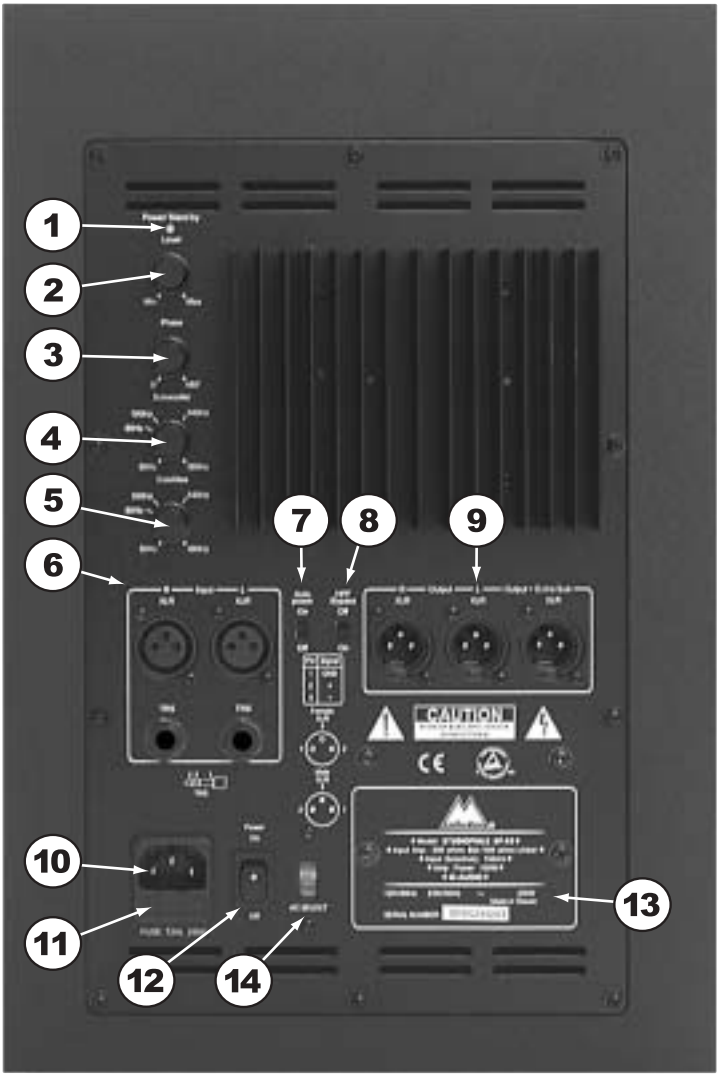
Studiophile SP-8S

Users Manual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CAUTION

Rear Panel:

