

ADCOM[®]
details you can hear

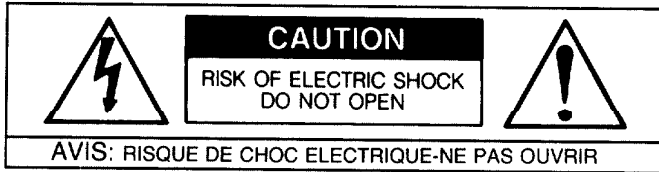
GSP-560

Surround Sound
Processor/Amplifier

OWNER'S MANUAL

THE FOLLOWING PRECAUTIONS AND SAFETY INSTRUCTIONS ARE REQUIREMENTS OF UL AND CSA SAFETY REGULATIONS

Warning: To reduce the risk of fire or electric shock, do not expose this unit to rain or moisture.



The graphic symbol of a lightning flash with an arrow point within a triangle signifies that there is dangerous voltage within the unit and it poses a hazard to anyone removing the cover to gain access to the interior of the unit **Only qualified service personnel should make any such attempt.**



The graphic symbol of an exclamation point within an equilateral triangle warns a user of the device that it is necessary to refer to the instruction manual and its warnings for proper operation of the unit



Do not place this unit on an unstable cart, stand, tripod, bracket, or table. The unit may fall, causing serious injury to a child or adult, and serious damage to the unit. Use only with a cart, stand, tripod, bracket, or table recommended by the manufacturer, or sold with the unit. Any mounting of the device should follow the manufacturer's instructions, and should use a mounting accessory recommended by the manufacturer.

Read all the safety and operating instructions before connecting or using this unit

Retain this notice and the owner's manual for future reference

All warnings on the unit and in its operating instructions should be adhered to

All operating and use instructions should be followed

Do not use this unit near water, for example, near a bathtub, washbowl, kitchen sink, laundry tub, in a wet basement, or near a swimming pool

The unit should be installed so that its location or position does not interfere with its proper ventilation. For example, it should not be situated on a bed, sofa, rug, or similar surface that may block the ventilation openings, or placed in a built-in installation, such as bookcase or cabinet, that may impede the flow of air through its ventilation openings.

The unit should be situated away from heat sources such as radiators, heat registers, stoves, or other devices (including amplifiers) that produce heat

The unit should be connected to a power-supply outlet only of the voltage and frequency marked on its rear panel

The power-supply cord should be routed so that it is not likely to be walked on or pinched, especially near the plug, convenience receptacles, or where the cord exits from the unit

Clean unit only as recommended in its instruction manual

The power-supply cord of the unit should be unplugged from the wall outlet when it is to be unused for a long period of time

Care should be taken so that objects do not fall, and liquids are not spilled, into the enclosure through any openings

This unit should be serviced by qualified service personnel when

- A The power cord or the plug has been damaged; or
- B Objects have fallen, or liquid has been spilled, into the unit, or
- C The unit has been exposed to rain, or liquids of any kind, or
- D The unit does not appear to operate normally, or exhibits a marked change in performance; or
- E The device has been dropped, or the enclosure damaged

**DO NOT ATTEMPT SERVICING OF THIS UNIT YOURSELF.
REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.**

ATTENTION

POUR PRÉVENIR LES CHOCS ÉLECTRIQUES NE PAS UTILISER CETTE FICHE POLARISÉE AVEC UN PROLONGATEUR, UNE PRISE DE COURANT OU UNE AUTRE SORTIE DE COURANT, SAUF SI LES LAMES PEUVENT ÊTRE INSÉRÉES À FOND SANS EN LAISSER AUCUNE PARTIE À DÉCOUVERT

CAUTION

TO PREVENT ELECTRIC SHOCK DO NOT USE THIS POLARIZED PLUG WITH AN EXTENSION CORD, RECEPTACLE OR OTHER OUTLET UNLESS THE BLADES CAN BE FULLY INSERTED TO PREVENT BLADE EXPOSURE

CAUTION

POWER LINES

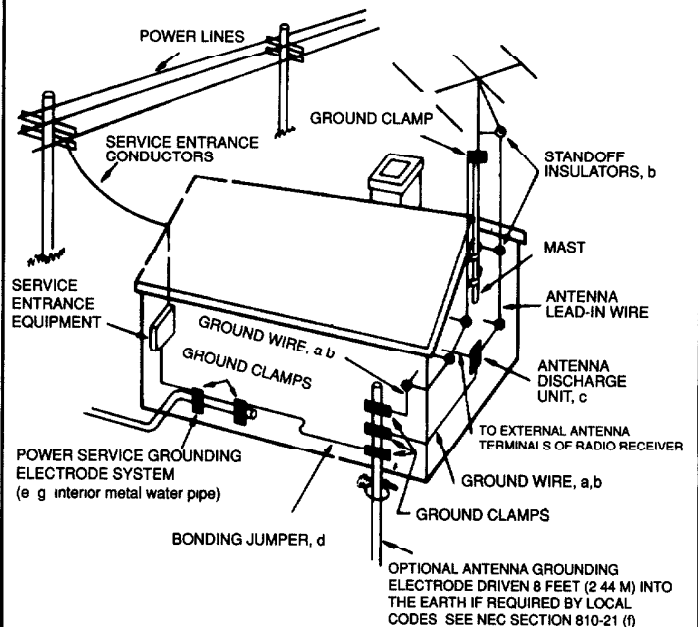
Any outdoor antenna must be located away from all power lines.

