harman/kardon®

AVR 2600

AUDIO/VIDEO RECEIVER
OWNER'S MANUAL

IMPORTANT SAFETY INSTRUCTIONS

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. The A/V receiver's cabinet may be cleaned by gently wiping with a soft cotton or microfiber cloth. Do not use water or any liquid cleaners.

7. Do not block any of the 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. Do not defeat the safety purpose of the polarized or grounding-type plug. A 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 or the third prong is provided for your safety. When 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 plugs, convenience receptacles and the point where they exit from the apparatus.

11. Only use the attachments/accessories specified by the manufacturer.

12. Use only with a 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.

Wet Location Marking
Apparatus shall not be exposed to dripping or splashing and no objects filled with liquids, such as vases, shall be placed on the apparatus.

Service Instructions
CAUTION – These servicing instructions are for use by qualified service personnel only. To reduce the risk of electric shock, do not perform any servicing other than that contained in the operating instructions, unless you are qualified to do so.

Outdoor Use Marking
WARNING – To reduce the risk of fire or electric shock, do not expose this apparatus to rain or moisture.

CAUTION
RISK OF ELECTRIC SHOCK
DO NOT OPEN

CAUTION: To reduce the risk of electric shock, do not remove cover (or back). No user-serviceable parts inside. Refer servicing to qualified service personnel.

The lightning flash with arrowhead symbol, within an equilateral triangle, 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 a risk of electric shock to persons.

The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

IMPORTANT SAFETY INFORMATION

Verify Line Voltage Before Use

Your AVR 2600 has been designed for use with 120-volt AC current. Connection to a line voltage other than that for which it is intended can create a safety and fire hazard and may damage the unit.

If you have any questions about the voltage requirements for your specific model, or about the line voltage in your area, contact your selling dealer before plugging the unit into a wall outlet.

Do Not Use Extension Cords

To avoid safety hazards, use only the power cord attached to your unit. We do not recommend that extension cords be used with this product. As with all electrical devices, do not run power cords under rugs or carpets or place heavy objects on them. Damaged power cords should be replaced immediately by an authorized service center with a cord meeting factory specifications.

Handle the AC Power Cord Gently

When disconnecting the power cord from an AC outlet, always pull the plug; never pull the cord. If you do not intend to use the unit for any considerable length of time, disconnect the plug from the AC outlet.

Do Not Open the Cabinet

There are no user-serviceable components inside this product. Opening the cabinet may present a shock hazard, and any modification to the product will void your warranty. If water or any metal object such as a paper clip, wire or staple accidentally falls inside the unit, disconnect it from the AC power source immediately, and consult an authorized service center.

CATV or Antenna Grounding

If an outside antenna or cable system is connected to this product, be certain that it is grounded so as to provide some protection against voltage surges and 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 require-ments of the grounding electrode.

NOTE TO CATV SYSTEM INSTALLER: This reminder is provided to call the CATV (cable TV) system installer's attention to article 820-40 of the NEC, which 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 possible.

Installation Location

• To ensure proper operation and to avoid the potential for safety hazards, place the unit on a firm and level surface. When placing the unit on a shelf, be certain that the shelf and any mounting hardware can support the weight of the product.

• Make certain that proper space is provided both above and below the unit for ventilation. If this product will be installed in a cabinet or other enclosed area, make certain that there is sufficient air movement within the cabinet. Under some circumstances, a fan may be required.

• Do not place the unit directly on a carpeted surface.

• Avoid installation in extremely hot or cold locations, or in an area that is exposed to direct sunlight or heating equipment.

• Avoid moist or humid locations.

• Do not obstruct the ventilation slots on the top of the unit, or place objects directly over them.

• Due to the weight of the AVR 2600 and the heat generated by the ampli-fiers, there is the remote possibility that the rubber padding on the bottom of the unit's feet may leave marks on certain wood or veneer materials. Use caution when placing the unit on soft woods or other materials that may be damaged by heat or heavy objects. Some surface finishes may be particularly sensitive to absorbing such marks, due to a variety of factors

beyond our control, including the nature of the finish, cleaning materials used, and normal heat and vibration caused by the use of the product, or other factors. We recommend that caution be exercised in choosing an installation location for the component and in normal maintenance practices, as your warranty will not cover this type of damage to furniture.

Cleaning

When the unit gets dirty, wipe it with a clean, soft, dry cloth. If necessary, and only after unplugging the AC power cord, wipe it with a soft cloth dampened with mild soapy water, then a fresh cloth with clean water. Wipe it dry immediately with a dry cloth. NEVER use benzene, aerosol cleaners, thinner, alcohol or any other volatile cleaning agent. Do not use abrasive cleaners, as they may damage the finish of metal parts. Avoid spraying insecticide near the unit.

Moving the Unit

Before moving the unit, be certain to disconnect any interconnection cords with other components, and make certain that you disconnect the unit from the AC outlet.

Important Information for the User

This equipment has been tested and found to comply with the limits for a Class-B digital device, pursuant to Part 15 of the FCC Rules. The limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio-frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communication. However, there is no guarantee that harmful interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interfer-ence by one or more of the following measures:

• Reorient or relocate the receiving antenna.

• Increase the separation between the equipment and receiver.

• Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

• Consult the dealer or an experienced radio/TV technician for help.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful inter-ference, and (2) this device must accept interference received, including interference that may cause undesired operation.

NOTE: Changes or modifications may cause this unit to fail to comply with Part 15 of the FCC Rules and may void the user's authority to operate the equipment.

UNPACKING

The carton and shipping materials used to protect your new receiver during shipment were specially designed to cushion it from shock and vibration. We suggest that you save the carton and packing materials for use in ship-ping if you move, or should the unit ever need repair.

To minimize the size of the carton in storage, you may wish to flatten it. This is done by carefully slitting the tape seams on the bottom and collaps-ing the carton. Other cardboard inserts may be stored in the same manner. Packing materials that cannot be collapsed should be saved along with the carton in a plastic bag.

If you do not wish to save the packaging materials, please note that the carton and other sections of the shipping protection are recyclable. Please respect the environment and discard those materials at a local recycling center.

It is important that you remove the protective plastic film from the front-panel lens. Leaving the film in place will affect the performance of your remote control.

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WARNING

To prevent fire or shock hazard, do not expose this appliance to rain or moisture.

For Canadian model

This Class B digital apparatus complies with Canadian ICES-003. For models having a power cord with a polarized plug:

CAUTION: To prevent electric shock, match wide blade of plug to wide slot, fully insert.

Modèle pour les Canadien

Cet appareil numérique de la classe B est conforme à la norme NMB-003 du Canada. Sur les modèles dont la fiche est polarisee:

ATTENTION: Pour éviter les chocs électriques, introduire la lame la plus large de la fiche dans la borne correspondante de la prise et pousser jusqu'au fond.

Please register your AVR 2600 at www.harmankardon.com.

NOTE: You'll need the product's serial number. At the same time, you can choose to be notified about new products and/or special promotions.

Thank you for choosing a Harman Kardon® product!

For more than fifty years, the Harman Kardon® mission has been to share a passion for music and entertainment, using leading-edge technology to achieve premium performance. Harman Kardon, Inc., invented the receiver, a single component designed to simplify home entertainment without compromising performance. Over the years, Harman Kardon products have become easier to use, while offering more features and sounding better than ever. The AVR 2600 multizone 7.1-channel digital audio/video receiver continues this tradition with some of the most advanced audio and video processing capabilities yet, and a wealth of listening and viewing options.

To obtain the maximum enjoyment from your new receiver, please read this manual and refer back to it as you become more familiar with its features and their operation.

If you have any questions about this product, its installation or its operation, please contact your Harman Kardon retailer or custom installer, or visit the Web site at www.harmankardon.com.

Harman Kardon AVR 2600 7.1-Channel Audio/Video Receiver

Audio Section

• 65 Watts x 7, seven channels driven at full power at 8 ohms, 20Hz – 20kHz, <0.07% THD, 455 watts total

• High-current capability, ultrawide-bandwidth amplifier design with low negative feedback

• All-discrete amplifier circuitry

• Quadruple-crossover bass management

• Dual 32-bit Cirrus Logic® DSP processor

• 192kHz/24-bit A/D and D/A conversion

• Sampling upconversion to 96kHz

• Dolby® Volume processing

Surround Modes

• Dolby Digital EX, Dolby Digital Plus, Dolby TrueHD

• Dolby Pro Logic® II and IIx (Movie, Music and Game), up to 96kHz

• Harman Virtual Speaker

• Harman Headphone

• DTS-HD High Resolution Audio™; DTS-HD Master Audio™

• DTS® (5.1; DTS Stereo; DTS-ES® 6.1 Discrete and Matrix)

• DTS 96/24™ (DTS Stereo)

• DTS Neo:6® (Cinema 5-, 6- or 7-channel; Music 5-, 6- or 7-channel), up to 96kHz

• Logic 7® (Movie, Music and Game), up to 96kHz

• 5- or 7-Channel Stereo, up to 96kHz

• Surround Off (DSP or Analog Bypass)

Audio Inputs

• AM/FM/SIRIUS®* tuner

• Analog Audio 1 through 5

• Front-panel Analog Audio

• 6-/8-Channel Analog Audio

Audio/Video Inputs

• Three Composite Video

• Front-panel Composite Video

• Two Component Video 100MHz

• Four HDMI™ (V.1.3a with Deep Color)

• Faroudja DCDi Cinema™ video processing

◆ Transcodes 480i composite video to component video format, with upscaling to 1080i

◆ Transcodes 480i video to HDMI output, with upscaling to 1080p

• ᵀʰᵉBridge III dock** for iPod and iPhone connectivity with audio/video playback

Digital Audio Inputs

• Coaxial: two rear-panel/one front-panel

• Optical: two rear-panel/one front-panel

Outputs

• Subwoofer output

• Analog Audio 2 and 4

• Composite Video 2

• Video Monitor (composite and component)

• Digital Audio (one coaxial)

• HDMI (V.1.3a with Deep Color)

• Multizone Audio: speaker-level and line-level, both shared with surround back channels

• Headphone

Ease of Use

• EzSet/EQ™ automated setup (microphone supplied)

• Full-color user interface and setup menu, generated in high-definition video

• Two-line dot-matrix front-panel display

• Color-coded connections

• Programmable, eight-device main remote control (includes AVR control over The Bridge III)

• Source input renaming

• Lip Sync Delay (up to 180msec)

• USB port for system upgrades

• Switched accessory power outlet

• Remote infrared (IR) input and output

• Zone 2 IR input

Supplied Accessories

The following accessory items are supplied with the AVR 2600. If any of these items are missing, please contact Harman Kardon customer service at www.harmankardon.com.

• System remote control

• EzSet/EQ microphone

• AM loop antenna

• FM wire antenna

• Four AAA batteries

• Two covers for front-panel jacks

* SIRIUS Satellite Radio tuner and subscription to SIRIUS service required. Hardware and service sold separately. SIRIUS service is not available in Alaska or Hawaii.

** Charges iPod nano 4th generation, iPod touch 2nd generation, iPhone 3G, iPod nano 3rd generation, iPod classic, iPhone, iPod touch 1st generation, iPod nano 2nd generation, iPod 5th generation, iPod nano 1st generation, iPod 4th generation, iPod mini. The Bridge III dock, iPod and iPhone are not included.
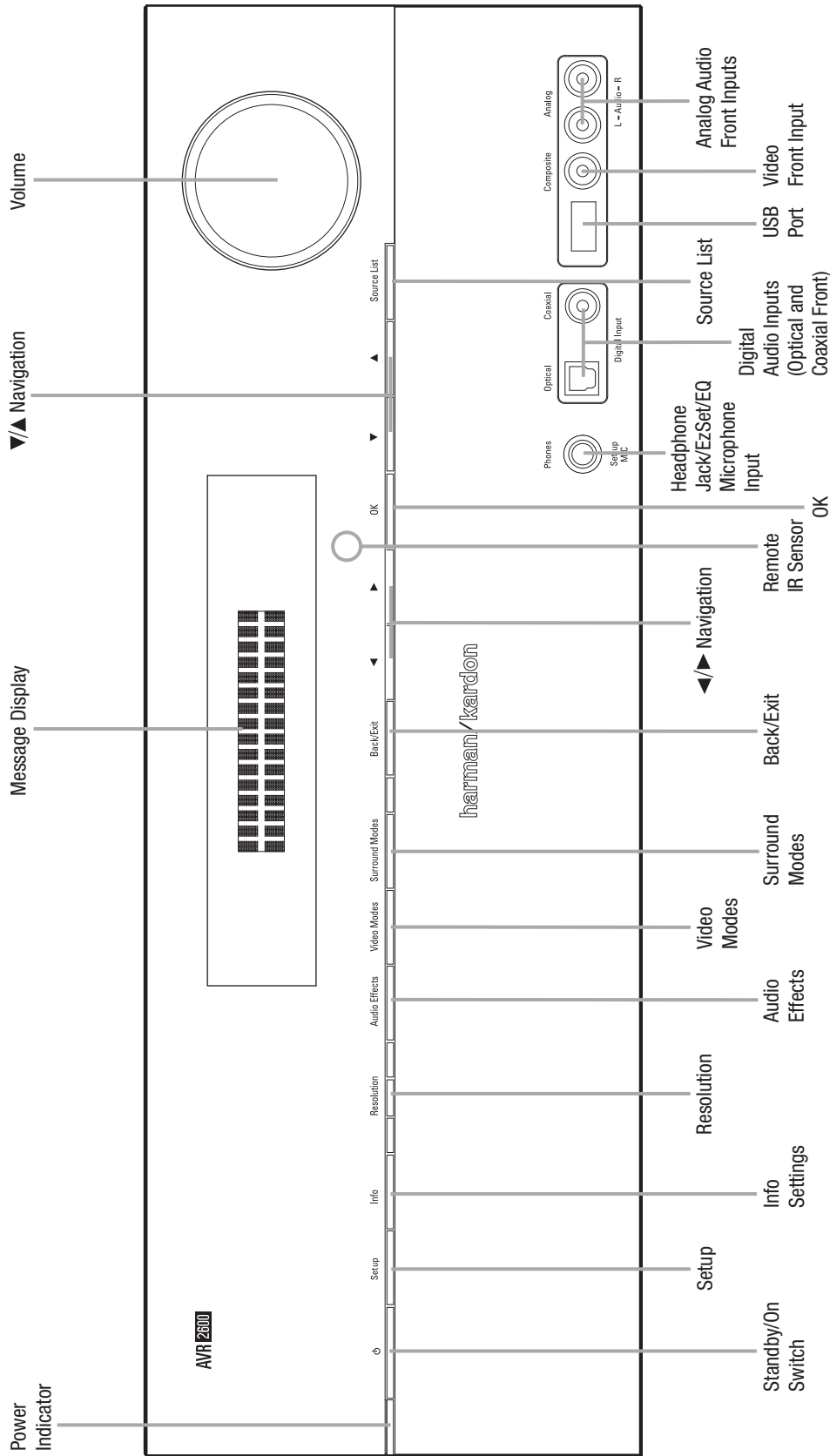
Power Indicator

Message Display

Volume

▼/▲ Navigation

Standby/On Switch

Setup

Info Settings

Resolution

Audio Effects

Video Modes

Surround Modes

Back/Exit

◄/► Navigation

Remote IR Sensor

OK

Source List

Headphone Jack/EzSet/EQ Microphone Input

Digital Audio Inputs (Optical and Coaxial Front)

Source List

USB Port

Video Front Input

Analog Audio Front Inputs

NOTE: To make it easier to follow the instructions throughout the manual that refer to this illustration, a copy of this page may be downloaded from the Product Support section at www.harmankardon.com.

Power Indicator: This LED has three possible modes:

• **Main Power Off:** When the AVR is unplugged or the rear-panel Main Power Switch is off, this LED is off.

• **Standby:** Amber indicates that the AVR is ready to be turned on.

• **On:** When the AVR is turned on, this LED turns white.

> **NOTE:** If the PROTECT message ever appears, turn off the AVR and unplug it. Check all speaker wires for a possible short. If none is found, bring the unit to an authorized Harman Kardon service center for inspection and repair before using it again.

Standby/On Switch: This electrical switch turns the receiver on, or places it in Standby mode for quick turn-on.

Setup Button: Press this button to access the AVR's main menu.

Info Settings Button: Press this button to directly access the AVR's Source Info submenu, which contains the settings for the current source.

Resolution: Press this button to access the AVR's video output resolution setting: 480i, 480p, 720p, 1080i, 1080p or 1080p/24 (if available on source and display).

> **IMPORTANT NOTE:** If the AVR's video output resolution is set higher than the capabilities of the actual connection, you will not see a picture. If the best available video connection from the AVR to the TV is composite video, press this button and change the resolution to 480i.

Audio Effects: Press this button to directly access the Audio Effects submenu, which allows adjustment of the tone and other audio controls. See the Initial Setup section for more information.

Video Modes: Press this button for direct access to the Video Modes submenu, which contains settings that may be used to improve the picture, if necessary, after you have adjusted the picture settings using the video display or TV.

Surround Modes: Press this button to select a surround sound (e.g., multichannel) mode. The Surround Modes menu will appear on screen, and the menu line will appear in the front-panel display. See the Advanced Functions section for more information on surround modes.

Source List: Press this button to select a source device, which is a component where a playback signal originates, e.g., DVD.

Back/Exit: Press this button to return to the previous menu, or to exit the menu system.

▼/▲ ◄/► Navigation: These buttons are used to navigate the AVR's menus.

OK: Press this button to select the currently highlighted item.

Headphone Jack/EzSet/EQ Microphone Input: Plug a 1/4" headphone plug into this jack for private listening.

This jack is also used to connect the supplied microphone for the EzSet/EQ procedure described in the Initial Setup section.

USB Port: This port may be used in case a software upgrade for the receiver is offered in the future. Do not connect a storage device, peripheral product or a PC here, unless instructed to do so as part of an upgrade procedure.

Digital Audio and Analog Audio/Video Front Inputs: Connect a source component that will only be used temporarily, such as a digital camera or game console, to these jacks. Use only one type of audio and one type of video connection.

> **NOTE:** The AVR's menus refer to these jacks as the Optical Front, Coaxial Front, Composite Front, and Analog Front inputs.

Volume Knob: Turn this knob to raise or lower the volume.

Message Display: Various messages appear in this two-line display in response to commands and changes in the incoming signal. In normal operation, the current source name appears on the upper line, while the surround mode is displayed on the lower line. When the on-screen display menu system (OSD) is in use, the current menu settings appear.

Remote IR Sensor: This sensor receives infrared (IR) commands from the remote control. It is important to ensure that it is not blocked. If covering the sensor is unavoidable, use an optional Harman Kardon HE 1000, or other infrared receiver, connecting it to the Remote IR Input on the AVR 2600's rear panel.
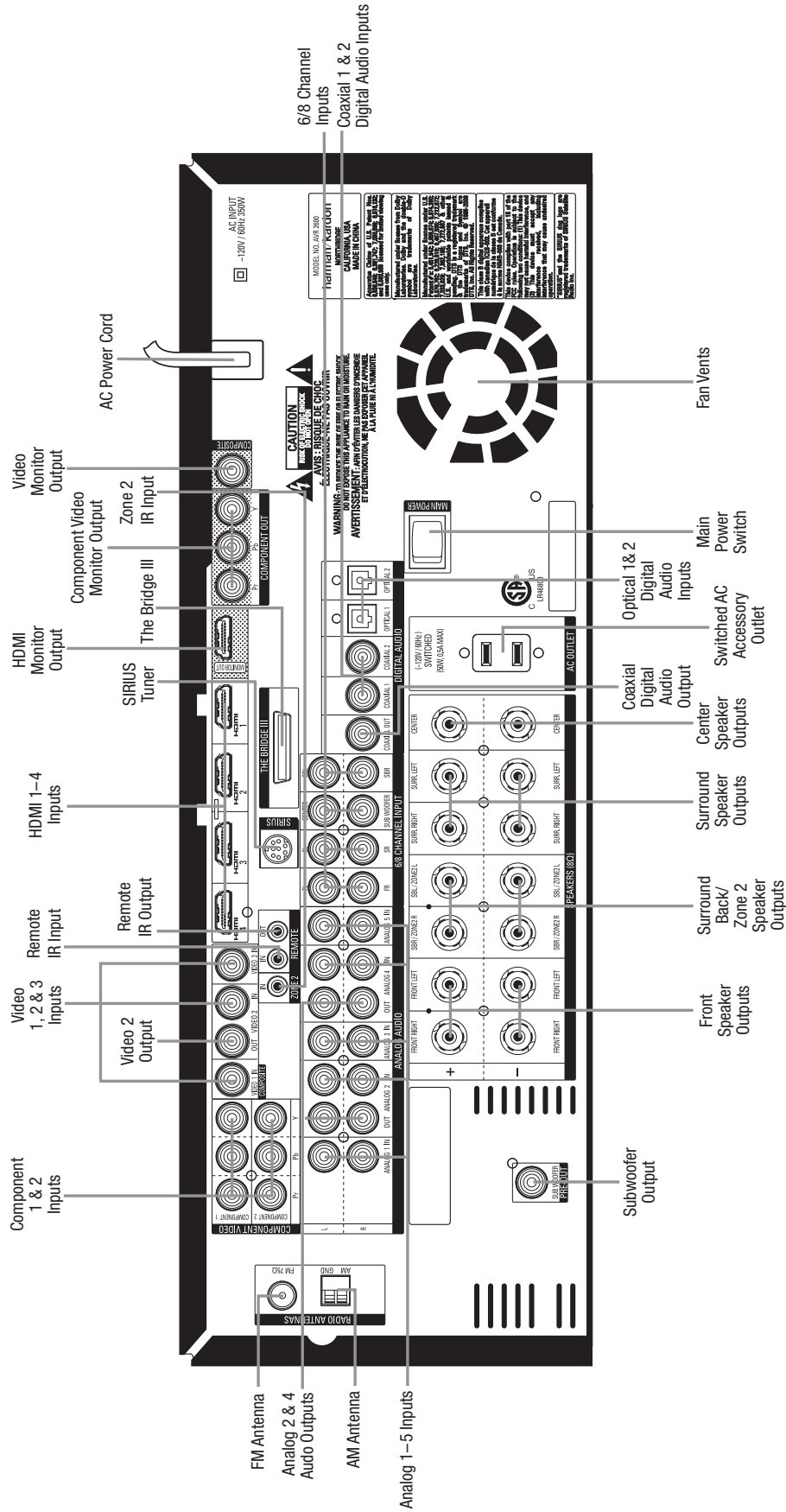
AC Power Cord

Video Monitor Output

Component Video Monitor Output

Zone 2 IR Input

HDMI Monitor Output

The Bridge III

SIRIUS Tuner

HDMI 1–4 Inputs

Remote IR Output

Remote IR Input

Video 1, 2 & 3 Inputs

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Coaxial 1 & 2 Digital Audio Inputs

Fan Vents

Main Power Switch

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Surround Back/ Zone 2 Speaker Outputs

Front Speaker Outputs

Subwoofer Output

FM Antenna

Analog 2 & 4 Audio Outputs

AM Antenna

Analog 1–5 Inputs

NOTE: To make it easier to follow the instructions throughout the manual that refer to this illustration, a copy of this page may be downloaded from the Product Support section at www.harmankardon.com.

Main Power Switch: This mechanical switch turns the power supply on or off. It is usually left on, and cannot be turned on or off using the remote control.

6-/8-Channel Inputs: Connect the multichannel analog audio outputs of a non-HDMI player (DVD-Audio, SACD™, Blu-ray Disc™ or HD-DVD, or any other external decoder) to these jacks. See page 30 for more information.

Coaxial 1/2 and Optical 1/2 Digital Audio Inputs: If a source has a compatible digital audio output, and if you are not using an HDMI connection for audio for the device, connect it to one of these jacks to hear digital audio formats, such as Dolby Digital, DTS and linear PCM. Use only one type of digital audio connection for each source.

Coaxial Digital Audio Output: If a source is also an audio recorder, connect the Coaxial Digital Audio Output to the recorder's matching input for improved recording quality. Only PCM digital audio signals are available for recording. Both coaxial and optical digital audio signals are available at this Digital Audio Output.

SIRIUS Tuner Jack: Connect a SIRIUS satellite radio tuner module here.

Zone 2 Infrared (IR) Input: Connect a remote IR receiver located in the remote zone of a multizone system to this jack to control the AVR (and any source devices connected to the Remote IR Output) from the remote zone.

Remote Infrared (IR) Input and Output: When the remote IR receiver on the front panel is blocked, connect an optional IR receiver to the Remote IR Input jack. The Remote IR Output may be connected to the Remote IR Input of a compatible product to enable remote control through the AVR.

HDMI Inputs and Output: HDMI (High-Definition Multimedia Interface) is a connection for transmitting digital audio and video signals between devices. Connect up to four HDMI-equipped source devices to the HDMI inputs using a single-cable connection.

When you connect the HDMI Output to your video display, the AVR 2600 will automatically transcode analog video signals to the HDMI format, upscaling to as high as 1080p.

> **NOTE:** When connecting a DVI-equipped display to one of the HDMI Outputs:
> • Use an HDMI-to-DVI adapter.
> • Make sure the display is HDCP-compliant. If it isn't, do not connect it to an HDMI Output; use an analog video connection instead.
> • Always make a separate audio connection.

Analog 1 – 5 Inputs: Connect the left and right analog audio outputs of a source device to any of these inputs. These inputs may be paired with any video inputs.