1. Power/Standby LED: This LED indicates the power status. If the auto-muting circuitry is engaged, this LED will be amber if there is no audio signal to the SP-8S, and green when the SP-8S receives a signal. If "Auto-Power" is switched off, then this LED will remain green.
2. "Level" control knob: This knob controls the amplifier level of the SP-8S. The gain range is from minimum to maximum, labeled "Min" and "Max," with Min being full attenuation and Max being full volume.
3. Phase control knob: This knob controls phase of the crossover frequencies of the Subwoofer and the Satellites from 0 to 180 degrees.
4. "Subwoofer" LPF control knob: This knob designates the cutoff frequency of the SP-8S using a LPF, or low-pass filter. This setting will determine the highest frequency that the SP-8S will reproduce.
5. "Satellites" HPF control knob: This knob determines the HPF, or high-pass filter cutoff frequency for the Satellite speakers while using the SP-8S's Stereo Bass Management System. The Satellites control knob is functional only when the HPF Bypass switch is set to Off.
6. Input section: This section provides two balanced XLR inputs and two 1/4" TRS connectors that may be used for balanced (TRS) or unbalanced (TS) operation. Either XLR or TRS may be used as your audio input. These inputs are designated as "L" and "R" for operation in bass management mode. When bass management is not used, either the L or R input may be used to input signal to the SP-8S.
7. Auto Power On/Off Switch: When this switch is set to "On," Auto Power mode is engaged. Switching to "Off" will defeat Auto Power mode.
8. HPF Bypass switch: Switching HPF Bypass to "On" will bypass the Satellites HPF control knob, effectively defeating the SP-8S's Stereo Bass Management System. With HPF Bypass switched off, the "Satellites" HPF cutoff frequency control knob is engaged and bass management is operational.
9. Output section: This section provides three balanced XLR outputs labeled "Extra Sub" and "L" & "R." The Extra Sub output gives you throughput directly from the inputs for the purpose of connecting an additional subwoofer. The L and R outputs are to be used for connecting Satellite speakers (your left and right mains) when using the Bass Management System.
10. Power cable socket: This socket accepts a standard grounded AC cable.
11. Fuse holder: This fuse holder allows the replacement of a fuse for the purpose of circuit protection.
12. Power On/Off switch: Switching to "On" will power the SP-8S subwoofer. Switching to "Off" will power the unit down.
13. Manufacturer's Label: This section gives the model number and manufacturer information, including important power requirement information. See section, "Correct Power Operation."
14. Voltage-Select Switch: Provides 2 selections - 115VAC and 230VAC, and should be set to match the "house current" (receptacle) voltage of the country/location in which the speaker is used. The 115V setting is correct for the USA andthe 230V setting correct for most of the UK and Europe.

SP-8S Features

The SP-8S is a high-quality subwoofer designed to deliver extremely low frequencies in conjunction with stereo pairs of studio reference monitors such as the M-Audio Studiophile SP-8B or SP-5B. In fact, so many consumers have subwoofers in their home and car entertainment systems that you're not really mixing accurately without having a sub yourself.

M-Audio's engineers designed the SP-8S to meet professional quality performance standards and to provide superior value. Your SP-8S is constructed using high-quality components such as the 8-inch mineral filled polypropylene woofer cone. We use only selected grade components throughout the circuit design, placing special emphasis on components within the audio path to assure stable, consistent performance. We've built in a unique smooth-clipping circuit to deliver a warm musical sound similar to a vacuum tube. This circuit also provides overload protection for safe and high volume performance.

The SP-8S incorporates a unique Stereo Bass Management System. When subwoofers are added to many systems, all frequencies are routed to both the main monitors and the sub. The problem is that both the main monitors and the sub are still trying to put out the same low frequencies, duplicating the playback of some of the low frequencies and thereby compromising monitoring accuracy.

Our Stereo Bass Management System solves that and delivers optimal fidelity. The SP-8S's internal crossover network splits the signal at a user-defined crossover frequency, routing everything below it to the internal sub and everything above it to the main outputs. This significantly improves fidelity because the sub and mains aren't tripping over each other to reproduce the same frequency—and each component only has to reproduce frequencies to which it is ideally suited.

Your SP-8S also features auto-muting circuitry that automatically turns the subwoofer on when it senses a program signal while turning it off to conserve power when no signal is present. Various controls also allow you to adjust the performance of the SP-8S in conjunction with the rest of your system. While the SP-8S is easy to operate, we suggest that you take a few minutes to read the rest of this manual in order to derive optimal audio quality from your new subwoofer. Enjoy!

First Things First

In order to avoid risk of damage and insure optimum performance from your SP-8S Subwoofer, please take time to read this manual before you proceed to unpack and install it.

Unpacking

Remove the SP-8S from the carton carefully, paying extra attention to avoid touching or damaging the speaker cone. If the system is damaged in any way or does not contain all parts, contact your dealer immediately. We recommend that you save the carton in the event that you need to transport or ship the product in the future. Within the SP-8S package you should find:

- This manual
- The SP-8S Subwoofer
- One (1) standard AC Power cable

Correct Power Operation

Since the SP-8S contains its own amplifier, it must be connected to a power outlet using the detachable AC cable provided. Before connecting power, please make sure that the Voltage-Select Switch, located on the the speakers rear panel is set to the appropriate position, as described in the rear-panel features list appearing earlier in this manual.