OUTDOOR ANTENNA GROUNDING

If an outside antenna is connected to your tuner or tuner preamplifier, be sure the antenna system is grounded so as to provide some protection against voltage surges and built-up static charges. Section 810 of the National Electrical Code, ANSI/NFPA No. 70-1984, provides information with respect to proper grounding of the mast and supporting structure, grounding of the lead-in wire to an antenna discharge unit, size of grounding conductors, location of antenna discharge unit, connection to grounding electrodes, and requirements for the grounding electrode.

- a. Use No.10 AWG (5.3 mm²) copper, No.8 AWG (8.4 mm²) aluminum, No.17 AWG (1.0 mm²) copper-clad steel or bronze wire, or larger, as a ground wire
- b. Secure antenna lead-in and ground wires to house with stand-off insulators spaced from 4-6 feet (1.22-1.83 m) apart.
- c. Mount antenna discharge unit as close as possible to where lead-in enters house.
- d. Use jumper wire not smaller than No.6 AWG (13.3 mm²) copper, or the equivalent, when a separate antenna-grounding electrode is used. See NEC Section 810-21 (j).

EXAMPLE OF ANTENNA GROUNDING AS PER NATIONAL ELECTRICAL CODE INSTRUCTIONS CONTAINED IN ARTICLE 810 - RADIO AND TELEVISION EQUIPMENT



NOTE TO CATV SYSTEM INSTALLER

This reminder is provided to call the CATV system installer's attention to Article 820-22 of the National Electrical Code that provides guidelines for proper grounding and, in particular, specifies that the cable ground shall be connected to the grounding system of the building, as close to the point of cable entry as practical

INTRODUCTION

Congratulations on your decision to purchase the ADCOM GSP-560 Surround Sound Processor/Amplifier. We think you've made a wise choice. The GSP-560 is the first product of its type to combine advanced **Dolby Pro Logic** decoding circuitry, simplified controls and award winning amplification. In short, the GSP-560 brings audiophile standards to the world of home theater.

Enjoy your movies!

A NOTE ON YOUR OWNER'S MANUAL

In a hurry? The **QUICK START** Section will soon have you up and running. However, we strongly recommend that you refer to the expanded instructions in **EVERYTHING YOU NEED TO KNOW** to "fine tune" your system for enhanced enjoyment once everything is working.

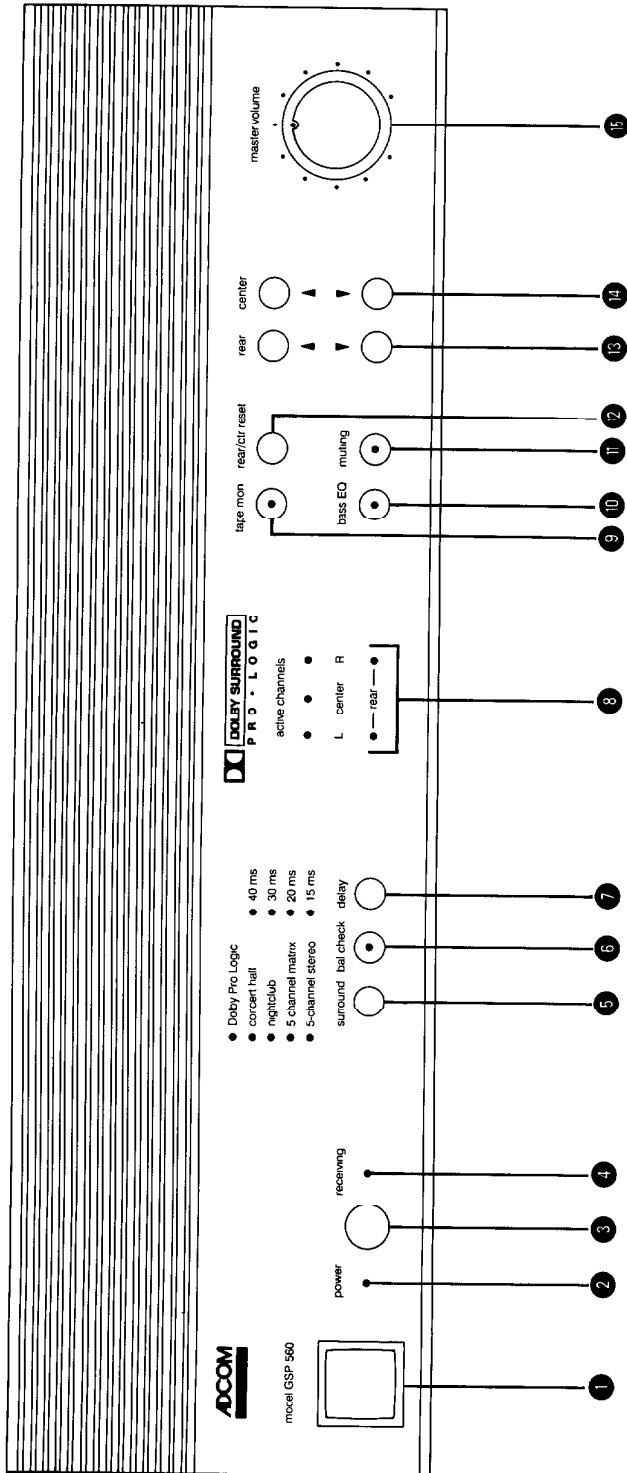
If you're more patient or want more background, start with **EVERYTHING YOU NEED TO KNOW**. You'll be rewarded with a much better understanding of how the GSP-560 works and what its capabilities are.