> **NOTES:**
> • The Analog 2 and 4 inputs are each associated with a set of outputs. Consider using these connectors for an audio or video recorder.
> • You may optionally connect a source to both an analog and digital audio input. This is useful for making recordings, for multizone applications or simply as a backup.

Analog 2 and 4 Outputs: Connect either of these analog audio outputs to the analog audio inputs of a recording device. A signal is available at these outputs whenever an analog audio source is playing.

Subwoofer Output: If you have a powered subwoofer with a line-level input, connect it to the Subwoofer Output.

The Bridge III Input: Connect a Harman Kardon ⫸Bridge™III docking station (not included) to this input for use with most docking iPod models, 4G and later, iPhone or iPhone 3G (not included). Turn the receiver off (Standby mode) when connecting The Bridge III.

Fan Vents: This area contains vents used by the AVR 2600's fan to cool the system. Maintain a clearance of at least 3 inches from the nearest surface to avoid overheating the unit. It is normal for the fan to remain off at most normal volume levels. An automatic temperature sensor turns the fan on only when it is needed.

> **IMPORTANT NOTE:** Never block the fan vents, as doing so could allow the AVR to overheat to dangerous levels.

Video 1/2/3 Inputs: Use these jacks to connect your video-capable source components (e.g., VCR, DVD player, cable TV box) to the receiver. Use only one type of video connection for each source.

Video 2 Output: Connect this analog video output to the composite video input of a recording device. A signal is available at this output whenever an analog video source is playing.

Video Monitor Output: If any of your sources use composite video connections, connect this monitor output to the corresponding input on your video display. If your video display is equipped with HDMI or component video inputs, this connection is unnecessary, as the AVR 2600 will convert the composite video source signal to the correct format for a single video-cable connection to the TV.

Component Video 1/2 Inputs: If a video source has analog component video (Y/Pb/Pr) capability, and if you are not using an HDMI connection, connect the component video outputs of the source to one of the sets of component video inputs. Do not make any other video connections to that source.

Component Video Monitor Outputs: If you are using one of the Component Video Inputs and your television or video display is component-video-capable (but does not have an HDMI input), connect these jacks to the video display.

NOTES:

• Due to copy-protection restrictions, there is no output at the Component Video Monitor Outputs for HDCP-copy-protected sources.

• Composite video signals are upscaled to as high as 1080i and available at these outputs. If your video display's best connection is component video, it is the only video connection required from the AVR to the display.

AM and FM Antenna Terminals: Connect the included AM and FM antennas to their respective terminals for radio reception.

Front, Center and Surround Speaker Outputs: Use two-conductor speaker wire to connect each set of terminals to the correct speaker. Remember to observe the correct polarity (positive and negative connections).

Surround Back/Zone 2 Speaker Outputs: These speaker outputs are used for the surround back channels in a 7.1-channel home theater, or may be reassigned to a remote room for multizone operation.

Switched AC Accessory Outlet: You may plug the AC power cord of one source device into this outlet, and it will turn on whenever you turn on the receiver. Do not use a source that consumes more than 50 watts of power.

AC Power Cord: After you have made all other connections, plug the AC power cord into an unswitched wall outlet.

MAIN REMOTE CONTROL FUNCTIONS
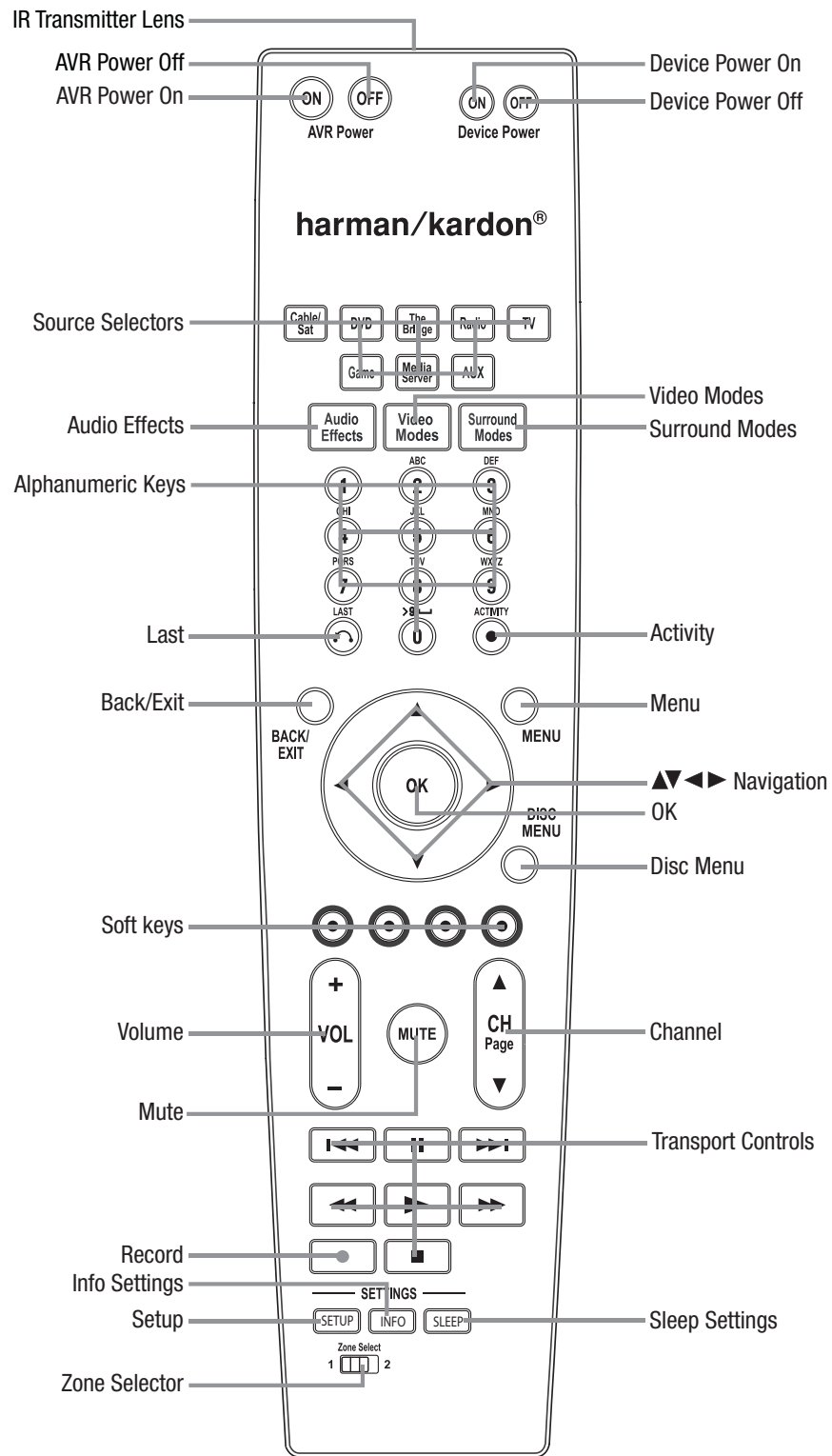
IR Transmitter Lens

AVR Power Off

AVR Power On

Device Power On

Device Power Off

AVR Power

Device Power

harman/kardon®

Source Selectors

Audio Effects

Video Modes

Surround Modes

Alphanumeric Keys

Last

Activity

Back/Exit

Menu

▲▼◄► Navigation

OK

Disc Menu

Soft keys

Volume

Channel

Mute

Transport Controls

Record

Info Settings

Setup

Sleep Settings

Zone Selector

The AVR 2600 remote is capable of controlling 8 devices, including the AVR itself and an iPod docked in an optional The Bridge III. During the installation process, you may program the codes for each of your source components into the remote. To operate a component, press its Selector button to change the device mode.

Each Source Selector has been preprogrammed to control certain types of components, with only the codes specific to each brand and model changing, depending on which product code is programmed. The AUX and Cable/SAT Source Selectors may be used for multiple device types, depending on the first digit of the product code. Other Source Selectors may be reassigned to other device types (see Initial Setup section).

AUX Source Selector: CD player product codes begin with 0, 1 or 2. VCR codes begin with 3 or 4. HDTV set-top box codes begin with 6, PVD codes begin with 7 and TiVo® set-top box codes begin with 8.

Cable/SAT Source Selector: Cable set-top box codes begin with 0, 1 or 2, and satellite set-top box codes begin with 3 or 4.

> **IMPORTANT NOTE:** All of the AVR 2600's audio and video inputs are independently assignable. Select the inputs to which the device is physically connected during Initial setup. Any device may be connected to any compatible input and given any name (e.g., DVD or Game).

Most of the buttons on the remote have dedicated functions, although the precise codes transmitted vary depending on the device mode. Due to the wide variety of functions for various source devices, we have included only a few of the most-often used functions on the remote: alphanumeric keys, transport controls, television-channel control, menu access and power on and off.

Buttons dedicated to the AVR are available at any time, even in another device mode: AVR Power On and Off, Audio Effects, Video Modes, Surround Modes, Volume, Mute and Sleep Settings. Press the Setup Button near the bottom of the remote to return it to AVR mode.

A button's function depends on which component is being controlled. See Table A13 in the appendix for listings of the functions for each type of component.

IR Transmitter Lens: As buttons are pressed on the remote, infrared codes are emitted through this lens.

AVR Power On Button: Press to turn on the AVR. The Master Power Switch on the rear panel must be on.

Device Power Off Button: Press a device's Source Selector, then press this button to turn off the device.

Device Power On Button: Press a device's Source Selector, then press this button to turn on the device.

Mute Button: Press to mute the AVR 2600's speaker and headphone outputs. To end the muting, press this button, adjust the volume, or turn off the receiver.

AVR Power Off Button: Press to turn off the AVR 2600.

Source Selectors: Press one of these buttons to select a source device, e.g., DVD, CD, cable TV, satellite or HDTV tuner. This will also turn on the receiver and switch the remote's device mode to operate the source. The first press of the Radio Selector switches the AVR to the last-used tuner band (AM, FM or SIRIUS). Each successive press changes the band.

While the DVD Source Selector may be used to operate either a Harman Kardon Blu-ray Disc player or a Harman Kardon DVD player, the default mode is to operate a Harman Kardon Blu-ray Disc player. To toggle between Harman Kardon Blu-ray Disc player and DVD player operation, press and hold the DVD Source Selector for 2 seconds. The source selector will flash twice to confirm that the remote's mode has changed to operate the other type of disc player.

Audio Effects: Press to directly access the Audio Effects submenu, which allows adjustment of the AVR's tone and other audio controls. See the Initial Setup section for more information.

Video Modes: Press for direct access to the Video Modes submenu, which contains picture settings to be used after you have adjusted the picture settings on the video display or TV. See the Advanced Functions section for more information.

Surround Modes: Press to directly access the Surround Modes submenu. Select a Surround mode category: Auto Select, Virtual Surround, Stereo, Movie, Music or Video Game. The surround mode will change when the menu line is highlighted.

To change the surround mode for the selected category, press the OK Button when the menu line is highlighted and select one of the available surround mode options, using the ▼/▲ Buttons. Press the OK Button, or press the Back/Exit Button to exit the Surround Modes menu and display the next higher menu in the hierarchy.

See the Advanced Functions section for more information on surround modes.

Sleep Settings Button: Press to activate the sleep timer, which turns off the receiver after a programmed period of time of up to 90 minutes. Each press increases the timer by 10 minutes, ending with the "Sleep Off" message.

Volume Control: Press to raise or lower the volume.

Navigation (▼/▲ ◄/►) and OK Buttons: These buttons are used to make selections within the menu system and to operate the tuner.

Alphanumeric Keys: Use these buttons to enter numbers for radio station frequencies or to select station presets.

Last Channel: When controlling a cable, satellite or HDTV set-top box or a TV, press this button to return to the previous television channel.

Activity: With this button, up to eleven Activities may be programmed to transmit a series of commands with a single press. Execute an Activity by pressing this button, then the Alphanumeric Key (or the AVR Power On or Off Button) into which it was programmed. See the Advanced Functions section for more information on Activities.

Back/Exit: Press to return to the previous menu or to exit the menu system.

Menu Button: This button is used within the Now Playing menu for the tuner (including SIRIUS Radio), and The Bridge III, and to display the main menu on some source devices. To display the AVR 2600's main menu, press the Setup Button.

Disc Menu: While a DVD is playing, press the DVD Source Selector, then this button, to display the disc's menu.

Soft Keys: These buttons are used with some source devices. See Table A13 in the appendix for details. They are also used with a Teletext-capable television if your broadcast, cable or satellite provider offers Teletext service.

Channel/Page Control: When the tuner has been selected, this control selects a preset radio station. While operating a cable, satellite or HDTV set-top box or a television, press these buttons to change channels.

Record Button: Use this button to make recordings when an audio or video recorder is in use.

Setup Button: Press to display the AVR's Main Menu, or to switch the remote to AVR device mode.

Info Settings Button: Press to display the AVR's Info Menu, which contains the settings for the current source.

Zone Selector: Use this switch to select whether AVR commands will affect the main listening area (Zone 1) or the remote zone of a multizone system (Zone 2). For normal operation, leave the switch in the Zone 1 position.

Track Skip: These buttons are used with source components to change tracks or chapters.

Transport Controls: These buttons are used to control source components and The Bridge III.

This introductory section will help you to familiarize yourself with some basic concepts unique to multichannel surround sound receivers, which will make setup and operation smoother.

Typical Home Theater System

A home theater typically includes an audio/video receiver, which controls the system; a disc player; a source component for television broadcasts (cable box, satellite dish receiver, HDTV tuner or antenna connected to the TV); a video display (television); and loudspeakers.

Multichannel Audio

The main benefit of a home theater system is the placement of loudspeakers around the room to produce "surround sound." Surround sound immerses you in the presentation for increased realism.

The AVR 2600 may have up to seven speakers connected directly to it, plus a subwoofer. Each main speaker is powered by its own amplifier channel inside the receiver. A system with more than two speakers is called a multichannel system.

• **Front Left and Right –** The main speakers are used as in a 2-channel system. In many surround modes, these speakers are secondary, while the main action, especially dialogue, is moved to the center speaker.

• **Center –** The center speaker is used for dialogue in movies and television programs, allowing the dialogue to originate near the actors' faces, for a more natural sound.

• **Surround Left and Right –** The surround speakers improve directionality of ambient sounds. In addition, more loudspeakers play dynamic soundtracks without risk of overloading any one speaker.

• **Surround Back Left and Right –** Additional surround speakers may be placed behind the listening position, improving the precision of ambient sounds and allowing for more realistic pans.

The surround back speakers are used with surround modes designed for 7.1-channel systems, such as Dolby Digital EX, Dolby Digital Plus, Dolby TrueHD, DTS-ES (Discrete and Matrix), DTS-HD High Resolution Audio, DTS-HD Master Audio and Logic 7 (7.1 modes). The surround back speakers are optional, and the AVR 2600 may be set up with a 5.1-channel system in the main listening area, and the surround back channels reassigned to a multizone system, where the surround back channels power loudspeakers located in another room.

Many people expect the surround speakers to play as loudly as the front speakers. Although all of the speakers in the system will be calibrated to sound equally loud at the listening position, most artists use the surround speakers for ambient effects only, and they program their materials to steer very little sound to these speakers.

• **Subwoofer –** A subwoofer is designed to play only the lowest frequencies (the bass). It augments smaller, limited-range satellite speakers used for the other channels. Many digital-format programs, such as movies recorded in Dolby Digital, contain a low-frequency effects (LFE) channel which is directed to the subwoofer. The LFE channel packs the punch of a rumbling train or airplane, or the power of an explosion, adding realism and excitement to your home theater. Some people use two subwoofers, for additional power and even distribution of the sound.

Surround Modes

There are different theories as to the best way to present surround sound and to distribute information to the speakers. A variety of algorithms have been developed in an effort to reproduce the way we hear sounds in the real world, resulting in a rich variety of options.

Several companies have taken surround sound in different directions:

• **Dolby Laboratories –** Dolby TrueHD, Dolby Digital Plus, Dolby Digital, Dolby Digital EX, Dolby Pro Logic II and IIx

• **DTS –** DTS-HD High Resolution Audio, DTS-HD Master Audio, DTS, DTS-ES (Discrete and Matrix), DTS Neo:6, DTS 96/24

• **Harman International (the Harman Kardon parent company) –** Logic 7, Harman Virtual Speaker, Harman Headphone

• **Stereo Modes –** Generic modes that expand upon conventional 2-channel stereo, including 5- and 7-channel stereo

Table A13 in the appendix contains detailed explanations of the mode groups and the mode options available within each group. Digital modes, such as Dolby Digital and DTS, are only available with specially encoded programs, such as HDTV, Blu-ray Disc media and digital cable or satellite television. Other modes may be used with digital and analog signals to create a different surround presentation, or to use a different number of speakers. Surround Mode selection depends upon the number of speakers in your system, the materials you are watching or listening to, and your personal tastes.

There are different types of audio and video connections used to connect the receiver, the speakers, the video display, and the source devices. The Consumer Electronics Association has established the CEA® color-coding standard. See Table 1.

Table 1 – Connection Color Guide

Audio Connections		
	Left	Right
Front **(FL/FR)**	**White**	**Red**
Center **(C)**	**Green**	
Surround **(SL/SR)**	**Blue**	**Gray**
Surround Back **(SBL/SBR)**	**Brown**	**Tan**
Subwoofer **(SUB)**	**Purple**	
Digital Audio Connections		
Coaxial	**Orange**	
Optical	Input ◼	Output ◻
Video Connections		
Component Y **Green**	Pb **Blue**	Pr **Red**
Composite	**Yellow**	
S-Video	⊙	
HDMI™ Connections (digital audio/video)		
HDMI	⬡	

Speaker Connections

Speaker cables carry an amplified signal from the receiver's speaker terminals to each loudspeaker. They contain two wire conductors, or leads, inside plastic insulation, that are differentiated in some way, such as with colors or stripes.

The differentiation preserves polarity, without which low-frequency performance can suffer. Each speaker is connected to the receiver's speaker-output terminals using two wires, one positive (+) and one negative (–). Always connect the positive terminal on the speaker, which is usually colored red, to the positive terminal on the receiver, which is colored as indicated in the Connection Color Guide (Table 1). The negative terminals are both black.
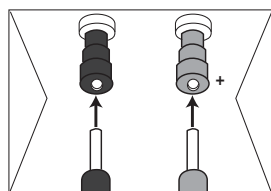
The AVR 2600 uses binding-post speaker terminals that can accept banana plugs or bare-wire cables. Banana plugs are inserted into the hole in the middle of the terminal cap. See Figure 1.

Figure 1 – Binding-Post Speaker Terminals With Banana Plugs

Bare wire cables are installed as follows (see Figure 2):

1. Unscrew the terminal cap until the pass-through hole is revealed.

2. Insert the bare end of the wire into the hole.
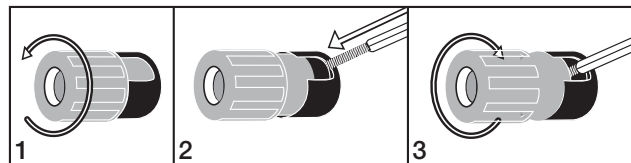
3. Hand-tighten the cap until the wire is held snugly.

Figure 2 – Binding-Post Speaker Terminals With Bare Wires

Subwoofer

The subwoofer is dedicated to the low frequencies (bass), which require more power. To obtain the best results, most speaker manufacturers offer powered subwoofers that contain their own amplifier. Usually, a line-level (nonamplified) connection is made from the receiver's Subwoofer Output to a corresponding jack on the subwoofer, as shown in Figure 3.

Although the purple subwoofer outputs look similar to full-range analog audio jacks, they are filtered to allow only the low frequencies to pass. Don't connect these outputs to any other devices.

Preout   Subwoofer
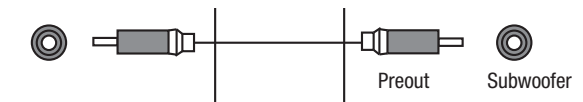
Figure 3 – Subwoofer

CONNECTING SOURCE DEVICES TO THE AVR

Audio and video signals originate in "source devices," including your Blu-ray Disc or DVD player, CD player, DVR (digital video recorder) or other recorder, tape deck, game console, cable or satellite television box, an iPod or iPhone docked in the optional The Bridge III docking station or MP3 player. The AVR's tuner also counts as a source, even though no external connections are needed, other than the FM and AM antennas and the SIRIUS tuner module.

Separate connections are required for the audio and video portions of the signal, except for digital HDMI connections. The types of connections used depend upon the capabilities of the source device and video display.

Audio Connections

There are two types of audio connections: digital and analog. Digital audio signals are required for listening to sources encoded with digital surround modes, such as Dolby Digital and DTS, or for noncompressed PCM digital audio. There are three types of digital audio connections: HDMI, coaxial and optical. Do not use more than one type of digital audio connection for each source device. However, it's okay to make both analog and digital audio connections to the same source.

NOTE: HDMI signals may carry both audio and video. If your video display device has an HDMI input, make a single HDMI connection from each source device to the AVR. Usually, a separate digital audio connection is not required. Turn the volume on your television all the way down.

Digital Audio

The AVR 2600 is equipped with four HDMI (High-Definition Multimedia Interface) inputs, and one output. HDMI technology enables digital audio and video information to be carried using a single cable, delivering the highest quality picture and sound.

The AVR 2600 uses HDMI (V.1.3a with Deep Color) technology and is capable of processing both the audio and video components of the HDMI data, minimizing the number of cable connections in your system. The AVR 2600 implements Deep Color, which increases by an order of magnitude the shades of color that can

be displayed, and the latest lossless multichannel audio formats, including Dolby TrueHD and DTS-HD Master Audio.

> **NOTE:** Some DVD-Audio, SACD, Blu-ray Disc and HD-DVD players only output multichannel audio through their multi-channel analog outputs. Make a separate analog audio con-nection in addition to the HDMI connection, which is still used for video and to listen to Dolby Digital, DTS or PCM materials that may be stored on the disc.

The AVR 2600 converts analog video signals to the HDMI format, including its on-screen menus, upscaling to high-definition 1080p resolution.

The HDMI connector is shaped for easy plug-in (see Figure 4). If your video display has a DVI input and is HDCP-compliant, use an HDMI-to-DVI adapter (not included). A separate audio connection is required. HDMI cable runs are limited to about 10 feet.

Figure 4 – HDMI Connection

If your video display or source device is not HDMI-capable, use one of the analog video connections (composite or component video) and a separate audio connection.

Coaxial digital audio jacks are usually color-coded in orange. Although they look similar to analog jacks, you should not connect coaxial digital audio outputs to analog inputs or vice versa. See Figure 5.

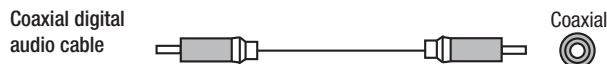**Coaxial digital audio cable**   **Coaxial**

Figure 5 – Coaxial Digital Audio

Optical digital audio connectors are normally covered by a shutter to protect them from dust. The shutter opens as the cable is inserted. Input connectors are color-coded using a black shutter, while outputs use a gray shutter. See Figure 6.
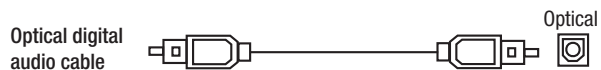
Optical digital audio cable   **Optical**

Figure 6 – Optical Digital Audio

Analog Audio

Two-channel analog connections require two cables, one for the left channel (white) and one for the right channel (red). These two cables are often attached to each other. See Figure 7.

For sources that are capable of both digital and analog audio, you may make both connections.

The analog audio connection is required for multizone operation, as the AVR 2600's multizone system is not capable of converting a digital signal to analog format. Use the analog audio connections with the Surround Back/Zone 2 speaker outputs, in case another 2-channel digital audio source is in use in the main listening area. The AVR 2600 is only capable of processing one PCM source at a time.

You may only record materials from DVDs or other copy-protected sources using analog connections. Remember to comply with all copy-right laws, if you choose to make a copy for your own personal use.

Analog audio cable (RCA)   **L R**

Figure 7 – Analog Audio

The 6-/8-Channel Inputs are multichannel analog connections that are used with high-definition sources that decode the copy-protected digital content, such as some DVD-Audio, SACD, Blu-ray Disc and HD-DVD players. See Figure 8. The multichannel analog audio con-nection is not required for players compliant with HDMI version 1.1 or better, or that output linear PCM signals via an HDMI connection. Consult the owner's guide for your disc player for more information, and see page 27.

Multichannel analog audio cable (RCA)

Front White | **Surround** Blue | **Center** Green
Subwoofer
Red | Gray | Purple
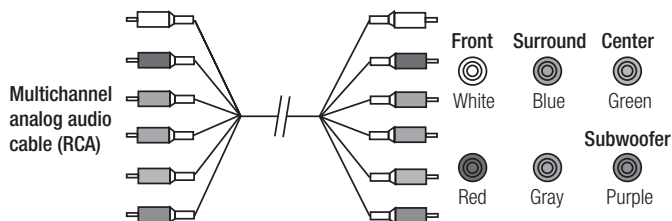
Figure 8 – Multichannel Analog Audio

The AVR 2600 also includes a proprietary, dedicated connection for The Bridge III docking station for the iPod or iPhone. If you own a docking iPod (most models, 4G or later), iPhone or iPhone 3G, connect The Bridge III (not included) to The Bridge III port on the receiver. See Figure 9. Dock your iPod or iPhone (not included) in The Bridge III, and you may listen to your audio materials through your high-performance audio system. You may view still images or video materials stored on a photo- or video-capable iPod that supports video browsing or iPhone. Use the AVR 2600 remote to control the iPod, with naviga-tion messages displayed on the front panel and on a video display connected to the AVR. The Bridge III outputs analog audio to the AVR 2600, and is available to the multizone system.