Note: - WARNING! - Use of improper voltage/ selector switch combinations may result in hazardous conditions and/or damage to speaker components not covered by speaker warranty.

Positioning the Subwoofer in the Studio

In theory, the best position for the SP-8S subwoofer is midway between the satellite speakers, with its front facing forward and in the same plane as the fronts of the satellite speakers. However, due to the fact that low bass frequencies are somewhat non-directional, you may locate the SP-8S quite far from this position without any detrimental effect on the sound reproduction.

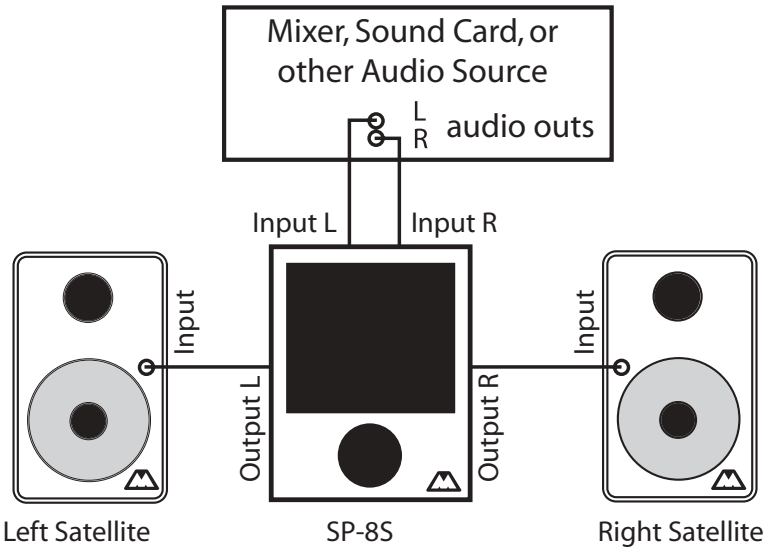
Each room is different in acoustic properties, so please feel free to experiment with placement. Different positions of the SP-8S in relation to walls will affect its efficiency, as well as the room's overall influence on the frequency response. You can compensate for this by readjusting the filter settings (see section, "Setting the Subwoofer LPF and the Satellites HPF").

Connecting the SP-8S and Your Main Speakers

Most applications will utilize the SP-8S's internal Stereo Bass Management System to realize maximum benefit. There are, however, two possible operational modes that you may use when connecting your SP-8S and your Mains, or "Satellite" stereo speakers, i.e., 1) using the SP-8S with bass management and 2) using the SP-8S without bass management.

Using the SP-8S with Stereo Bass Management

To take advantage of the SP-8S's internal Stereo Bass Management System, your main monitors become satellites of the subwoofer. Connect the left and right main or control room outputs of your mixer, sound card, or other audio source to the Input-L and Input-R jacks of the SP-8S (#6) respectively. (You may use either the XLR or TRS inputs, depending upon your cabling needs.) Then, connect Output-L and Output-R (#9) XLR jacks on the SP-8S to the inputs on the left and right satellites



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Once you have completed this setup, you must set the Subwoofer LPF control knob and the Satellites HPF control knob for your particular needs. Please see the section, "Optimizing the Rear Panel Settings" for information on how to do this. Also note that the HPF Bypass switch is set to "Off" in this scenario.

