

AVR 7200 AUDIO/VIDEO RECEIVER

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Typographical Conventions

In order to help you use this manual with the remote control, front-panel controls and rear-panel connections, certain conventions have been used.

EXAMPLE – (bold type) indicates a specific remote control or front-panel button, or rear-panel connection jack

EXAMPLE – (OCR type) indicates a message that is visible on-screen or on the front-panel information display

EXAMPLE – (Synchro type) indicates a message that is displayed on the remote control's LCD screen

1 – (number in a square) indicates a specific front-panel control

1 – (number in a circle) indicates a rear-panel connection

1 – (number in an oval) indicates a button or indicator on the remote

A – (letter in a square) indicates an indicator in the front-panel display

A – (letter in an oval) indicates a button on the Zone II remote

Thank you for choosing Harman Kardon®! With the purchase of a Harman Kardon® AVR 7200, you are about to begin many years of listening enjoyment. Designed to provide all the excitement and detail of movie soundtracks and every nuance of musical selections, the AVR 7200 is truly a multichannel receiver for the new millennium.

The AVR 7200 has been engineered so that it is easy to take advantage of all the power of its digital technology. However, to obtain the maximum enjoyment from your new receiver, we urge you to read this manual. A few minutes spent learning the functions of the various controls will enable you to take advantage of all the power the AVR 7200 is able to deliver.

If you have any questions about this product, its installation or its operation, please contact your retailer or custom installer. They are your best local source of information.

Description and Features

The AVR 7200 is among the most versatile and multi-featured A/V receivers available, incorporating a wide range of listening options. In addition to Dolby® Digital and DTS® decoding for digital sources, a wide array of matrix surround-encoded or stereo surround modes is available for use with sources such as CD, VCR, TV broadcasts and the AVR 7200's own FM/AM tuner. Along with Dolby Digital EX, Dolby Pro Logic® II, DTS Neo:6®, Dolby 3 Stereo, and Hall and Theater modes, the AVR 7200 offers Harman International's exclusive Logic 7® process in both 5.1 and 7.1 versions to create a wider, more enveloping field environment and more defined fly-overs and pans. Another Harman Kardon exclusive is VMAx®, which uses proprietary processing to create an open, spacious sound field even when only two front speakers are available. Finally, the AVR 7200 offers decoding of MP3 data, so that you may listen to the latest music selections directly from compatible computers or playback devices with the power and fidelity you expect from Harman Kardon.

In addition to providing a wide range of listening options, the AVR 7200 is easy to configure so that it provides the best results with your speakers and specific listening-room environment. On-screen menus make it simple to enter settings for speaker configurations and bass management, and an EzSet™ remote with LCD display measures a system's output levels and automatically calibrates them for perfectly balanced sound field presentation.

For the ultimate in flexibility, the AVR 7200 features connections for five video devices, all with both composite and S-Video inputs. Two additional audio inputs are available, and six digital inputs make the

AVR 7200 capable of handling all the latest digital audio sources. For compatibility with the latest HDTV video sources and progressive scan DVD players, the AVR 7200 also features two-input, wide-bandwidth, low-crosstalk component video switching.

The front panel offers coax and optical digital inputs and outputs for direct connection to digital recorders, along with analog audio/video connections that may be switched to outputs for use with portable recorders – a Harman Kardon exclusive. Two video recording outputs, preamp-out and a color-coded eight-channel input with complete digital bass management, make the AVR 7200 virtually future-proof, with everything needed to accommodate tomorrow's new formats right onboard.

The AVR 7200's flexibility and power extend beyond your main home theater or listening room. The AVR 7200 includes a sophisticated multizone control system that allows you to select one source for use in the main room and a different source for audio and video distribution to a second zone. Complete volume control in the second zone is possible with a separate infrared control link. To make it easy to operate the AVR 7200 from a remote zone, a separate "Zone II" remote is included. Additional multiroom options include the option to assign two of the AVR 7200's output channels to the multiroom system and the ability to link the AVR 7200 to innovative A-BUS® keypads for multiroom operation without the need for external amplifiers. The AVR 7200's powerful amplifier uses traditional Harman Kardon high-current design technologies to meet the wide dynamic range of any program selection.

Harman Kardon invented the high-fidelity receiver fifty years ago. With state-of-the-art circuitry and time-honored circuit designs, the AVR 7200 is the perfect combination of the latest in digital audio technology, a quiet yet powerful analog amplifier in an elegant, easy-to-use package.

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 polarisée: 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.

HDCD®, HDCD®, High Definition Compatible Digital® and Pacific Microsonics™ are either registered trademarks or trademarks of Pacific Microsonics, Inc., in the United States and/or other countries. HDCD system manufactured under license from Pacific Microsonics, Inc.

- A wide range of digital and matrix surround modes, including Dolby® Digital, Dolby Digital EX, Dolby Pro Logic® II, DTS®, DTS-ES® Discrete and Matrix, and DTS Neo: 6®
- Seven channels of high-current amplification with two channels assignable to either surround back or multiroom applications
- Harman Kardon's exclusive Logic 7® processing, available for the first time with both 7.1 and 5.1 processing in a variety of modes and two modes of VMAx®
- MP3 decoding for use with computers and digital audio players
- **IIIExSet™** remote control with LCD display automatically sets output levels for optimum performance
- High-bandwidth, HDTV-compatible component video switching
- Switchable front-panel analog A/V jacks and discrete front-panel coaxial and optical digital inputs and outputs for easy connection to portable digital devices and video game consoles
- Extensive bass management options, including three separate crossover groupings and full digital bass management on the 6/8-channel direct inputs for use with DVD-Audio or SACD players
- RS-232 port for external control
- On-screen menu and display system
- Extensive multiroom options, including a standard Zone II remote, assignable amplifier channels and A-BUS Ready® capability for listening to a separate source in a remote zone
- HDCD® decoding for enhanced CD playback

CAUTION

**RISK OF ELECTRIC SHOCK
DO NOT OPEN**

CAUTION: To prevent electric shock, do not use this (polarized) plug with an extension cord, receptacle or other outlet unless the blades can be fully inserted to prevent blade exposure.



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.

SAFETY INFORMATION

Important Safety Information

Verify Line Voltage Before Use

Your AVR 7200 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 guarantee. If water or any metal object such as a paper clip, wire or a 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 requirements 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 that provides guidelines for proper grounding and, in particular, specifies that the cable ground shall be connected to the grounding system of the building, as close to the point of cable entry as 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 7200 and the heat generated by the amplifiers, 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.

Cleaning

When the unit gets dirty, wipe it with a clean, soft, dry cloth. If necessary, wipe it with a soft cloth dampened with mild soapy water, then a fresh cloth with clean water. Wipe 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 interfer-

ence 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 interference 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 interference, 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.