THE BRIDGE III   Figure 9 – The Bridge III port

Video Connections

Many sources output both audio and video signals (e.g., Blu-ray Disc or DVD player, cable television box, HDTV tuner, satellite box, VCR, DVR). In addition to the audio connection, make one type of video connection for each of these sources (only one at a time for any source).

Digital Video

If you have already connected a source device to one of the HDMI inputs, you have automatically made a video connection, as the HDMI signal includes both digital audio and video components.

Analog Video

There are two types of analog video connections used on the AVR 2600: composite video and component video.

Composite video is the basic connection most commonly available. The jack is usually color-coded yellow, and looks like an analog audio jack. Do not plug a composite video cable into an analog or coaxial digital audio jack, or vice versa. Both the chrominance (color) and luminance (intensity) components of the video signal are transmitted using a single cable. See Figure 10.

Figure 10 – Composite Video

Component video separates the video signal into three components – one luminance ("Y") and two sub-sampled color signals ("Pb" and "Pr") – that are transmitted using three separate cables. See Figure 11.
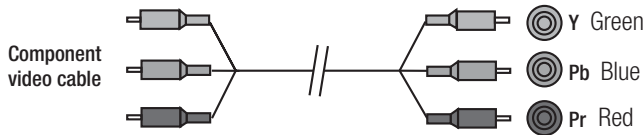
Figure 11 – Component Video

If it's available on your video display, an HDMI connection is recommended as the best quality connection, followed by component video, and then composite video.

> **NOTES:**
>
> • HDCP-copy-protected sources are not available at the Component Video Monitor Outputs.
>
> • Standard and high-definition analog video signals may be upscaled to 1080i resolution for the Component Video Monitor Outputs. For improved video performance, consider upgrading to an HDMI-capable video display with 1080p resolution.

ANTENNAS

The AVR 2600 uses separate terminals for the included FM and AM antennas.

The FM antenna uses a 75-ohm F-connector. See Figure 12.

Figure 12 – FM Antenna

The AM loop antenna needs to be assembled. Connect the two leads to the spring terminals on the receiver. The AM antenna leads have no polarity, and you may connect them to either terminal. See Figure 13.
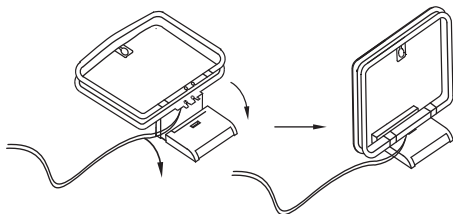
Figure 13 – AM Antenna

To enjoy SIRIUS satellite radio, purchase a SIRIUS-Ready tuner module and a subscription to the SIRIUS service. Visit www.sirius.com for information on SIRIUS-Ready tuner modules. The AVR 2600 is compatible with the SiriusConnect SC-H1 tuner module, using the 8-pin DIN cable included with the module, and it provides power for the tuner module, so that it is not necessary to use the AC adapter supplied with the tuner module. Although you may use a module

with standard audio connections, labeled for "car and home use," you will not be able to enjoy the AVR 2600's ease of control.

USB PORT

The USB Port on the AVR 2600 is used only for software upgrades. If an upgrade for the receiver's operating system is released in the future, it may be downloaded to the AVR using this port. Complete instructions will be provided at that time.

Optimally, the speakers should be placed in a circle with the listening position at its center. The speakers should be angled so that they directly face the listening position.

Front Speaker Placement

The center speaker is placed either on top of, below or mounted on the wall above or below the video display screen.

The front left and right speakers are placed along the circle, about 30 degrees from the center speaker and angled toward the listener.

Place the front left/right and center speakers at the same height, preferably at about the same height as the listener's ears. The center speaker should be no more than 2 feet above or below the left/right speakers. If you're using only two speakers with the AVR 2600, place them in the front left and right positions.

Placement of the surround speakers depends on the number of speakers in your system.

Figure 14 – Speaker Placement (5.1-Channel System)

Placement of Surround Speakers in a 5.1-Channel System

The side surround speakers should be placed 110 degrees from the center speaker, slightly behind and angled toward the listener. Alternatively, place them behind the listener, with each surround speaker facing the opposite-side front speaker. See Figure 14. The surround speakers may be placed a little higher than the listener's ears.

Placement of Surround Speakers in a 7.1-Channel System

In a 7.1-channel system, the side surround speakers are placed 90 degrees from the center speaker, directly to either side of the listening position. The surround back left and right speakers are placed 150 degrees from the center speaker, or directly facing the opposite-side front speaker. See Figure 15.

Figure 15 – Speaker Placement (7.1-Channel System)

NOTE: Some speaker manufacturers offer 6.1-channel speaker systems, for 6.1-channel surround sound formats, such as Dolby Digital EX, DTS-ES Discrete and Matrix modes and DTS Neo:6 mode. Using the AVR 2600 in a 6.1-channel configuration is not recommended. The 6.1-channel formats will sound better when played through a 7.1-channel system. The same surround back channel information is played through both surround back speakers, but with twice the power and clarity.

To use the AVR 2600 with a 6.1-channel speaker system, place the single surround back speaker directly behind the listener, but do not connect it until after you have run the EzSet/EQ procedure for a 5.1-channel system. After the EzSet/EQ process finishes, connect the surround back speaker to the Surround Back Left Speaker Output. Then follow the directions in the Advanced Functions section for manual setup of the surround back speaker.

Subwoofer Placement

Placement of the subwoofer requires less precision, since low-frequency sounds are omnidirectional. Placing the subwoofer close to a wall or in a corner will reinforce the low frequencies, and may create a "boomy" sound. Temporarily place the subwoofer where the listener normally sits, then walk around the room until the low frequencies sound best. Place the subwoofer in that spot.

NOTE: Your receiver will sound its best when the same model or brand loudspeaker is used for all positions.

Installing the AVR 2600 and connecting it to the other system components can be complicated. To simplify installation, it is suggested that you design your system before you begin connecting wires and cables.

Although the rear-panel jacks allow for a variety of audio and video connections to other components, the AVR's software organizes the connections into six conventional sources: Cable/SAT, DVD, TV, Game, Media Server and AUX. The internal sources (the optional The Bridge III dock for iPod, and the Radio) will be explained later.

Table A1 in the appendix indicates the default device types for each source, and the default audio/video connection assignments. If the defaults suit your system, then connect your devices to the audio/video inputs shown. Otherwise, design your system as explained below.

1. Best video connection type for your system: Examine the video inputs on your TV or video display. Write down the best available video connection type here: _____. The options, in order of preference, are: HDMI, DVI (must be HDCP-compliant), component video or composite video. This is the "system-best" video connection for your system.

2. Decide which source will be used for each device: Match up to six devices to the six conventional sources listed in the Table 2 worksheet below. Use the AUX source for any of these device types: CD player, HDTV set-top box, personal video recorder (PVR), TiVo device or VCR.

> **NOTE:** You may match any device type to any source. The device type is only relevant for programming control codes into the handheld remote and, as explained on page 24, you may reassign any Source Selector's device type. Any audio or video source may be connected to any matching jack on the AVR, regardless of device type.

3. Best video connection for each source: Examine each source device and write down the best available type of video connection, but not better than the system-best connection. Leave blank audio-only sources, such as a CD player.

4. Best audio connection for each source: For each source device, write down the best available type of audio connection. See the note below, and if the HDMI connection may be used for audio, it is the best option. The other options, in order of preference, are: optical digital audio, coaxial digital audio, 2-channel analog audio.

NOTES:
- For multichannel disc players, if both the device and the TV use HDMI connections for video, then check the owner's manual for the device to determine whether it transmits multichannel audio via its HDMI output. If it does, then no separate audio connection is required. If not, write down the multichannel analog audio connection in addition to any other audio type. See page 27 for more information.
- If the device uses an HDCP-compliant DVI output for video, then connect it to one of the AVR's HDMI Inputs using an HDMI-to-DVI adapter, but a separate audio connection will always be required.

5. Decide which sources to connect to each of the video inputs: Assign only one unique video input to each source. Use the best type of video connection available for each source.
- If your system-best video connection is "HDMI", select up to four HDMI source devices and assign them to one of the four numbered HDMI Inputs.
- If your system-best video connection is "Component", or if you have source devices with component video outputs that weren't assigned to one of the HDMI Inputs, assign up to two devices to one of the two numbered Component Video Inputs.
- If your system-best video connection is "Composite Video", or if you have source devices with composite video outputs that have not been assigned to any other video input, then assign up to three devices to one of the three numbered composite video Inputs.

> **NOTE:** If the source device is a video recorder that will be used to record from other devices connected to the AVR, assign the recorder to the Video 2 Input, which has a recording output. Any of the Coaxial or Optical Digital Inputs may be assigned to the recorder for audio, if it is capable of making digital audio recordings. To make analog recordings, assign either the Analog 2 or 4 Audio Inputs to the recorder, as both have recording outputs. It is not necessary to connect TiVo or PVR devices that will only record from their direct cable or satellite television signals to the AVR's recording outputs.

Table 2 – Source Assignment Worksheet

Source	Device Type	Best Video Connection (HDMI, DVI, Component, Composite)	Video Input Assigned	Best Audio Connection (HDMI, Optical, Coaxial, 2-Ch Analog, 6-/8-Ch Analog)	Audio Input Assigned (may be one digital plus one or more analog)	Analog Audio Input for Recording or Multizone Operation
Cable/SAT						
DVD						
TV						
Game						
Media Server						
AUX						

6. Decide which audio inputs to connect to each source: Assign only one unique digital audio input to each digital source. Assign analog audio inputs to analog sources, or as secondary connections for digital sources for backup, for recording or to make the source available to the multizone system.

• Any source using an HDMI Input requires no additional connection for audio *unless:*

   ◆ The source doesn't output multichannel audio through its HDMI output. Make a second connection to the 6-/8-Channel Analog Audio Inputs.

   ◆ The source has an HDCP-compliant DVI output for video only. Assign a digital or analog audio input.

• For any source whose best audio connection is optical or coaxial digital audio, assign one of the three Optical or three Coaxial Digital Audio Inputs. Do not connect both types of digital audio to the same source device.

• You may assign one of the 2-Channel Analog Audio Inputs to a digital source.

• You may also assign the 6-/8-Channel Analog Audio Inputs, if available, to a digital source. See page 27.

• Assign one of the six 2-channel Analog Audio Inputs to an analog source.

NOTE: If the source device is a digital audio recorder, it may be used with any of the Coaxial or Optical Digital Audio Inputs and the Coaxial Digital Audio Output. Both coaxial and optical signals are available at the Coaxial Digital Audio Output. To make analog recordings, assign either the Analog 2 or 4 Audio Inputs to the recorder, as both have recording outputs.

You are now ready to begin installing the AVR. Before beginning to connect the various components to the receiver, turn off all devices, including the AVR 2600, and unplug their power cords. *Don't plug in any of the power cords until you have finished making all of your connections.*

The receiver generates heat. Select a location that leaves several inches of space on all sides. Avoid completely enclosing the receiver inside an unventilated cabinet. Place components on separate shelves rather than stacking them directly on top of the receiver. *Never block the AVR's ventilation slots on the top and side panels. Doing so could cause the AVR to overheat, with potentially serious consequences.* Some shelf surface finishes are delicate. Try to select a location with a sturdy surface finish.

> **TIP:** Label each cable before connecting it, to avoid mistakes. Write a description of the cable on a blank adhesive label, e.g., "DVD", and fold the label around the cable about 6 inches from the end to be plugged into the AVR.

Almost all of the following installation steps are optional, depending on your system. Skip any step that does not apply to your system.

STEP ONE – Connect Source Devices

Leaving all AC power cords unplugged, connect the source devices to the AVR using the audio and video inputs you assigned in Table 2.

STEP TWO – Connect TV

Connect the system-best video input on the TV to the corresponding video monitor output on the AVR.

STEP THREE – Connect Loudspeakers

After you have placed your loudspeakers in the room as explained on page 19, connect each speaker to its color-coded terminal on the AVR. Maintain proper polarity by connecting the negative terminal on the speaker (usually colored black) to the negative terminal on the AVR (also colored black); and the positive terminal on the speaker (usually red) to the positive terminal on the AVR (color varies by channel; see Table 1 on page 16).

If you have a subwoofer, connect its line-level or LFE input to the purple Subwoofer Output.

> **NOTE:** If the subwoofer only has speaker-level inputs, after you have configured the AVR using EzSet/EQ technology as described on page 25, connect the subwoofer's left and right speaker input terminals to the AVR's Front Left and Front Right Speaker Outputs, then connect the front left and right main speakers to the subwoofer's left and right speaker output terminals. Consult the owner's manual for the subwoofer for specific installation instructions.

STEP FOUR – Connect Optional The Bridge III Dock

To enjoy content stored on a compatible iPod or iPhone (not included):

1. Turn off the AVR, using its Standby/On Switch.

2. Holding the cable with the wider part of the connector at the bottom, gently squeeze the tabs on each side as you insert it into the connector on the rear panel. See Figure 16.

Figure 16 – The Bridge III Connector

3. Place the black insert in The Bridge III, making sure to push it all the way down. See Figure 17.

> **NOTE:** Do not place an iPod or iPhone in The Bridge III unless both the black insert and a dock adapter are installed. Otherwise, the iPod or iPhone will not connect properly, and both it and The Bridge III may sustain damage that is not covered by the warranty.

Figure 17 – Docking an iPod or iPhone in The Bridge III

4. Locate the dock adapter that was included with your iPod or iPhone, or select one of the included dock adapters by referring to Table 3. If your iPod or iPhone does not appear in Table 3 and did not include an adapter, contact Apple Inc. to purchase one.

   Place the adapter in The Bridge III insert, as shown in Figure 17.

5. Remove the iPod or iPhone from any case, and dock it in The Bridge III, as shown in Figure 17.

Table 3 – Select the Correct The Bridge III Insert

The Bridge III Insert	iPod Model
NANO	iPod nano, 1st and 2nd generation
5G (VIDEO 60GB)	iPod, 5th generation (60GB, 80GB), and iPod classic (160GB)
5G (VIDEO 30GB)	iPod, 5th generation (30GB), and iPod classic (80GB)
13	iPod nano, 3rd and 4th generation
12, 14	iPod touch – install large bumper; iPhone or iPhone 3G – install small bumper

STEP FIVE – Connect FM Antenna

Connect the included FM antenna to the 75-ohm FM antenna terminal.

STEP SIX – Connect AM Antenna

Assemble the included AM antenna (see Figure 18) and connect it to the AM and Ground antenna terminals. The antenna is not polarized, and either lead may be connected to either terminal.
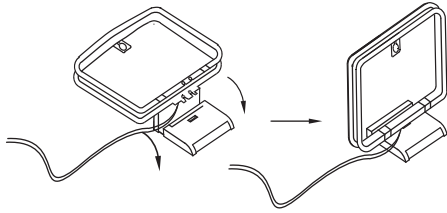

Figure 18 – AM Antenna Assembly

STEP SEVEN – Connect SIRIUS Tuner Module

If you have purchased an optional SIRIUS tuner module designed for SIRIUS-Ready devices, plug it into the SIRIUS jack. Purchase a subscription and activate the module, following the instructions posted at www.sirius.com. Place the module within view of a south-facing window.

STEP EIGHT – Connect Remote IR Inputs and Outputs

The AVR 2600 is equipped with a Remote IR Input, a Zone 2 Input and a Remote IR Output to facilitate use of your system with a remote control in a variety of situations.

When the AVR 2600 is placed inside a cabinet or facing away from the listener, connect an external IR receiver, such as the optional Harman Kardon HE 1000, to the Remote IR Input jack. For multizone operation, connect an optional IR receiver, keypad or other control device to the Zone 2 IR Input for remote control of the AVR 2600 (and any sources connected to the AVR's Remote IR Output) from the remote zone. Signals transmitted through the Zone 2 IR Input will control source selection and volume for the main or remote zone, depending on the setting of the remote's Zone Selector. If a source device is shared with the main listening area, any control commands issued to that source will also affect the main room.

If any source devices are equipped with a compatible Remote IR Input, use a 1/8-inch mini-plug interconnect cable (not included) to connect the AVR's Remote IR Output to the source device's Remote IR Input.

To control more than one source device through the Remote IR Output, connect all sources in "daisy chain" fashion, connecting each device's IR output to the next device's IR input, starting with the AVR.

STEP NINE – Install a Multizone System

The AVR 2600 offers the ability to distribute audio to other areas in your home.

IMPORTANT SAFETY NOTE: Installing a multizone system typically requires running cables inside walls. Always comply with the appropriate safety codes when installing concealed wiring, particularly all applicable state and local building codes and the NEC (National Electrical Code). Failure to do so may present a safety hazard. If you have any doubt about your ability to work with electrical and telecommunications wiring, hire a licensed electrician or custom installer to install the multizone system.

Multizone operation takes over the Surround Back/Zone 2 amplifier channels, limiting the system in the main listening room to 5.1 channels.

1. Connect the remote room's speakers directly to the Surround Back/Zone 2 Speaker Outputs. Reassign the Surround Back amplifier channels to power the speakers (see page 42).

2. Connect IR Control Devices to the Zone 2 IR Input

Connect an IR control device to the Zone 2 IR Input for remote-room control of the multizone system, source devices and volume in the remote zone.

NOTE: Only analog audio sources are available to the multizone system. For digital sources, make a second, analog audio connection. The Bridge III source is available to the multizone system.

STEP TEN – Plug in AC Power Cords

Before plugging the AVR into an unswitched electrical outlet, make sure the Main Power Switch on the rear panel is off, to prevent the possibility of damaging the AVR in case of a transient power surge.

You may plug one device that draws no more than 50 watts into the AC Switched Accessory Outlet on the rear panel. Turn on the device's mechanical or master power switch, and that device will power on any time the AVR 2600 is turned on (some devices may require additional steps to power on from their standby mode). If the device has a clock or must always be on (such as a cable set-top box programmed to make recordings), do not plug it into this outlet.

Plug the AC Power cord into an unswitched AC outlet.

It is recommended that you copy the appropriate information from the Table 2 worksheet to Table A5 in the appendix for future reference, in the event changes are made to the system components.

STEP ELEVEN – Insert Batteries in Remote

The AVR 2600 remote control uses four AAA batteries (included).

To remove the battery cover located on the back of the remote, squeeze the tab and lift the cover.

Insert the batteries as shown in Figure 19, observing the correct polarity.

Figure 19 – Remote Battery Compartment

Point the remote's lens toward the front panel of the AVR 2600. Make sure no objects, such as furniture, are blocking the remote's path to the receiver. Bright lights, fluorescent lights and plasma video displays may interfere with the remote's functioning. The remote has a range of about 20 feet, depending on the lighting conditions. It may be used at an angle of up to 30 degrees to either side of the AVR.

Leave the Zone Selector Switch at the bottom in the Zone 1 position for normal use.

If the remote control seems to operate intermittently, or if pressing a button on the remote does not cause the Setup Button or one of the Source Selectors to light, check or replace the batteries.

STEP TWELVE – Program Sources Into the Remote

The AVR 2600 remote may be programmed to control many brands and models of DVD players, cable boxes, satellite receivers, the Harman Kardon DMC 1000 digital media center and TVs. It is also preprogrammed to operate your iPod when docked in The Bridge III.

To access the functions for a particular device, switch the remote's device mode. Press the Setup Button to access the codes that control the receiver, or the Source Selector Buttons to access the codes for the devices programmed into the remote.

While the DVD Source Selector may be used to operate either a Harman Kardon Blu-ray Disc player or a Harman Kardon DVD player, the default mode is to operate a Harman Kardon Blu-ray Disc player. To toggle between Harman Kardon Blu-ray Disc player and DVD player operation, press and hold the DVD Source Selector for 2 seconds. The source selector will flash twice to confirm that the remote's mode has changed to operate the other type of disc player.

Follow these steps to program the correct codes for each source device into the remote:

1. Look up the codes for the product type (e.g., DVD, cable TV box) and the brand name of your source in Tables A14 – A24 of the Appendix.

   NOTE: The AUX Source Selector is used for CD, HDTV, PVD recorder, TiVo and VCR device types. Similarly, the Cable/SAT Source Selector is used for either a cable or satellite TV set-top box. The first digit of the product code indicates the device type.

2. Turn on your source device.

3. Place the remote in program mode: Press and hold the Source Selector as it turns red, goes dark, and turns red again. Then release it.

Optional: To reassign a Source Selector's device type (e.g., if there are two DVD players in the system), press the Source Selector for the new device type now. For example, to reassign the Cable/SAT Source Selector to operate a DVD player, first press and hold the Cable/SAT Button, then press the DVD Button.

The remote control is preprogrammed at the factory to operate a Harman Kardon Blu-ray Disc player when in DVD device mode. It is not necessary to change the device type to program a DVD player's codes.

4. Enter a code from Step 1, above.

   a) If the device turns off, press the Source Selector again to save the code. It will flash and the remote will exit Program mode.

   b) If the device does not turn off, enter another code. If you run out of codes, search through all of the codes in the remote's library for that product type by pressing the ▲ or ▼ Button repeatedly until the device turns off. When the device turns off, save the code by pressing the Source Selector. It will flash, and the remote will exit Program mode.

5. Check that other functions control the device correctly. Sometimes manufacturers use the same Power code for several models, while other codes vary. Repeat this process until you've programmed a satisfactory code set that operates most functions.

6. Find out which code number you have programmed by pressing and holding the Source Selector to enter the Program mode. Press the OK Button, and the Source Selector will flash in the code sequence. One flash represents "1", two flashes for "2", and so forth. A series of many fast flashes represents "0". Record the codes programmed for each device in Table A9 in the appendix.

Most of the button labels on the remote describe the button's function when used to control the AVR 2600. However, the button may perform a different function when used to control another device. Refer to the Remote Control Function List, Table A13 in the Appendix.

Activities are preprogrammed code sequences that execute many code commands with a single button press. "Punch-through" programming allows the remote to operate a device's channel or transport controls with the remote in another device's mode. See page 43 for instructions on these advanced programming functions.

STEP THIRTEEN – Turn On the AVR 2600

Two steps are required the first time you turn on the AVR 2600.

1. Flip the rear-panel Main Power Switch to the "On" position. The Power Indicator on the front panel will turn amber, indicating that the AVR is in Standby mode and is ready to be turned on. Normally, you may leave the Main Power Switch on, even when the receiver is not being used.

2. There are several ways to turn on the AVR from Standby mode.

   a) Press the Standby/On Switch on the front panel.

   b) Using the remote, press the AVR Power On Button or any of the Source Selectors.

   NOTES:
   • Any time you press one of the Source Selectors on the remote, the remote will switch device modes. To control the receiver, press the Setup Button. Some AVR functions are available in all device modes: Volume Controls (including Mute), Audio Effects, Video Modes, Surround Modes, Setup, Info Settings, Sleep Settings and AVR Power On and Off.

   • If you do not see a picture within about one minute, refer to the Video Troubleshooting Tips on page 30.

In this section, you will configure the AVR 2600 to match your actual system. A video display must be connected to one of the video monitor outputs on the receiver.

USING THE ON-SCREEN MENU SYSTEM

Although it's possible to configure the AVR using only the remote and the front-panel messages, it is easier to use the full-screen menu system.

The menu system is accessed by pressing the Setup Button on the remote or front panel.

The Main Menu will appear (see Figure 20), and if a video source is playing, it will be visible behind the transparent menu.
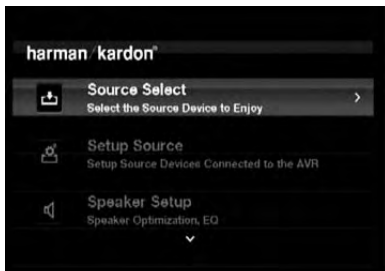
Figure 20 – Main Menu

NOTE: When using the AVR's on-screen menu system, a video output resolution of 720p or higher is recommended for easiest viewing, and to provide graphics that simplify some configuration options. Depending on the resolution selected, the menus shown by your system may vary in appearance.

The main menu system consists of five submenus: Source Selection, Setup Source, Speaker Setup, Zone 2 and System.

Use the ▼/▲ ◄/► Buttons on the remote or front panel to navigate the menu system, and press the OK Button to select a menu or setting line, or to enter a new setting.

The current menu, setting line or setting will appear in the Message Display, as well as on screen.

To return to the previous menu or exit the menu system, press the Back/Exit Button. Be certain all settings are correct, as any changes you have made will be retained.

Most users should follow the instructions in this Initial Setup section to configure a basic home theater system. You may return to these menus at any time to make additional adjustments, such as those described in the Advanced Functions section.

Before beginning initial setup, all loudspeakers, a video display and all source devices should be connected. You should be able to turn on the receiver and view the main menu when you press the Setup Button. If necessary, reread the Installation Section and the beginning of this section before continuing.

Configure the AVR 2600, Using EzSet/EQ Technology

One of the most important steps in setting up a home theater system is to calibrate the receiver to match the loudspeakers, optimizing sound reproduction.

