker Cables	<p>With the amplifier firmly seated where you have selected, it is time to connect the speaker cables. The Stellar S300 and M700 use custom machined connectors. These connectors were specially engineered to match the performance specifications of the Stellar Amp.</p> <p>The connectors can accept spade, banana or wire connections. There are two sets for each channel on the S300 and two sets for the singly mono channel on the M700. Most systems will use only one set of the binding posts to connect the speaker cable. Use only the finest speaker cables and connectors.</p> <p>Note that you should never connect speaker cables while the amp is on. If one speaker lead is connected (+ or -) and the other lead brushes up against the chassis, there is the potential to present the speaker with 25VDC . This voltage has the potential to damage a driver (usually the woofer) in a speaker.</p>
Black Terminal is Not Ground	Its important to note that the Stellar Amplifier is a fully balanced BTL amplifier. As such the Black terminal is not ground. If connecting the Stellar to a Rel Acoustics Subwoofer its important to consult the manufacturer's service documentation to ensure the Stellar is appropriate for the subwoofer.



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Biwire	Some may wish to biwire their speakers to the Stellar. This practice involves using one shotgun configured cable or two separate cables. In either case, connect one cable to one set of binding posts, the other to the second set. On the loudspeaker side, one pair of cables goes to the tweeter binding posts, the remaining set to the woofer section.
Plug in the Connecting Cables	<p>The Stellar S300 and M700 Amplifiers accept either single ended RCA or balanced XLR connections to the preamplifier or DAC feeding it. Regardless of the cable chosen, the Stellar will treat the incoming signal in such a way that it becomes balanced throughout the amplifier's circuitry.</p> <p>Our preference for connection to the preamplifier is balanced XLR cables. Balanced signals are lower in noise and take advantage of common mode rejection. Single ended RCA cables can also be good, but we shy away from their use at lengths exceeding two meters.</p>
Plug in the Power Cable	<p>Once connections have been made to both the loudspeakers and the preamplifier, it is time to plug the AC power source in.</p> <p>Stellar amplifiers are voltage specific. They operate ONLY at the voltage set at the factory. Do NOT plug the Stellar into a voltage other than what it is set for. Failure to observe this rule may damage the Stellar.</p> <p>You are now ready to enjoy your first listen to the Stellar Amplifier. Making sure the preamplifier and the system is on, push the front panel standby button on the Stellar front panel. When the blinking stops and the PS logo turns steady on, the amplifier is ready to play music.</p>
Power Up Transient	Upon startup, its common to hear a small sound from the connected speakers. This is normal and is not harmful to the loudspeakers.
Output Disable Mode	We recommend leaving the rear panel power switch active at all times, and placing the unit in Output Disable Mode when finished listening. Output Disable Mode can be activated by pressing the front panel PS Audio logo button, located on the upper left hand corner of the Stellar Amplifier's front panel. When the logo button is not lit, the amplifier is in Output Disable Mode. This mode keeps the amplifier in a reduced power mode, maintaining excellent performance benefits while consuming little power.
Trigger Input / Output	The Stellar S300 and M700 Amplifiers have a 5V -12V Trigger for remotely powering the unit on and off. It is important to note that the trigger "out" is intended to loop through to a second power amplifier. The Stellar amplifier does not generate a trigger signal. An input Trigger DC voltage is required.

Logo Button Indicators

There are four conditions for the Stellar Amplifier:

1. Off
The Logo Button is not illuminated. The unit in Output Disable Mode.
2. On - Ready
The Logo Button is fully illuminated. The Stellar is powered on and ready.
3. Flashing Slow - Booting
The Logo Button is flashing slowly. This is the boot sequence. The Logo Button will flash slowly for 10 seconds during power up. Then the Logo Button will become steady.
4. Flashing Fast - Fault Protect Mode
The Logo Button is flashing quickly. Then the unit powers off. This is the fault mode. The Logo Button will flash quickly for 5 seconds and the unit will power down. Read more about Fault Protect Mode in the troubleshooting section.