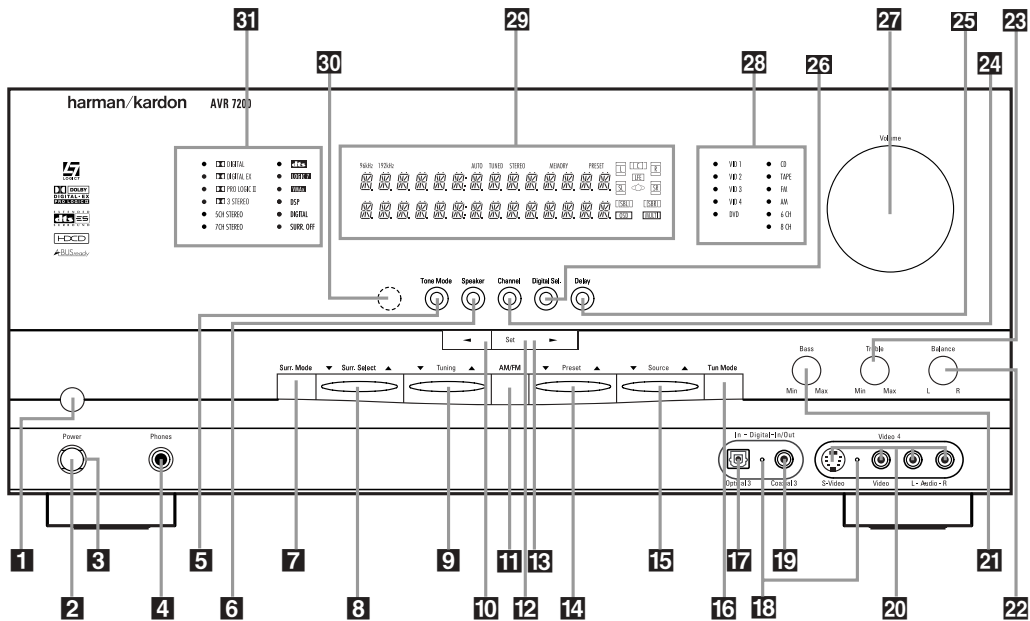
Unpacking

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 shipping 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 collapsing 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.

At this time you should remove the protective plastic film from the front-panel lens. Leaving the film in place may affect the performance of your remote control.



- 1** Main Power Switch
- 2** System Power Control
- 3** Power Indicator
- 4** Headphone Jack
- 5** Tone Mode
- 6** Speaker Selector
- 7** Surround Mode Group Selector
- 8** Surround Mode Selector
- 9** Tuning Selector
- 10** ◀ Button
- 11** Tuner Band Selector
- 12** Set Button
- 13** ▶ Button
- 14** Preset Station Selector
- 15** Input Source Selector
- 16** Tuner Mode Selector
- 17** Optical 3 Digital Input
- 18** Input/Output Status Indicator
- 19** Coaxial 3 Digital Input/Output
- 20** Video 4 Input/Output Jacks
- 21** Bass Control
- 22** Balance Control
- 23** Treble Control
- 24** Channel Adjust Selector
- 25** Delay Adjust Selector
- 26** Digital Input Selector
- 27** Volume Control
- 28** Input Indicators
- 29** Main Information Display
- 30** Remote Sensor Window
- 31** Surround Mode Indicators

1 Main Power Switch: Press this button to apply power to the AVR 7200. When the switch is pressed in, the unit is placed in a Standby mode, as indicated by the amber **Power Indicator 3** surrounding the **System Power Control 2**. This button **MUST** be pressed in to operate the unit. To turn the unit off and prevent the use of the remote control, this switch should be pressed until it pops out from the front panel so that the word "OFF" may be read at the top of the switch.

NOTE: This switch is normally left in the "ON" position.

2 System Power Control: When the **Main Power Switch 1** is "ON," press this button to turn on the AVR 7200; press it again to turn the unit off. Note that the **Power Indicator 3** surrounding the switch will turn green when the unit is on.

3 Power Indicator: This LED will be lit in amber when the unit is in the Standby mode to signal that the

unit is ready to be turned on. When the unit is in operation, the indicator will turn green.

4 Headphone Jack: This jack may be used to listen to the AVR 7200's output through a pair of headphones. Be certain that the headphones have a standard 1/4" stereo phone plug. The main room speakers will automatically be turned off when the headphone jack is in use.

5 Tone Mode: This button allows you to remove the tone controls (Treble, Bass and Balance) from the signal path. The first press of the button displays a **TONE IN** message in the **Main Information Display 29**. If you wish to set the tone controls to "flat," without any treble or bass alteration, press the **◀** or **▶** **Selector Buttons 10/13** so that **TONE OUT** appears in the **Lower Display Line B**.

6 Speaker Selector: Press this button to begin the process of configuring the AVR 7200 for the type of

speakers it is being used with. For complete information on configuring the speaker settings, see page 21.

7 Surround Mode Group Selector: Press this button to select the top-level group of surround modes. Each press of the button will select a major mode grouping in the following order:

→ Dolby Modes → DTS Digital Modes → VMAx Modes
→ DSP Modes → Stereo Modes → Logic 7 Modes

Once the button is pressed so that the name of the desired surround mode group appears in the on-screen display and in the **Lower Display Line B**, press the **Surround Mode Selector 8** to cycle through the individual modes available. For example, press this button to select Dolby modes, and then press the **Surround Mode Selector 8** to choose from the various mode options.

FRONT-PANEL CONTROLS

8 Surround Mode Selector: Press this button to select from among the available surround mode options for the major mode group selected. The specific modes will vary based on the number of speakers available, the major mode group and whether the input source is digital or analog. For example, press the **Surround Mode Group Selector 7** to select a major mode grouping such as Dolby or Logic 7, and then press this button to see the specific mode choices that are available. For more information on mode selection, see page 28.

9 Tuning Selector: Press the left side of the button to tune lower-frequency stations and the right side of the button to tune higher-frequency stations. When a station with a strong signal is reached, the **TUNED Indicator 11** will be lit in the **Main Information Display 29**.

10 ◀ Button: When making system configuration changes using the front-panel controls, press this button to scroll left through the available choices for the option being adjusted.

11 Tuner Band Selector: Pressing this button will automatically switch the AVR 7200 to the Tuner mode. Pressing it again will switch between the AM and FM frequency bands. (See page 32 for more information on the tuner.)

12 Set Button: When making system configuration changes using the front-panel controls, press this button to enter a setting into the unit's memory.

13 ▶ Button: When making system configuration changes using the front-panel controls, press this button to scroll right through the available choices for the option being adjusted.

14 Preset Station Selector: Press this button to scroll up or down through the list of stations that have been entered into the preset memory. (See page 32 for more information on tuner programming.)

15 Input Source Selector: Press this button to change the input by scrolling up or down through the list of input sources.

16 Tuner Mode Selector: Press this button to select Auto or Manual tuning. When the button is pressed so that the **AUTO Indicator J** lights, the tuner will search for the next station with an acceptable signal when the **Tuning Selector 9/23/E** is pressed. When the button is pressed so that the **AUTO Indicator J** is not lit, each press of the **Tuning Selector 9/23/E** will increase the frequency. This button may also be used to switch between Stereo and Mono modes for FM radio reception. When weak reception is encountered, press the button until the **Stereo Indicator H** goes out to switch to Mono reception. Press and hold again to switch back to Stereo mode. (See page 32 for more information on using the tuner.)

17 Optical 3 Digital Input: Connect the optical digital output of an audio or video product to this jack.

18 Input/Output Status Indicator: This LED indicator will normally light green to show that the front-panel **Coaxial 3 Digital Input/Output Jack 19** or the front-panel **Video 4 Input/Output Jacks 20** are operating as inputs. When these jacks are configured for use as an output, the indicator will turn red to show that the jack may be used for recording. (See page 32 for more information on configuring the front-panel jacks as outputs, rather than inputs.)

19 Coaxial 3 Digital Input/Output: Connect the coaxial digital input or output for a digital audio product such as a portable audio player or video game to this jack. The jack is normally an input, but may be switched to an output for recording using the menu system. See page 32 for more information.

20 Video 4 Input/Output Jacks: These audio/video jacks may be used for temporary connection to video games or portable audio/video products such as camcorders and portable audio players. These jacks are normally inputs, but may be switched to outputs for recording using the menu system. See page 32 for more information.

21 Bass Control: Use this control to boost or reduce the low-frequency output of the left/right front channels by as much as ± 10 dB. Set this control as you find suitable to adjust to your specific taste or room acoustics.

22 Balance Control: Use this control to change the relative volume for the front left/right channels.

NOTE: When multichannel surround modes are in use, this control should be at the midpoint, or "12 o'clock" position for proper operation.