Until recently, most receivers required manual calibration and configuration, a tedious process that called for a good ear or the purchase of an SPL (sound-pressure level) meter. Although you may configure the AVR 2600 manually, as described in the Advanced Functions section, it is recommended that you take advantage of the signature Harman Kardon EzSet/EQ system.

Eliminate extraneous background noise, such as noisy air conditioning. Avoid making any loud noises while running EzSet/EQ setup.

IMPORTANT SAFETY NOTE: During the EzSet/EQ procedure, a series of very loud test sweeps will be played through all of the speakers. Avoid sitting or standing close to any one speaker during the procedure. If you are particularly sensitive to loud noises, you may wish to leave the room and have someone else run the EzSet/EQ process.

STEP ONE – Place the included EzSet/EQ microphone in the listening position or in the center of the room, at about the same height as the listeners' ears. The microphone features a threaded insert on the bottom, for mounting on a camera tripod.

STEP TWO – Plug the EzSet/EQ microphone into the Headphone Jack/EzSet/EQ Microphone Input Jack on the front of the receiver, and set the level control on the subwoofer to the halfway point.

STEP THREE – Turn on the AVR 2600 and the video display. Press the Setup Button to display the Main Menu. Use the ▼ Button to highlight the Speaker Setup line, then press the OK Button. See Figure 21.
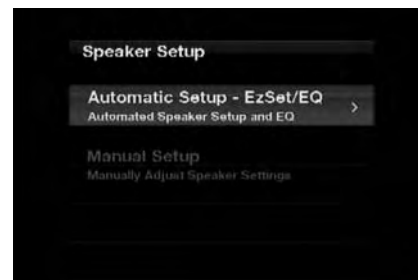
Figure 21 – Speaker Setup Menu Screen

Select "Automatic Setup-EzSet/EQ", and the screen shown in Figure 22 will appear.
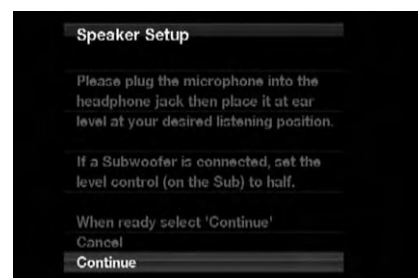
Figure 22 – EzSet/EQ Screen

To return to the Speaker Setup menu without starting the EzSet/EQ process, select Back. When you are ready to begin, select Continue.

NOTE: The AVR 2600 will automatically set its master volume to − 25dB.

STEP FOUR – After you select "Continue", the screen shown in Figure 23 will appear. Select the number of speakers in your system. Select 5.1 if no surround back speakers are present or if the surround back channels will be used for multizone operation.
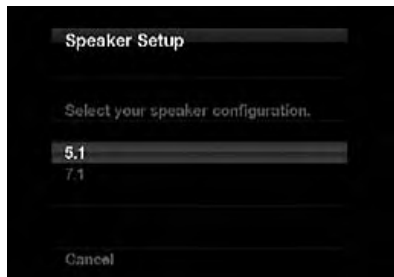
Figure 23 – EzSet/EQ: Number of Speakers

NOTE: If there are fewer than five main speakers in your system, do not use the EzSet/EQ process. Instead, proceed as described in the Advanced Functions section. If you have selected a 6.1-channel configuration with a single surround back speaker, use EzSet/EQ automatic configuration for 5.1 speakers, connect the single surround back speaker to the left Surround Back Speaker Output, then configure the surround back speaker manually, as described in the Advanced Functions section. The 6.1-channel configuration is not recommended. If the subwoofer is to be connected to the Front Speaker Outputs, do not connect the subwoofer until after running the EzSet/EQ process.

The test will begin, and the screen shown in Figure 24 will appear. Maintain silence during the EzSet/EQ configuration.
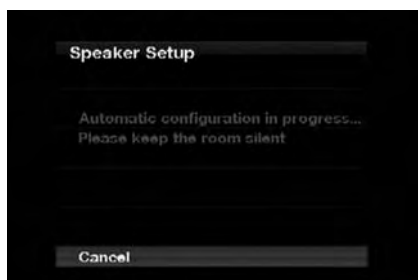
Figure 24 – EzSet/EQ in Progress

As the EzSet/EQ system tests each speaker, its position will appear on screen. If the test sweep is heard from a different speaker than the one indicated on screen, turn off the AVR and check the speaker-wire connections, then begin again.

When the test is completed, select the Continue option. These options will be displayed:

• **View Settings:** Select to view the results of the EzSet/EQ procedure.

• **Done:** Select to return to the Speaker Setup menu.

See the Advanced Functions section for instructions on how to manually configure the speakers or manually adjust the settings established by the EzSet/EQ process.

Set Up Sources

The Info Settings menu is used to assign the correct physical audio and video connections to each source.

The following settings are not optional and must be adjusted now to enable playback of each source: Video Input From Source, Audio Input From Source and Resolution to Display. The other settings may be adjusted later.

To display the Info Settings menu, press the Info Settings Button (front panel or remote). Or, from the Main Menu, select the Setup Source line and select a source from the slide-in menu. A screen similar to the one shown in Figure 25 will appear.
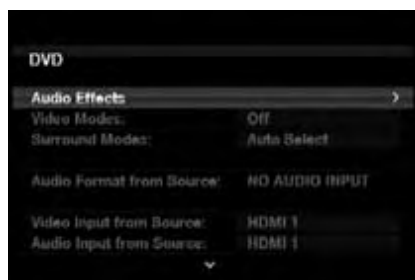
Figure 25 – Setup Source Menu

Audio Effects: Displays the Audio Effects submenu, where you may adjust the Dolby Volume setting, the bass and treble tone controls, the LFE trim, the Equalization On/Off setting and the MP3 enhancement for each source independently. Leave this submenu at its default settings, and return to it later if your system requires fine-tuning. See the Advanced Functions section for more information.

Video Modes: Displays the Video Modes submenu, where you may make picture adjustments for each source independently. Leave the settings at their factory defaults. Picture adjustments should be made to your video display first, with this menu used only for fine-tuning. See the Advanced Functions section for more information.

Surround Modes: Displays the Surround Modes submenu, where you may program surround modes for movies, music and games for each source independently.

Digital surround signals, such as Dolby Digital and DTS, are auto-matically played in their native formats, although you may change the surround mode. See the Advanced Functions section for more information.

Audio Format From Source: This line is informational only. When a digital program is playing, its format will be identified here. When analog audio programs are playing, this line displays ANALOG.

Audio and Video Input Selection

See Table A2 in the appendix for the factory default input assignments for each source. You may assign any available input to any source using the Info Settings menu.

When a source is selected, the AVR will check the assigned digital audio input for a signal. If one is present, the digital input will be selected. If not, the AVR will select the analog audio input specified at the Audio Auto Polling line of the Info Settings menu. If you don't want the AVR to select an analog audio input for the source, leave this setting at its default of Off.

The AVR will also select the assigned video source. The only "audio-only" sources on the AVR 2600 are the Radio and The Bridge III (video may be available; see page 32), which use special on-screen menus. For external sources, if no video signal is present, the display will remain black. You may pair an audio device with an A/V device's video signal using the Info Settings menu. Sources may share audio or video inputs.

> **NOTE:** The Bridge III obtains its audio and video signals (when available) from the iPod or iPhone docked in it, and it may not be used with other audio or video sources.

Video Input From Source: Assign the correct video input. Refer to Table 2, where you noted the physical video input the source is connected to, and select that input here.

Audio Input From Source: Assign the correct analog or digital audio input. Refer to Table 2, where you noted the physical audio input the source is connected to, and select that input here. If both analog and digital audio connections were made, select the digital input here, and select the analog input at the Audio Auto Polling and Zone 2 Audio lines below.

6-/8-Channel Inputs

The 6-/8-Channel Analog Audio Inputs are used when playing certain multichannel discs (DVD-Audio, Blu-ray Disc, SACD and HD-DVD) on a player that decodes the audio and outputs it via its multichannel analog audio outputs but not via its HDMI output.

HDMI-Equipped Multichannel Disc Player:

• Connect the player's HDMI output to one of the AVR's HDMI Inputs. No other connections are necessary.

• Assign the HDMI Input to both the Audio and Video Input From Source settings.

HDMI-Equipped Multichannel Disc Player That Does Not Output Multichannel Audio via an HDMI Connection:

• Connect the player's HDMI output and its multichannel analog audio outputs to one of the AVR's HDMI Inputs and to the AVR's 6-/8-Channel Analog Audio Inputs.

• Assign the HDMI Input to both the Audio and Video Input From Source settings.

• When listening to DVD-Video discs, CDs or other materials out-putting standard-definition digital audio, do nothing, as long as the HDMI Input is assigned to the Audio Input From Source setting.

• To listen to high-resolution multichannel discs, change the Audio Input From Source setting to "6/8 Channel". Change it back to the HDMI Input to listen to standard-resolution digital materials.

Multichannel Disc Player Without HDMI Output, or When Video Display Has No HDMI Input:

• Connect the player's component video outputs to one set of Component Video Inputs on the AVR. Depending on the capabilities of the player and your video display, you may need to use a composite video connection instead.

• Connect the player's digital audio output to a digital audio input on the AVR.

• Connect the player's multichannel audio outputs to the AVR's 6-/8-Channel Analog Audio Inputs.

• Assign the correct digital audio and analog video inputs to the Audio and Video Input From Source settings.

• When listening to DVD-Video discs, CDs or other materials out-putting standard-definition digital audio, do nothing, as long as the correct digital audio input is assigned to the Audio Input From Source setting.

• To listen to high-resolution multichannel discs, change the Audio Input From Source setting to "6/8 Channel". Change it back to the digital audio input to listen to standard-resolution digital materials.

> **NOTE:** The 6-/8-Channel Inputs pass the incoming signals directly to the volume control, without digitizing or processing them. It is not possible to change the surround mode or adjust any of the audio controls in the Audio Effects menu when using the 6-/8-Channel Inputs. Configure the bass management settings (i.e., speaker size, delay and output level) on your source device to match the settings programmed using the EzSet/EQ procedure, which may be viewed using the Speaker Setup menu (see Advanced Functions section). Consult the owner's guide for your multichannel player for more information.

Resolution to Display: This setting reflects the video output resolution, which is dependent upon the capabilities of the video display.

• If the display is connected to the AVR's HDMI Output, the two devices will communicate with each other, and the AVR will auto-matically select the best available video output resolution.

• If the display is connected to the AVR's Component Video Outputs, there is no automatic detection of the display's capabilities, and the video output resolution must be manually adjusted to match the display's capabilities (which may be obtained from the display's manual or its manufacturer's Web site).

• If the display is connected to the AVR's Composite Video Monitor Output, the video output resolution must be set to 480i (the factory default) to view any content, including the AVR's own menus.

Adjust the resolution by pressing the front-panel Resolution Button and using the ▲/▼ Buttons until the correct setting appears in the front-panel Message Display. For composite video, the correct setting is 480i. For component video, it is the highest resolution where a picture is visible. You will be prompted to accept or cancel the reso-lution change; the CANCEL message will appear on the front panel. Press the ▼ Button to view the ACCEPT option, and then press the OK Button.

> **NOTE:** When the display has a DVI input which is connected to the AVR using an HDMI-to-DVI adapter, the picture will be distorted or blank if the display is not HDCP-compliant. In that case, a different video connection must be used (component or composite).

Resolution From Source: Informational only. Indicates the resolution of the video output by the source device.

HDMI Bypass: When an HDMI source signal is in use and the system includes an HDMI-capable display, the HDMI Bypass mode passes the source signal directly to the HDMI output, bypassing all video processing within the AVR, including video output resolution adjustment. To allow the AVR to process all video, including "blending" the source video with its on-screen messages and menus so that you may adjust the AVR without missing any portion of the program, turn this setting off. When the HDMI Bypass mode is on, it is not possible to "blend" the video source signal with the AVR's on-screen menus. When any remote or front-panel buttons are pressed, the AVR will momentarily exit HDMI Bypass mode and display the on-screen menu on a black background. After the menu is cleared from the screen, either by timing out or when the Back/Exit Button is pressed, the AVR will return to HDMI Bypass mode.

Change Name: Change the display name for your source, which is useful if your source's device type is different from the available source names. Select this line and use the ▼/▲ Buttons to scroll forward or reverse through the alphanumeric characters. When the desired character appears, use the ► Button to move the cursor to the next position. Move the cursor again to leave a blank space. When you have finished, press the OK Button. The name will appear on the front panel and next to its original name, e.g., DVD, throughout the on-screen menu system. To clear the entry without making any changes, scroll to the blank character before "A".

Adjust Lip Sync: Resynchronizes the audio and video signals from a source to eliminate a "lip sync" problem. Lip sync issues can occur when the video portion of a signal undergoes additional processing in either the source or the video display. The Lip Sync adjuster appears by itself, enabling you to view the video while listening to the audio. Use the ◄/► Buttons to delay the audio by up to 180ms. See Figure 26.
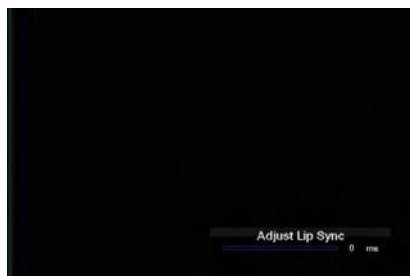
Figure 26 – Adjust Lip Sync

Audio Auto Polling: Used when both analog and digital audio connections are made. When no digital signal is present, the AVR will automatically switch to the analog audio input.

This can be useful for older cable television systems that broadcast channels in both analog and digital audio.

If an analog audio connection was made, select it here. If not, choose the Off setting, and the AVR will always use the digital audio connection.

Zone 2 Audio: Determines the audio source for the multizone system remote zone. Select the analog audio input the source is connected to. Digital audio is not available to the multizone system.

Press the Back/Exit Button, then return to the Setup Source line of the Main Menu to configure the next source. When you have finished, press the Back/Exit Button to clear the menus from view.

You are now ready to begin enjoying your new receiver!

Now that you have installed your components and completed a basic configuration, you are ready to begin enjoying your home theater system.

TURNING ON THE AVR 2600

Flip the rear-panel Main Power Switch to the "On" position. The Power Indicator on the front panel will turn amber, indicating that the AVR is in Standby mode and is ready to be turned on. The Main Power Switch is normally left on.

There are several ways to turn on the AVR 2600:

a) Press the Standby/On Switch on the front panel.

b) Using the remote, press the AVR Power On Button or any of the Source Selectors.

To turn the receiver off, press either the Standby/On Switch on the front panel or the AVR Power Off Button on the remote control. Unless the receiver will not be used for an extended period of time, leave the Main Power Switch on. When the Main Power Switch is turned off, any settings you have programmed will be preserved for up to four weeks.

IMPORTANT NOTE: If the PROTECT message ever appears in the Message Display, turn off the AVR and unplug it. Check all speaker wires for a short. If none is found, bring the unit to an authorized Harman Kardon service center for inspection and repair before using it again.

VOLUME CONTROL

Adjust the volume either by turning the knob on the front panel (clockwise to increase volume or counterclockwise to decrease volume), or by pressing the Volume Control on the remote. The volume is displayed as a negative number of decibels (dB) below the 0dB reference point.

0dB is the maximum recommended volume for the AVR 2600. Although it's possible to turn the volume to a higher level, doing so may damage your hearing and your speakers. For certain more dynamic audio materials, even 0dB may be too high, allowing for damage to equipment. Use caution with regard to volume levels.

To change the volume level display from the default decibel scale to a 0-to-90 scale, adjust the Volume Units setting in the System Settings menu, as described on page 42.

Dolby Volume

The AVR 2600 implements Dolby Volume processing, which can improve the audio performance of the system by revealing subtle details even at normal home-listening volumes.

One concern of the typical home theater listener is that volumes can vary widely for different programs played by a source, e.g., television commercial advertisements are often much louder than the main feature. Another is that details heard in the recording studio at typically high reference volumes are lost at the lower volumes used by many listeners.

The AVR 2600 uses two Dolby Volume techniques to address these issues. The Leveler module maintains a consistent listening volume within a source, e.g., while watching commercial television or while listening to different tracks on a data CD. The Modeler module

endeavors to re-create the reference presentation that was heard in the recording studio without losing portions of the program at the typically lower volume levels often used in the home. When the Modeler module is active, you may notice details of the performance that were hidden when the program was played on other equipment.

NOTE: The Dolby Volume processor is not used to level volume across sources.

To adjust the Dolby Volume setting, press the Audio Effects Button. A screen similar to the one shown in Figure 27 will appear. Move the cursor to highlight the Dolby Volume setting, and each press of the OK Button will switch to one of the options in Table 4 below. The settings do not refer to the volume level, which is adjusted normally using the Volume Control, but rather to the amount of Dolby Volume processing desired.
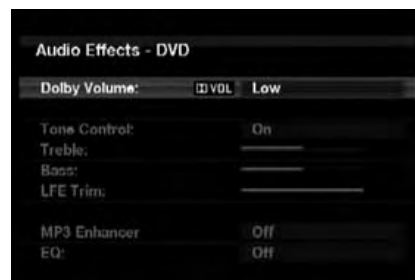
Figure 27 – Adjust Dolby Volume

Table 4 – Dolby Volume Settings

Setting	Effect
Off	No Dolby Volume processing
Low	Only Dolby Volume Modeler module is active
Medium	Both Modeler and Leveler modules are active; Leveler module has a value of 3
Max	Both Modeler and Leveler modules are active; Leveler module has a value of 9

NOTE: Dolby Volume processing is compatible with sources recorded at a sampling rate of 48kHz. High-resolution sources, such as DTS 96/24, will be decoded at 48kHz. DTS 96/24 programs will be played in DTS 5.1 mode. To hear DTS 96/24 materials in high resolution, turn off Dolby Volume processing.

Dolby Volume Calibration Offset

Calibration Offset is a feature of Dolby Volume processing that allows you to adjust the calibration of the AVR 2600 to optimally match your speakers and listening environment. The AVR 2600 is calibrated with the average speaker sensitivity in mind; however, different speakers may have different sensitivities. Use Calibration Offset to adjust the calibration of the AVR 2600 according to the types of speakers you have.

The average home audio speaker sensitivity is 88dB SPL (8 ohms, 1 watt, 1 meter). Check the sensitivity specification for your loudspeakers, found in the owner's manual or on the manufacturer's Web site. If your speakers have a sensitivity rating greater than 88dB SPL, increase Calibration Offset by the difference between

your speakers' sensitivity and 88dB. If they have a sensitivity rating of less than 88dB SPL, decrease Calibration Offset by the difference between your speakers' sensitivity and 88dB.

To adjust the Calibration Offset, press the Setup Button and scroll to the System Setup menu, then select it. Scroll to the Dolby Volume Calibration line, which defaults to 0dB. Use the ◄/► Buttons to adjust the setting within the range of –10dB to +10dB.

MUTE FUNCTION

To temporarily mute all speakers and the headphones, press the Mute Button on the remote. Any recording in progress will not be affected. The MUTE message will appear in the display as a reminder. To restore normal audio, press the Mute Button again, or adjust the volume. Turning off the AVR will also end muting.

SLEEP TIMER

The sleep timer sets the AVR to play for up to 90 minutes and then turn off automatically.

Press the Sleep Settings Button on the remote, and the time until turn-off will be displayed. Each additional press of the Sleep Button increases the play time by 10 minutes, with a maximum of 90 minutes. The SLEEP OFF setting disables the sleep timer.

When the sleep timer has been set, the front-panel display will automatically dim to half-brightness.

If you press the Sleep Button after the timer has been set, the remaining play time will be displayed. Press the Sleep Button again to change the play time.

AUDIO EFFECTS

Adjust the Dolby Volume setting, tone controls, LFE trim, Equalization On/Off setting or MP3 enhancement to improve performance. Access these settings from the Audio Effects submenu, as described in the Advanced Functions section.

It is recommended that you leave the settings at their default values until you are more familiar with your system.

VIDEO MODES

The settings in the Video Modes menu are used to fine-tune the picture, if necessary, after making all adjustments on the video display. It is recommended that you leave the settings at their defaults. See the Advanced Functions section for detailed information.

HEADPHONES

Plug the 1/4-inch plug on a pair of headphones into the front-panel jack for private listening. The default Headphone Bypass mode delivers a conventional 2-channel signal to the headphones.

Press the Surround Modes Button on the front panel or the remote, to switch to Harman Headphone virtual surround processing, which emulates a 5.1-channel speaker system. No other surround modes are available for the headphones.

SOURCE SELECTION

Press the front-panel Source List Button. Use the ▼/▲ Buttons to scroll through the sources. Using the on-screen menus, press the Setup Button, highlight "Source Select" and press the OK Button. Scroll to the desired source in the slide-show menu and press the OK Button.

For direct access to any source, press its Source Selector on the remote.

The AVR selects the audio and video inputs assigned to the source, and any other settings made during setup.

The source name, the audio and video inputs assigned to the source, and the surround mode will appear on the front panel. The source name and surround mode will also appear on screen.

VIDEO TROUBLESHOOTING TIPS:
If there is no picture:

• Check the source selection and video input assignment.

• Check the wires for a loose or incorrect connection.

• Check the video input selection on the display device (TV).

• Press the front-panel Resolution Button and use the ▼/▲ Buttons until the correct video output resolution is selected and a picture appears. The CANCEL message will appear. Press the ▼ Button to view the ACCEPT option, then press the OK Button.

Additional Tips for HDMI Connections:
• Turn off all devices (including the TV, AVR and any source components).

• Unplug the HDMI cables, starting with the cable between the TV and AVR, and continuing with the cables between the AVR and each source device.

• Carefully reconnect the cables from the source devices to the AVR. Connect the cable from the AVR to the TV last.

• Turn on the devices in this order: TV, AVR, source devices.

USING THE RADIO

To select the AVR 2600's built-in radio:

1. Press the Source List Button on the front panel. Use the ▼/▲ Buttons to scroll to the desired band.

2. Press the Radio Source Selector on the remote. Press it again to switch bands (AM, FM or SIRIUS).

A screen similar to the one shown in Figure 28 will appear. The SIRIUS band uses a different screen.

Figure 28 – FM Radio

Use the ▼/▲ Buttons or the Channel Control to tune a station (or channel for SIRIUS Radio), as displayed on the front panel and on screen.

The AVR defaults to automatic tuning, meaning each press of the ▼/▲ Buttons scans through all frequencies until a station with acceptable signal strength is found. To switch to manual tuning, in which each press of the ▼/▲ Buttons steps through a single frequency increment (0.1MHz for FM, or 10kHz for AM), press the Menu Button. The Mode line will display the current setting. Each press of the OK Button toggles between automatic and manual tuning modes.

When an FM station has been tuned, toggling the tuning mode also switches between stereo and monaural play, which may improve reception of weaker stations.

A total of 30 stations (AM and FM together) may be stored as presets. When the desired station has been tuned, press the OK Button, and two dashes will flash. Use the Alphanumeric Keys to enter the desired preset number.

To tune a preset station: Press the ◄/► Buttons or the I◄◄/►►I Transport Controls; or press the Menu Button and scroll to the desired preset, then press the OK Button; or enter the preset number using the Numeric Keys. For presets 10 through 30, press 0 before the preset number. For example, to enter preset 21, press 0-2-1.

SIRIUS SATELLITE RADIO OPERATION

To listen to Satellite Radio, you'll need to connect a SIRIUS Satellite Radio tuner (sold separately) to your SIRIUS Ready receiver. SIRIUS Satellite Radio is available to residents of the U.S. (except Alaska and Hawaii) and Canada.

Satellite Radio delivers a variety of commercial-free music from categories including Pop, Rock, Country, R&B, Dance, Jazz, Classical and many more, plus coverage of all the top professional and college sports, including play-by-play games from select leagues and teams. Additional programming includes expert sports talk, uncensored entertainment, comedy, family programming, local traffic and weather, and news from your most trusted sources.

Once you've purchased a SIRIUS tuner, you'll need to activate it and subscribe to begin enjoying the service. Easy-to-follow installation and setup instructions are provided with the SIRIUS tuner. There are a variety of programming packages available, including the option of adding "The Best of XM" programming. "The Best of XM" service is not available to SIRIUS Canada subscribers at this time. Please check with SIRIUS Canada for any updates using the numbers and Web address below.

Family-friendly packages are also available to restrict channels featuring content that may be inappropriate for children.

To subscribe to SIRIUS, U.S. and Canadian customers can call 1-888-539-SIRI (7474) or visit sirius.com (U.S.) or siriuscanada.ca (Canada).

The AVR 2600 is a SIRIUS Ready device, and is able to receive the SIRIUS service when a user-supplied SIRIUS tuner module is connected and the service activated.

Select a tuner module designated for SIRIUS Ready audio components. A SIRIUS Ready module uses the special connector on the AVR and is controlled by the AVR's internal tuner, including its 40 preset station locations and remote control. Although you may use a "car and home" module with standard audio connections, you will not be able to enjoy the AVR's ease of control.

The SIRIUS-Connect SC-H1 tuner module is compatible with the AVR 2600. Other modules that have standard analog or digital audio outputs may be connected to a compatible input and operated using their own controls.

Plug the module into the SIRIUS tuner jack on the rear of the AVR 2600. Place the tuner module so that it has a clear view through a south-facing window.

Select SIRIUS Radio as the source in one of these ways:

1. Press the Source List Button on the front panel. Use the ▼/▲ Buttons to scroll to "SIRIUS Radio" and press the OK Button.