Troubleshooting

Owner's Reference Stellar S300 and M700 Amplifiers

Fault Protect Mode

The Stellar Amplifier is designed to protect itself if it detects a dangerous signal surge or transient that could damage the circuit. In these instances the Stellar goes into Fault Protect Mode. If you see the blue logo button flashing quickly and the Stellar turns itself off, then it has entered this mode. This can happen if the Stellar is heavily overdriven.

If this occurs remove power from the Stellar and disconnect all inputs and outputs. Then, power the Stellar back on and verify that it powers on normally. If this is the case then power off the Stellar and re-connect the speakers and sources. Try playing music back at a low level at first.

If after removing all connected equipment the Stellar continues to enter Fault Protect Mode, please contact PS Audio.

No Sound Comes From the Stellar

Check to make sure power is going into the Stellar and it is connected to a live source. Make sure the rear panel master power switch is in the on position. Push the front panel logo light. Check the speaker cable connections to the speakers.

Hum and Ground Loops

If there is hum coming from your loudspeakers it may be coming from your preamplifier, or it may come from an interaction between components in your system and Stellar. This type of interaction is known as a ground loop.

The first step to determine where the hum is coming from is to place the Stellar in Output Disable Mode and remove the input connection from the preamplifier. Turn the amp back on and see if there is hum. Chances are good there will not be. If the hum is a low frequency soft sound, see if its level goes up and down with the preamp volume control. If it does, the problem is in the preamplifier. If not, it may be in your connecting cables. Try a different set. If the hum is a sharper buzz it is most likely a ground loop.

The easiest way to figure out where ground loop problems lie is by the process of elimination. You need to determine where the hum or buzz is coming from within your system. If the hum/buzz goes away when you remove the inputs to the power amp, your next step will be to reconnect the amp and move further down the chain. It is important to do this in the correct order and take the time to perform the test in a methodical step-by-step manner. If you have a preamp, or processor that is feeding the power amp, your next step would be to disconnect all inputs to the preamplifier or processor. Once these are disconnected, and the preamp or processor is connected only to the power amplifier, turn the system on and again, listen for hum. Should the hum now appear, it is a problem with your preamp or processor or their interaction with the power amp. Before returning the preamp or processor to the manufacturer, try a cheater plug to break a ground loop. Cheater plugs are simple devices that convert a three prong AC plug into a two prong AC plug and in the act of converting three prongs to two prongs they disconnect the ground from the wall socket. Try one of these on the preamp. If you determine that there is still no hum present when the preamp, processor or receiver is connected with no inputs, then selectively begin plugging in your various inputs one at a time. After each connection, check for hum until you discover the humming culprit. Use the same method described above to remove the ground on the offending piece of kit. As with all products using switched-mode power supply (SMPS), proper grounding is important for both safety and performance. You should not remove or defeat the ground pin of your M300 or M700 for any reason.



Troubleshooting

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VCR's, surround processors, and any device that is connected to a television cable or satellite dish can cause a loud buzz and should always be suspect. If, by the process of elimination described above, you determine it is a component like a cable TV box that is causing the hum/buzz to occur, and using a cheater plug doesn't help matters, it may be necessary to isolate the cable connection (CATV) with an isolation transformer. This inexpensive device is available at most department store type outlets and is sometimes called a 'matching transformer'. If you have problems finding one, call your local cable TV company for advice. The matching transformer will be placed between the cable TV cord and the

It may be something unrelated causing the hum

Just remember, take the system down to its simplest level of connection. Find a way to hook the system up with as many pieces of the system not connected as possible. Keep it simple and get it to the point where the hum's gone. Then start adding back components one at a time until the hum returns.

Finding the problem is 9/10th of the work in finding a solution.

The system has no bass

It may be that you have the polarity of the amplifier loudspeaker connection wrong on one channel. When out of phase, polarity, will cause bass cancellation and should be avoided. Check to make sure the red terminal on the Stellar goes to the red terminal on your loudspeaker.

Fuses

There are no user serviceable fuses in the Stellar S300 or M700 Amplifiers.