23 Treble Control: Use this control to boost or reduce the high-frequency output of the left/right front channels by as much as ± 10 dB. Set this control as you find suitable to adjust to your specific taste or room acoustics.

24 Channel Adjust Selector: Press the button to begin the process of adjusting the channel level outputs using the source currently playing through your AVR. For complete information on adjusting the channel output level, see page 33.

25 Delay Adjust Selector: Press this button to begin the process of adjusting the delay settings for Dolby surround modes. See page 23 for more information on delay adjustments.

26 Digital Input Selector: Press this button to begin the process of selecting a digital source for use with the currently selected input. Once the button has been pressed, use the **◀** or **▶** Buttons **10/13** to choose the desired input and then press the **Set Button 12**

to enter the setting into the unit's memory. See page 30 for more information on digital audio.

27 Volume Control: Turn this knob clockwise to increase the volume, counterclockwise to decrease the volume. If the AVR 7200 is muted, adjusting volume control will automatically release the unit from the silenced condition.

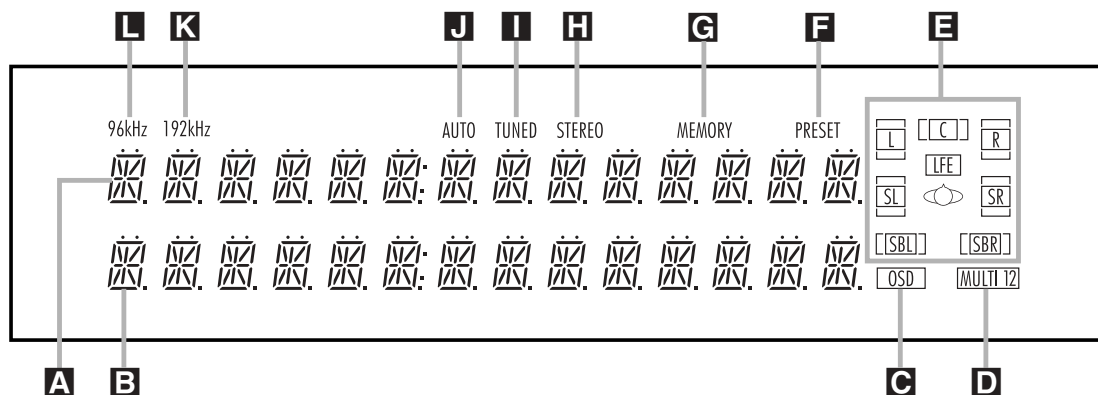
28 Input Indicators: A green LED will light to the left of the input that is currently the input source for the AVR 7200.

29 Main Information Display: This display delivers messages and status indications to help you operate the receiver. (See page 7 for a complete explanation of the Information Display.)

30 Remote Sensor Window: The sensor behind this window receives infrared signals from the remote control. Aim the remote at this area and do not block or cover it unless an external remote sensor is installed.

31 Surround Mode Indicators: These LEDs will light to show the surround mode and digital bitstream in use. Note that depending on the specific combination of input sources and surround mode selected, more than one indicator may light. (See page 28 for more information.)

FRONT-PANEL INFORMATION DISPLAY



- A** Upper Display Line
- B** Lower Display Line
- C** OSD Indicator
- D** Multiroom Indicator
- E** Speaker/Channel Input Indicators

- F** PRESET Indicator
- G** MEMORY Indicator
- H** STEREO Indicator
- I** TUNED Indicator
- J** AUTO Indicator

- K** 192kHz Indicator
- L** 96kHz Indicator

A Upper Display Line: Depending on the unit's status, a variety of messages will appear here. In normal operation, the current audio and video input source information will appear on this line.

B Lower Display Line: Depending on the unit's status, a variety of messages will appear here. In normal operation, the current surround mode name will appear on this line.

C OSD Indicator: When the OSD system is in use, this indicator lights to remind you that the other indicators in this display do not function when the On-Screen Display is being used.

D Multiroom Indicator: This indicator lights when the multiroom system is active. It will remain lit when the multiroom system is in use even though the main room system is in the Standby mode and all other indicators are dark. (See page 36 for more information on the Multiroom system.)

E Speaker/Channel Input Indicators: These indicators are multipurpose, indicating either the speaker type selected for each channel or the incoming data-signal configuration. The left, center, right, right surround, left surround, right surround back and left surround back speaker indicators are composed of three boxes, while the subwoofer is a single box. The center box lights when a "Small" speaker is selected, and the two outer boxes light when "Large" speakers are selected. When none of the boxes are lit for the center, surround or subwoofer channels, no speaker has been selected for one

of those positions. (See page 21 for more information on speaker setup.) The letters inside each of the center boxes display the active input channels. For standard analog inputs, only the L and R will light, indicating a stereo input. When a digital source is playing, the indicators will light to display the channels being received at the digital input. When the letters flash, the digital input has been interrupted. (See page 31 for more information on the Channel Indicators.)

F PRESET Indicator: This indicator lights when the tuner is in use to show that the preset number for the current station being listened to appears in the Upper Display Line. (See page 32 for more information on tuner presets.)

G MEMORY Indicator: This indicator flashes when entering presets and other information into the tuner's memory.

H STEREO Indicator: This indicator lights when an FM station is being tuned in stereo.

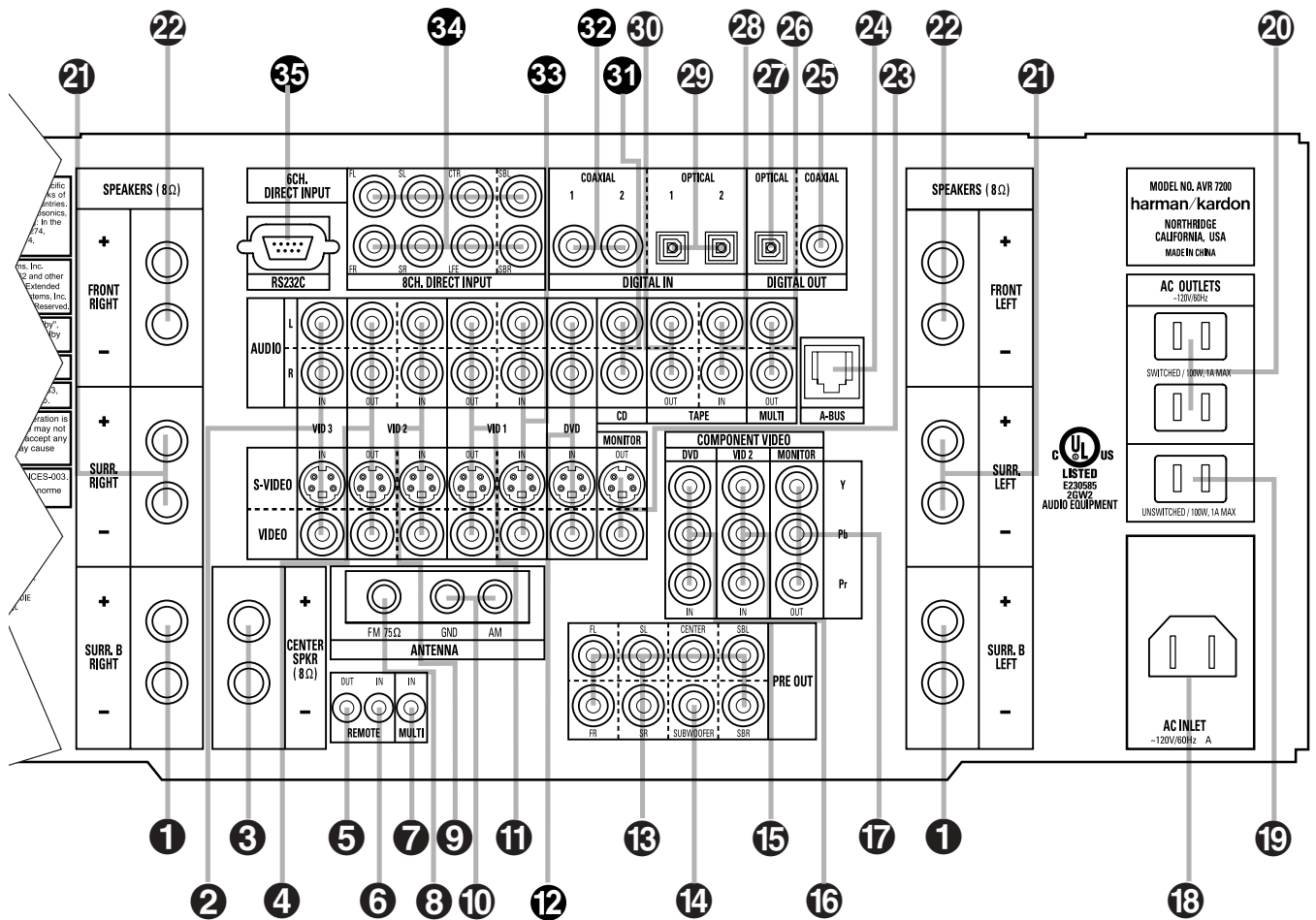
I TUNED Indicator: This indicator lights when a station is being received with sufficient signal strength to provide acceptable listening quality.