This unit is manufactured under license from Dolby Laboratories Licensing Corporation. It is additionally licensed under one or more of the following patents. U.S. number 3,959,590; Canadian numbers 1,004,603 and 1,037,877. "Dolby," "Pro Logic," and the double-D symbol are trademarks of Dolby Laboratories Licensing Corporation.

FRONT and REAR PANELS

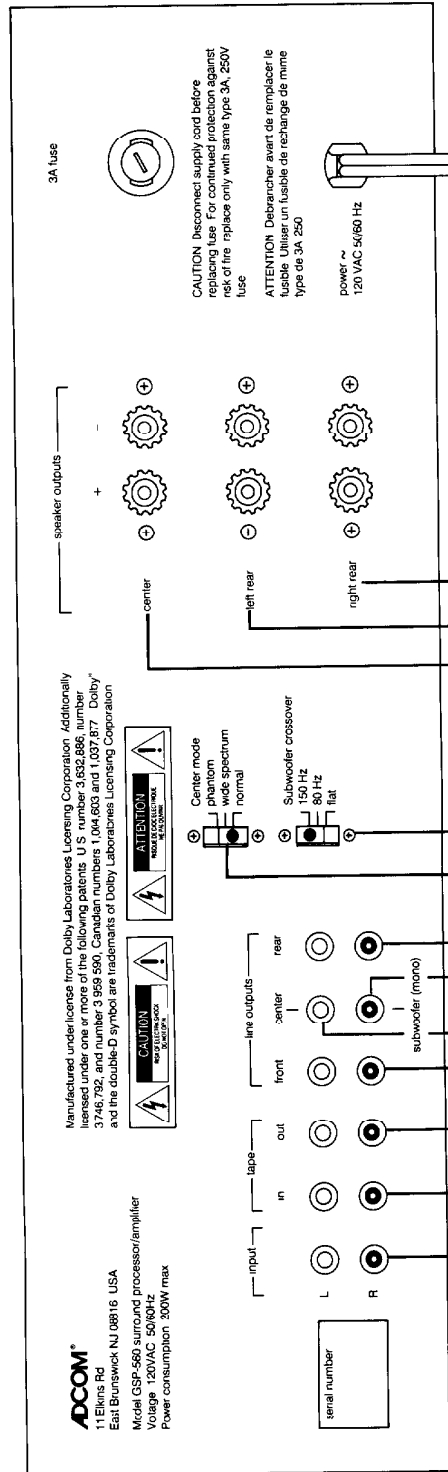
We carefully designed the GSP-560 with your enjoyment in mind. Controls are at a minimum and we've arranged them in functional groups so that their use is almost intuitive. The rear panel also benefits from the same design goals. Take a moment to familiarize yourself with them. You'll find references to the circled ID numbers throughout the rest of this manual.

GSP - 560 FRONT PANEL DIAGRAM



- 1 Power On/Off
- 2 Power Indicator LED
- 3 IR Sensor Window
- 4 Receiving LED
- 5 Surround Selector
- 6 Balance Check Selector
- 7 Delay Selector Pushbutton
- 8 Active Channel Display LEDs
- 9 Tape Monitor
- 10 Bass EQ
- 11 Muting
- 12 Rear/Center Reset
- 13 Rear Level - Up/Down
- 14 Center Level - Up/Down
- 15 Master Volume

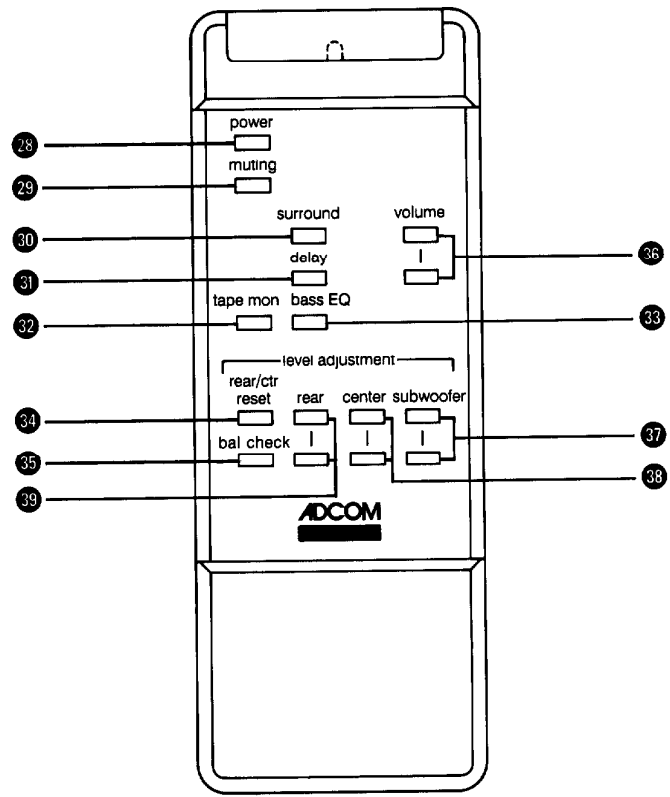
GSP - 560 REAR PANEL DIAGRAM



- 16 Main Inputs (L & R)
- 17 Tape Inputs (L & R)
- 18 Tape Outputs (L & R)
- 19 Line Outputs - Front (L & R)
- 20 Line Output - Center
- 21 Line Output - Subwoofer (mono)
- 22 Line Outputs - Rear (L & R)
- 23 Center Mode Switch
- 24 Subwoofer Crossover Switch
- 25 Speaker Output - Center
- 26 Speaker Output - Left Rear
- 27 Speaker Output - Right Rear

