

## User Manual

### Description

Thank you for purchasing the SAM500 by OSD. This 500 watt DSP amplifier has some of the most advanced DSP functions available. We have included settings with common subwoofer set-ups from TV speakers to floorstanding speakers, just select the pre-set that matches your system most closely and cross-over frequency and slope will be set automatically.

#### Caution:

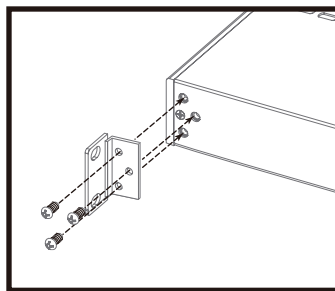
**MAKE SURE TO READ THIS INSTRUCTION MANUAL BEFORE TURNING THE POWER ON OR HOOKING UP THIS POWER AMPLIFIER.**

### Installing Rack Mount Ears

If you are planning on installing this amplifier into a rack, continue reading how to install the supplied rack ears.

1. Use the supplied three screws to attach the supplied rack ears to the SAM500 amp. If required, the feet on the bottom of the amplifier can also be removed at this time by unscrewing the mounting screws located in the center of each foot.

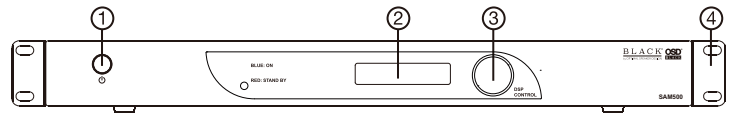
2. Due to the weight of the amplifier, it is recommended that rear supports be secured to the rear rack rails. Hardware to do this is not supplied with the amplifier and is specific to the type and depth of rack being used.



NOTE: Leave adequate ventilation above and below the amplifier when rack mounted. If there is not enough ventilation, amp may over heat and switch to standby mode.

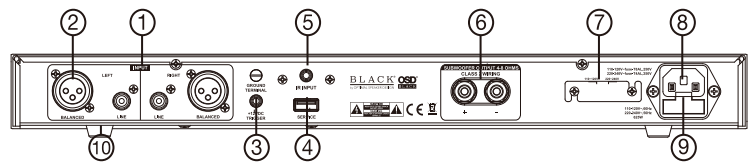
### SAM500 Amplifier Controls and Setup

#### Front Panel



1. **Power Switch:** Turns the amplifier on or off. Amplifier must be on for the trigger or auto sense modes to operate.
2. **16 Character x 2-row Liquid Crystal Display:** Shows the amplifier's status, menus and settings and works in conjunction with the turn and push navigation controls and the remote control.
3. **Programming Navigation Control:** Used to scroll through the display menus, change setting and program the DSP controller.
4. **Optional Rack Ears:** Two rack mount ears are provided for rack mounting.

#### Back Panel



1. **Line Input:** For receiving line-level signals. Accepts either a stereo or LFE signal.
2. **XLR Balanced Input:** For receiving balanced signals. Accepts either a stereo or LFE signal
3. **12V Trigger Input:** For triggering the power on/off from other devices such as processors or receivers that have a 12V trigger output. 6V minimum required for triggering. **NOTE:** Once in trigger mode, the amplifier cannot be turned on without a 12V trigger signal. To disable the 12V trigger, press and hold the navigation control knob. The power switch must be in the ON position. The trigger mode will be turned off and the amplifier will power on.
4. **Service:** For uploading new firmware or updates and for accessing PC App.
5. **IR Input:** Link to Infrared (IR) hub.

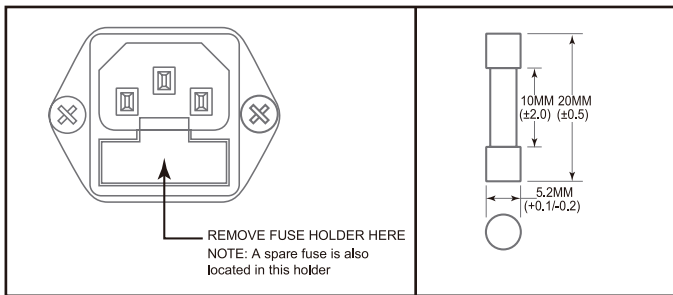
**6. 5-way Binding Posts:** Connect your subwoofer here. Minimum impedance of the load is 4 ohms. Multiple subwoofers can be connected if the combined load impedance is 4 ohms or greater.