J AUTO Indicator: This indicator lights when the tuner's Auto mode is in use.

K 192kHz Indicator: This indicator lights when the input source has a 192kHz bit rate.

L 96kHz Indicator: This indicator lights when the input source has a 96kHz bit rate.

REAR-PANEL CONNECTIONS



- | | | |
|--|---|--|
| <ul style="list-style-type: none"> 1 Surround Back/Multiroom Speaker Outputs 2 Video 3 Inputs 3 Center Speaker Outputs 4 Video 2 Outputs 5 Remote IR Output 6 Remote IR Input 7 Multiroom IR Input 8 FM Antenna Terminal 9 Video 2 Inputs 10 AM Antenna Terminals 11 Video 1 Outputs 12 DVD Inputs | <ul style="list-style-type: none"> 13 Preamp Outputs 14 Subwoofer Output 15 DVD Component Video Inputs 16 Video 2 Component Video Inputs 17 Component Video Monitor Outputs 18 AC Power Cord Jack 19 Unswitched AC Accessory Outlet 20 Switched AC Accessory Outlets 21 Surround Speaker Outputs 22 Front Speaker Outputs 23 Video Monitor Outputs 24 A-BUS Connector | <ul style="list-style-type: none"> 25 Coaxial Digital Audio Output 26 Multiroom Audio Outputs 27 Optical Digital Audio Output 28 Tape Inputs 29 Optical Digital Audio Inputs 30 Tape Outputs 31 CD Audio Inputs 32 Coaxial Digital Audio Inputs 33 Video 1 Inputs 34 8-Channel Direct Inputs 35 RS-232 Port |
|--|---|--|

NOTE: To assist in making the correct connections for multichannel input, output and speaker connections, all connection jacks and terminals are color-coded in conformance with the latest CEA standards as follows:

<ul style="list-style-type: none"> Front Left: White Front Right: Red 	<ul style="list-style-type: none"> Center: Green Surround Left: Blue Surround Right: Gray Surround Back Left: Brown Surround Back Right: Tan Subwoofer: Purple Digital Audio: Orange 	<ul style="list-style-type: none"> Composite Video: Yellow Component Video "Y": Green Component Video "Pr": Red Component Video "Pb": Blue
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1 Surround Back/Multiroom Speaker Outputs:

These speaker terminals are normally used to power the surround back left/surround back right speakers in a 7.1 channel system. However, they may also be used to power the speakers in a second zone, which will receive the output selected for a multiroom system. To change the output fed to these terminals from the default of the Surround Back speakers to the Multiroom Output, you must change a setting in the Advanced Menu of the OSD system. See page 34 for more information on configuring this speaker output. In normal surround system use, the brown and black terminals are the surround back left channel positive (+) and negative (-) connections and the tan and black terminals are the surround back right positive (+) and negative (-) terminals. For multiroom use, connect the brown and black SBL terminals to the red and black connections on the left remote zone speaker and connect the tan and black SBR terminals to the red and black terminals on the right remote zone speaker.

2 Video 3 Inputs: Connect the analog audio and composite or S-Video PLAY/OUT jacks of a VCR or other video source to these jacks.

3 Center Speaker Outputs: Connect these outputs to the matching + and - terminals on your center channel speaker. In conformance with the new CEA color-code specification, the green terminal is the positive (+) terminal that should be connected to the red (+) terminal on speakers with the older color-coding. Connect the black (-) terminal on the AVR to the black (-) terminal on your speaker. (See page 15 for more information on speaker polarity.)

4 Video 2 Outputs: Connect the analog audio and composite or S-Video REC/IN jacks of a VCR or other video recording device such as a DVD recorder or PVR to these jacks.

5 Remote IR Output: This connection permits the IR sensor in the receiver to serve other remote controlled devices. Connect this jack to the "IR IN" jack on Harman Kardon (or other compatible) equipment.

6 Remote IR Input: If the AVR 7200's front-panel IR sensor is blocked due to cabinet doors or other obstructions, an external IR sensor may be used. Connect the output of the sensor to this jack.

7 Multiroom IR Input: Connect the output of an IR sensor in a remote room to this jack to operate the AVR 7200's multiroom control system.

8 FM Antenna Terminal: Connect the supplied indoor or an optional external FM antenna to this terminal.

9 Video 2 Inputs: Connect the analog audio and composite or S-Video PLAY/OUT jacks of a VCR or other video source to these jacks.

10 AM Antenna Terminals: Connect the AM loop antenna supplied with the receiver to these terminals. If an external AM antenna is used, make connections to the AM and GND terminals in accordance with the instructions supplied with the antenna.

11 Video 1 Outputs: Connect the analog audio and composite or S-Video REC/IN jacks of a VCR or other video recording device such as a DVD recorder or PVR to these jacks.

12 DVD Inputs: Connect the analog audio and composite or S-Video outputs of a DVD player or other video source to these jacks.

13 Preamp Outputs: Connect these jacks to an optional, external power amplifier for applications where higher power is desired.

14 Subwoofer Output: Connect this jack to the line-level input of a powered subwoofer. If an external subwoofer amplifier is used, connect this jack to the subwoofer amplifier input.

15 DVD Component Video Inputs: Connect the Y/Pr/Pb component video outputs of a DVD player to these jacks.

16 Video 2 Component Video Inputs: Connect the Y/Pr/Pb component video outputs of an HDTV set-top converter, satellite receiver or other video source device with component video outputs to these jacks.

17 Component Video Monitor Outputs: Connect these outputs to the component video inputs of a video projector or monitor. When a source connected to one of the **Component Video Inputs 15 16** is selected, the signal will be sent to these jacks.

18 AC Power Cord Jack: Connect the AC power cord to this jack when the installation is complete. To ensure safe operation, use only the power cord supplied with the unit. If a replacement is required, it must be of the same type and capacity.

19 Unswitched AC Accessory Outlet: This outlet may be used to power any AC device. The power will remain on at this outlet regardless of whether the AVR 7200 is on or off.

20 Switched AC Accessory Outlets: These outlets may be used to power any device you wish to have turned on when the AVR 7200 is turned on with the **System Power Control Button 2**.

NOTE: The total power consumption of all devices connected to the accessory outlets should not exceed 100 watts.