Specifications

Owner's Reference Stellar S300 and M700 Amplifiers

Stellar Amplifier Specifications

Color Options	Black, Silver	
Voltage Options	Japan / US	120V
	Europe/Asia	230V
Mains Power Input		IEC C14
Accessories Included	Line Cord(s)	US (NEMA 5-15P) (all versions) Schuko (CEE7/7) (230V version) UK (BS1363) (230V version)
	Audio Inputs	RCA (Unbalanced) XLR (Balanced)
	Other Input/Output	DC Trigger input 3.5mm 5-15VDC
Width	17.0"	
Height	2.8" (not including feet)	
	3.25" (including feet)	
Depth	12.0" (chassis only)	
	13.0" (including connectors and knobs)	
Weight	S300 and M700	8 lbs
Shipping Width	22"	
Shipping Height	8"	
Shipping Depth	17"	
Shipping Weight	S300	18lbs
	M700	21lbs



Specifications

Owner's Reference Stellar S300 and M700 Amplifiers

Stellar Amplifier Specifications

Performance S300

(All measurements with both channels driven)

Output Power	(120VAC Mains, 1KHz, 1% THD)	
	8Ω	135W minimum
	4Ω	300W minimum
Gain		30.5dB +/- 0.5dB
Sensitivity		1.01V
Input Impedance	RCA (Unbalanced)	50kΩ
	XLR (Balanced)	100kΩ
Output Impedance	50Hz, 2.8VRMS	<0.007Ω
Damping Factor	50Hz, 2.8VRMS	
	8Ω	>1100
	4Ω	>550
Frequency Response	2.8VRMS into 4Ω	10Hz – 20KHz +/- 0.5dB
		10Hz – 50KHz +/- 3.0dB
Output Regulation	1W @ 20KHz	
	No Load-8Ω	+/- 0.5dB
THD + N	1KHz, 1W/4Ω	< 0.02%
	10-20KHz, 1W/4Ω	< 0.02%
	10-50KHz, 1W/4Ω	< 0.05% (90KHz BW)
	1KHz, 37.5W/4Ω	< 0.01%
Signal to Noise	1KHz @ 300W	100dB
Power Consumption	Idle	13W
	1/8th power 4Ω	104W
	Rated power 4Ω	830W



Specifications

Owner's Reference Stellar S300 and M700 Amplifiers

Stellar Amplifier Specifications

Performance M700

Output Power	(120VAC Mains, 1KHz, 1% THD)	
	8Ω	350W minimum
	4Ω	700W minimum
Gain		30.5dB +/-0.5dB
Sensitivity		1.6V
Input Impedance	RCA (Unbalanced)	50kΩ
	XLR (Balanced)	100kΩ
Output Impedance	50Hz, 2.8VRMS	<0.007Ω
Damping Factor	50Hz, 2.8VRMS	
	8Ω	>1100
	4Ω	>550
Frequency Response	2.8VRMS into 4Ω	10Hz – 20KHz +/- 0.5dB
		10Hz – 50KHz +/- 3.0dB
Output Regulation	1W @ 20KHz	
	No Load-8Ω	+/- 0.5dB
THD + N	1KHz, 1W/4Ω	< 0.02%
	10-20KHz, 1W/4Ω	< 0.02%
	10-50KHz, 1W/4Ω	< 0.05% (90KHz BW)
	1KHz, 87.5W/4Ω	< 0.015%
Signal to Noise	1KHz @ 700W	105dB
Power Consumption	Idle	23W
	1/8th power 4Ω	125W
	Rated power 4Ω	895W



Warranty

Owner's Reference Stellar S300 and M700 Amplifiers

Limited Three Year Warranty

Should I Register My Product?

- Registering your product validates the warranty start date.
- If you do not register your product within 30 days of service, a copy of your purchase receipt from an authorized PS Audio dealer may be used as a proof of purchase to establish the warranty start date.
- If no proof of purchase from an authorized PS Audio dealer or registration is provided, the production date of the product will be used to determine the warranty start date.
- Registration can be completed online, by phone, by mail, or by email.
- You may wish to sign up for PS Audio's monthly newsletters, specials, product updates, and/or Paul's Daily Posts.

What Does this Warranty Cover?