**7. Voltage Selector Switch:** The amplifier can be used on 110~120V (60Hz) or 220~240V (50Hz) line voltage. To change the operating line voltage, turn the power off using the power button and unplug the power cord. Remove the plastic cover screws and the plastic cover over the voltage selector located on the rear of the amp. Set the switch to the correct position for the line voltage in your country. Replace the plastic cover and screws over the voltage selector switch.

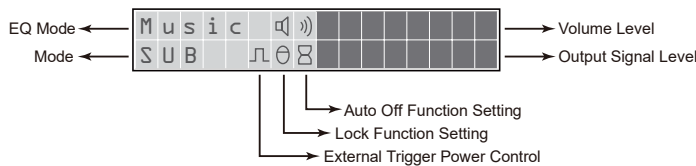
**NOTE:** If required, remove the IEC line cord and replace with an IEC AC cable that matches the AC wall socket, this should be a 10A rated cable. When the voltage selector switch is changed, the fuse must also be changed to continue to provide protection to the amplifier.

**8. Power Cord Receptacle:** The supplied power cord needs to be connected to this receptacle in order for the amplifier to work properly.

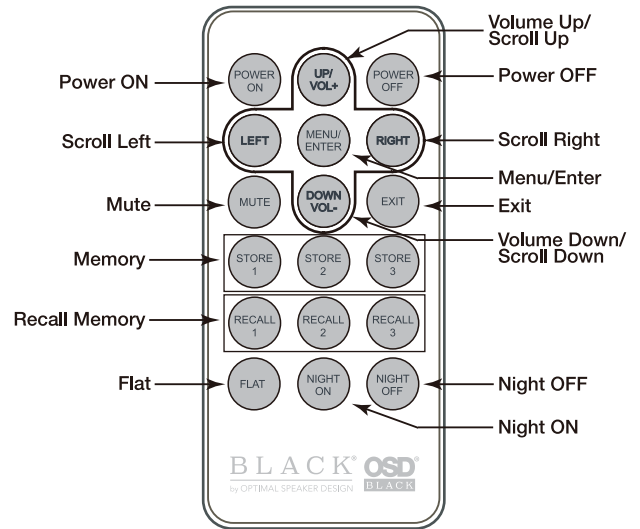
**9. Fuse Holder:** This is the power fuse access. **WARNING!** In the event the fuse must be replaced, the replacement fuse must match exactly the original fuse value or damage to the amplifier may result. **Use a 8A 120V or 4A 240V fuse.** **CAUTION!** Before replacing the fuse, disconnect the power cord from the power receptacle.



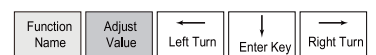
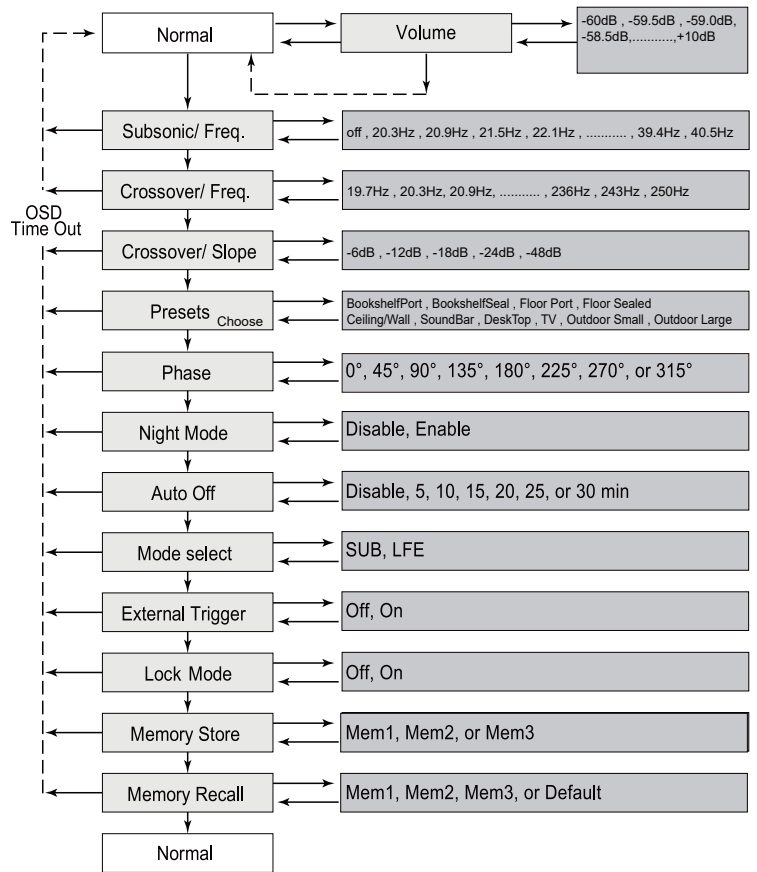
**10. Removable Feet:** The amplifier feet can be removed as required for rack mount installation.