21 Surround Speaker Outputs: Connect these outputs to the matching + and - terminals on your surround channel speakers. In conformance with the new

CEA color-code specification, the blue terminal is the positive (+) terminal that should be connected to the red (+) terminal on the Surround Left speaker with older color-coding, while the gray terminal should be connected to the red (+) terminal on the Surround Right speaker with the older color-coding. Connect the black (-) terminal on the AVR to the matching black (-) terminals for each surround speaker. (See page 15 for more information on speaker polarity.)

22 Front Speaker Outputs: Connect these outputs to the matching + or - terminals on your left and right speakers. When making speaker connections, always make certain to maintain correct polarity by connecting the color-coded (white for front left and red for front right) (+) terminals on the AVR 7200 to the red (+) terminals on the speakers and the black (-) terminals on the AVR 7200 to the black (-) terminals on the speakers. (See page 15 for more information on speaker polarity.)

23 Video Monitor Outputs: Connect these jacks to the composite or S-Video input of a TV monitor or video projector to view the on-screen menus and the output of any standard video source selected by the receiver's video switcher.

24 A-BUS Connector: Connect this jack to an optional A-BUS-certified remote room keypad or amplifier to extend the multiroom capabilities of your AVR 7200. See pages 16 and 36 for more information on A-BUS.

25 Coaxial Digital Audio Output: Connect this jack to the coaxial digital audio input of a CD-R/RW, MiniDisc or other digital recorder.

26 Multiroom Audio Outputs: Connect these jacks to the optional external audio power amplifier and video distribution system that delivers the source selected for multizone distribution.

27 Optical Digital Audio Output: Connect this jack to the optical digital audio input connector on a CD-R/RW, MiniDisc or other digital recorder.

28 Tape Inputs: Connect these jacks to the PLAY/OUT jacks of an audio recorder.

29 Optical Digital Audio Inputs: Connect the optical digital audio output from a DVD player, HDTV receiver, the S/P-DIF output of a compatible computer sound card playing MP3 files or streams, LD player or CD player to these jacks. The signal may be a Dolby Digital signal, a DTS signal or a standard PCM digital source.

30 Tape Outputs: Connect these jacks to the RECORD/INPUT jacks of an audio recorder.

31 CD Audio Inputs: Connect these jacks to the analog audio output of a compact disc player or CD changer.

REAR-PANEL CONNECTIONS

32 Coaxial Digital Audio Inputs: Connect the coax digital audio output from a DVD player, HDTV receiver, the S/P-DIF output of a compatible computer sound card playing MP3 files or streams, LD player or CD player to these jacks. The signal may be a Dolby Digital signal, DTS signal or a standard PCM digital source. Do not connect the RF digital output of an LD player to these jacks.

33 Video 1 Inputs: Connect the analog audio and composite or S-Video PLAY/OUT jacks of a VCR or other video source to these jacks.

34 8-Channel Direct Inputs: These jacks are used for connection to source devices such as DVD-Audio or SACD players with discrete analog outputs. Depending on the source device in use, all eight jacks may be used, though in many cases only connections to the front left/right, center, surround left/right and LFE (sub-woofer input) jacks will be used for standard 5.1 audio signals.

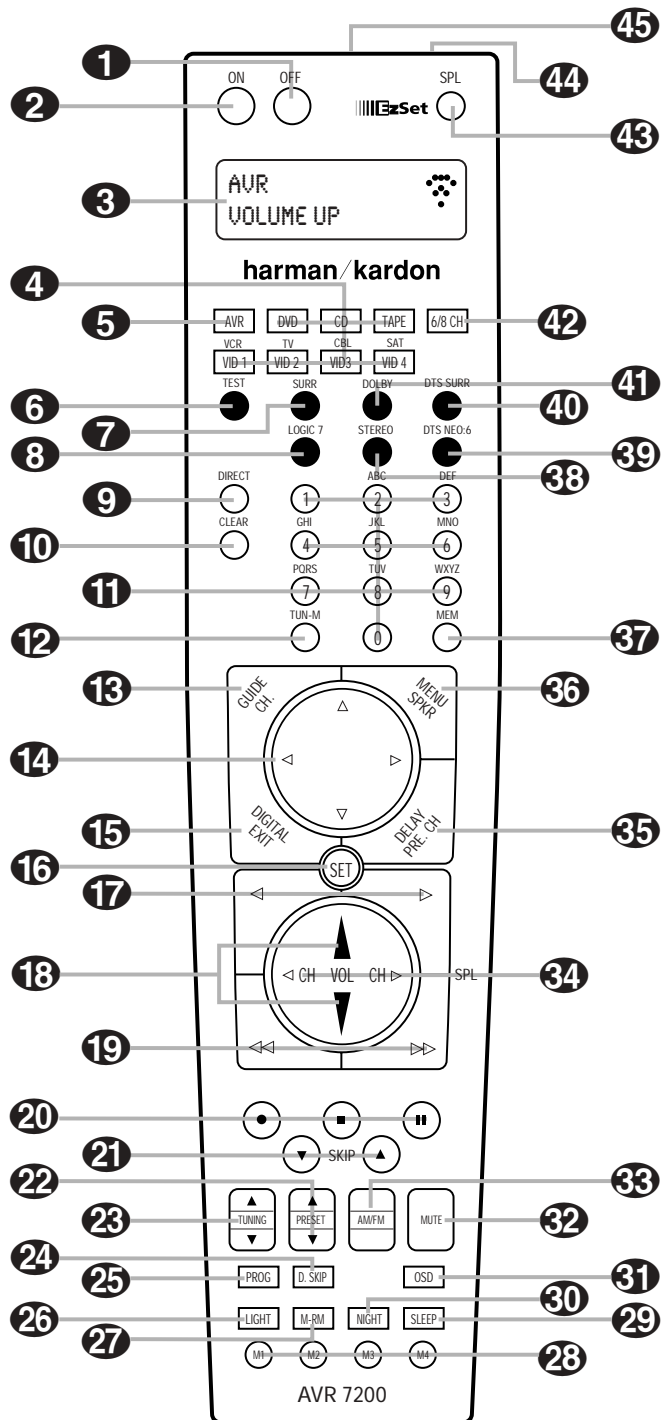
35 RS-232 Port: This jack is used to enable the AVR 7200 to be controlled by an external computer or programmable remote system that uses RS-232 commands. Due to the complexity of RS-232 connections, we recommend that they be made only by a trained and qualified custom installer. See page 36 for more information on the RS-232 control port.

MAIN REMOTE CONTROL FUNCTIONS

- 1 Power Off Button
- 2 Power On Button
- 3 LCD Information Display
- 4 Input Selectors
- 5 AVR Selector
- 6 Test Button
- 7 DSP Surround Mode Selector
- 8 Logic 7 Mode Select Button
- 9 Direct Button
- 10 Clear Button
- 11 Numeric Keys
- 12 Tuning Mode Button
- 13 Channel Select Button
- 14 Navigation Button
- 15 Digital Select Button
- 16 Set Button
- 17 Transport Play Buttons
- 18 Volume Up/Down Buttons
- 19 Transport Fast-Play/Scan Buttons
- 20 Main Transport Controls
- 21 Track Skip Up/Down Buttons
- 22 Preset Up/Down Button
- 23 Tuning Up/Down Button
- 24 Disc Skip Button
- 25 Program Button
- 26 Light Button
- 27 Multiroom
- 28 Macro Buttons
- 29 Sleep Button
- 30 Night Mode Button
- 31 OSD Button
- 32 Mute Button
- 33 AM/FM Tuner Select
- 34 Channel Up/Down Selector
- 35 Delay Select Button
- 36 Speaker Select Button
- 37 Memory Button
- 38 Stereo Mode Select Button
- 39 DTS Neo:6 Mode Select Button
- 40 DTS Digital Mode Select Button
- 41 Dolby Mode Select Button
- 42 6/8-Channel Input Select
- 43 SPL Select Button
- 44 EzSet Microphone Sensor
- 45 Lens

NOTES:

- The function names shown here are each button's feature when used with the AVR 7200. Most buttons have additional functions when used with other devices. When a button is pressed, the function name will appear in the bottom line of the LCD Information Display **3**.
- The jack on the upper right side of the remote is reserved for future use. Do not remove the plug provided or connect any device to the jack.