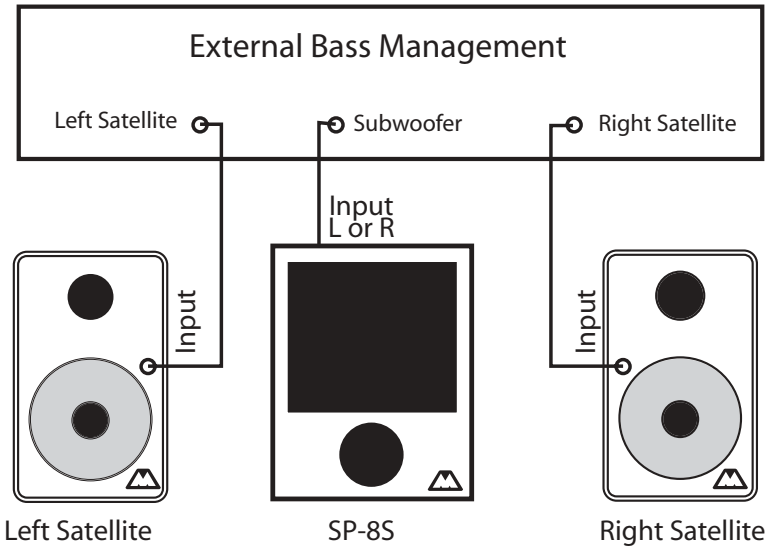
Using the SP-8S without Stereo Bass Management

You may wish to use the SP-8S with an existing external bass management system, or with bass management defeated on the SP-8S. See section, "Setting the HPF Bypass Switch" for more information on defeating bass management.

With bass management defeated, you may still use the speaker setup illustrated above. With the HPF Bypass switch set to "On," the L & R XLR Outputs will operate in a "Thru" mode, passing the original signal at the Input section directly

through to the outputs. In this setup, you will want to set the Subwoofer LPF control knob to the desired cutoff frequency for the SP-8S. The Satellites HPF control knob is not operational with the HPF Bypass switch set to “On.”

If you are using an external bass management device, or if you have an auxiliary or subwoofer output send, you may want to connect this directly to the SP-8S while connecting your main L & R outputs directly to your “Mains,” or stereo L & R speakers. In this instance, you may use either the Input-L or Input-R connections on the SP-8S.



In this setup, you will want to set the Subwoofer LPF control knob to the desired cutoff frequency for the SP-8S. Once again, the Satellites HPF control knob is not operational with the HPF Bypass switch set to “On.”

Connecting an Additional Subwoofer

If you have a large monitoring environment requiring greater subwoofer sound pressure, you can connect as many SP-8S cabinets as desired in a daisy chain. Simply connect the Extra Sub Output (located in the Output section) to the Input-L or Input-R input of second SP-8S (you may use the Extra Sub Output to connect to another brand of subwoofer). In this instance, you will want to have the HPF Bypass switch set to “On” on the second SP-8S subwoofer so that bass management is not repeated in the second sub.

Operation

Power Modes

The SP-8S's Power switch (#12) must be switched "On" in order for the SP-8S to operate. The subwoofer is designed to operate continuously in Standby mode, thereby conserving power. (The SP-8S uses less than 3 VA in standby mode.) When the Auto Power mode is engaged, the subwoofer automatically becomes operational when a signal is present and returns to Standby mode when a signal has not been detected for five minutes.

To operate in Auto Power mode, turn the Auto Power On/Off switch (#7) to the "On" position. The Power/Standby LED (#1) indicates the current status of the Auto Power circuit, glowing amber when in Standby and green when fully operational.

When Auto Power is engaged, it is not necessary to turn the Power switch on each time you wish to use the SP-8S. In special situations where you intend to play the system at very low volume or if Auto Power mode will not meet your application for any other reason, you can switch the Auto Power On/Off switch to the "Off" position. When Auto Power Mode is turned off you must turn the SP-8S on or off manually using the Power switch.

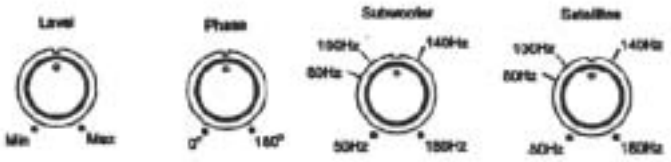
Note: If you intend not to use the system for a long period of time (such as a vacation), it is advisable to manually turn the system off via the Power switch.