2. Press the Radio Source Selector on the remote repeatedly until SIRIUS Radio is selected.

There are four ways to tune a SIRIUS Radio channel:

1. Use the ▼/▲ Buttons or the Channel Control to scan through the channel numbers.

2. Use the ◄/► Buttons to scan through any previously programmed preset stations.

3. After you have programmed presets, directly enter the preset number (1 through 40) using the Alphanumeric Keys. For two-digit positions, enter a "0" before the number.

4. Press the Menu Button to search for a channel by: preset, category, all channels or direct entry.

When you are able to hear Channel 1, you are ready to activate your module. If you don't hear Channel 1, make sure the module's plug is firmly seated in the SIRIUS jack, and that the module is near a south-facing window. Try rotating the module to obtain reception. You may need to purchase an extension cable to ensure that the module is near the window.

Tune to Channel 0 for a display of your module's Radio ID number. You may also view the Radio ID number by pressing the Menu Button and selecting "SIRIUS ID".

The current channel number and preset location will appear in the lower line of the Message Display. The song title, artist, channel name, channel category, channel number, preset position (if pro-grammed) and three signal-strength bars, will all appear on screen when a video display is in use.

For traffic and weather channels, the current city's name will appear instead of the channel name, and the local weather and temperature will be displayed on screen.

A total of 40 channels may be stored as presets. When the desired channel has been tuned, press the OK Button, and two dashes will flash in the front-panel display. Use the Alphanumeric Keys to enter the desired preset number.

To tune a preset, press the ◄/► Buttons or the I◄◄/►►I Transport Controls, or press the Menu Button and scroll to the desired preset, then press the OK Button; or enter the preset number using the Numeric Keys. For presets 10 through 40, press 0 before the preset number. For example, to enter preset 21, press 0-2-1.

RECORDING

Two-channel analog and digital audio signals, as well as composite video signals, are normally available at the appropriate recording outputs. To make a recording, connect your audio or video recorder to the appropriate output jacks, as described in the Installation

section, insert blank media and make sure the recorder is turned on and recording while the source is playing.

NOTES:

1. Analog and digital audio signals are not converted to the other format.

2. Only PCM digital audio signals are available for recording. Proprietary formats such as Dolby Digital and DTS may not be recorded using the digital audio connections. Use the analog audio connections to make an analog recording.

3. HDMI and component video sources are not available for recording.

4. Please make certain that you are aware of any copyright restrictions on any material you record. Unauthorized duplication of copyrighted materials is prohibited by federal law.

USING *The*Bridge III DOCKING STATION

The Bridge III is an optional dock that is compatible with most docking iPod models, 4G and later, and iPhone models (not included). When The Bridge III is connected to its proprietary input on the AVR 2600 and the iPod or iPhone is docked, you may play the audio, video and still-image materials on your iPod or iPhone through your high-quality audio/video system; operate the iPod or iPhone using the AVR remote or the AVR's front-panel controls; view navigation messages on the AVR's front panel or a connected video display; and charge the iPod or iPhone.

When the source The Bridge is selected and an iPod or iPhone is docked, the message "The Bridge" appears in the front-panel Message Display. If the AVR doesn't detect the iPod or iPhone, turn off the AVR, remove the iPod or iPhone from The Bridge III and reset the iPod or iPhone. When the iPod or iPhone returns to its main menu, redock it and turn on the AVR.

Table 5 summarizes the controls available with The Bridge III during normal playback.

Table 5 – Using The Bridge III

iPod or iPhone Function	Remote Control Key
Play	Play (▶)
Pause	Pause (II)
Menu	Menu
Back/Exit	Back/Exit or Left Arrow (◄)
Select	OK or Right Arrow (▶)
Scroll Reverse	Up Arrow (▲)
Scroll Forward	Down Arrow (▼)
Forward Search	Forward Search (▶▶)
Reverse Search	Reverse Search (◄◄)
Next Track	Next (▶▶I) or Right Arrow (▶)
Previous Track	Previous (I◄◄) or Left Arrow (◄)
Page Up/Down	Page Up/Down

While a selection is playing, the song title and play mode icon will appear in the front-panel Message Display.

If a video monitor is connected to the AVR 2600 and the system is not in iPod Manual Mode, the Now Playing screen will appear and display the play mode icon, song title, artist and album. A graphic bar indicates the current play position within the track. If random or repeat play has been programmed, an icon will appear in the upper right corner.

The screen may disappear from view, depending on the Setup and Slide-In Menus setting in the System Settings menu (described in the Advanced Functions section). Restore the Now Playing screen to view by pressing either of the ◄/► Buttons.

NOTE: It is strongly recommended that you use the screen saver built into your video display to avoid possible damage from "burn-in" that may occur with plasma and many CRT displays when a still image, such as a menu screen, remains on display for an extended period of time.

Press the Menu Button to view the slide-out menu:

Music: Navigates the audio materials stored on the iPod or iPhone. Use the Page Up/Down Control on the remote to scroll through the content a page at a time.

Photo/Manual: Select this line to view still images stored on a photo-capable iPod or iPhone. The system will switch to iPod Manual Mode, and control will shift to the iPod. Use the screen and controls on the iPod. The AVR remote may also be used.

To view photos on a video monitor connected to the AVR, select the photo and press the Play Button on the iPod, or press the OK Button on the remote three times.

Videos: Select this line to view videos stored on an iPod that supports video browsing or an iPhone.

NOTES ON VIDEO PLAYBACK:

• As of this writing, video browsing is only supported on the iPod 5G, iPod classic (80GB, 120GB and 160GB), iPod nano 3G and 4G, and iPod touch or iPhone (when loaded with software version 2 or higher). For other iPod models, it is not possible to view photos (except iPod 4G) or videos on an external monitor while using The Bridge III. Due to the design of the iPhone, it is not possible to view photos stored on the iPhone using The Bridge III.

• Before attempting to view photos or videos stored on your device, check the Video Settings menu on the device and make sure that the TV Out setting is set to On. The TV Signal setting should be NTSC, to match the capabilities of your video display. If your selection was playing and is paused, the iPod or iPhone requires you to reselect the video for the new TV Out setting to take effect.

• If you do not see the Videos line in the menu, and the iPod supports video browsing and has video content stored on it, you may need to turn off the AVR, remove the iPod from The Bridge III, reset the iPod, turn the AVR back on and dock the iPod again. An iPhone may not need to be reset, as simply undocking and redocking it may resolve the problem. This

procedure may also help when a video program is selected but the "Now Playing" screen appears instead of the video images.

To exit iPod Manual Mode, with the AVR remote in The Bridge mode, press the Menu Button. To return to a previous menu level, press the Back/Exit Button or the ◄ Button.

Random: Select this setting for random playback, also known as "Shuffle Mode". Each press of the OK Button switches the setting: shuffle by Song, shuffle by Album, or Off to end random playback.

Repeat: Select this setting to repeat a track or all tracks in the current album or playlist. Each press of the OK Button switches the setting: repeat Off, repeat One or repeat All.

NOTE: The iTunes application allows you to exempt some tracks from Shuffle mode. The AVR 2600 cannot override this setting.

The AVR supports audio playback from some applications available for the iPhone and the iPod touch. Place the system in iPod Manual Mode by pressing the Menu Button and selecting "Photo/Manual". Then use the controls on the iPhone or iPod touch to run the application. Due to the wide variety of applications and many factors affecting them, playback is not guaranteed.

While scrolling, hold the key to scroll faster. Use the Page Up/Down control on the remote to scroll a page at a time (not in manual mode).

NOTES:
- The Play and Pause functions are not available unless content has been selected for playback.
- To search within a track (not in Manual Mode), press and hold the indicated button. Press the Previous Track Button once to skip to the beginning of the current track. Press the Previous Track Button twice to skip to the beginning of the previous track.

iPod MANUAL MODE

Press the Menu Button and select Photo/Manual to enter iPod Manual Mode. This is required to view photos stored on the iPod or iPhone.

Table 6 summarizes the controls available with The Bridge III in iPod Manual mode.

Table 6 – Using The Bridge III in iPod Manual Mode

iPod Function	Remote Control Key
Play	Play (►)
Pause	Pause (II)
Menu	Back/Exit or Left Arrow (◄)
Select	OK
Select Next Screen* (Scrubber, Cover Art, Ratings)	Right Arrow (►)
Scroll Reverse	Page Up or Up Arrow (▲)
Scroll Forward	Page Down or Down Arrow (▼)
Next Track	Next (►►I) or Right Arrow (►)
Previous Track	Previous (I◄◄) or Left Arrow (◄)

* Does not appear on video display connected to AVR.

When a slideshow is being displayed, some controls have different effects:
- To pause the slideshow, including any audio track that is playing, press the Pause Button.
- To resume a paused slideshow, press the Pause Button. Pressing the Play Button begins audio playback.
- To play an audio track stored on the iPod, adjust the Slideshow Settings on the iPod.
- To skip to the next or previous photo on the iPod, press the Next or Previous Transport Control.
- It is not possible to skip to the next or previous audio track during a slideshow.
- To search forward or in reverse within an audio track, press the Forward or Reverse Search Transport Control. If no audio track is playing, these controls will have no effect during the slideshow.

SELECTING A SURROUND MODE

Surround mode selection can be as simple or sophisticated as your individual system and tastes. Feel free to experiment, and you may find a few favorites for certain sources or program types. More detailed information on surround modes may be found in the Advanced Functions section.

To select a surround mode, press the Surround Modes Button (front panel or remote). The Surround Modes menu will appear (see Figure 29). Use the ▼/▲ Buttons repeatedly until the desired surround mode category appears: Auto Select, Virtual Surround, Stereo, Movie, Music or Video Game. Press the OK Button to change the type's surround mode.

Figure 29 – Surround Modes Menu

Auto Select: For digital programs, such as movies recorded with a Dolby Digital soundtrack, the AVR will automatically use the native surround format. For 2-channel analog and PCM programs, the AVR uses Logic 7 Movie, Music or Game mode, depending on the source.

Virtual Surround: When only two main speakers are present in the system, Harman Virtual Surround may be used to create an enhanced sound field that virtualizes the missing speakers. Select between Wide and Reference modes.

Stereo: When 2-channel playback is desired, select the number of speakers used for playback:
- 2 CH STEREO uses only two speakers. As described on page 35, you may select Analog Bypass mode for a pure analog signal when analog audio inputs are in use. Turn off the Tone Control setting in the Audio Effects submenu, and the AVR does the rest.

- 5 CH STEREO plays the left-channel signal through the front and surround left speakers, the right-channel signal through the right speakers and a summed mono signal through the center speaker.
- 7 CH STEREO follows the same scheme as 5 CH STEREO, but adds the surround back speakers. This mode is only available when the surround back speakers are present and have not been reassigned to multizone operation. See page 42 for more information.

Movie: Use when a surround mode is desired for movie playback: Logic 7 Movie, DTS Neo:6 Cinema or Dolby Pro Logic II (IIx when seven main speakers are present).

Music: Use when a surround mode is desired for music playback: Logic 7 Music, DTS Neo:6 Music or Dolby Pro Logic II (IIx when seven main speakers are present). The Dolby Pro Logic II/IIx Music mode allows access to a submenu with some additional settings. See the Advanced Functions section for more information.

Video Game: Use to select a surround mode for game playback: Logic 7 Game, or Dolby Pro Logic II (IIx when seven main speakers are present) Game.

After you have made your selection, press the Back/Exit Button.

See the Advanced Functions section for more information on surround modes.

Much of the AVR 2600's performance is handled automatically, with little intervention required on your part. The AVR 2600 is capable of being customized to suit your system and your tastes. In this section, some of the more advanced adjustments available are described.

AUDIO PROCESSING AND SURROUND SOUND

Audio signals output by sources are encoded in a variety of formats that can affect not only the quality of the sound but the number of speaker channels and the surround mode. You may also manually select a different surround mode, when available.

Analog Audio Signals

Analog audio signals usually consist of two channels – left and right. The AVR 2600 offers three options for playback:

1. **Analog Bypass Mode:** The 2-channel signal is passed directly from the input to the volume control, without being digitized or undergoing any processing for bass management or surround sound. To select analog bypass mode:

   a) The analog audio inputs for the source must be selected. If necessary, press the Info Button on the remote and use the ▼/▲ Buttons to scroll to the Audio Input from source setting.

   b) The tone controls must be disabled by setting the Tone Control to Off. Press the Audio Effects Button to access the Tone Control setting.

   c) The 2-channel Stereo mode must be selected. Press the Surround Modes Button to access the STEREO line of the Surround Modes submenu. Press the OK Button to select 2-channel Stereo.

   When the Tone Control setting is Off, the front speakers will be set to Large automatically. When the Tone Control setting is turned On, if you have set the front speaker crossover to a numeric setting, the front speakers will return to the Small setting.

   NOTE: Audio from The Bridge III source is analog, and when 2-channel Stereo mode is selected, the audio will be played in Analog Bypass mode.

2. **DSP Surround Off Mode:** The DSP Surround Off mode digitizes the incoming signal and applies the bass management settings, including speaker configuration, delay times and output levels. Select this mode when your front speakers are small, limited-range satellites and you are using a subwoofer. To select this mode, use a digital audio input, or turn the Tone Control setting off, and select 2-channel Stereo mode.

3. **Analog Surround Modes:** The AVR 2600 is able to process 2-channel audio signals to produce multichannel surround sound, even when no surround sound has been encoded in the recording. Among the available modes are the Dolby Pro Logic II/IIx modes, the Harman Virtual Speaker modes, the DTS Neo:6 modes, the Logic 7 modes and the Stereo modes.

Digital Audio Signals

Digital audio signals offer greater capacity, which allows the encoding of center and surround channel information directly into the signal. The result is improved sound quality and startling directionality, since each channel is reproduced discretely.

Even when only two channels are encoded, the digital signal allows for a higher sampling rate that delivers greater detail. High-resolution recordings sound extraordinarily distortion-free, especially at high frequencies.

Surround Modes

Surround mode selection is dependent upon the format of the incoming audio signal, as well as personal taste. Table A13 offers a brief description of each mode and indicates the types of incoming signals or digital bitstreams the mode may be used with. Additional information about the Dolby and DTS modes is available on the companies' Web sites: www.dolby.com and www.dtsonline.com.

When in doubt, check the jacket of your disc for more information on which surround modes are available. Usually, nonessential sections of the disc, such as trailers, extra materials or the disc menu, are only available in Dolby Digital 2.0 (2-channel) or PCM 2-channel mode. If the main title is playing and the display shows one of these surround modes, look for an audio or language setup section in the disc's menu. Also, make sure your player's audio output is set to the original bitstream rather than 2-channel PCM. Stop play and check the player's output setting.

For any incoming signal, only a limited number of surround modes are available. Although there is never a time when all of the AVR 2600's surround modes are available, there is usually a wide variety of modes available for a given input.

Multichannel digital recordings are found in the 5.1-, 6.1- or 7.1- channel formats. The channels included in a 5.1-channel recording are front left, front right, center, surround left, surround right and LFE. The LFE channel is denoted as ".1" to represent the fact that it is limited to the low frequencies.

6.1-Channel recordings add a single surround back channel, and 7.1-channel recordings add surround back left and surround back right channels to the 5.1-channel configuration. New formats are available in 7.1-channel configurations. The AVR 2600 is able to play the new audio formats, delivering a more exciting home theater experience.

NOTE: To use the 6.1- and 7.1-channel surround modes, the Surround Back channels must be enabled. See the Manual Speaker Setup section on page 36 for more information.

The Digital formats include Dolby Digital 2.0 (two channels only), Dolby Digital 5.1, Dolby Digital EX (6.1), Dolby Digital Plus (7.1), Dolby TrueHD (7.1), DTS-HD High-Resolution Audio (7.1), DTS-HD Master Audio (7.1), DTS 5.1, DTS-ES (6.1 Matrix and Discrete), DTS 96/24 (5.1), 2-channel PCM modes in 32kHz, 44.1kHz, 48kHz or 96kHz, and 5.1 or 7.1 multichannel PCM.

When a digital signal is received, the AVR 2600 detects the encoding method and the number of channels, which is displayed briefly as three numbers, separated by slashes (e.g., "3/2/.1").

The first number indicates the number of front channels in the signal:

"1" represents a monophonic recording, usually an older program that has been digitally remastered or, more rarely, a modern program for which the director has chosen a special effect.

"2" indicates the presence of the left and right channels, but no center channel.

"3" indicates that all three front channels (left, right and center) are present.

The second number indicates whether any surround channels are present:

"0" indicates that no surround information is present.

"1" indicates that a matrixed surround signal is present.

"2" indicates discrete left and right surround channels.

"3" is used with DTS-ES bitstreams to represent the presence of the discrete surround back channel, in addition to the side surround left and right channels.

"4" is used with 7.1-channel digital formats to indicate the presence of two discrete side surround channels and two discrete back surround channels.

The third number is used for the LFE channel:

"0" indicates no LFE channel.

".1" indicates that an LFE channel is present.

The 6.1-channel signals – Dolby Digital EX and DTS-ES Matrix and Discrete – each include a flag meant to signal the receiver to decode the surround back channel, indicated as 3/2/.1 EX-ON for Dolby Digital EX materials, and 3/3/.1 ES-ON for DTS-ES materials.

Dolby Digital 2.0 signals may include a Dolby Surround flag indicating DS-ON or DS-OFF, depending on whether the 2-channel bitstream contains only stereo information, or a downmix of a multichannel program that can be decoded by the AVR's Dolby Pro Logic decoder. By default, these signals are played in Dolby Pro Logic IIx Movie mode.

When a PCM signal is received, the PCM message and the sampling rate (32kHz, 44.1kHz, 48kHz or 96kHz) will appear.

When only two channels – left and right – are present, the analog surround modes may be used to decode the signal into the remaining channels. If you would prefer a different surround format than the native signal's digital encoding, press the Surround Modes Button to display the Surround Modes menu (see Figure 30).

The Auto Select option uses the native signal's digital encoding, e.g., Dolby Digital, DTS, Dolby TrueHD or DTS-HD Master Audio. For 2-channel materials, the AVR defaults to Logic 7 Movie mode. If you prefer a different surround mode, select the surround mode category: Virtual Surround, Stereo, Movie, Music or Video Game. Press the OK Button to change the mode.

Each category is set to a default surround mode:

• **Virtual Surround:** Harman Virtual Speaker

• **Stereo:** 7-channel stereo

• **Movie:** Logic 7 Movie

• **Music:** Logic 7 Music

• **Video Game:** Logic 7 Game

You may select a different mode. The choice of surround modes depends on the number of speakers in your system.

• **Virtual Surround:** Harman Virtual Speaker

• **Stereo:** 2-channel stereo, 5-channel stereo or 7-channel stereo

• **Movie:** Logic 7 Movie, DTS Neo:6 Cinema, Dolby Pro Logic II Movie, Dolby Pro Logic IIx Movie

• **Music:** Logic 7 Music, DTS Neo:6 Music, Dolby Pro Logic II Music, Dolby Pro Logic IIx Music

• **Video Game:** Logic 7 Game, Dolby Pro Logic II Game, Dolby Pro Logic IIx Game

Once you have programmed the surround mode for each type of audio, select the line from the Surround Modes menu to override the AVR's automatic surround mode selection. The AVR will use the same surround mode the next time the source is selected.

Please refer to Table A13 in the appendix for more information on which surround modes are available with different bitstreams.

Dolby Surround Settings

Some additional settings are available for Dolby modes. When the Dolby Pro Logic II or IIx Music modes have been selected, choose the Edit submenu to adjust the Center Width, Dimension and Panorama settings. See Figure 30.
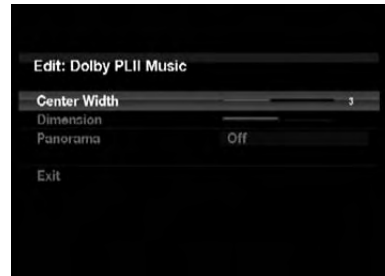
Figure 30 – Dolby Pro Logic II/IIx Music Mode Settings

Center Width: This setting affects how vocals sound through the three front speakers. A higher number (up to 7) focuses the vocal information tightly on the center channel. Lower numbers broaden the vocal soundstage. Use the ◄/► Buttons to adjust.

Dimension: This setting affects the depth of the surround presentation, allowing you to "move" the sound toward the front or rear of the room. The setting of "0" is a neutral default. Setting "F-3" moves the sound toward the front of the room, while setting "R-3" moves the sound toward the rear. Use the ◄/► Buttons to adjust.

Panorama: With the Panorama mode turned ON, some of the sound from the front speakers is moved to the surround speakers, creating an enveloping "wraparound" effect. Each press of the OK Button toggles the setting on or off.

MANUAL SPEAKER SETUP

The AVR 2600 is flexible and may be configured for most speakers, and to compensate for the acoustic characteristics of your room.

The EzSet/EQ process automatically detects the capabilities of each speaker, and optimizes the AVR 2600's performance. If you are

unable to run EzSet/EQ calibration, or if you wish to make further adjustments, use the Manual Speaker Setup on-screen menus.

Before beginning, place your loudspeakers as explained in the Speaker Placement section, and connect them to the AVR. Consult the owner's guide for the speakers or the manufacturer's Web site for the frequency range specification. Although you may set the output levels "by ear," an SPL (sound-pressure level) meter purchased at a local electronics store will provide greater accuracy.

Record your configuration settings in Tables A3 through A12 in the appendix for easy re-entry after a system reset, or if the AVR's Master Power Switch is turned off or the unit is unplugged for more than four weeks.

> **NOTE:** When using the AVR's Speaker Setup menus, select a video output resolution of 720p or higher to view graphics that simplify configuration.

STEP ONE – Determine Speaker Crossover

Without using the EzSet/EQ process, the AVR 2600 can't detect how many speakers you've connected to it; nor can it determine their capabilities. Consult the speaker's technical specifications and locate the frequency response, usually given as a range, e.g., 100Hz – 20kHz (±3dB). Write down the lowest frequency that each of your main speakers is capable of playing (100Hz in the example) as the crossover in Table A3 in the appendix. This is not the same as the crossover frequency listed in the speaker's specifications. For the subwoofer, write down the transducer size.

The receiver's bass management determines which speakers will be used to play back the low-frequency (bass) portion of the source program. Sending the lowest notes to small satellite speakers won't sound right, and may even damage the speaker. The highest notes may not be heard at all through the subwoofer.

With proper bass management, the AVR 2600 divides the source signal at a crossover point. All information above the crossover point is played through the satellite speaker, and all information below the crossover point is played through the subwoofer. Each loudspeaker in your system performs at its best, delivering an enjoyable sound experience.

STEP TWO – Measure Speaker Distances

Ideally, all of your speakers would be placed in a circle, with the listening position at the center. However, you may have had to place some speakers a little further away from the listening position than others. Sounds that are supposed to arrive simultaneously from different speakers may blur, due to different arrival times.

Use the AVR's delay adjustment to compensate for real-world speaker placements.

Measure the distance from each speaker to the listening position, and write it down in Table A4 in the appendix. Even if all of your speakers are the same distance from the listening position, enter your speaker distances as described in Step Three.

STEP THREE – Manual Setup Menu

Now you are ready to program the receiver. Sit in the usual listening position and make the room as quiet as possible.

With the receiver and video display turned on, press the Setup Button to display the menu system. Use the ▼ Button to move the cursor to the Speaker Setup line, and press the OK Button to display the Speaker Setup menu. See Figure 21.

If you have run the EzSet/EQ process, the results were saved. To tweak the EzSet/EQ results, or to configure the AVR 2600 from scratch, select Manual Setup. A screen similar to the one shown in Figure 31 will appear.

Figure 31 – Manual Speaker Setup Menu

> **NOTE:** All of the speaker setup submenus include the Back option, as shown at the bottom of Figure 31. To save the current settings, select the Back option.

To reconfigure the speakers from scratch, select the Reset option.

For best results, adjust the submenus in this order: Number of Speakers, Crossover (Size), Sub Mode, Distance and Level Adjust.

Number of Speakers

Move the cursor to the Number of Speakers line and press the OK Button. See Figure 32.

Figure 32 – Number of Speakers Menu

Program the correct setting for each speaker group: ON when the speakers are present in the system, and OFF for positions where no speakers are installed. The Front Left & Right speakers are always ON and may not be disabled. Any changes will be reflected in the total number of speakers displayed at the top of the screen.

The setting for the surround back speakers includes a third option: Zone 2. The AVR 2600 is capable of multizone operation, supporting placement of a pair of speakers in another room. The AVR 2600's assignable surround back amplifier channels make multizone operation easier than ever, since an external power amplifier is not required. Select the Zone 2 option at this line, and connect the Surround Back Speaker Outputs to loudspeakers located in the remote room.

The main room will be configured automatically for up to 5.1 channels. See the Multizone Operation section for more information.

NOTE: When the Surround Back speakers are set to "Zone 2", they will not be configured during the EzSet/EQ process. To use the speakers in the main listening area, configure them as "On", and run the EzSet/EQ process for a 7.1-channel system. If the speakers will only be used during multizone operation, configure them manually, as explained below.

The settings in this menu affect the remainder of the speaker setup process and the availability of various surround modes at any time.

When you have finished, select the Back option or use the Back/Exit Button.

Adjust Crossover Frequencies Menu

After you have programmed the number of speakers, the AVR will return to the Manual Speaker Setup menu (see Figure 31). Navigate to the Crossover (Size) line and press the OK Button to display the Adjust Crossover Frequencies menu (see Figure 33).