GSP - 560 REMOTE CONTROL

- 28 Power On/Off
- 29 Muting
- 30 Surround
- 31 Delay
- 32 Tape Monitor
- 33 Bass EQ
- 34 Rear/Center Reset
- 35 Balance Check
- 36 Volume - Up/Down
- 37 Subwoofer Level - Up/Down
- 38 Center Level - Up/Down
- 39 Rear Level - Up/Down



QUICK START

- 1) Unpack the GSP-560 carefully **MAKE SURE YOU REMOVE THE REMOTE CONTROL FROM THE BOX.** Put the foam cocoon and other packing materials back in the carton and save it if at all possible
- 2) Select a stable, vibration-free location for the GSP-560 as close as possible to your other audio and video components. **REMEMBER THAT THE GSP-560 HAS THREE HIGH CURRENT AMPLIFIERS INSIDE!** Make sure you have enough air space for proper ventilation.
- 3) Turn off all the other components in your system. That means everything. And don't plug the GSP-560 into the AC outlet yet
- 4) If your system's control center (a receiver, integrated amplifier, or preamplifier) has connections designed for an external signal processor, follow these steps. If not, go to **QUICK START** Paragraph 5 below.
 - a) Connect your control center's Processor Out jacks to the GSP-560's "**Main Input**" jacks 16. These are to the far left of the jack array on the GSP-560's rear panel.
 - b) Connect your control center's Processor In jacks to the GSP-560's "**Line Outputs - Front**" 19 jacks
 - c) Activate the control center's Processor loop by engaging the appropriate switch
- 5) If your control center does not have external processor connections, use the tape jacks instead
 - a) If you have a tape deck connected to your control center's Tape In and Tape Out jacks (sometimes marked Play and Record respectively), remove these connections.
 - b) Connect your control center's Tape Out jacks to the GSP-560's "**Main Input**" jacks 16. These are to the far left of the jack array on the GSP-560's rear panel.
 - c) Connect the GSP-560's "**Line Outputs - Front**" 19 to your control center's Tape In jacks.
 - d) Reconnect your tape deck to the GSP-560's "**Tape In**" 17 and "**Tape Out**" 18 jacks

- e) Put the Tape Monitor switch on your control center to the "In" or active position
 - f) Use the GSP-560's "**Tape Monitor**" pushbuttons (9 on the front panel and 32 on the remote controller) as needed to play or monitor a tape
- 6)** If you have a center channel speaker
- a) Connect the speaker to the GSP-560's "**Speaker Outputs - Center**" binding posts 25. Make sure you connect the "+" or red terminal on the GSP-560 to the "+" terminal on the speaker. Then connect the GSP-560's "-" or black terminal to the "-" terminal on the speaker
 - b) Make sure the "**Center Mode**" switch 23 on the rear panel is in either the "**Wide**" or "**Normal**" position. (See **EVERYTHING YOU NEED TO KNOW** for details.)
- 7)** If you do NOT have a center channel speaker, make sure that the "**Center Mode**" switch 23 is in the "**Phantom**" position
- We strongly suggest a center channel speaker. You'll find it makes dialog more intelligible and increases system flexibility. (Again, see **EVERYTHING YOU NEED TO KNOW** for details.)
- 8)** Connect the two rear speakers to the "**Speaker Outputs - Left Rear**" 26 and "**Speaker Outputs - Right Rear**" 27 binding posts respectively. Observe the same polarity continuity ("+" to "+" and "-" to "-") outlined in Paragraph 6a above
- 9)** Make sure the "**Master Volume**" control on the GSP-560 15 and the gain control on the control center are turned down
- 10)** Plug the GSP-560 into an AC outlet and turn it on by pressing the "**Power**" switch 1. Then turn the other system components on
- 11)** Turn your control center's gain control to the position you normally use for comfortable listening.
- 12)** Turn the GSP-560's "**Master Volume**" 15 control clockwise to about 10 o'clock. **THIS ISN'T A HARD AND FAST RULE** — you'll know if you need to move this adjustment up or down a bit higher after you've started Step 14 below
- 13)** Verify that you're in **Dolby Pro Logic** mode by making sure that the appropriate LED (the one to the left of "Dolby Pro Logic Surround") is lighted. If some other mode is indicated, press the "**Surround**" pushbutton 5 until the Dolby ProLogic LED lights
- 14)** Activate the GSP-560's Balance Check circuit by pressing the "**Bal Check**" pushbutton 6 on the front panel
- 15)** Adjust the GSP-560's center and rear channel outputs so that the sequential "rushing water" noise is equally loud when heard through each speaker. Sit in your favorite chair and use the remote control for these adjustments. (See Paragraph 15 in **EVERYTHING YOU NEED TO KNOW** for details.)
- 16)** Turn off the sequential test tone by pushing the "**Bal Check**" 6 control again
- 17)** Remember that the GSP-560's "**Master Volume**" control is now the volume control for the entire system. If you inadvertently move your control center's gain adjustment after you've gone through the balancing process outlined in Paragraph 15 above and detailed in Paragraph 15 of **EVERYTHING YOU NEED TO KNOW**, you'll have to rebalance for optimal listening
- 18)** Select your source material and enjoy!