## Remote Control



## Control Flow Chart - SUB Mode



## LCD Display Screens and Functions

Normally, the LCD display will show the status for a number of settings as well as the volume level and a flashing output level bar display.

**Volume Control:** Adjusts the output of the system. The volume control should be set to achieve similar volume levels from both the main speakers and subwoofer.



Volume Control

**Subsonic Control:** This allows the user to select the frequency at which they wish to cut off the high-pass audio signal.



Subsonic Control

**Crossover / Frequency:** This allows the user to select the frequency at which they wish to cut off the low-pass audio signal. This feature only available in Sub Mode.



Crossover Frequency

**Crossover / Slope:** This allows the user to select the slope for the crossover. This feature only available in Sub Mode.



Crossover Slope

**Preset Mode:** There are presets for all sat/sub combinations, such as TV speakers or floor-standing speakers.



**Preset**   **Preset Name**   **Subsonic/Freq**   **X-Over/Freq**   **X-Over/Slope**

Preset	Preset Name	Subsonic/Freq	X-Over/Freq	X-Over/Slope
1	BookshelfPort	20	50	24dB
2	BookshelfSeal	20	60	12dB
3	Floor Port	20	40	24dB
4	Floor Sealed	20	50	12dB
5	Ceiling/Wall	20	60	6dB
6	Soundbar	20	80	12dB
7	Desktop	20	80	24dB
8	TV	20	120	6dB
9	Outdoor Small	20	60	6dB
10	Outdoor Large	20	45	6dB

**Phase Control:** This feature is used to adjust the subwoofer's acoustic phase to match that of the main speakers.



Phase Control

**Night Mode:** Limits the dynamic range of the amplifier so the louder context of the source signal is reduced. This feature allows the user to select night mode. Choose enable or disable.



Night Mode

**Auto Off:** This feature allows the amplifier to turn itself off when not in use. With the function set to active, the amplifier will monitor its input signal. If no signal is present the amplifier will shut down and go into standby mode. As soon as a signal is present, the amplifier will turn itself back on.



Auto Off

**Mode Select:** This allows the user to select a mode. Set values contain: SUB or LFE.



Mode Select

**External Trigger:** This allows the user to select and enable the external trigger function. Press and hold the navigation control knob with the power switch in the ON position to change.



External Trigger

**Lock Mode:** When this function is active, all settings will be protected until disabled. Values are: ON or Off.



Lock Mode

**Memory Store:** This allows the user to select the memory bank. There are three memory banks.



Memory Store

**Memory Recall:** This allows the user to recall settings saved using the "Memory Store" function.



Memory Recall

# SAM500

## Specifications

Power Output: 500 Watts (RMS @ 4Ω)  
 Total Harmonic Distortion (THD): <1%  
 Equalizer: Adjustable Built-In 7-Band (-24 to +12dB) Accessible only via PC App - see website osdaudio.com  
 Adjustable Low Pass Crossover: 19.7Hz-250Hz  
 Adjustable Slope: 6dB-48dB  
 Line Level Input Sensitivity: 190 mV  
 Phase Control: 0 to 315° / 45° Increments  
 Auto Turn-on Sensitivity: 3 mV @ 50 Hz  
 External Trigger: 12V  
 Thermal Protection Circuit: Yes  
 Night Mode: Yes  
 Remote Control: Yes  
 Single Ended and Balance Input: Yes  
 Dimensions (with rack mounts): 19" W (483mm)  
 1.75" H (45mm)  
 10.38" D (264mm)  
 Weight: 16 lbs. (7.26kg)  
 Fuse: 8 Amp (120V)  
 4 Amp (240V)