Figure 33 – Adjust Crossover Frequencies Menu

The AVR will only display those speaker groups programmed in the Number of Speakers menu.

Refer to Table A3 for each speaker's crossover. For the main speakers, this is the lowest frequency the speaker reproduces well.

For each main speaker, select one of the seven crossover frequencies: 40Hz, 60Hz, 80Hz, 100Hz, 120Hz, 150Hz or 200Hz. If the crossover frequency is below 40Hz, select the first option, "Large". This setting doesn't refer to the speaker's physical size, but to its frequency response, which is also called "full range".

Specify the size of the subwoofer's transducer as 8, 10, 12 or 15 inches. The AVR always sets the subwoofer crossover to 100Hz, but uses the transducer size for equalization. Write down the settings in Table A3 in the appendix.

When you have finished entering the settings, select Back, or press the Back/Exit Button.

Sub Mode

Move the cursor to the Sub Mode line. This setting depends upon how you programmed the front left and right speakers.

• If you set the front speakers to a numeric crossover frequency, the subwoofer setting will always be SUB. All low-frequency information will always be sent to the subwoofer. If you don't have a subwoofer, either upgrade to full-range speakers or add a subwoofer at the earliest opportunity.

• If you set the front speakers to LARGE, select one of the three settings for the subwoofer.

◆ **L/R+LFE:** This setting sends all low-frequency information to the subwoofer, including both information that would normally be played through the front left and right speakers, and the special low-frequency effects (LFE) channel information.

◆ **Off:** Select this setting when no subwoofer is in use. All low-frequency information will be sent to the front left and right speakers.

◆ **LFE:** This setting plays low-frequency information contained in the left and right program channels through the front speakers, and directs only the LFE channel to the subwoofer.

NOTE: If you are using a Harman Kardon HKTS Series speaker system, select the appropriate numeric crossover frequency for the Main Speaker groups, and the subwoofer will automatically be set to LFE.

Adjust Speaker Distance Menu

Placing the speakers at different distances from the listening positions can muddy the sound, as sounds are heard earlier or later than desired.

Even if all of your speakers are placed the same distance from the listening position, do not skip this menu.

On the Manual Speaker Setup menu, move the cursor to the Distance line and press the OK Button to display the Adjust Speaker Distance menu. See Figure 34.

Figure 34 – Adjust Speaker Distance Menu

Enter the distance from each speaker to the listening position, as measured in Step Two – Measure Speaker Distances and recorded in Table A4 in the appendix (see page 37).

The default unit of measurement is feet. To change the unit to meters, return to the main AVR menu. Select the System Settings menu, then scroll down to the General Setup section and select the Unit of Measure line. Press the OK Button to change the setting.

Select a speaker, then use the ◄/► Buttons to change the measurement. The values vary between 0 and 30 feet, with a default of 10 feet for all speakers.

NOTE: If the surround back channels are assigned to the multizone system, you will not be able to adjust their delay settings.

STEP FOUR – Setting Channel Output Levels Manually

For a conventional 2-channel receiver, the balance control affects the stereo imaging by adjusting the relative loudness of the left and right channels.

With up to seven main channels, plus a subwoofer, imaging becomes both more critical and more complex. The goal is to ensure that each channel is heard at the listening position with equal loudness.

EzSet/EQ calibration can handle this critical task for you, simply and automatically. However, the AVR's Adjust Speaker Levels menu allows you to calibrate the levels manually, either using the system's test tone or while playing source material.

1. Make sure all speakers have been placed and connected correctly.

2. Adjust the number of speakers, crossover, distance and sub mode for each speaker in your system, as described in Step Three.

3. Measure the channel levels in one of these ways, and adjust the channel levels using the Adjust Speaker Levels menu:

   a) Preferably, use a handheld SPL meter set to the C-Weighting, Slow scale. Adjust each channel so that the meter reads 75dB.

   b) By ear. Adjust the levels so that all channels sound equally loud.

   c) If you are using a handheld SPL meter with source material, such as a test disc or an audio selection, play it and adjust the AVR's master volume control until the meter measures 75dB.

Press the Setup Button to display the menu system, and then navigate to the Speaker Setup line. Press the OK Button to display the Speaker Setup menu. Select Manual Setup, press the OK Button, and then navigate to the Level Adjust line. Press the OK Button to display the Adjust Speaker Levels menu. See Figure 35.

Figure 35 – Adjust Speaker Levels Menu

All of the speaker channels will appear with their current level settings.

Reset Levels: To reset all levels to their factory defaults of 0dB, scroll down to this line at the bottom of the menu and press the OK Button.

To set your levels using the AVR 2600's internal test tone, adjust the TEST TONE line as follows:

Test Tone: Determines whether the test tone is active. To begin, press the OK Button repeatedly to select the Off, Auto or Manual setting. Manually moving the cursor out of the channel listings area of the screen automatically stops the test tone.

When this setting reads Auto, the test tone will automatically circulate to all channels, pausing for a few moments at each channel and then moving to the next channel several seconds later, as indicated by the highlight bar. Adjust the level for any channel when the test tone is paused there, using the ◄/► Buttons. Use the ▼/▲ Buttons to move the cursor to another line, and the test tone will follow the cursor.

When this setting reads Manual, the test tone will not move to the next channel until you use the ▼/▲ Buttons.

Individual Channels: If you are using an external source to set your output levels, navigate to each channel and use the ◄/► Buttons to adjust the level, between –10dB and +10dB.

When you have finished adjusting the speaker levels, select the Back option or press the Back/Exit Button. Record the level settings in Table A3 in the appendix.

AUDIO EFFECTS

To adjust other audio settings, such as the tone controls, press the Audio Effects Button to display the Audio Effects menu (see Figure 28). The menu may also be accessed from the Setup Source menu by pressing the Info Settings Button and selecting Audio Effects.

> **NOTE:** The settings in the Audio Effects menu affect each source independently.

Dolby Volume: See page 29 for an explanation of Dolby Volume processing and its benefits. Refer to Table 4 on that page for an explanation of each of the Dolby Volume settings.

Tone Control: Determines whether the treble and bass controls are active. When it's off, the tone controls are "flat", with no changes. When it's on, the bass and treble frequencies are boosted or cut, depending upon the tone-control settings. When an analog audio source is in use and the 2-Channel Stereo surround mode is selected, setting the Tone Control to "Off" places the unit in analog bypass mode.

Treble and Bass: Boost or cut the high or low frequencies by up to 10dB by using the ◄/► Buttons to change the temperature bar setting. The default setting is 0dB, at the center of the temperature bar.

LFE Trim: Attenuates the loudness of the subwoofer. The setting defaults to the maximum of 0dB. Press the ◄/► Buttons to reduce the level by up to 10dB; the setting will appear as a negative number.

MP3 Enhancer: Enhances bass performance when playing MP3 tracks. Select On, or leave at the default Off setting for non-MP3 audio.

EQ On/Off: This setting activates or deactivates the equalization settings obtained when the EZSet/EQ II process was run. The settings are saved for reactivation at a later listening session.

When you have finished, press the Audio Effects Button or the Back/Exit Button.

VIDEO ADJUSTMENTS

The AVR 2600 uses leading-edge Faroudja DCDi Cinema video processing technology. Incoming video may be upscaled up to

1080p (1080i with component video outputs) for outstanding video quality, even with analog video sources. The Faroudja DCDi Cinema Dual 3D comb filters and 10-bit video processing eliminate the jagged edges and moiré patterns seen with less advanced processing. The "Torino" video processing chip generates on-screen graphics in high definition, and blends it with the incoming video, so that you can continue to watch a program while using system menus.

The video processor automatically provides the best picture based on the capabilities of your video display and the incoming source video. You may experiment with the Video Modes menu adjustments to try to improve the picture further.

Video Modes

Adjust the picture settings on your video display before adjusting the AVR. Access the picture settings from the Video Modes menu. Press the Video Modes Button, and the screen shown in Figure 36 will appear. The menu may also be accessed from the Info Settings menu.

NOTE: The settings in the Video Modes menu affect each source independently.
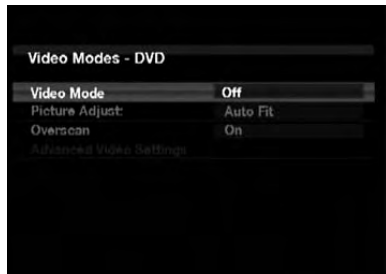
Figure 36 – Video Modes Menu

Video Mode: The default setting of Off passes the video signal through to the display with only basic video processing. Video scaling cannot be turned off, but selecting the HDMI Bypass mode in the Info Settings menu for a source connected to one of the HDMI Inputs passes the video signal directly from the HDMI Input to the HDMI Output, bypassing all video processing. Select one of these processing options to optimize the picture for the current program by applying adjustments to the brightness, contrast, color and sharpness:

• Sports: For sporting events.

• Nature: For programs shot outdoors, in a natural setting.

• Movie: For movies and many television broadcasts.

• Custom: Allows manual adjustment of the picture settings. The Brightness, Contrast, Color and Sharpness settings appear as sliders with values ranging from 0 to 100. The default setting for each adjustment is 50. Use the ◄/► Buttons to change each setting's value.

Picture Adjust: Changes the aspect ratio of the displayed image.

Widescreen (16:9) images are displayed on a full-screen (4:3) device in letterbox format. Black bars may appear above and below the image.

When displaying full-screen images on a widescreen device, black or gray bars may appear to the left and right of the image (pillarboxing).

Plasma and CRT monitors may suffer from "burn-in" when the same image, such as the horizontal or vertical bars, is left on screen for a long period of time. Adjust the picture so that it fills the display's screen. Highlight this setting and press the OK Button. Each press of the ▼/▲ Buttons changes the setting. Press the OK Button when the desired setting appears.

• **Auto Fit:** The AVR automatically adjusts the image, as required, to fit the display's capabilities.

• **Height Fit:** Adjusts the image to eliminate any bars above or below it. Bars may remain at the sides.

• **Width Fit:** Adjusts the image to eliminate any bars on the sides. Bars may remain above and below the image.

• **Zoom 1x:** Displays the image as received from the source. If the image is in the 4:3 aspect ratio, on widescreen displays pillarbox format may be used. If the image is in the 16:9 aspect ratio, on full-screen (4:3) displays letterbox format may be used.

• **Zoom 2x and Zoom 3x:** Stretches the image evenly to completely fill the screen. The outer portions of the image may be cropped.

Experiment with this setting until you find a pleasing display format for each program.

Overscan: For historical reasons, there is a convention to reserve an area around the border of a video frame, called "overscan", that may be viewed on newer high-definition displays, although it was not visible on older analog television sets. However, since not all displays are capable of showing this portion of the frame, directors avoid placing important information in that area. If your video display is capable of displaying the overscan area, turn this setting on to avoid seeing a black border around the image which could cause unwanted "burn-in" on some plasma and CRT displays. The AVR turns this setting off by default when the source device is connected to one of the HDMI Inputs. The setting is turned on by default when the source is connected to one of the analog video inputs.

Advanced Video Settings: Press the ► or OK Button to display the Advanced Video Modes submenu (see Figure 37). This submenu is not accessible when the video processor (Video Mode setting) is turned off.

Figure 37 – Advanced Video Modes Menu

Noise Reduction: Adjust this setting to Low, Medium or High to filter out signal noise, or turn it off.

MPEG Noise Reduction: This setting is designed to address two specific types of video distortion, mosquito noise and blocking artifacts. If you see haziness or shimmering around the edges of

objects or the scrolling credits in a film, or if the image appears to "pixellate" into blocks, change the MPEG Noise Reduction setting from Off to Low, Medium or High.

Cross Color Suppressor: Turn this setting on to remove cross color artifacts, which can occur when high-frequency luminance (brightness) signals are misinterpreted as chroma (color) signals, causing unwanted flickering, flashing colors or rainbow patterns. This setting is not available with HDMI sources, or when no video signal is present.

Black Level: This setting is only effective when used with the Composite Video Output. Turn it on for a full black-level setting that provides the full dynamic range of black as presented on most DVDs. When turned off, the setting complies with NTSC standards for video with "setup", and may be more appropriate when your video display has limited video processing capability.

Deinterlacing: For historical reasons, video in the NTSC format was interlaced. That is, each refresh of the television screen displayed only half the pixels in a frame, alternating between all of the even rows of pixels and all of the odd rows. Modern displays are capable of displaying the complete frame all at once by progressively scanning all of the rows of pixels from top to bottom. For optimal viewing on a progressive-scan display (most flat-panel displays), the video images must be deinterlaced. When viewing images via the Composite Video Monitor Output, any time the AVR's video output resolution is 480i, this setting may be turned off.

Film Mode Detect: This setting is only accessible when the Deinterlacing setting is turned on. It compensates for the different frame rates in which film and video are shot. Film is shot at a rate of 24 frames per second (progressive scan), while video is shot at slightly less than 60 frames per second (interlaced). The AVR is able to detect whether the program was originally shot on film and transferred to video (e.g., to create a DVD), and to compensate appropriately for any authoring errors in the conversion. Select a setting of 3:2 (for NTSC materials), 2:2 (for PAL materials originating overseas), Off or Auto.

How to Adjust the Custom Picture Settings

Set the Video Mode to Custom to display the picture settings, as shown in Figure 38.
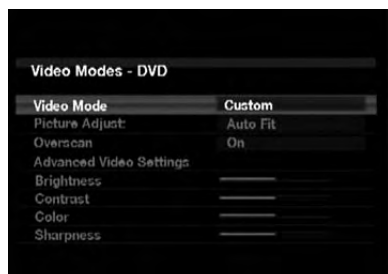
Figure 38 – Video Modes Custom Processing

With a color bar test pattern from a test disc or other source on screen, the following adjustments may be made:

• The color intensity setting on your TV.

• Color adjustments using the color bars, which may be (left to right) black, white, yellow, cyan (turquoise), green, magenta, red, blue, black.

• The color transition, seen as sharp separation of the bars.

• The performance of the color circuits in your TV (with "Video" signals); bar edges should show no vertical crawling dots.

Use the gray scale and the black/white fields in the test pattern to adjust the brightness and contrast.

Brightness Adjustment

1. Turn down the color control on your TV until the color bars appear in black and white.

2. Adjust the contrast to the lowest level where you still can see all gray scale bars separately and clearly.

3. Adjust the brightness so that the bars in the gray scale are all visible. The bar farthest to the left has to be as black as possible rather than gray but the next gradation must clearly be distinct from it. The bars in the gray scale should gradually and evenly change from black to white.

Contrast Adjustment

1. Adjust the contrast on your TV until you see a bright white bar in the lower right corner of the screen and a deep-dark-black bar to the left.

2. If the brightness of the white bar no longer increases when the contrast is turned up or the borders of white letters bloom (overlight) into the black areas (drastically decreasing the sharpness of the type), the contrast has been turned up too much. Reduce the contrast until these effects disappear and the video still looks realistic.

3. If you are watching TV with ambient daylight, adjust the contrast so that a normal video picture looks the same as the surroundings in your room; that way the eye is relaxed when watching the TV picture. Reduce the setting when the surrounding light is dimmed to improve the sharpness of the picture.

4. The gray scale in the middle line should retain the same distinction between each bar as before the contrast adjustment. If not, repeat both Step 3 of the Brightness Adjustment and the Contrast Adjustment.

Color Adjustment

1. When the brightness and contrast are set optimally, adjust the color control. Set the level so that the colors look strong but still natural, not overdone. If the color level is too high, depending on the TV, some of the bars will seem wider or the color intensity will not increase when the control is turned up. Test the color intensity with a video of pictures of faces, flowers, fruit and vegetables.

2. Refer to a large white bar in your test pattern to tweak the warmth of the picture using the Tint control on your TV.

Sharpness Adjustment

Contrary to intuition, the picture will appear sharper and clearer with the sharpness backed off from the maximum setting. Reduce the sharpness setting on your television, and the setting on the AVR 2600, if necessary, to minimize the appearance of any white lines between the bars in the gray scale portion of the test screen.

Convergence and Edge Focus

The crosshatch pattern that may surround the test screen may be used to evaluate edge focus and convergence in front- or rear-projection video displays. If you are unable to improve the picture using the available controls, contact the video display manufacturer's authorized service representative for assistance.

When you have finished making any video adjustments, press the Back/Exit Button.

MULTIZONE OPERATION

With the multizone system in use, you may enjoy an exciting 5.1-channel home theater presentation in the main listening area, while others listen to the same materials or an entirely different presentation in another room.

Although installation of a multizone system is not complicated, it requires running wires inside walls. Check your local building codes and comply with the requirements for in-wall wiring systems, to prevent the possibility of a dangerous situation. If you have any questions about installing a multizone system, it is strongly recommended that you contact a professional custom installer. See Step Nine of the Installation section on page 23 for instructions on installing a multizone system.

Operating the Multizone System

The AVR 2600's multizone system is accessed using the on-screen Zone 2 menu. Press the Setup Button, and use the ▼/▲ Buttons to navigate to the Zone 2 line. Press the OK Button to display the Zone 2 menu. See Figure 39.
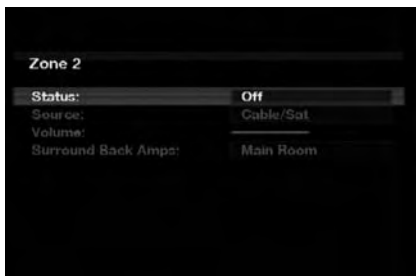
Figure 39 – Zone 2 Menu

Status: Turns the multizone system on or off. When no one is listening in the remote room, leave this setting at the default of OFF.

Source: Indicates the source input for the remote zone. You may select a different source from the main listening area. However, if the same source has been selected for both the main listening area and the remote zone, listeners in both areas will hear the same content.

> **NOTE:** Only analog audio sources, including The Bridge III, are available to the multizone system. To hear digital devices, such as a CD player, in the remote zone, follow these steps:
>
> 1. In addition to a digital audio connection, connect the source device's analog audio outputs to the AVR. Make a note in Table A5 in the appendix which set of inputs was used.
>
> 2. In the Info Settings menu, leave the Audio Input From Source setting at the digital audio input. Scroll down to the Zone 2 Audio setting and select the analog audio input.

Volume: The volume is controlled separately for the remote zone.

Surround Back Amps: Informational only. Automatically reassigns the surround back channels to the multizone system when the multizone system is turned on. When this line is set to Zone 2, you may only configure the main listening room for up to 5.1 channels. Since the EzSet/EQ process will only configure the main system, use the Manual Setup section of the Speaker Setup menu to configure the remote speakers with the Status setting off, then turn the Status setting on.

To operate the multizone system using the main remote, slide the Zone Select Switch at the bottom of the remote to the "2" position. To select a zone using the Zone 2 remote, press the Zone Selector, and the Zone Indicator will turn green when the remote is set to operate Zone 1, or red to operate Zone 2.

SYSTEM SETTINGS

The AVR 2600 offers system settings for ease of use. These settings may be accessed from the System Settings menu, which is selected by pressing the Setup Button and navigating to the System line. Press the OK Button to display the System Settings menu. See Figure 40.

Figure 40 – Systems Settings Screen

Front-Panel Dimmer: Select On 100% for full brightness, dim to 50% or 25% of full brightness or select Off to fully darken the display. The light inside the Volume Control will go out when the display is partly or fully dimmed, but the Power Indicator will always remain lit to remind you that the AVR is powered on.

General AVR Settings

Volume Units: Select whether volume is displayed in the conventional decibel scale or on a numeric scale from 0 to 90. When the decibel scale is used, 0dB is the maximum recommended volume, with lower volumes displayed as negative values.

Volume Default and Volume Default Level: These two settings are used together to program the volume level at turn-on. Turn Volume Default on, and then set the Volume Default Level to the desired turn-on volume. When the Volume Default setting is left off, the AVR will play at the last-used volume setting from the previous listening session.

Unit of Measure: Adjusts the speaker-distance settings for Manual Speaker Setup. Select between meters and feet.

Language: Select the preferred language for the AVR's on-screen menus and displays: English, French, Spanish, German, Italian or Russian.

HDMI Audio to TV: Determines whether HDMI audio signals are passed through the HDMI Output to the video display. In normal operation, leave this setting Off, as audio will be played through the AVR. To use the TV by itself, without the home theater system, turn this setting On. Mute the TV's speakers when using the AVR for audio.

Dolby Volume Calibration: This setting determines the Dolby Volume Calibration Offset, as described on page 30. Its default of 0dB is best when the system's loudspeakers have a sensitivity rating of 88dB (8 ohms, 1 watt, 1 meter). If your loudspeakers have a higher sensitivity rating, increase the Dolby Volume Calibration setting by the difference between your speakers' sensitivity and 88dB. If your speakers have a lower sensitivity, decrease the Dolby Volume Calibration setting by the difference between 88dB and your speakers' sensitivity.

Menu Appearance

Menu Transparency: Select whether video programs will be visible when the menu system is in use. Select Normal for a fully transparent background, Medium for partial transparency or Opaque to block video programs while the menus are on screen.

Volume/Status Messages: When the AVR is turned on, the volume is adjusted or the source is changed, or if a change in the input signal is detected, a status message will be displayed on screen. Select how long the message remains visible, from 2 to 10 seconds, with a default of 3 seconds. Select "Off" if you do not wish to see the status messages.

Menus: This setting governs how long the Surround Modes, Video Modes and Audio Effects menus remain visible after the last adjustment: 5, 10 or 30 seconds, 1 minute or 5 minutes. Select "No Time-Out" to view the menus indefinitely, but this setting is not recommended, due to the danger of "burn-in" on some video displays.

Setup and Slide-In Menus: This setting determines how long the setup menus (Main Menu, Speaker Setup Menu, Zone 2 Menu, all slide-in menus) remain visible after the last adjustment. Select a time-out period of 5, 10 or 15 (the default) minutes, or no time-out, which leaves the menus on screen until manually cleared. A time-out period avoids the possibility of burn-in damage to plasma or CRT displays.

Screen Saver: Program a time-out period for no activity (with no menus displayed) before the AVR's built-in screen saver begins. Select a period of 5, 10, 20 or 30 minutes or 1 hour, or turn off the screen saver. A time-out period avoids the possibility of burn-in damage to plasma or CRT displays.

System Information

Software Version: This line is informational only. From time to time, Harman Kardon, Inc., may release software upgrades that improve performance or add features. If you are experiencing difficulties with the AVR, a customer service representative may ask for the software version of your product to determine whether a later upgrade is available.

Upgrade Software: If a software upgrade is released for the AVR 2600, installation instructions will be available in the Product Support section of the Web site or from Harman Kardon Customer Service. At that time, you may access this submenu to install the upgrade software.

> **NOTE:** During a system upgrade, do not power off the AVR or use any of its controls. Doing so could permanently damage the AVR.

ADVANCED REMOTE CONTROL FUNCTIONS

The AVR 2600 remote control also serves as a universal remote that may be programmed to operate other components. Refer to the Function List (Table A14 in the appendix) for assistance in operating your other components. The function of each button will not necessarily correspond to the label printed on the button.

Punch-Through Programming

The punch-through feature allows you to operate one component, while setting certain groups of controls to operate another component. For example, while using the AVR controls for surround modes and other audio functions, you may operate the transport controls of your DVD player. Or while using the remote to control video functions on your TV, you may use your cable box to change channels.

To program punch-through control while operating any device:

1. Press and hold the Source Selector (or Setup Button) for the main device the remote will be operating. The Source Selector will light, go dark and then light up again, indicating the remote is in Program mode and that you may release the button.

2. Select the type of punch-through programming.

   a) For channel control punch-through, press the Channel Up Button.

   b) To program transport control punch-through, press the Play Button.

3. Press the Source Selector for the device whose channel or transport controls will be used while operating the device selected in the first step. The Source Selector will flash to confirm.

For example, to watch the TV while changing channels using the cable box, press and hold the TV Button until it lights. Then press the Channel Up Button, followed by the Cable/SAT Button.

To undo punch-through programming, follow the same steps as above, but press the same Source Selector in Steps 1 and 3.

> **NOTE:** The Volume and Mute controls are always dedicated to the AVR.

Activities (Macros)

Activities are used to program sequences of up to 19 commands that are executed with a single button press. Activities are well suited for power on and off commands, to send out a multidigit channel number with one button press, or to control another device with more flexibility than the built-in punch-through controls. Up to eleven activities may be programmed.

NOTE: Use caution when programming complicated activities. It isn't possible to program a pause or delay before sending commands after Power On, and the component may not be ready to respond to commands immediately after powering on.

To program, or "record" an activity, follow these steps:

1. To enter Program mode, simultaneously press and hold the Activity Button and the Alphanumeric Key or AVR Power On or Off Button to which the activity will be assigned.

2. Press the Source Selector (or Setup Button) for each device before you enter individual commands. This step counts as one of the 19 commands allowed for each activity.

3. For Power On, press the AVR or Device Power On Button.

4. Press the AVR or Device Power Off Button for Power Off.

5. Press the Activity Button to end the programming process, and the last Source Selector (or the Setup Button) will flash three times.

It isn't possible to "edit" a command within an activity. To erase the activity:

1. Press and hold the Activity Button and the Alphanumeric Key or AVR Power On or Off Button until the Source Selector or Setup Button lights.

2. Press the Activity Button to erase the activity.

To execute an activity, press the Activity Button, then press the Alphanumeric Key (or the AVR Power On or Off Button) for the Activity.