EVERYTHING YOU NEED TO KNOW

This section uses the same paragraph numbers as the preceding **QUICK START** section. We hope you find the additional information useful and enjoyable.

1) PACKING MATERIAL

As part of ADCOM's quality control procedures, your GSP-560 was carefully inspected for physical imperfections and electrical performance before it left our plant. In the event of physical damage, notify your ADCOM dealer immediately and request help in filing a written damage claim.

THE RIGHT TO A CLAIM AGAINST A COMMON CARRIER CAN BE FORFEITED IF THE CARRIER IS NOT NOTIFIED PROMPTLY IN WRITING AND IF THE SHIPPING CARTON AND PACKING MATERIALS ARE NOT AVAILABLE FOR INSPECTION. SAVE ALL PACKING MATERIALS UNTIL THE CLAIM HAS BEEN SETTLED.

The foam cocoon and carton were specifically designed to protect your GSP-560. Even though space is often at a premium in today's homes, we recommend that you save the packing materials in case you need to ship the unit anywhere in the future.

2) INSTALLING

The GSP-560 is heavier than you might expect due to the high capacity toroidal transformer and large heat sink assembly for the power amplifiers. A stable supporting surface is necessary. We won't go into the endless and mostly unproven theories about extraneous vibrations and their deleterious effects on audio/video components except to say that the more massive and firmly anchored the supporting surface is, the less likely you'll be to experience any problems.

Proper airflow is important. Don't block the ventilation slots on the bottom plate and top cover of the unit. The feet will insure enough air space below the GSP-560 for adequate circulation. **DO NOT STACK OTHER UNITS ON TOP OF THE GSP-560.** We recommend 4" of open space above the GSP-560 to allow for cooling.

3) SAFETY

Turning off system components before initial installation and connection avoids the nasty buzzes, thumps and other sounds of electronic distress that occasionally accompany hooking up components. Remember to give any power amplifiers sufficient time to fully discharge their power supplies before you begin your connections. 30 seconds after turn-off is usually sufficient.

4-5) LINE LEVEL CONNECTIONS

Patience and common sense will help to avoid almost all of the errors you might make during the initial installation. Remember to connect Left Channel to Left Channel and Right Channel to Right Channel, etc. The jacks on all ADCOM products follow conventional color coding: **White for Left Channel** and **Red for Right Channel**. Most interconnect cables observe this general guideline: the connectors on each end of the cable are usually color coded.

We've received many questions about the sonic attributes of premium interconnect cables. We do suggest that you make sure any cable you use is a "low capacitance" design. (Most are.) Your ADCOM salesperson will be happy to make cost-effective recommendations based on individual component characteristics and system complexity.

6) CENTER CHANNEL SPEAKER CONNECTIONS

The "Center Mode" switch  has three positions. The bottom two, "Wide Spectrum" and "Normal," are important here.

"Wide Spectrum" sends a full range signal to the center channel speaker. Use this position when your center channel speaker is capable of extended bass reproduction and is acoustically similar to your main left and right speakers.

"Normal" restricts bass output (below 100 Hz) to the center channel speaker and redirects it to the main left front and right front full range speakers. Use this position when you've chosen a smaller center channel speaker that might not be capable of extended bass reproduction. Under these circumstances, "Normal" reduces speaker distortion and improves center channel clarity.

NOTE: The center channel speaker is an essential component in a Dolby Pro Logic equipped home theater system. It should be placed as close to your TV screen as is physically possible and must be magnetically shielded to prevent image distortion and possible damage to your picture tube.

In conjunction with Dolby Pro Logic's "adaptive matrix" decoding, the center channel speaker improves coherency by anchoring the soundfield to the screen's image. Dialog, for example, always appears to be coming from your TV regardless of where you're sitting in the room.

7) NO CENTER CHANNEL SPEAKER?

If you're not using a center channel speaker, place the "Center Mode" switch 23 in the top or "Phantom" position. This position splits the Pro Logic decoder's center channel output between both main speakers to synthesize a center channel image.

The "Phantom" position provides an excellent interim step in creating a home theater system. It allows you to benefit from the improved localization inherent in Pro Logic decoding. However, the "Phantom" position is not as effective as using a center channel speaker. Initial sonic images are more vague and they shift as you move about the room rather than being "locked" to the TV screen. We strongly recommend a center channel speaker. Your ADCOM dealer will be pleased to recommend a suitable choice.

8) SOME CONSIDERATIONS FOR REAR (SURROUND) SPEAKERS

Rear speakers are necessary for full enjoyment of Dolby Surround encoded material. However, the rear output of the Pro Logic decoder is bandwidth limited. This means that rear speakers, at least when reproducing Pro Logic processed signals, don't receive audio information much lower than 100 Hz or much higher than 7 kHz.