MAIN REMOTE CONTROL FUNCTIONS

IMPORTANT NOTE: The AVR 7200's remote may be programmed to control up to eight devices, including the AVR 7200. Before using the remote, it is important to remember to press the **Input Selector Button 4** that corresponds to the unit you wish to operate. In addition, the AVR 7200's remote is shipped from the factory to operate the AVR 7200 and most Harman Kardon CD or DVD players and cassette decks. The remote is also capable of operating a wide variety of other products using the control codes that are part of the remote. Before using the remote with other products, follow the instructions on pages 38 – 40 to program the proper codes for the products in your system.

It is also important to remember that many of the buttons on the remote take on different functions, depending on the product selected using the Device Control Selectors. The descriptions shown here primarily detail the functions of the remote when it is used to operate the AVR 7200.

- 1 Power Off Button:** Press this button to place the AVR 7200 or a selected device in the Standby mode. Note that this will turn off the main room functions, but if the Multiroom system is activated, it will continue to function.
- 2 Power On Button:** Press this button to turn on the power to a device selected by first pressing one of the **Input Selectors 4**.
- 3 LCD Information Display:** This two-line screen displays various information depending on the commands that have been entered into the remote.
- 4 Input Selectors:** Pressing one of these buttons will perform three actions at the same time. First, if the AVR 7200 is not turned on, this will power up the unit. Next, it will select the source shown on the button as the input to the AVR 7200. Finally, it will change the remote control so that it controls the device selected. After pressing one of these buttons you must press the **AVR Selector Button 5** again to operate the AVR 7200's functions with the remote.
- 5 AVR Selector:** Pressing this button will switch the remote so that it will operate the AVR 7200's functions. If the AVR 7200 is in the Standby mode, it will also turn the AVR 7200 on.
- 6 Test Button:** Press this button to begin the sequence used to calibrate the AVR 7200's output levels. (See page 24 for more information on calibrating the AVR 7200.)
- 7 DSP Surround Mode Selector:** Press this button to select from among the available DSP surround modes. (See page 29 for more information on the Theater, Hall and VMaX modes.)

- 8 Logic 7 Mode Select Button:** Press this button to select from among the available Logic 7 surround modes. (See page 29 for the available Logic 7 options.)
- 9 Direct Button:** Press this button when the tuner is in use to start the sequence for direct entry of a station's frequency. After pressing the button, simply press the proper **Numeric Keys 11** to select a station. (See page 32 for more information on the tuner.)
- 10 Clear Button:** When programming the remote or using the EzSet feature, press this button to cancel the current function. When using the remote to enter frequencies for direct tuner access, press this button to clear previous entries.
- 11 Numeric Keys:** These buttons serve as a ten-button numeric keypad to enter tuner preset positions. They are also used to select channel numbers when TV, Cable or SAT has been selected on the remote, or to select track numbers on a CD, DVD or LD player, depending on how the remote has been programmed. These buttons are also used to enter letters and numbers when renaming devices in the LCD Information Display. (See page 45 for more information on renaming devices and keys.)
- 12 Tuning Mode:** Press this button when the tuner is in use to select between automatic tuning and manual tuning. When the button is pressed so that **MANUAL TUNING** appears in the **Lower Display Line B**, pressing the **Tuning Selector 9** will move the frequency up or down in single-step increments. When the FM band is in use, pressing this button for manual tuning when a station's signal is weak will change to monaural reception. (See page 32 for more information.)
- 13 Channel Select Button:** This button is used to start the process of setting the AVR 7200's output levels to an external source. Once this button is pressed, press the **▲/▼** on the **Navigation Button 14** to select the channel being adjusted, then press the **Set Button 16**, followed by the **▲/▼** on the **Navigation Button 14** again, to change the level setting. (See page 33 for more information.)
- 14 Navigation Button:** This single disc-like button is used to navigate through the on-screen configuration menus, to scroll through the options list and to select choices for the various settings such as delay, speakers, surround modes, digital inputs, etc. To use the button, simply press it left, right, up or down in the direction indicated by the **▲▼◀▶** icons printed on the button disc. Depending on the menu being used, pressing the button will either change the video highlight that indicates a specific choice or it will change the option shown in the on-screen or front panel display. The sections in this manual describing the unit's individual features and configuration options contain specific information on how the navigation controls are used.

- 15 Digital Select Button:** Press this button to assign one of the digital inputs **29 32 17 19** to a source. (See page 30 for more information on using digital inputs.)
- 16 Set Button:** This button is used to enter settings into the AVR 7200's memory. It is also used in the setup procedures for delay time, speaker configuration and channel output level adjustment.
- 17 Transport Play Buttons:** These buttons have no direct function on the AVR 7200, but they are used when the remote is programmed for a compatible DVD, CD or tape player. Pressing these buttons will transmit a forward- or reverse-play command, according to the capabilities of the player being controlled. In the factory default setting, these buttons are programmed for Harman Kardon DVD players so that you may control a compatible player without having to switch devices.
- 18 Volume Up/Down Buttons:** These controls share the common disc in the lower third of the remote. To raise the volume, press the button marked **▲** by pressing towards the top of the remote. To lower the volume, press the button marked **▼** by pressing towards the bottom of the remote. The **◀▶** buttons on the left and right sides of this disc change channels up or down when the TV, cable box or satellite **Input Selectors 4** have been pressed.
- 19 Transport Fast-Play/Scan Buttons:** These buttons have no direct function on the AVR 7200, but they are used when the remote is programmed for a compatible DVD, CD or tape player. Pressing these buttons will transmit a fast-play forward, fast-play reverse, or fast-forward or -reverse scan command, according to the capabilities of the player being controlled. In the factory default setting, these buttons are preprogrammed with the remote codes for Harman Kardon DVD players so that you may control a compatible player without having to switch devices.
- 20 Main Transport Controls:** These buttons have no direct function on the AVR 7200, but they are used when the remote is programmed for a compatible DVD, CD or tape player. Pressing these buttons will transmit a stop (■), record (●), or pause (⏸) command, according to the capabilities of the player being controlled. In the factory default setting, these buttons are programmed with the remote codes for Harman Kardon DVD players so that you may control a compatible player without having to switch devices.
- 21 Track Skip Up/Down Buttons:** These buttons do not have a direct function with the AVR 7200, but when used with a compatibly programmed CD or DVD changer will change the track or chapter currently being played. In the factory default setting, these buttons are programmed with the remote codes for Harman Kardon DVD players so that you may control a compatible player without having to switch devices.

MAIN REMOTE CONTROL FUNCTIONS

22 Preset Up/Down Button: When the tuner is in use, press this button to scroll through the stations programmed into the AVR 7200's memory.

23 Tuning Up/Down Button: When the tuner is in use, this button will tune up or down through the selected frequency band. If the **Tuning Mode Button 12 16** has been pressed so that **AUTO** appears in the **Lower Display Line B** and the **AUTO Indicator J** lights, pressing either button will cause the tuner to seek the next station with acceptable signal strength for quality reception. When **MANUAL** appears in the **Lower Display Line B** and the **AUTO Indicator J** goes out, pressing this button will tune stations in single-step increments. (See page 32 for more information.)

24 Disc Skip Button: This button has no direct function for the AVR 7200 but may be used to change the disc in a CD or DVD changer when the remote is programmed for that type of device.