Resetting the Remote

To reset the remote to its factory defaults, simultaneously press and hold the TV Source Selector and the "0" Alphanumeric Key. When the TV Button relights, enter the code "333". When the TV Button goes out, and all of the Source Selectors flash, the remote control will be reset.

PROCESSOR RESET

If the unit behaves erratically after a power surge, first turn off the Main Power Switch and unplug the AC power cord for at least 3 minutes. Plug the cord back in and turn the receiver on. If this doesn't help, reset the AVR.

NOTE: A system reset erases all user configurations, including video resolution, speaker and level settings, and tuner presets. After a reset, reenter all of these settings from your notes in the appendix worksheets.

To reset the AVR 2600, place it in Standby mode (press the front-panel Standby/On Switch so that the Power Indicator turns amber). Then press and hold the front-panel OK Button for at least 5 seconds until the RESET message appears.

If the receiver does not function correctly ofter a processor reset, contact an authorized Harman Kardon service center for assistance. Authorized service centers may be located by visiting the Web site at www.harmankardon.com.

NOTE: After performing a system reset, wait at least 1 minute before pressing any Source Selectors.

MEMORY

If the AVR 2600 is unplugged or experiences a power outage, it will retain user settings for up to four weeks.

Symptom	Cause	Solution
Unit does not function when Main Power Switch is turned on	• No AC Power	• Make certain AC power cord is plugged into a live outlet • Check whether outlet is switch-controlled
Display lights, but no sound or picture	• Intermittent input connections • Mute is on • Volume control is down	• Secure all input and speaker connections • Press Mute Button • Turn up volume control
No sound from any speaker; PROTECT message appears on front panel	• Amplifier is in protection mode due to possible short • Amplifier is in protection mode due to internal problems	• Check speaker wires for shorts at receiver and speaker ends • Contact your local Harman Kardon service center
No sound from surround or center speakers	• Incorrect surround mode • Input is monaural • Incorrect configuration • Stereo or Mono program material	• Select a mode other than Stereo • There is no surround information from mono sources • Check speaker configuration • The surround decoder may not create center- or rear-channel information from nonencoded programs
Unit does not respond to remote commands	• Weak batteries in remote • Wrong device selected • Remote sensor is obscured	• Change remote batteries • Press the Setup Button • Make certain front-panel sensor is in line of sight of remote or connect an optional remote sensor
Intermittent buzzing in tuner	• Local interference	• Move unit or antenna away from computers, fluorescent lights, motors or other electrical appliances
Surround Back Speaker settings cannot be accessed, and test tone does not play through Surround Back Speakers	• Multizone system has been turned on, and the surround back channels were reassigned to multizone operation	• Use the menu system to access the Zone 2 menu. Turn off the Status setting to reassign the surround back channels to the main room.
The SIRIUS Preview Channel (001) is silent	• SIRIUS tuner is not plugged in • SIRIUS tuner is not located in such a way as to enable reception • SIRIUS signal requires a refresh	• Use a SIRIUS tuner module designed for use with SIRIUS Ready home audio equipment, and plug the module into the SIRIUS Radio Jack • The SIRIUS tuner module needs an unobstructed view of the southern sky, or to be within range of a SIRIUS terrestrial repeater; if necessary, purchase an extension cable from your SIRIUS Radio dealer • Visit www.siriusradio.com
Unable to activate Program mode on remote	• Source Selector not held for at least 3 seconds	• The selector will light as you initially press it, and go dark as you hold it down. Continue to hold it and wait 3 seconds for the selector to light again
Remote buttons light, but AVR does not respond	• Remote is in Zone 2 mode	• Slide the Zone Switch at the bottom of the remote to the Zone 1 position

Additional information on troubleshooting possible problems with your AVR 2600, or installation-related issues, may be found in the list of "Frequently Asked Questions", which is located in the Product Support section at www.harmankardon.com.

Appendix – Default settings, worksheets, remote product codes

Table A1 – Recommended Source Component Connections

Device Type	AVR 2600 Source	Digital Audio Connection	Analog Audio Connection	Video Connections
Cable TV, satellite TV, HDTV or other device that delivers television programs	Cable/SAT	HDMI 2	Analog 1	HDMI 2
DVD Audio/Video, SACD, Blu-ray Disc, HD-DVD player	DVD	HDMI 1	Analog 2	HDMI 1
Media Server, including Harman Kardon DMC 1000	Media Server	HDMI 4	Analog 5	HDMI 4
TV	TV	Optical 1	Analog 3	Component 1*
Video game console	Game	HDMI 3	Analog 4	HDMI 3
Any audio or video device, e.g., CD player, camcorder, cassette deck	AUX	Coax Front	Analog Front	Composite Front (not used for audio-only devices)
Recorder	Any	Coaxial 2 Input and Coaxial Output	Analog 4 Inputs and Outputs	Composite Video 2 Input and Output
iPod or iPhone	The Bridge III	None	The Bridge III	The Bridge III for photo- and video-capable iPod and iPhone models

*Make this connection only when using the TV source for a non-display device. Do not connect your television's or video display's video output to the AVR at any time.

Table A2 – Source Setting Defaults

	Cable/Sat	DVD	Media Server	Radio	TV	Game	AUX	The Bridge
Surround Modes (Auto Select)	Logic 7 Movie	Logic 7 Movie	Logic 7 Music	Logic 7 Movie	Logic 7 Movie	Logic 7 Movie	Logic 7 Music	Logic 7 Music
Video Input	HDMI 2	HDMI 1	HDMI 4	N/A	Component 1	HDMI 3	Composite Front	The Bridge III
Audio Input	HDMI 2	HDMI 1	HDMI 4	N/A	Optical 1	HDMI 3	Coaxial Front	The Bridge III
Resolution to Display*	480i*	480i	480i	480i	480i	480i	480i	480i
Audio Auto Polling	Off	Off	Off	N/A	Off	Off	Off	N/A
Zone 2 Audio	Analog 1	Analog 2	Analog 5	Radio	Analog 3	Analog 4	Analog Front	The Bridge III
Dolby Volume	Medium	Low	Medium	Medium	Medium	Medium	Low	Medium

*Video output resolution may vary for HDMI connections.

Table A3 – Speaker/Channel Setting Defaults

	All Digital and 2-Channel Analog Audio Inputs	6-/8-Channel Analog Audio Inputs*	Your Settings Position 1	Your Settings Position 2
Left/Right Speakers	ON	ON		
Center Speaker	ON	ON		
Left/Right Surround Speakers	ON	ON		
Left/Right Surround Back Speakers	OFF	OFF		
Subwoofer 1	ON	ON		
Subwoofer 2	ON	ON		
Left/Right Speakers Crossover	100Hz	Large*		
Center Speaker Crossover	100Hz	Large*		
Left/Right Surround Speakers Crossover	100Hz	Large*		
Left/Right Surround Back Speakers Crossover	100Hz	Large*		
Subwoofer Mode	LFE	LFE*		
Subwoofer Size	10 inch	ON		
Front Left Level	0dB	0dB		
Center Level	0dB	0dB		
Front Right Level	0dB	0dB		
Surround Right Level	0dB	0dB		
Surround Back Right Level	0dB	0dB		
Surround Back Left Level	0dB	0dB		
Surround Left Level	0dB	0dB		
Sub Level	0dB	0dB		

* Note: The 6-/8-Channel Inputs are "direct" inputs whose signals are passed directly to the volume control without any bass management processing. Thus, the speakers are always full-range and cannot be adjusted. The settings are global for the remaining audio inputs.

Table A4 – Delay Setting Defaults

Speaker Position	Distance From Speaker to Listening Position	Your Delay Settings Position 1	Your Delay Settings Position 2
Front Left	12 feet		
Center	12 feet		
Front Right	12 feet		
Surround Right	10 feet		
Surround Left	10 feet		
Surround Back Right	10 feet		
Surround Back Left	10 feet		
Subwoofer	12 feet		
A/V Lip Sync Delay (See Info Settings Menu)	0mS		

Table A5 – Source Settings

	Cable/Sat	DVD	Media Server	Radio	TV	Game	AUX	The Bridge
Device Type								
Surround Modes								
Video Input								The Bridge III
Audio Input								The Bridge III
Resolution to Display								
Adjust Lip Sync								
Change Name								N/A
Audio Auto Polling								N/A
Zone 2 Audio								The Bridge III
Dolby Volume								

Table A6 – Audio Effects Settings

	Default	Cable/Sat	DVD	Media Server	Radio	TV	Game	AUX	The Bridge
Dolby Volume	See Source								
Tone Control	Off								
Treble	0dB								
Bass	0dB								
LFE Trim	0dB								
MP3 Enhancer	Off								

Table A7 – Video Modes Settings

	Default	Cable/Sat	DVD	Media Server	Radio	TV	Game	AUX	The Bridge
Video Mode	Off								
Brightness*	50								
Contrast*	50								
Color*	50								
Sharpness*	50								
Picture Adjust	Auto Fit								
Overscan	On								
Noise Reduction**	Low								
MPEG Noise Reduction**	Low								
Cross Color Suppressor**	On								
Black Level**	Off								
Deinterlacing**	On								
Film Mode Detect**	3:2								

* Note: These settings are only available when the Video Mode is set to Custom.
** Note: These settings are only displayed when Advanced Video Settings is selected.

Table A8 – Surround Modes

	Default	Cable/Sat	DVD	Media Server	Radio	TV	Game	AUX	The Bridge
Auto Select	Logic 7 Movie or native digital format								
Virtual Surround	Harman Virtual Speaker								
Stereo	5 CH Stereo								
Movie	Logic 7 Movie								
Music	Logic 7 Music								
Game	Logic 7 Game								
Center Width*	0								
Dimension*	0								
Panorama*	Off								

* Note: These settings are only available when Dolby Pro Logic II or IIx Music mode has been selected. Access these settings by selecting the Edit option.

Table A9 – Remote Control Codes

Source Input	Device Type (if changed)	Product Brand and Code Number
Cable/Sat		
DVD		
Media Server		
TV		
Game		
AUX		

Table A10 – System Settings

Feature	Default	Your Settings
Front-Panel Dimmer	On 100%	
Volume Units	dB	
Volume Default	Off	
Volume Default Level	−25dB	
Unit of Measure	Feet	
Language	English	
HDMI Audio to TV	Off	
Dolby Volume Calibration	0dB	
Menu Transparency	Medium	
Volume/Status Messages	3 seconds	
Menus	1 minute	
Setup and Slide-In Menus	15 minutes	
Screen Saver	10 minutes	
Software Version	Check your product	

Table A11 – Zone 2 Settings

Source Input	Default	Your Settings
Status	Off	
Source	FM Radio	
Volume	−25dB	
Surround Back Amps	Depends on Status setting	Not adjustable

Table A12 – Surround Modes

Surround Mode	Description	Incoming Bitstream or Signal
Dolby Digital	Provides up to five separate main audio channels and a dedicated low-frequency effects (LFE) channel.	• Dolby Digital 1/0/.0 or .1, 2/0/.0 or .1, 3/0/.0 or .1, 2/1/.0 or .1, 2/2/.0 or .1, 3/2/.0 or .1 • Dolby Digital EX (played as 5.1) • Dolby Digital Plus decoded and delivered via coax or optical connection
Dolby Digital EX	An expansion of Dolby Digital 5.1 that adds a surround back channel which may be played through one or two surround back speakers. May be manually selected when a non-EX Dolby Digital stream is detected.	• Dolby Digital EX • Dolby Digital 2/2/.0 or .1, 3/2/.0 or .1
Dolby Digital Plus	An enhanced version of Dolby Digital encoded more efficiently, Dolby Digital Plus has the capacity for additional discrete channels and for streaming audio from the Internet, all with enhanced audio quality. Source material may be delivered via an HDMI connection, or decoded to Dolby Digital or PCM and transmitted via S/P-DIF coaxial or optical digital audio.	• Dolby Digital Plus via HDMI connection (source device decodes to Dolby Digital when a coax or optical connection is used)
Dolby TrueHD	Dolby TrueHD is an expansion of MLP Lossless™ audio, the same format used on DVD Audio discs. Dolby TrueHD adds the features found in Dolby Digital, such as night mode settings, while delivering fully lossless audio that is a true reproduction of the studio master recording.	• Blu-ray Disc or HD-DVD encoded with Dolby TrueHD, delivered via HDMI
Dolby Digital Stereo	Delivers a 2-channel downmix of Dolby Digital materials.	• Dolby Digital 1/0/.0 or .1, 2/0/.0 or .1, 3/0/.0 or .1, 2/1/.0 or .1, 2/2/.0 or .1, 3/2/.0 or .1 • Dolby Digital EX
Dolby Pro Logic II Mode Group	Analog decoder that derives five full-range, discrete main audio channels from matrix surround-encoded or 2-channel analog sources. Four variants are available.	See below
Dolby Pro Logic II Movie	Variant of Dolby Pro Logic II that is optimized for movie and television programs.	• Dolby Digital 2.0 or 2.1 • Analog (2-channel) • Tuner • PCM (32kHz, 44.1kHz, 48kHz, 96kHz)
Dolby Pro Logic II Music	Variant of Dolby Pro Logic II that is optimized for music selections. Allows adjustment of sound field presentation in three dimensions: • Center Width (adjusts width of vocal soundstage) • Dimension (adjusts depth of soundstage) • Panorama (adjusts wraparound surround effect)	• Dolby Digital 2.0 or 2.1 • Analog (2-channel) • Tuner • PCM (32kHz, 44.1kHz, 48kHz, 96kHz)
Dolby Pro Logic II Game	Variant of Dolby Pro Logic II that emphasizes use of the surround channels and subwoofer for total immersion in the video gaming experience.	• Dolby Digital 2.0 or 2.1 • Analog (2-channel) • Tuner • PCM (32kHz, 44.1kHz, 48kHz, 96kHz)
Dolby Pro Logic	Original version of Dolby Pro Logic that steered a mono signal containing information below 7kHz to the surround channels.	• Dolby Digital 2.0 or 2.1 • Analog (2-channel) • Tuner • PCM (32kHz, 44.1kHz, 48kHz, 96kHz)
Dolby Pro Logic IIx Mode Group	An expansion of Dolby Pro Logic II that adds a surround back channel which may be played through one or two surround back speakers. The Dolby Pro Logic IIx modes may be selected not only with Dolby Digital bitstreams, but thanks to the AVR 2600's post-processor, they may also be used with some DTS bitstreams to add a surround back channel to 5.1 modes.	See below

Table A12 – continued

Surround Mode	Description	Incoming Bitstream or Signal
Dolby Pro Logic IIx Movie	This mode is similar to Dolby Pro Logic II Movie, with an added surround back channel.	• Dolby Digital 2/0/.0 or .1, 2/2/.0 or .1, 3/2/.0 or .1, EX • Analog (2-channel) • Tuner • PCM (32kHz, 44.1kHz, 48kHz, 96kHz)
Dolby Pro Logic IIx Music	This mode is similar to Dolby Pro Logic II Music, including the availability of center width, dimension and panorama adjustments. Dolby Pro Logic IIx Music adds a surround back channel.	• Dolby Digital 2/0/.0 or .1, 2/2/.0 or .1, 3/2/.0 or .1, EX • Analog (2-channel) • Tuner • PCM (32kHz, 44.1kHz, 48kHz, 96kHz)
Dolby Pro Logic IIx Game	This mode is similar to Dolby Pro Logic II Game, with the added benefit of a surround back channel.	• Dolby Digital 2/0/.0 or .1 • Analog (2-channel) • Tuner • PCM (32kHz, 44.1kHz or 48kHz)
Harman Virtual Speaker	Simulates 5.1 channels when only two speakers are present, or a more enveloping sound field is desired.	• Dolby Digital • Analog (2-channel) • Tuner • PCM (32kHz, 44.1kHz or 48kHz)
DTS Digital	Using a different encoding/decoding method than Dolby Digital, it also provides up to five discrete main channels, plus an LFE channel.	• DTS 1/0/.0 or .1, 2/0/.0 or .1, 3/0/.0 or .1, 3/1/.0 or .1, 2/2/.0 or .1, 3/2/.0 or .1 • DTS-ES Matrix (played as 5.1) • DTS-ES Discrete (played as 5.1)
DTS-HD	DTS-HD is a new high-definition audio format that complements the high-definition video found on Blu-ray Disc and HD-DVD discs. It is transmitted using a DTS core with high-resolution extensions. Even when only DTS 5.1 surround sound is desired (or available, if the multizone system is in use), the higher capacity of high-resolution discs serves up DTS at twice the bit rate used on DVD-Video discs.	• Blu-ray Disc or HD-DVD discs encoded with DTS-HD modes, delivered via HDMI
DTS-HD Master Audio	DTS-HD Master Audio technology delivers bit-for-bit reproductions of the studio master recording in up to 7.1 channels, for an incredibly accurate performance.	• Blu-ray Disc or HD-DVD discs encoded with DTS-HD Master Audio technology, delivered via HDMI
DTS-ES Matrix	DTS Extended Surround adds a single surround back channel to DTS 5.1 digital surround sound. The Matrix version includes the surround back channel information "matrixed" into the left and right (side) surround channels, for compatibility with 5.1-channel systems.	• DTS-ES Matrix
DTS-ES Discrete	DTS-ES Discrete is another Extended Surround mode that adds a surround back channel, but this information is encoded discretely on the disc, and is not derived from information contained in the surround channels.	• DTS-ES Discrete
DTS Stereo	Delivers a 2-channel downmix of DTS Digital materials, or presents a matrix-encoded surround presentation.	• DTS 1/0/.0 or .1, 2/0/.0 or .1, 3/0/.0 or .1, 3/1/.0 or .1, 2/2/.0 or .1, 3/2/.0 or .1 • DTS 96/24 • DTS-ES Matrix • DTS-ES Discrete
DTS Neo:6 Mode Group	DTS Neo:6 analog processing is available with DTS and DTS 96/24 signals and 2-channel analog or PCM signals to create a 3-, 5- or 6-channel presentation.	See below

Table A12 – continued

Surround Mode	Description	Incoming Bitstream or Signal
DTS Neo:6 Cinema	Depending on the number of speakers in your system, select 3-, 5- or 6-channel modes, enhanced for movie or video presentations.	• DTS 2/2/.0 or .1, 3/2/.0 or .1 • DTS 96/24 • Analog (2-channel) • PCM (32kHz, 44.1kHz or 48kHz)
DTS Neo:6 Music	Available only in 5- and 6-channel modes, creates a surround presentation suitable for music recordings.	• DTS 2/2/.0 or .1, 3/2/.0 or .1 • DTS 96/24 • Analog (2-channel) • PCM (32kHz, 44.1kHz or 48kHz)
Logic 7 Mode Group	A Harman International proprietary technology, Logic 7 technology enhances 2-channel and matrix-encoded recordings by deriving separate information for the surround back channels. This provides more accurate placement of sound, improves panning and expands the sound field, even when used with 5.1-channel systems. Logic 7 technology uses 96kHz processing, and is available in 5.1- or 7.1-channel modes. Three variants are available.	See below
Logic 7 Movie	Especially suited to 2-channel sources containing Dolby Surround or matrix encoding, Logic 7 Movie mode increases center channel intelligibility.	• Analog (2-channel) • Tuner • PCM (32kHz, 44.1kHz, 48kHz, 96kHz)
Logic 7 Music	The AVR 2600 is programmed at the factory to default to this mode for 2-channel signals. Logic 7 Music mode is well suited to conventional 2-channel music recordings.	• Analog (2-channel) • Tuner • PCM (32kHz, 44.1kHz, 48kHz, 96kHz)
Logic 7 Game	Use Logic 7 Game mode to enhance enjoyment of video game consoles.	• Analog (2-channel) • Tuner • PCM (32kHz, 44.1kHz, 48kHz, 96kHz)
5-Channel Stereo	Useful for parties, the left- and right-channel information is played through both the front and surround speakers on each side, while the center speaker plays a summed mono mix.	• Analog (2-channel) • Tuner • PCM (32kHz, 44.1kHz or 48kHz, 96kHz, 192kHz)
7-Channel Stereo	Expands the 5-Channel Stereo presentation to include the surround back channels.	• Analog (2-channel) • Tuner • PCM (32kHz, 44.1kHz or 48kHz, 96kHz, 192kHz)
2-Channel Stereo	Turns off all surround processing and plays a pure 2-channel signal or a downmix of a multichannel signal. The signal is digitized and bass management settings are applied, making it appropriate when a subwoofer is used.	• Analog (2-channel; DSP downmix available for multichannel) • Tuner • PCM (32kHz, 44.1kHz, 48kHz, 96kHz)
2-Channel Stereo (Analog Bypass)	Maintains an analog input signal in that form, bypassing all digital processing (i.e., surround and bass management). Requires Tone Control setting to be off.	• Analog (2-channel) • Tuner
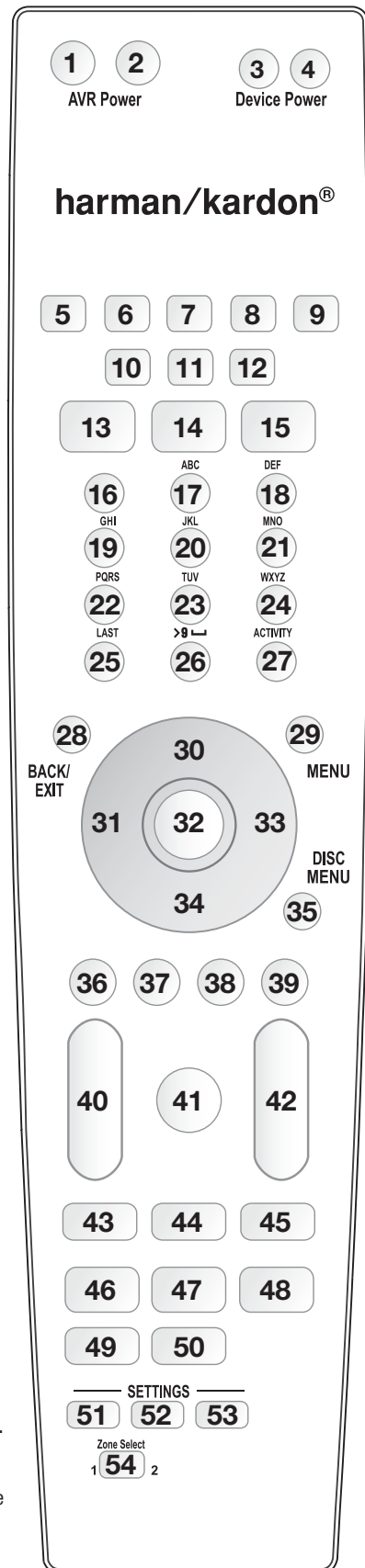
Refer to the numbered buttons in Figure 41 when using the Function List.