Setting the HPF Bypass Switch

In normal operation, the HPF Bypass switch should be left in the "Off" position. When the HPF Bypass switch is in the Off position, the SP-8S Stereo Bass Management System is operational. In this case, the "Satellites" control knob, which sets the cutoff frequency of the HPF, is also operational.

When you want to bypass the SP-8S Stereo Bass Management System, engage the HPF Bypass by switching it to the "On" position. This will defeat the "Satellites" control knob and the HPF.

Optimizing the Rear Panel Settings



There are four control knobs on the rear of the SP-8S: “Level,” “Phase,” “Subwoofer” LPF cutoff frequency, and “Satellites” HPF cutoff frequency. These combined controls make it possible to optimally match the low bass frequencies from the subwoofer to your unique combination of satellite speakers, room characteristics and subwoofer position. Because of these variables, there is no single recipe for obtaining the best audio results. While you can certainly apply sound meters and other analysis equipment in establishing the right settings, most people use their ears and a few familiar recordings to determine the best settings.

Setting the Level Control

Use the Level control (#2) to adjust the volume of the subwoofer to properly match that of the satellite speakers. We suggest starting with this knob in the 12 o’clock position.

Note: Placement has a great deal to do with how the Level knob is set. If the SP-8S is placed on the floor against one wall in a normal room, for example, the resulting sound pressure may be as much as 3dB greater than if the subwoofer stands alone. Placement in a corner could add another 3dB of sound pressure over placement against a wall alone.

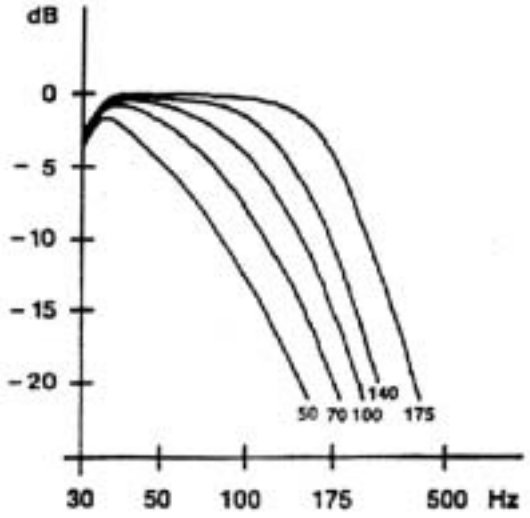
Setting the Phase Control

The purpose of the Phase control (#3) is to match the phase of the Satellite HPF cut off frequency to the phase of the Subwoofer LPF cutoff frequency. Adjust the Phase in order to make sure that the Subwoofer and Satellites are in phase at the selected crossover frequency. This will allow you to achieve the maximum sound pressure and the most accurate sound quality from the whole system.

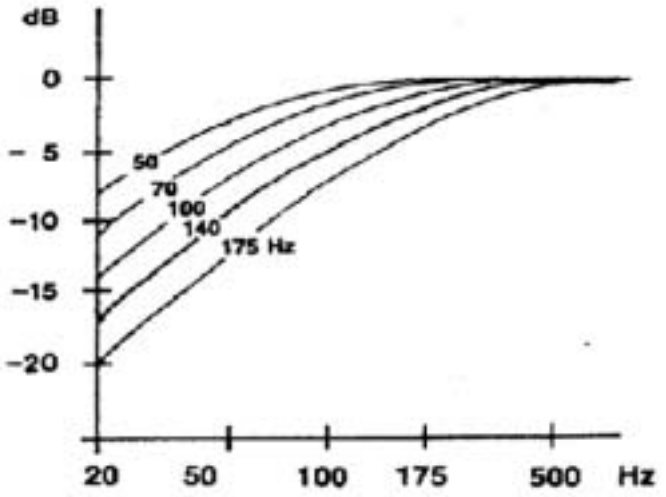
A little experimentation here may be in order. When signals are out of phase, they tend to cancel each other. This is most likely to occur when using bass management, in which case both the “Subwoofer” and “Satellites” cutoff frequencies are set to the same frequency settings (see the next two sections for more information). Rotate the Phase control knob until the SP-8S sounds the most robust, or return it to the 0 degree position if that is the optimum setting or if you hear no difference.