## Trouble Shooting

SYMPTOM	POSSIBLE CAUSE AND TEST PROCEDURE
No sound from the subwoofer(s).	<ol style="list-style-type: none"> <li>1. Check that the amplifier is plugged into an A/C power outlet and has power.</li> <li>2. Make sure that the subwoofer(s) is/are connected properly.</li> <li>3. Make sure there is an audio signal from pre-amp / receiver.</li> </ol>
Sound from at least one subwoofer, but not the other(s).	<ol style="list-style-type: none"> <li>1. Verify that all wires are properly connected.</li> <li>2. Verify that all connections are complete and secure, with no stray wires contacting other terminals.</li> <li>3. Check each individual subwoofer</li> </ol>

## WARRANTY

All Optimal Speaker Design electronics products have a 5 Year Limited Warranty against defects in materials and workmanship. Proof of purchase must accompany all claims. During the warranty period Optimal Speaker Design will replace any defective part and correct any defect in workmanship without charge for either parts or labor. Optimal Speaker Design may replace returned speakers with a product of equal value and performance. In such cases, some modification to the mounting may be necessary and are not Optimal Speaker Designs responsibility.

For this warranty to apply, the unit must be installed and used according to its written instructions. If necessary, repairs must be performed by Optimal Speaker Design. The unit must be returned to Optimal Speaker Design at the owner's expense and with prior written permission. Accidental damage and shipping damage are not considered defects, nor is damaged resulting from abuse or from servicing performed by an agency or person not specifically authorized in writing by Optimal Speaker Design. Optimal Speaker Design sells products only through authorized dealers and distributors to ensure that customers obtain proper support and service. Any Optimal Speaker Design product purchased from an unauthorized dealer or other source, including retailers, mail order dealers and on-line sellers will not be honored or serviced under existing Optimal Speaker Design warranty policy. Any sale of product by an unauthorized source or other manner not authorized by Optimal Speaker Design shall void the warranty on the applicable product.

Damage to or destruction of components due to application of excessive power voids the warranty on those parts. In these cases, repairs will be made on the basis of the retail value of the parts and labor. To return for repairs, you must email customer service at RMA@osdaudio.com for a Returned Merchandise Authorization (RMA) number# then the unit must be shipped to Optimal Speaker Design at the owner's expense, along with a note explaining the nature of service required. Be sure to pack the speaker(s) in a corrugated container with at least 3 inches of resilient material to protect the unit from damage in transit.

This Warranty Does Not Cover: Damage caused by abuse, accident, misuse, negligence, or improper operation (installation) • Any products that have been altered or modified • Any product whose identifying number of decal, serial #, etc. has been altered, defaced or removed • Normal wear and maintenance.

## WARNING

TO PREVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE. THIS APPLIANCE SHALL NOT BE EXPOSED TO DRIPPING OR SPLASHING WATER AND THAT NO OBJECT FILLED WITH LIQUIDS SUCH AS VASES SHALL BE PLACED ON APPARATUS.



This symbol is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute risk of electric shock to persons.



This symbol is intended to alert the user to the presence of important operation and maintenance (servicing in the literature accompanying the appliance).

## IMPORTANT SAFETY INSTRUCTIONS

Electricity is used to perform many useful functions, but it can also cause personal injuries and property damage if improperly handled. This product has been engineered and manufactured with the highest priority on safety. However, improper use can result in electric shock and / or fire. In order to prevent potential danger, please observe the following instructions when installing, operating and cleaning the product. To ensure your safety and prolong the service life of your Sound Bar, please read the following precautions carefully before using the product.

1. Read these instructions.
2. Keep these instructions.
3. Heed all warnings.
4. Follow all instructions.
5. Do not use this apparatus near water.
6. Clean only with dry cloth.
7. Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
8. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
9. The battery shall not be exposed to excessive heat such as sunshine, fire or the like. Do not defeat the safety purpose of the polarized or grounding-type plug. 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 and 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 the plugs, convenience receptacles, and the point where they exit from the apparatus.
11. Only use attachments/accessories specified by the manufacturer.
12. Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.
13. Unplug this apparatus during lightning storms or when unused for long periods of time.
14. 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.
15. The mains plug or an appliance coupler is used as a disconnect device, the disconnecting device shall remain ready operable.