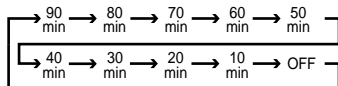
25 Program Button: This button is used to begin the process of programming the remote. Press and hold this button for three seconds to place the remote in the programming mode. Once the red LED under the **Set Button 16** lights, release the button. You may then select from the desired option. (See pages 38 – 47 for more information on configuring the remote.)

26 Light Button: Press this button to activate the remote's backlight for ease of use in darkened rooms.

27 Multiroom: Press this button to activate the multiroom system or to begin the process of changing the input or volume level for the second zone. (See page 36 for more information on the multiroom system.)

28 Macro Buttons: Press these buttons to store or recall a "Macro", which is a preprogrammed sequence of commands stored in the remote. (See page 41 for more information on macros.)

29 Sleep Button: Press this button to place the unit in the Sleep mode. After the time shown in the display, the AVR 7200 will automatically go into the Standby mode. Each press of the button changes the time until turn-off in the following order:



30 Night Mode Button: Press this button to activate the Night mode. This mode is available in specially encoded Dolby Digital sources, and it preserves dialogue (center channel) intelligibility at low volume levels.

31 OSD Button: Press this button to activate the On-Screen Display (OSD) system used to set up or adjust the AVR 7200's parameters.

32 Mute Button: Press this button to momentarily silence the AVR 7200 or TV set being controlled, depending on which device has been selected.

33 AM/FM Tuner Select: Press this button to select the AVR 7200's tuner as the listening choice. Pressing this button when the tuner is already in use will select between the AM and FM bands.

34 Channel Up/Down Selector: This button has no function when the AVR is being controlled, but when programmed for use with a VCR, TV, cable box, satellite receiver or other similar product it will change the channel up or down. See pages 38 – 47 for more information on programming the remote.

35 Delay Select Button: Press this button to begin the process for setting the delay times used by the AVR 7200 when processing surround sound. After pressing this button, the delay times are entered by pressing the **Set Button 16** and then the **▲/▼ Navigation Button 14** to change the setting. Press the **Set Button 16** again to complete the process. (See page 23 for more information on setting delay times.)

36 Speaker Select Button: Press this button to begin the process of configuring the AVR 7200's bass management system. Then press the **▲/▼ Navigation Button 14** to select the channel you wish to set up. Press the **Set Button 16** and then select another channel to configure. When all adjustments have been completed, press the **Set Button 16** twice to exit the settings and return to normal operation. (See page 21 for more information on speaker setup.)

37 Memory Button: Press this button to enter a radio station into the AVR 7200's preset memory. Once **PRESET MEMORY** flashes in the **Lower Display Line B** and the **Memory Indicator G** lights, you have five seconds to enter a preset memory location using the **Numeric Keys 11**. (See page 32 for more information.)

38 Stereo Mode Select Button: Press this button to select a stereo listening mode. The first press of the button places the AVR 7200 in a true, two-channel, left/right Stereo mode with no surround processing. The next press selects either five-channel Stereo or seven-channel Stereo, depending on the speaker configuration.

39 DTS Neo:6 Mode Select Button: Press this button to select a DTS Neo:6 mode. (See page 29 for the available DTS Neo:6 options.)

40 DTS Digital Mode Select Button: When a DTS-encoded digital source is playing, each press of this button will scroll through the available DTS modes. The specific choice of modes will vary according to the type of encoding on the disc and your system's

speaker configuration. When a DTS source is not in use, this button has no function. (See page 29 for the available DTS digital options.)

41 Dolby Mode Select Button: This button is used to select from the available Dolby Surround modes. Each press of this button will select one of the Dolby Pro Logic II modes or Dolby 3 Stereo. When a Dolby Digital-encoded source is in use, the Dolby Digital mode may also be selected. (See page 29 for the available Dolby surround mode options.)

42 6-Channel/8-Channel Input Select: Press this button to select the device connected to the **6- or 8-Channel Direct Inputs 34**. (See page 28 for more information.)

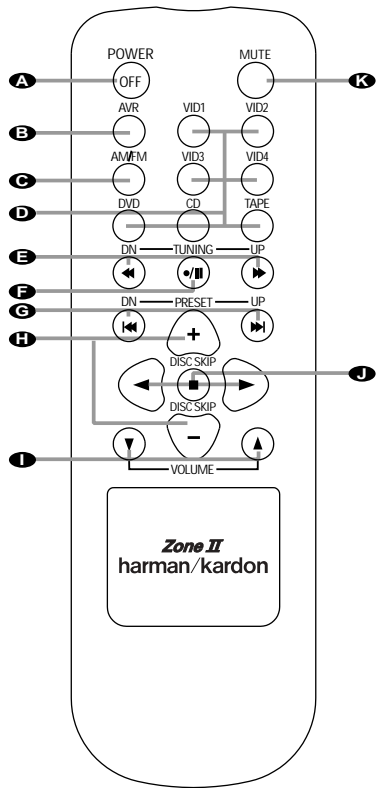
43 SPL Select Button: This button activates the EzSet function to quickly and accurately calibrate the AVR 7200's output levels. When the button is pressed you will then need to select between automatic EzSet operation or using the remote as a manual SPL meter by pressing the **▲/▼ Navigation Button 14** until your choice appears in the remote's LCD display. Press the **Set Button 16** to enter the setting, and then follow the instructions as displayed in the LCD display. (For complete information, see page 24.)

44 EzSet Microphone Sensor: The microphone sensor that is used by the EzSet system is behind the three slots at the top of the remote control. When using EzSet to calibrate the AVR 7200 be certain that the slots are not covered. (See page 24 for more information on using EzSet.)

45 Lens: The infrared emitters behind the plastic lens at the top of the remote communicate the remote codes to the AVR 7200. Be certain that the lens is not covered when using the remote, and point the lens toward the AVR for best results. In learning mode, the remote receives IR codes to be learned through a sensor behind the lens.

NOTE: DO NOT remove the rubber plug that is supplied to cover the jack on the upper right side of the remote. The jack is not active and is reserved for future use.

ZONE II REMOTE CONTROL FUNCTIONS



- A** Power Off
- B** AVR Selector
- C** AM/FM Tuner Select
- D** Input Selectors
- E** Tuning Up/Down – Fast Play
- F** Record/Pause
- G** Preset Up/Down – Track Skip
- H** Disc Skip
- I** Volume Up/Down
- J** Play Forward/Reverse – Stop
- K** Mute

A Power Off: When used in the room where the AVR 7200 is located, press this button to place the unit in Standby. When it is used in a remote room with a sensor that is connected to the **Multiroom IR Input 7** jack, this button turns the Multiroom system on and off.

B AVR Selector: Press this button to turn on the AVR 7200. The input in use when the unit was last on will be selected.

C AM/FM Tuner Select: Press this button to select the Tuner as the input to the Multiroom system. Press it again to change between the AM and FM bands.

D Input Selectors: When the AVR 7200 is off, press one of these buttons to select a specific input and turn the unit on. When the unit is already in use, pressing one of these buttons will change the input.

E Tuning Up/Down – Fast Play: When this remote is used in the same room as the AVR 7200, these buttons may be used to change the frequency of the tuner. These buttons may also control the Fast Play or Fast Reverse functions of compatible Harman Kardon CD, DVD or cassette decks in the same room, or from a remote room when an IR link is connected to the AVR 7200.

F Record/Pause: Press this button to activate the Record or Pause function on compatible Harman Kardon CD, DVD or cassette deck products.

G Preset Up/Down – Track Skip: When the AVR 7200's tuner is selected as the input source, these buttons will move up or down through the list of stations that have been stored in the preset memory. When a CD or DVD changer or player is selected, these buttons activate the Forward or Reverse Track or Chapter Skip functions.