This has led some people to contend that surround speakers can be inexpensive "afterthoughts" in a home theater system. Such is definitely NOT the case. While Pro Logic processed rear channel information doesn't contain extended bass or treble, the surround speakers should have fairly flat frequency response over the required bandwidth. Inexpensive speakers usually exhibit very uneven or "peaky" response that can alter the effects intended by the creators of Dolby Surround encoded material.

Another argument against very inexpensive surround speakers is that the GSP-560 is designed with two operating modes ("5 Channel Matrix" and "5 Channel Stereo") that send full-bandwidth signals to the rear channels. Here, severe speaker limitations will be even more obvious and detrimental. Again, your ADCOM dealer will show you appropriate choices.

Once you've chosen your rear channel speakers, the next issue is placement - where do you put them? Unfortunately there are no hard and fast rules to make your life easier here. Generally, the surround speakers should not be aimed directly at you. Common practice has them widely spaced high on the rear wall of your entertainment room. A variation? Place them on the side walls, slightly behind and above your favorite listening and watching position. Some experimentation will probably be necessary. Enjoy!

9) VOLUME CONTROL POSITION

Nothing to add here except to point out that this is a standard safety procedure designed to protect amplifiers, speakers and, of course, your ears in the unlikely event of a mis-matched connection or a malfunctioning component.

10) INITIAL TURN-ON

When you plug the GSP-560 into an AC outlet, an internal microprocessor automatically activates to control initial operation. Pushing the front panel "Power" switch 1 or the "Power" button on the remote controller 23 turns the unit on. The "Power Indicator LED" 2 changes from yellow (standby status) to red (fully operational status,) the red LED on the "Master Volume" control 5 turns on, and all processor and amplifier stages are fully energized. After a brief interval to insure stable operation, relays connect the line level stages to the rear panel RCA jacks and power amplifier inputs. Note that ADCOM does not place relays at the output of the amplifiers themselves. Our considerable experience suggests that amplifier output relays inevitably malfunction or degrade sonic performance.

When the GSP-560 is turned off, the relays open immediately to mute all line outputs, including the internal connections to the power amplifiers. This protects against any transient pops that may be unsettling.

11) SOME NOTES ON VOLUME CONTROL USE

Once you've connected the GSP-560, a major functional change occurs in your system

The volume control of your original control center (preamplifier, integrated amp, or receiver) no longer adjusts total system volume. Instead, that control now adjusts only front channel levels — the sound going to the left front and right front speakers. If you turn it down all the way, you'll still have output from the center and rear channels. Turning it up all the way overshadows the center channel and therefore defeats the main benefit of ProLogic decoding. Continued use of this control will also alter the relative contribution of the rear channels to the overall soundfield, thereby reducing the system's ability to recreate the sonic experience intended by the soundtrack's creators.

In effect, the level control on your system's original control center **SHOULD BE SET ONCE, THEN IGNORED**. The best way of doing this is to turn your control center's gain control to the position you previously associated with comfortable to slightly loud listening. All subsequent adjustments will be done via the GSP-560's front panel "**Master Volume**" control ❶ or the pushbuttons on the GSP-560's hand held remote controller ❸6.

12) INITIAL LEVEL ADJUSTMENTS

Because the GSP-560's "**Master Volume**" control increases or decreases levels to **ALL** outputs simultaneously, it is the new level control for the entire system.

However, you still must adjust the relative levels of the center and rear channels (subwoofer, too, if you are using one) before you're completely ready.

To do this, turn the "**Master Volume**" control ❶ to about 10 o'clock. **THIS ISN'T A HARD AND FAST RULE** — you'll know if you need to change this adjustment a bit after you've started the procedure detailed in Paragraph 15 below.

13) SELECT DOLBY PRO LOGIC MODE

Without going into endless details, the Pro Logic decoding IC in the GSP-560 is designed to accurately recreate the original soundfield intended by the creators of the Dolby Surround encoded media you will be playing.

14) INTRODUCTORY NOTES ON THE BALANCE CHECK CIRCUIT

The **Balance Check** circuit does exactly what its name implies. An internal signal generator interrupts the normal audio information and sends a test tone to all loudspeakers sequentially. The test tone is a filtered broadband signal close in overall balance to the normal distribution of tones encountered in real life.

DO NOT PLAY ANY OTHER SOURCE THROUGH THE GSP-560 WHEN USING THE BALANCE CHECK CIRCUIT: if you need to check balances when playing a source, simply put the source on "Pause," go through the balance check routine explained in Paragraph 15, then resume playing the source.

15) USING BALANCE CHECK

The goal of the balance check circuit is to enhance the spatial accuracy of your playback system by matching the acoustic levels of all system speakers in your room as closely as possible. Once you've done this, any level differences from left to center or from center to rear, etc., are differences intended by the creators of the original soundtrack, not some unwanted aberration caused by the acoustics of your room.

BECAUSE EVERY ROOM IS ACOUSTICALLY DIFFERENT AND THE RELATIVE CHANNEL-TO-CHANNEL LEVELS WILL CHANGE AS YOU MOVE AROUND THE ROOM, WE STRONGLY RECOMMEND THAT YOU PERFORM THIS CHECK FROM YOUR FAVORITE CHAIR USING THE GSP-560'S HAND HELD REMOTE CONTROLLER.