This warranty covers defects in material and workmanship for products purchased from PS Audio or its authorized dealers and agents.

What Will PS Audio Do to Correct the Problem?

In the event your product fails your sole remedy under this limited warranty shall be to return the product to PS Audio or an authorized PS Audio repair center. The product will be repaired without charge for parts or labor, replaced, or the purchase price refunded through the original point of purchase, at the option of PS Audio.

What is the Period of Coverage?

This limited warranty is in effect for 3 years from the date the unit was first purchased from PS Audio or its dealers and agents.

Who Pays for Shipping?

You are responsible to pay for the safe and proper shipment of the warranted product to PS Audio or its authorized repair center.

PS Audio or its authorized repair center will pay the cost of returning the repaired or replacement product to you under this warranty.

What Does this Warranty Not Cover?

- This warranty does not cover damage due to: Accidents, carelessness, improper transportation, misuse, neglect, or abuse
- Failure to follow the operating instructions that are provided by PS Audio in the owner's manuals (available for download at psaudio.com)
- Use in any manner inconsistent with PS Audio's operating instructions (available for download at psaudio.com)
- Lack of routine maintenance
- Connection to an improper voltage supply
- Alterations or modifications to the unit
- Improper or unauthorized repair, including repairs not authorized by PS Audio or a PS Audio authorized repair center



Warranty

Owner's Reference Stellar S300 and M700 Amplifiers

- Fire, lightning, flood, "acts of God," or other contingencies beyond the control of PS Audio
- Products purchased through an unauthorized source (if you have questions as to whether or not a dealer is authorized, please contact customer support at psaudio.com)
- Products with a factory-applied serial number that has in any way been altered, defaced, or removed

Limitations on PS Audio's Obligations Under this Warranty

- In no event will PS Audio's liability to you exceed the original purchase price of the unit.
- This warranty does not cover the cost of custom installation, customer instruction, setup adjustments, or signal reception problems.
- This warranty does not cover consequential and incidental damages. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you.
- In the event your warranted product cannot be repaired, PS Audio will replace or refund the unit. We reserve the right to replace any out-of-stock, discontinued, or limited edition products with a comparable product. Discontinued products may not be available for warranty replacement.

How Can the Warranty be Transferred?

This warranty is for the benefit of the original purchaser of the product. The warranty may be transferred to a subsequent purchaser during the 3 year warranty period. To do this, you must contact PS Audio directly to set up transfer of registration.

How Do I Get Warranty Service?

To locate an authorized PS Audio repair center, for service assistance, or for help with the operation of a product or just for information, please contact PS Audio customer support.

Warranty Service Within the US

- You must first obtain a Return Merchandise Authorization Number (RMA#) to receive warranty service and prior to returning any item. Contact PS Audio or an authorized PS Audio repair center to receive an RMA#.
- You must put the RMA# on all returns. If it is not clearly marked, PS Audio will return the package back to you, freight collect.
- You should include a description of the problem, along with the RMA# inside the packaging.
- Original packaging should be used for the safe transit of your PS Audio unit to the repair center. If you do not have the original packing, PS Audio can sell and ship to you replacement packaging.
- You are responsible for the cost of shipping the product to a PS Audio authorized repair center. You should insure the product for its full retail cost in the event it gets lost or damaged in transit. PS Audio is not responsible for damage incurred in products sent to us.
- Shipping your product in non-PS Audio packaging may void this warranty. PS Audio reserves the right to charge you for new factory packaging to return your product after a repair.



Warranty

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How State Law Applies

This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

Warranty Service Outside of the US

PS Audio has authorized distribution in many countries of the world. In each country, the authorized importing distributor has accepted the responsibility for warranty of products sold by that distributor. Warranty service should be obtained where the product was purchased.

Changes to Our Products

PS Audio reserves the right to modify the design of any product without obligation to purchasers of previously manufactured products and to change the prices or specifications of any products without notice or obligation to any person.

PS Audio Inc.
4826 Sterling Dr.
Boulder, CO 80301
Phone - 720.406.8946
Fax - 720.406.8967
Email - support@psaudio.com
Web - psaudio.com