Setting the Subwoofer LPF and the Satellites HPF

The fundamental concept behind the Stereo Bass Management System is to isolate the upper and lower frequency ranges and direct them respectively to the component best suited to reproduce them. In order to accomplish this, the SP-8S utilizes a crossover network to determine how different frequency ranges are distributed to the subwoofer and satellite monitors.

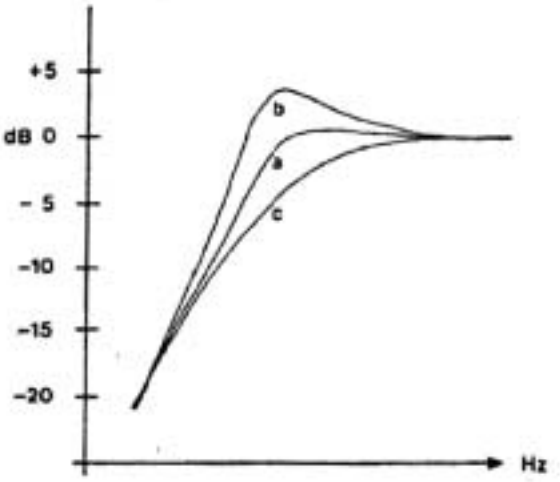


This crossover network consists of two main components: a 2nd order (12 db/octave) low-pass filter that limits the upper frequencies that the subwoofer has to reproduce (shown above), and a high-pass filter that limits the lower frequencies the satellite monitors have to reproduce (shown below). The Subwoofer LPF cutoff frequency (#4) and Satellite HPF cutoff frequency (#5) controls adjust frequencies of the low- and high-pass filters, respectively. Both have a range of 50 to 180 Hz.



You will need to use your ears to determine the best settings for these filters. The frequency markings shown next to each control knob may give you some guidelines. 50Hz (or above) might be used as a setting for music production. 80Hz is the proposed setting for Dolby Digital playback, while 100Hz is the proposed setting for THX.

If your satellites are properly damped at the bass response as shown in curve "a," set the two crossover frequencies to be identical. If your satellite speakers are under-damped (boomy sounding) as shown in curve "b," experiment with setting the Satellite crossover frequency control higher. If they are over-damped (dry sounding) as shown in curve "c," experiment with a lower setting. You may want to note the final control settings in case they are accidentally altered.



Note: In the event that you do choose an external form of bass management, you will likely need to set the Subwoofer LPF cutoff frequency to 180Hz. If you choose not to use the SP-8S internal bass management or an external form of bass management, you may want to begin with a Subwoofer LPF cutoff frequency of 120Hz and experiment up or down until you reach your desired sound.

Troubleshooting

Avoiding Problems with Turntables

Since the SP-8S can produce a considerable output level at low frequencies, acoustic feedback via a turntable can occur. To ensure that this is not the case, perform the following test at installation of the SP-8S.

Set up the equipment for playing a record. Place the stylus on a non-rotating record (disconnect the turntable power cord if necessary). Tap the turntable while gradually increasing the volume of your audio system. If you begin to hear a sustaining sound quality before you are able to advance the volume control to a setting representing loud listening, acoustic feedback is a problem. You may need to move either the turntable or the SP-8S to remedy this problem. Alternately, try placing an anti-vibration pad under the turntable.