Figure 41 – Remote Control Function List Reference

Table A13 – Remote Control Function List

No.	Button Name	AVR	Radio FM	Radio AM	Radio XM	DVD	Media Server DMC1000	TV	The Bridge
01	AVR Power On	AVR Power On	AVR Power On	AVR Power On	AVR Power On	AVR Power On	AVR Power On	AVR Power On	AVR Power On
02	AVR Power Off	AVR Power Off	AVR Power Off	AVR Power Off	AVR Power Off	AVR Power Off	AVR Power Off	AVR Power Off	AVR Power Off
03	Device Power On					Power On	On	Power On	Power On
04	Device Power Off					Power Off	Off	Power Off	Power Off
05	Cable/SAT	Input Sel	Input Sel	Input Sel	Input Sel	Input Sel	Input Sel	Input Sel	Input Sel
06	DVD	Input Sel	Input Sel	Input Sel	Input Sel	Input Sel	Input Sel	Input Sel	Input Sel
07	The Bridge	Input Sel	Input Sel	Input Sel	Input Sel	Input Sel	Input Sel	Input Sel	Input Sel
08	Radio	Radio	Radio	Radio	Radio	Radio	Radio	Radio	Radio
09	TV	Input Sel	Input Sel	Input Sel	Input Sel	Input Sel	Input Sel	Input Sel	Input Sel
10	Game	Input Sel	Input Sel	Input Sel	Input Sel	Input Sel	Input Sel	Input Sel	Input Sel
11	Media Server	Input Sel	Input Sel	Input Sel	Input Sel	Input Sel	Input Sel	Input Sel	Input Sel
12	AUX	Input Sel	Input Sel	Input Sel	Input Sel	Input Sel	Input Sel	Input Sel	Input Sel
13	Audio Effects	Audio Effects	Audio Effects	Audio Effects	Audio Effects	Audio Effects	Audio Effects	Audio Effects	Audio Effects
14	Video Modes	Video Modes	Video Modes	Video Modes	Video Modes	Video Modes	Video Modes	Video Modes	Video Modes
15	Surround Modes	Surround Modes	Surround Modes	Surround Modes	Surround Modes	Surround Modes	Surround Modes	Surround Modes	Surround Modes
16	1	1	1	1	1	1	1	1	1
17	2	2	2	2	2	2	2	2	2
18	3	3	3	3	3	3	3	3	3
19	4	4	4	4	4	4	4	4	4
20	5	5	5	5	5	5	5	5	5
21	6	6	6	6	6	6	6	6	6
22	7	7	7	7	7	7	7	7	7
23	8	8	8	8	8	8	8	8	8
24	9	9	9	9	9	9	9	9	9
25	Last	Last	Last	Last	Last			Prev. Ch	Last
26	0	0	0	0	0	0	0	0	0
27	Activity	Activity	Activity	Activity	Activity	Activity	Activity	Activity	Activity
28	Back/Exit	Back/Exit	Back/Exit	Back/Exit	Back/Exit	Clear	Back		Back/Exit
29	Menu	Menu	Menu	Menu	Menu	Menu	Menu	Menu	Menu
30	Up	Up	Tune Up	Tune Up	Channel/Preset Up	Up	Up	Up	Up
31	Left	Left	Preset/Down	Preset/Down	Preset/Category Down	Left	Left	Left	Left
32	OK	OK	OK	OK	OK	Enter	Enter	OK	OK
33	Right	Right	Preset/Up	Preset/Up	Preset/Category Up	Right	Right	Right	Right
34	Down	Down	Tune Down	Tune Down	Channel/Preset Down	Down	Down	Down	Down
35	Disc Menu					Disc Menu	Disc Menu	OSD	
36	Red					Angle	Angle		
37	Green					Subtitle	Subtitle		
38	Yellow					Audio	Audio		
39	Blue					Zoom	Zoom		
40	Volume +	AVR Volume +	AVR Volume +	AVR Volume +	AVR Volume +	AVR Volume +	AVR Volume +	AVR Volume +	AVR Volume +
	Volume –	AVR Volume –	AVR Volume –	AVR Volume –	AVR Volume –	AVR Volume –	AVR Volume –	AVR Volume –	AVR Volume –
41	Mute	AVR Mute	AVR Mute	AVR Mute	AVR Mute	AVR Mute	AVR Mute	AVR Mute	AVR Mute
42	Channel/Page Up	Channel/Preset Up	Preset Up	Preset Up	Preset Up	Page Up		Channel Up	Page Up
	Channel/Page Down	Channel/Preset Down	Preset Down	Preset Down	Preset Down	Page Down		Channel Down	Page Down
43	Previous					Prev. Step	Previous		Previous
44	Pause					Pause	Pause		Pause
45	Next					Next Step	Next Step		Next
46	Rew ◄◄					Rew ◄◄	Rew ◄◄		Rew ◄◄
47	Play ►					Play ►	Play ►		Play ►
48	FF ►►					FF ►►	FF ►►		FF ►►
49	Record						Record		
50	Stop					Stop	Stop		Stop
51	Setup	AVR Sel and Setup	AVR Sel and Setup	AVR Sel and Setup	AVR Sel and Setup	AVR Sel and Setup	AVR Sel and Setup	AVR Sel and Setup	AVR Sel and Setup
52	Info Settings	Info Settings	Info Settings	Info Settings	Info Settings	Info Settings	Info Settings	Info Settings	Info Settings
53	Sleep	Sleep	Sleep	Sleep	Sleep	Sleep	Sleep	Sleep	Sleep
54	Zone Select	Zone Select	Zone Select	Zone Select	Zone Select	Zone Select	Zone Select	Zone Select	Zone Select

Table A13 – continued

No.	Button Name	Cable/SAT	Game	AUX				
				CD	HDTV	PVD	TiVo	VCR
01	AVR Power On	AVR Power On	AVR Power On	AVR Power On	AVR Power On	AVR Power On	AVR Power On	AVR Power On
02	AVR Power Off	AVR Power Off	AVR Power Off	AVR Power Off	AVR Power Off	AVR Power Off	AVR Power Off	AVR Power Off
03	Device Power On	Power On	Play	Power On	Power On	Power On	Power On	Power On
04	Device Power Off	Power Off	Stop	Power Off	Power Off	Power Off	Power Off	Power Off
05	Cable/SAT	Input Sel	Input Sel	Input Sel	Input Sel	Input Sel	Input Sel	Input Sel
06	DVD	Input Sel	Input Sel	Input Sel	Input Sel	Input Sel	Input Sel	Input Sel
07	The Bridge	Input Sel	Input Sel	Input Sel	Input Sel	Input Sel	Input Sel	Input Sel
08	Radio	Radio	Radio	Radio	Radio	Radio	Radio	Radio
09	TV	Input Sel	Input Sel	Input Sel	Input Sel	Input Sel	Input Sel	Input Sel
10	Game	Input Sel	Input Sel	Input Sel	Input Sel	Input Sel	Input Sel	Input Sel
11	Media Server	Input Sel	Input Sel	Input Sel	Input Sel	Input Sel	Input Sel	Input Sel
12	AUX	Input Sel	Input Sel	Input Sel	Input Sel	Input Sel	Input Sel	Input Sel
13	Audio Effects	Audio Effects	Audio Effects	Audio Effects	Audio Effects	Audio Effects	Audio Effects	Audio Effects
14	Video Modes	Video Modes	Video Modes	Video Modes	Video Modes	Video Modes	Video Modes	Video Modes
15	Surround Modes	Surround Modes	Surround Modes	Surround Modes	Surround Modes	Surround Modes	Surround Modes	Surround Modes
16	1	1	1	1	1	1	1	1
17	2	2	2	2	2	2	2	2
18	3	3	3	3	3	3	3	3
19	4	4	4	4	4	4	4	4
20	5	5	5	5	5	5	5	5
21	6	6	6	6	6	6	6	6
22	7	7	7	7	7	7	7	7
23	8	8	8	8	8	8	8	8
24	9	9	9	9	9	9	9	9
25	Last	Prev. Ch	Enter		Prev. Ch	Instant Replay	Enter/Last	
26	0	0	0	0	0	0	0	0
27	Activity	Activity	Activity	Activity	Activity	Activity	Activity	Activity
28	Back/Exit	Bypass	Clear		Exit/Cancel	Exit	Exit	Cancel
29	Menu	Menu	Start		Menu	Menu	Menu	Menu
30	Up	Up	Up		Up	Up	Up	Up
31	Left	Left	Left		Left	Left	Left	Left
32	OK	OK	Select		Enter	Setup	Select	Enter
33	Right	Right	Right		Right	Right	Right	Right
34	Down	Down	Down		Down	Down	Down	Down
35	Disc Menu	OSD	DVD Menu		OSD	AV	TiVo	OSD
36	Red	Guide	●	Open/Close	Caption	Mark	Window	
37	Green	PPV	■	Random Play	Fav. Ch	Repeat	Live TV	
38	Yellow	Fav. Ch	▲	Repeat	MTS	Jump Up	Slow	
39	Blue	Music	X	Intro Scan	Aspect	Jump Down	Skip	
40	Volume +	AVR Volume +	AVR Volume +	AVR Volume +	AVR Volume +	AVR Volume +	AVR Volume +	AVR Volume +
	Volume −	AVR Volume −	AVR Volume −	AVR Volume −	AVR Volume −	AVR Volume −	AVR Volume −	AVR Volume −
41	Mute	AVR Mute	AVR Mute	AVR Mute	AVR Mute	AVR Mute	AVR Mute	AVR Mute
42	Channel/Page Up	Channel Up	Scan Up	(+10)	Channel Up	Channel Up	Channel Up	Channel Up
	Channel/Page Down	Channel Down	Scan Down	Disc Skip	Channel Down	Channel Down	Channel Down	Channel Down
43	Previous		Slow Down	Skip Down	Back	Last Clip	Thumb Down	Scan Down
44	Pause		Pause	Pause	Pause	Pause	Pause	Pause
45	Next		Slow Up	Skip Up	Replay	Next Clip	Thumb Up	Scan Up
46	Rew ◀◀		Prev.	R. Search	Rew ◀◀	Rew ◀◀	Rew ◀◀	Rew ◀◀
47	Play ▶		Play ▶	Play ▶	Play ▶	Play ▶	Play ▶	Play ▶
48	FF ▶▶		Next	F. Search	FF ▶▶	FF ▶▶	FF ▶▶	FF ▶▶
49	Record		Subtitle	Time	Record	Record	Record	Record
50	Stop		Stop	Stop	Stop	Stop	Stop	Stop
51	Setup	AVR Sel and Setup	AVR Sel and Setup	AVR Sel and Setup	AVR Sel and Setup	AVR Sel and Setup	AVR Sel and Setup	AVR Sel and Setup
52	Info Settings	Info Settings	Info Settings	Info Settings	Info Settings	Info Settings	Info Settings	Info Settings
53	Sleep	Sleep	Sleep	Sleep	Sleep	Sleep	Sleep	Sleep
54	Zone Select							

Refer to Tables A14 through A24 when programming the codes for your components into the remote.

Table A14 – Remote Control Product Codes: TV

TV Manufacturer/Brand	Setup Code Number						
ADMIRAL	192						
ANAM	045	106	109	112	122		
AOC	037	122	123	128			
AUDIOVOX	012						
BLAUPUNKT	084						
BROKSONIC	205	206					
CITIZEN	045	123	128	132			
CONTEC	045						
CRAIG	045	157	158	159			
CROWN	045	132					
CURTIS MATHES	123	128	132				
DAEWOO	045	087	102	105	106	108	111
	114	116	119	127	128	132	
DAYTRON	128	132					
DYNATECH	063						
DYNEX	014						
ELECTROHOME	115	132					
EMERSON	045	123	128	132	139	157	158
	159	162	205				
FUJITSU	041	042					
FUNAI	045						
FUTURETECH	045						
GE	029	087	121	123	128	133	145
	159	163					
GRUNDIG	193						
HALL MARK	128						
HARMAN KARDON	201						
HITACHI	123	128	132	144	147		
HYTEK	016						
INKEL	120						
JC PENNEY	115	123	128	132	145		
JENSEN	019						
JVC	079	087	134				
KEC	045						
KLH	006						
KTV	045	123	132	162			
LG/GOLDSTAR	002	013	101	110	122	128	132
LLOYTRON	172	173					
LODGENET	069						
LXI	077	145	148				
MAGNAVOX	030	040	123	128	132	145	148
MARANTZ	115	123	148				
MEMOREX	069	128					
METZ	084						
MGA	115	123	128				
MITSUBISHI	077	115	123	128	160	167	168
MTC	175	176					
NATIONAL	148	177	179	180	181	182	
NEC	010	115	121	123	125		
OLEVIA	007						

TV Manufacturer/Brand	Setup Code Number						
OPTONICA	077						
ORION	207	208	209	210	211		
PANASONIC	087	148	169				
PHILCO	045	115	123	128	132	148	
PHILIPS	033	034	035	036	123	128	132
	145	148					
PIONEER	024	123	128				
POLAROID	003	004	005	006	043		
PORTLAND	128	132					
PROSCAN	133						
PROTON	008	059	122	128	132	165	
QUASAR	032	087					
RADIO SHACK	045	128	132	180	196	197	
RCA	021	115	123	128	133	145	161 163
REALISTIC	045	167	196				
RUNCO	044	046	152	153			
SAMPO	059	123	128				
SAMSUNG	020	022	124	128	132	145	
SANYO	026	054					
SCOTT	045	128	132				
SEARS	128	132	145				
SHARP	077	128	132				
SIEMENS	084						
SIGNATURE	069						
SONY	028	031	117	130	136	194	212
SOUNDESIGN	045	128					
SYLVANIA	025	123	128	145	148		
SYMPHONIC	184						
TANDY	077						
TATUNG	063						
TECHNICS	181						
TECHWOOD	128						
TEKNIKA	045	069	115	123	128	132	
TELERENT	069						
TERA	156						
THOMSON	190	191					
TIVO	051	052	and See Table A24				
TMK	128						
TOSHIBA	063	129	202				
TOTEVISION	132						
VIDEO CONCEPTS	160						
VIDTECH	128						
VIEWSONIC	011	038	039	047			
VIZIO	001	002					
WARDS	069	128	132	148			
WESTINGHOUSE	017	018	023				
YAMAHA	123	128					
YORK	128						
ZENITH	069	090					

Table A15 – Remote Control Product Codes: AUX-HDTV

TV Manufacturer/Brand	Setup Code Number				
APEX	614	616			
DISH NETWORK	612				
LG	604				
MAGNAVOX	607	608	609	610	611
MOTOROLA	605				
RCA	601	612			
SAMSUNG	603				
TATUNG	618				
TIVO	See Table A24				
ZENITH	602	606	619		

Table A16 – Remote Control Product Codes: AUX-VCR

VCR Manufacturer/Brand	Setup Code Number						
AIWA	340						
AKAI	348	408	409	426			
AUDIO DYNAMICS	318	348					
BROKSONIC	410	447					
CANON	435	440					
CAPEHART	394						
CITIZEN	434						
CRAIG	345	416					
DAEWOO	317	394	404				
DAYTRON	394						
DBX	318	348					
DYNATECH	340						
EMERSON	313	340	342	410	412		
FISHER	317						
FUNAI	340						
GE	376	395	424				
HARMAN KARDON	302	303	318	349			
HITACHI	340	348					
JC PENNEY	318	345					
JENSEN	348						
JVC	318	348	411	432			
KENWOOD	320	348					
LG/GOLDSTAR	318	407					
LLOYD	340						
LXI	320	340					
MAGNAVOX	340						
MARANTZ	318						
MEMOREX	317	320	340	352	353	354	376 442
MGA	349						
MITSUBISHI	349	431					
MULTITECH	340						
NAD	439						
NATIONAL	440						
NEC	318	348					
NORDMENDE	348						
OPTIMUS	459						
ORION	447						
PANASONIC	425	450	467	472			

Table A16 – continued (VCR)

VCR Manufacturer/Brand	Setup Code Number					
PHILCO	340					
PHILIPS	340	375				
PORTLAND	394					
PULSAR	376					
QUASAR	301	425				
RADIO SHACK	355	434	440	442	458	459
RCA	395	424	425	457	472	
REALISTIC	317	320	340	345	459	
SAMSUNG	345	351	395	405	409	
SANSUI	348	416	447			
SANYO	317	320				
SCOTT	410	412				
SEARS	317	320				
SHARP	429	456				
SONY	380	429				
SOUNDESIGN	340					
SYLVANIA	340					
SYMPHONIC	340					
TANDY	317	340				
TEAC	340	348				
TEKNIKA	340					
THOMAS	340					
TIVO	See Table A24					
TMK	313					
TOSHIBA	412	455				
TOTEVISION	345					
UNITECH	345					
VECTOR RESEARCH	318					
VIDEO CONCEPTS	318	340				
VIDEOSONIC	345					
WARDS	340	345	412			
YAMAHA	318	340	348			
ZENITH	340	350	376	383		

Table A17 – Remote Control Product Codes: AUX-CD

CD Manufacturer/Brand	Setup Code Number							
ADCOM	063	069						
AIWA	072	111	118	156	170			
AKAI	050	177	184					
AUDIO TECHNICA	053							
AUDIOACCESS	125							
AUDIOFILE	211							
BSR	044							
CALIFORNIA AUDIO	109							
CAPETRONIC	070							
CARRERA	087							
CARVER	136	140	141	143	144	145	185	186
CASIO	117	166						
CLARINETTE	166							
DENON	187	188	213					
EMERSON	052	093	108					
FISHER	055	095						
FUNAI	126							
GE	164							
HAITAI	099	214						
HARMAN KARDON	001	002	025	054	190			
HITACHI	093							
INKEL	216							
JC PENNEY	098	147						
JENSEN	153							
JVC	176	195	196					
KENWOOD	030	062	078	079	148	151	176	
	178	181						
LG/GOLDSTAR	016	087						
LOTTE	108							
LUXMAN	077	102						
LXI	164							
MAGNAVOX	039	113						
MARANTZ	058	084	191	192	193			
MCINTOSH	194							
MCS	080	098						
MITSUMI	152							
MODULAIRE	166							
NAD	013	074	197	198				
NAKAMICHI	199	200	201					
NEC	069							
NIKKO	053	055						
ONKYO	037	038	045	046	171	175	202	203
OPTIMUS	065	089	091	092	099	104	212	
PANASONIC	075	109	119	158	183	204		
PHILIPS	039	138	149	209				
PIONEER	071	094	100	112	123	131	161	
	162	215						
PROTON	210							
RADIO SHACK	126	166	213					
RCA	024	081	093	150				
REALISTIC	058	093	095	104	105	108	164	166
SANSUI	047	081	134	157	172			
SANYO	033	082	095					
SCOTT	108							

Table A17 – continued (CD)

CD Manufacturer/Brand	Setup Code Number							
SHARP	058	105	114	151	159	167	180	181
SHERWOOD	003	041	058	105	133			
SONY	103	115	116	118	132	139	163	205
	206	207	208	212	217			
SOUNDSTREAM	124							
SYMPHONIC	059	110						
TAEKWANG	177							
TEAC	011	058	085	086	106	107	110	121
	137	146	154					
THETA DIGITAL	039							
TOSHIBA	013	074	097	151	155	173		
VECTOR RESEARCH	087							
VICTOR	120	130						
WARDS	095							
YAMAHA	019	031	053	061	135	169		
YORK	166							

Table A18 – Remote Control Product Codes: DVD

DVD Manufacturer/Brand	Setup Code Number				
APEX DIGITAL	061				
DENON	019	020	051		
GE	003	004			
HARMAN KARDON	001	002			
JVC	006				
LG/GOLDSTAR	005	010	055	064	066
MAGNAVOX	056				
MARANTZ	059				
MITSUBISHI	023				
NAD	062				
ONKYO	009	048			
PANASONIC	008	024	030	044	
PHILIPS	016	056			
PIONEER	018	027	041	065	
PROCEED	060				
PROSCAN	003	004			
RCA	003	004			
SAMSUNG	017	053	054		
SHARP	028				
SONY	011	012	015	043	045
THOMSON	003	004			
TOSHIBA	009	058	067		
YAMAHA	030	063			
ZENITH	005	055	064		

Table A19 – Remote Control Product Codes: SAT

SAT Manufacturer/Brand	Setup Code Number							
BIRDVIEW	425							
CHANNEL MASTER	320	321	325	361				
CHAPARRAL	315	316	451					
CITOH	360							
DIRECTV	309	310	314					
DISH NETWORK	364							
DRAKE	313	317	318	413	481			
DX ANTENNA	331	352	379	483				
ECHOSTAR	364	395	397	452	453	463	477	478
	484	485						
ELECTRO HOME	392							
FUJITSU	324	329	334					
GENERAL INSTRUMENT	303	311	323	365	403	454	468	474
HITACHI	304	455						
HOUSTON TRACKER	463							
HUGHES	305	306	437	489				
JANIEL	366							
JERROLD	454	468	484					
LEGEND	453							
MACOM	317	365	369	370	371			
MAGNAVOX	461	473						
MEMOREX	453							
MITSUBISHI	307							
MOTOROLA	312	319						
NEXTWAVE	423							
NORSAT	373							
OPTIMUS	466							
PACE	328	487						
PANASONIC	353	366	457	469				
PANSAT	420							
PERSONAL CABLE	418							
PHILIPS	375							
PICO	407							
PRESIDENT	381	404						
RCA	301	358	439	458	465	490		
REALISTIC	349	480						
SAMSUNG	322	326	442					
SATELLITE SERVICE CO	335	388						
SCIENTIFIC ATLANTA	339	356						
SONY	362	405						
STAR CHOICE DBS	459							
STARCAST	347							
SUPER GUIDE	327	423						
TELECOM	330	333	390	391	393	409		
TOSHIBA	302	426	460	461	462	470		
UNIDEN	323	332	348	349	350	351	354	355
	381	383	389	403	466	479	480	
ZENITH	359	384	385	387	394	419	488	

Table A20 – Remote Control Product Codes: Game

Game Manufacturer/Brand	Setup Code Number	
MICROSOFT (XBOX, XBOX 360)	001	003
NYKO (PS3)	005	
SONY (PS2, PS3)	002	004

Table A21 – Remote Control Product Codes: Cable

Cable Manufacturer/Brand	Setup Code Number						
ABC	001	011					
ALLEGRO	111						
AMERICAST	212						
ARCHER	112						
BELCOR	113						
CABLE STAR	033	113					
CITIZEN	111						
COMCAST	007						
DIGI LINK	114						
EAGLE	186						
EASTERN	066	070					
EMERSON	112						
GENERAL INSTRUMENT	001	011	017	096	097	210	
GC ELECTRONICS	113						
GEMINI	032	060					
HAMLIN	056	099	100	101	117	175	208
HITACHI	001	188					
JASCO	111						
JERROLD	001	002	011	017	073	096	097	162
	188	210					
LINSAY	118						
MACOM	191						
MAGNAVOX	017	019	068				
MOVIETIME	035	039					
NSC	035	190					
OAK	197	220					
PACE	179						
PANASONIC	053	176	177	189	214		
PANTHER	114						
PHILIPS	013	019	020	085	090		
PIONEER	001	041	119	171	209	215	216
RADIO SHACK	111	112	213				
RCA	053	214					
RECOTON	116						
REGAL	056	099	100	101	208		
REMBRANT	032						
SAMSUNG	003	072	186				
SCIENTIFIC ATLANTA	183	203	221	222			
SEAM	121						
SIGNATURE	001	188					
SPRUCER	053	081	177	189			

Table A21 – continued (Cable)

Cable Manufacturer/Brand	Setup Code Number
STARCOM	002 011 163
STARGATE	120
TANDY	024
TELECAPATION	028
TEXSCAN	036
TFC	122
TIVO	029 030 and See Table A24
TOCOM	170 205
UNITED CABLE	011
UNIVERSAL	033 034 039 042 113
VIDEOWAY	124 211
VIEWSTAR	019 025 053 086 089 190
ZENITH	065 125 211 219

Table A22 – Remote Control Product Codes: Media Server

Manufacturer/Brand	Setup Code Number
APPLE	008 009
BEYOND	003
ESCIENT (FIREBALL)	004 005 006 007
HARMAN KARDON	001 002
MICROSOFT	003
REQUEST	010

Table A23 – Remote Control Product Codes: AUX-Cable/SAT Recorder (PVR)

Manufacturer/Brand	Setup Code Number
DAEWOO	701 704
ECHOSTAR	714 715 716
EXPRESSVU	714
HUGHES	717 727
HYUNDAI	718
PANASONIC	710 723
PHILIPS	711 717 724 727
PROSCAN	719
RCA	719 727
REPLAYTV	708 710 712 725 726
SONICBLUE	710 712
SONY	707 713 720 721 722 723 724

Table A24 – Remote Control Product Codes: AUX- TiVo

Manufacturer/Brand	Setup Code Number
COMCAST TIVO	808
COX TIVO	808
DIRECTV TIVO	806
HUMAX TIVO	803
NERO LIQUIDTV TIVO	805
PIONEER TIVO	801
TIVO HD XL DVR	807
TIVO HD DVR	804
TIVO SERIES2™ DT DVR	802
TOSHIBA TIVO	803

Audio Section

Stereo Mode, Continuous Average Power (FTC)
65 Watts per channel, 20Hz–20kHz, @ <0.07% THD, both channels driven into 8 ohms

Seven-Channel Surround Modes
Power per Individual Channel

Front L & R channels:
65 Watts per channel
@ <0.07% THD, 20Hz–20kHz into 8 ohms

Center channel:
65 Watts @ <0.07% THD, 20Hz–20kHz into 8 ohms

Surround (L & R Side, L & R Back) channels:
65 Watts per channel
@ <0.07% THD, 20Hz–20kHz into 8 ohms

Input Sensitivity/Impedance	
Linear (High-Level)	200mV/47k ohms
Signal-to-Noise Ratio (IHF-A)	100dB

Surround System Adjacent Channel Separation

Pro Logic® I/II	40dB
Dolby® Digital (AC-3)	55dB
DTS®	55dB

Frequency Response	
@ 1W (+0dB, −3dB)	10Hz −130kHz
High Instantaneous Current Capability (HCC)	±60 Amps
Transient Intermodulation Distortion (TIM)	Unmeasurable
Slew Rate	40V/μsec

FM Tuner Section

Frequency Range	87.5–108.0MHz
Usable Sensitivity	IHF 1.3μV/13.2dBf
Signal-to-Noise Ratio	Mono/Stereo 70/68dB
Distortion	Mono/Stereo 0.2/0.3%
Stereo Separation	40dB @ 1kHz
Selectivity	±400kHz, 70dB
Image Rejection	80dB
IF Rejection	90dB

AM Tuner Section

Frequency Range	520–1720 kHz
Signal-to-Noise Ratio	45dB
Usable Sensitivity	Loop 500 μV
Distortion	1kHz, 50% Mod 0.8%
Selectivity	±10kHz, 30dB

Video Section

Television Format	NTSC
Input Level/Impedance	1Vp-p/75 ohms
Output Level/Impedance	1Vp-p/75 ohms
Video Frequency Response (Composite and S-Video)	10Hz–8MHz (−3dB)
Video Frequency Response (Component Video)	10Hz–100MHz (−3dB)
HDMI™	Version 1.3a with 10-bit Deep Color

General

Power Requirement	AC 120V/60Hz
Power Consumption	120W idle, 1405W maximum (7 channels driven)

Dimensions	(Product)	(Shipping)
Width	17-5/16 inches (440mm)	18-5/16 inches (465mm)
Height	6-1/2 inches (165mm)	10-1/2 inches (266mm)
Depth	17-1/16 inches (435mm)	21-7/8 inches (555mm)
	(Product)	(Shipping)
Weight	44 lb (20kg)	51 lb (23.3kg)

Depth measurement includes knobs, buttons and terminal connections.
Height measurement includes feet and chassis.
Features, specifications and appearance are subject to change without notice.

Please register your AVR 2600 at www.harmankardon.com. You'll need the product's serial number. At the same time, you can choose to be notified about new products and/or special promotions.

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