- a) Press the "**Bal Check**" button on the hand held remote controller ❸5. The tone generator will "step" through all speakers sequentially beginning with the left front. After approximately two seconds of left front output, the tone will shift to the center channel.
- b) Use the "**Center Level Up/Down**" pushbuttons ❸8 to adjust center channel output to match left channel volume as closely as possible.

- c) After approximately two seconds, the center channel will mute and you'll hear the test tone through the right front speaker, probably at the same level as that of the left channel. If left and right levels match, do nothing.

If there is a substantial difference between left front and right front outputs, **correct the difference with your control center's balance control**. Significant placement differences for left and right front speakers may cause this imbalance. Ideally, these speakers should be spaced symmetrically on either side of the TV screen. If room decor makes this placement difficult, or if you prefer to sit off-center from the TV screen, you may need left-right balance correction.

- d) The test tone will shift to the rear speakers. First, make sure that both rear speakers are functioning, then use the **"Rear Level Up/Down"** pushbuttons (39) to adjust the rear channel output to match that of the front left, center, and front right speakers.

Remember to use the **"Active Channel Display"** (8) on the GSP-560's front panel as a visual reference. As the tones cycle through all speakers, the **Active Channel Display** will indicate which speaker is currently receiving the test tone.

You'll probably need to let the Balance Check test tones cycle through all speakers three or four times until you've matched levels closely. Don't worry about how quickly you can accomplish this balance adjustment — just take your time and do it carefully.

If you find yourself a bit intimidated by this procedure, remember that you begin again simply by pushing the **"Rear/Center Reset"** button (34). This will return all your gain adjustments to a neutral reference point. From here, you can start the level calibration process again. The front panel **"Rear/Center Reset"** button (12) serves the same purpose.

One note of caution: Do not use either **"Rear/Center Reset"** button after you're satisfied with channel-to-channel balances. They are intended only to provide a reference point from which to START the balancing procedure detailed here.

16) RESUMING NORMAL OPERATION

Push the "Bal Check" button (35) again to turn off the test tone. The GSP-560 is now ready for normal operation. See Paragraph 19 below for additional information on choosing the proper Surround and Delay options.

17) MASTER VOLUME OPERATION

When you use the remote controller for volume, the GSP-560 will give you two visual clues that the circuit is operating. First, the "Receiving" LED on the front panel (4) will flash. The LED on the "Master Volume" knob (15) will change color from red to green as the knob moves in response to commands from the hand held controller. However, the LED will NOT change color if you move the "Master Volume" knob by hand.

18) GETTING THE MOST OUT OF YOUR FAVORITE SOURCE MATERIAL

The GSP-560 is an enormously flexible unit and will increase your enjoyment of a wide variety of audio and video sources. This section is the most subjective in the entire Owner's Manual. Feel free to take the suggestions here as starting points for your own experimentation. Above all, enjoy!

- a) Choosing the proper Operating Mode

The GSP-560 provides six operating modes selected by the **"Surround"** pushbutton on the front panel (5) or the remote controller (31). These are **Dolby Pro Logic**, **Concert Hall**, **Nightclub**, **5 Channel Matrix**, **5 Channel Stereo** and **Bypass** (2 channel stereo). Each of the first five modes is indicated by an LED to the left of each mode ID. In **"Bypass"** mode, no Mode LED lights.

DOLBY PRO LOGIC is the preferred mode for properly processing **Dolby Surround** encoded video soundtracks, a growing number of CDs, and even the audio portion of some video games! In this mode, the GSP-560 presents a spatially correct soundstage with precise lateral imaging and front to back depth.

Rear channel delay choices: 30, 20, and 15 milliseconds (See 18B below for more information on delay.)

CONCERT HALL, recreates a fairly big and acoustically reverberant environment well suited for playback of full orchestral works and other music that is usually performed in large indoor spaces

Rear channel delay choices: 40 and 30 milliseconds.

NIGHTCLUB, synthesizes a smaller and more intimate soundfield ideal for many types of jazz and popular music.

Rear channel delay choices: 20 and 15 milliseconds

5 CHANNEL MATRIX is ideal for mono sources — the soundtracks of older videotapes, for example — and creates a dimensionally enhanced, diffuse soundfield for increased enjoyment

No rear channel delay is available in this mode

5 CHANNEL STEREO differs from the **MATRIX** mode in that no dimensional enhancement is performed. **5 CHANNEL STEREO** simply sends a mono (L + R) signal to the center channel speaker, Left Front information to the Left Rear speaker and Right Front data to the Right Rear.

No rear channel delay is available in this mode

b) Choosing the proper rear channel delay setting

Rear channel delay (available only in **Dolby Pro Logic**, **Concert Hall** and **Nightclub** modes) is a technique that has been used in consumer audio equipment since the early '70s. Sometimes confused with the various quadraphonic technologies popular in the mid '70s, time delay is a much more defined and exact process.