Replacing the Fuse

The SP-8S is protected from power anomalies by a fuse. In the event that the SP-8S does not seem to have power even though connected to AC, check the condition of the fuse in the fuse holder (#11). If the fuse needs replacing, it is critical to use only a fuse with an identical rating.

Technical Specs

SP-8S Specs:

- Type: Bass-reflex powered subwoofer
- Woofer Driver : 8-inch mineral-filled polypropylene cone with high-temperature voice coil and damped rubber surround
- Frequency Response : 30Hz – 180 Hz
- Low-Pass Filter : Butterworth –12dB/octave <325Hz, -24dB/octave > 325Hz
- Crossover Frequency: Adjustable 50Hz - 180Hz
- Input Sensitivity: 89dB
- Amplifier Power: 100W @100Hz, 4 ohm, 0.1% THD
- Dynamic Power: 120W
- S/N Ratio: > 100dB below full output, 100Hz
- Input Connectors: Two XLR balanced inputs; two TRS balanced/ unbalanced inputs
- Output Connectors: Two XLR balanced outputs for satellites, one XLR balanced output for additional subwoofer
- Controls: Level; Phase; Subwoofer Frequency; Satellite Frequency
- Switches: Auto on/off; Satellite high-pass output bypass
- Input Impedance: 20k ohms balanced, 10k ohms unbalanced
- Input Sensitivity: 150mV input produces full output with volume control at maximum
- Protection: Over temperature, turn-on/off transient, subsonic filter, external mains fuse, ALC (avoid from hard clipping)
- Indicator: Power On (green) or Stand-by/Protection (Amber)
- Power Requirements: Dual-voltage (selectable by rear-panel switch) for either 115V/~60Hz, 230V/~50Hz; powered via detachable 3-circuit line cord
- Cabinet: Vinyl-laminated MDF
- Dimension: 15.6 in. (h) x 10.63 in. (w) x 12 in. (d)
- Shipping Weight: 36 lbs.

Remarks: Above specifications are subject to change without notice.

One Year Warranty

MIDIMAN warrants that this product is free of defects in materials and workmanship under normal use for a period of one year from purchase date, so long as the product is: owned by the original purchaser; the original purchaser has proof of purchase from an authorized MIDIMAN dealer; and the purchaser has registered his/her ownership of the product by sending in the completed warranty card.

This warranty explicitly excludes any included external non-integrated power supplies and cables which may become defective as a result of normal wear and tear.

In the event that MIDIMAN receives written notice of defects in materials or workmanship from such an original purchaser, MIDIMAN will either replace the product, repair the product, or refund the purchase price at its option. In the event any repair is required, shipment to and from MIDIMAN and a nominal handling charge shall be born by the purchaser. In the event that repair is required, a Return Authorization number must be obtained from MIDIMAN. After this number is obtained, the unit should be shipped back to MIDIMAN in a protective package with a description of the problem and the Return Authorization clearly written on the package.

In the event that MIDIMAN determines that the product requires repair because of user misuse or regular wear, it will assess a fair repair or replacement fee. The customer will have the option to pay this fee and have the unit repaired and returned, or not pay this fee and have the unit returned unrepaired.

The remedy for breach of this limited warranty shall not include any other damages. MIDIMAN will not be liable for consequential, special, indirect, or similar damages or claims including loss of profit or any other commercial damage, even if its agents have been advised of the possibility of such damages, and in no event will MIDIMAN's liability for any damages to the purchaser or any other person exceed the price paid for the product, regardless of any form of the claim. MIDIMAN specifically disclaims all other warranties, expressed or implied. Specifically, MIDIMAN makes no warranty that the product is fit for any particular purpose.

This warranty shall be construed, interpreted, and governed by the laws of the state of California. If any provision of this warranty is found void, invalid or unenforceable, it will not affect the validity of the balance of the warranty, which shall remain valid and enforceable according to its terms. In the event any remedy hereunder is determined to have failed of its essential purpose, all limitations of liability and exclusion of damages set forth herein shall remain in full force and effect.

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