Time delay takes front channel information, “stores” it for a brief period of time (usually less than one tenth of a second), and then sends it to the rear speakers. While a useful technique to enhance apparent spaciousness and ambience, time delay also serves a specific purpose in Dolby Surround playback: it prevents front channel information (usually dialog) from “leaking” into the rear speakers. The reasons for this benefit are complex and based on a psychoacoustic effect called “masking.” Dolby Surround decoding limits time delay to a maximum of 30 milliseconds in order to optimize the intelligibility of the dialog information in a video soundtrack.

If you delay rear channel information longer than 30 milliseconds, you gradually lose the “masking” effect and become aware of a growing discontinuity between front and rear outputs. Eventually, you’ll perceive the rear channel output as a discrete echo rather than as an integral part of a coherent soundfield.

Somewhere in the middle of this range of effects, time delay has some interesting and useful applications. For example, longer delay times often give us the impression that we are in a larger room — the longer the delay, the larger the apparent space is. If we’re not particularly concerned about the “masking effect” necessary for proper Dolby Surround processing, we can experiment.

THE PRACTICAL APPLICATION OF THIS INFORMATION IS SIMPLE: IF YOU WANT TO CREATE A SMALLER ACOUSTICAL ENVIRONMENT, CHOOSE A SHORT DELAY TIME. IF YOU WANT TO BETTER APPROXIMATE THE ACOUSTICS OF A LARGER SPACE, CHOOSE A LONGER DELAY TIME. That’s why, for example, the **Concert Hall** mode allows you to choose either 40 or 30 milliseconds delay and the **Nightclub** position restricts your choices to 20 or 15 milliseconds.

19) BASS BOOST AND SUBWOOFER USE: INCREASING THE THUNDER

The “**Bass EQ**” circuit, activated by either the front panel or remote controller buttons (10 and 33 respectively) increase bass content in Left Front and Right Front outputs by approximately 8 dB at 80 Hz. This adds substantial low frequency energy or “punch” to music or a video soundtrack.

For even more bass output capability, the GSP-560 has a separate “**Subwoofer**” line output (21) for connection to a dedicated separate amplifier/subwoofer combination or a self-contained powered subwoofer.

When using this output, make sure to adjust the “**Subwoofer Crossover Switch**” (24) to the position best suited to the subwoofer you are using. This switch has three positions: “**150**”, “**60**” and “**flat**”. In the “**150**” position, the subwoofer output is filtered so that there is little audio information above 150 Hz. The “**60**” position screens information above 60 Hz while the “**flat**” position sends an unfiltered, broadband signal to the subwoofer output.

Consult your subwoofer’s owner’s manual for specific recommendations.

20) CUSTOM INSTALLATIONS: USING MORE POWERFUL AMPLIFIERS WITH THE GSP-560

The GSP-560’s center and rear line outputs (20 through 22) provide an additional measure of flexibility. While most

users will find the GSP-560's internal amplifiers more than adequate, a few may require additional power to cope with the requirements of custom installations or very large rooms.

In these cases, simply connect the appropriate line outputs to the corresponding external amplifier inputs, connect the appropriate speakers to the amplifier outputs, and complete the balancing process detailed in Paragraph 15

This custom installation mode is, for lack of a more imaginative phrase, "user transparent " Once you've connected and properly balanced your system, follow all the instructions exactly as if you were using the GSP-560's internal amplifiers.

21) CARE AND FEEDING OF THE GSP-560

ADCOM has taken great care to assure that your GSP-560 is as flawless in appearance as it is electrically. The front panel is a heavy-gauge, high grade anodized aluminum extrusion bead blasted for durability. The chassis, rear panel and top cover are painted and baked heavy gauge steel.

If the outer cover or front panel becomes dusty or fingerprinted, please clean with a soft, lintless cloth, SLIGHTLY DAMPENED with a very mild detergent solution.

DO NOT SPRAY OR USE LIQUIDS OF ANY KIND ON YOUR UNIT!

NEVER USE HARSH SCOURING POWDERS!

22) SERVICING

ADCOM's Technical Service Department will be happy to answer all questions pertaining to the installation and operation of your unit. In the unlikely event of difficulty, please contact us for prompt advice. If we can't help you resolve the problem immediately, we may refer you to an authorized repair agency, or authorize the return of your unit to our plant.

All written inquiries should be addressed to:

ADCOM Service Department
11 Elkins Road
East Brunswick, NJ 08816
USA

Telephone inquiries are welcomed from Monday through Friday between 9 AM and 4 PM, Eastern Time.

Please call (908) 390-1130.

We'll also be happy to answer FAX inquiries sent to (908) 390-9152. Please include your FAX number so we can respond.

When inquiring about your unit, please include the serial number, the name of the dealer from whom you purchased the unit and the date of purchase.

If we ask you to return the unit to us for service, we will issue a specific Return Authorization number for your use. **UNDER NO CIRCUMSTANCES SHOULD THE UNIT BE SHIPPED TO US WITHOUT PROPER AUTHORIZATION OR PACKED IN ANYTHING OTHER THAN ITS ORIGINAL PACKING.**

If the original packing has been lost, discarded or damaged, we will be happy to supply a replacement at a nominal charge. Please mention your need when you call or write.

Always ship PREPAID via UPS (United Parcel Service) or other appropriate carrier. **FREIGHT COLLECT SHIPMENTS WILL BE REFUSED. DO NOT SHIP VIA PARCEL POST** as the packaging will not necessarily withstand handling by our Postal Service.

GSP560/1.0/693

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