H Disc Skip: Press these buttons to change discs on compatible Harman Kardon CD or DVD changer or players.

I Volume Up/Down: When used in the room where the AVR 7200 is located, press this button to raise or lower the volume in that room. When it is used in a remote room with a sensor that is connected to the **Multiroom IR Input 7** jack, this button will raise or lower the volume in the remote room.

J Play Forward/Reverse – Stop: Press these buttons to control compatible Harman Kardon CD, DVD or cassette players.

K Mute: When used in the room where the AVR 7200 is located, press this button to temporarily silence the unit. When it is used in a remote room with a sensor that is connected to the **Multiroom IR Input 7** jack, this button will temporarily silence the feed to the remote room only. Press the button again to return to the previous volume level.

NOTE: The Zone II remote may be used in either the same room where the AVR 7200 is located, or it may be used in a separate room with an optional infrared sensor that is connected to the AVR 7200's **Multiroom IR Input 7** jack. When it is used in the same room as the AVR 7200, it will control the functions of the AVR 7200 or any compatible Harman Kardon products in that room. When it is used in a separate room via a sensor connected to the **Multiroom IR Input 7** jack, the buttons for Power, Input Source, Volume and Mute will control the source and volume for the second zone, as connected to the **Multiroom Audio Outputs 26** jacks. (See page 36 for complete information on using the multiroom system.)

System Installation

After unpacking the unit, locating it in a place with adequate ventilation and placing it on a solid surface capable of supporting its weight, you will need to make the connections to your audio and video equipment.

IMPORTANT NOTE: For your personal safety and to avoid possible damage to your equipment and speakers, it is always good practice to turn off and unplug the AVR and ALL source equipment from the AC output before making any audio or video system connections.

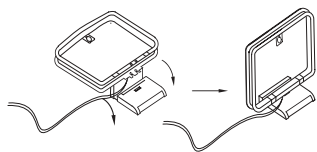
Audio Equipment Connections

We recommend that you use high-quality interconnect cables when making connections to source equipment and recorders to preserve the integrity of the signals.

1. Connect the analog output of a CD player to the **CD Audio Inputs 31**.

NOTE: When the CD player has both fixed and variable audio outputs, it is best to use the fixed output unless you find that the input to the receiver is so low that the sound is noisy, or so high that it is distorted.

2. Connect the analog Play/Out jacks of a cassette deck, MD, CD-R or other audio recorder to the **Tape Input Jacks 28**. Connect the analog Record/In jacks on the recorder to the **Tape Output Jacks 30** on the AVR 7200.
3. Connect the output of any digital sources such as such as a CD or DVD changer or player, advanced video game, a digital satellite receiver, HDTV tuner or digital cable set-top box or the output of a compatible computer sound card to the **Optical and Coaxial Digital Audio Inputs 29/32 17/19**.
4. Connect the coaxial or optical **Digital Audio Outputs 25/27** on the rear panel of the AVR to the matching digital input connections on a CD-R or MiniDisc recorder.
5. Assemble the AM loop antenna supplied with the unit so that the tabs at the bottom of the antenna loop snap into the holes in the base. Connect it to the **AM and GND Screw Terminals 10**.



6. Connect the supplied FM antenna to the **FM (75-ohm) Connection 8**. The FM antenna may be an external roof antenna, an inside powered or wire-lead antenna or a connection from a cable TV system. If the antenna or connection uses 300-ohm

twi-lead cable, you must use an optional 300- to 75-ohm adapter to make the connection.

7. Connect the front, center, surround and surround back speaker outputs **1 3 2 2** to the respective speakers. If only one speaker is used for the surround back channel, it may be connected to either the **SBL or SBR Terminal 1**.

To ensure that all the audio signals are carried to your speakers without loss of clarity or resolution, we suggest that you use high-quality speaker cable. Many brands of cable are available and the choice of cable may be influenced by the distance between your speakers and the receiver, the type of speakers you use, personal preferences and other factors.

Regardless of the brand of cable selected, we recommend that you use a cable constructed of multistrand copper with a gauge of 14 or smaller. Remember that in specifying cable, the lower the number, the thicker the cable.

Cable with a gauge of 16 may be used for runs of less than ten feet. We do not recommend that you use cables with an AWG of 18 or higher, due to the power loss and degradation in performance that may occur.

Cables that are run inside walls should be marked to indicate listing with UL, CSA or other appropriate testing agency standards. Questions about running cables inside walls should be referred to an installer or a licensed electrician who is familiar with the NEC and/or the applicable local building codes in your area.

When connecting wires to the speakers, be certain to observe proper polarity. Note that the positive (+) terminal of each speaker connection has a specific color code as noted on page 8. However, most speakers still use a red terminal for the positive (+) connection. Connect the "negative" wire to the black terminal on both the receiver and the speaker.

NOTE: While most speaker manufacturers adhere to an industry convention of using black terminals for negative and red ones for positive, some may vary from this configuration. To ensure proper phase and optimal performance, consult the identification plate on your speaker or the speaker's manual to verify polarity. If you do not know the polarity of your speaker, ask your dealer for advice before proceeding, or consult the speaker's manufacturer.

We also recommend that the length of cable used to connect speaker pairs be identical. For example, use the same length piece of cable to connect the front-left and front-right or surround-left and surround-right speakers, even if the speakers are a different distance from the AVR 7200.

8. Connections to a subwoofer are normally made via a line-level audio connection from the **Subwoofer Output 14** to the line-level input of a powered subwoofer. When a passive subwoofer is used, the connection first goes to a power amplifier, which will be connected to one or more subwoofer speakers. If you are using a powered subwoofer that does not have line-level input connections, follow the instructions furnished with the speaker for connection information.

9. If an external multichannel audio source with 5.1 outputs such as an external digital processor/decoder, DVD-Audio or SACD player is used, connect the outputs of that device to the **8-Channel Direct Inputs 34**.

Video Equipment Connections

Video equipment is connected in the same manner as audio components. Again, the use of high-quality interconnect cables is recommended to preserve signal quality.

Although the outputs from any compatible video device may be connected to any video input, to simplify programming device codes into the remote control, we recommend that a hard-drive recorder product such as a TiVo® or ReplayTV® be connected to the **Video 1 Connectors 11 33**. If there is no hard-drive recorder in your system, connect the VCR to those connectors; otherwise connect it to the **Video 2 Connectors 4 9**. The audio outputs of your TV should be connected to the **Video 2 Inputs 9**, and the outputs of a cable box or satellite receiver to the **Video 3 Inputs 2**.

Note that the AVR 7200 will not convert signals from composite to S-Video, or vice versa. S-Video inputs may only be viewed when the AVR 7200 is connected to a TV set or video display with S-Video capability. If you use both standard composite video and S-Video sources in your system, it is important that you connect both an S-Video cable and a standard composite video cable (a coax cable with an RCA plug on both ends) between the AVR 7200 and your TV or projector. Consult the instructions for your TV set or projector for more information on connecting both types of signals.

1. Connect a VCR's or other video source's audio and video Play/Out jacks to the **Video 1/Video 2 Input Jacks 9 33** on the rear panel. The Audio and Video Record/In jacks on the VCR should be connected to the **Video 1/Video 2 Output Jacks 4 11** on the AVR 7200.
2. Connect the analog audio and video outputs of a satellite receiver, cable TV converter or television set or any other video source to the **Video 3 Input Jacks 2**.

INSTALLATION AND CONNECTIONS

3. Connect the analog audio and video outputs of a DVD or laser disc player to the **DVD Inputs 12**.
4. Connect the digital audio outputs of a DVD player, satellite receiver, cable box or HDTV converter to the appropriate **Optical or Coaxial Digital Inputs 29 32 17 19**.
5. Connect the **Video Monitor Output 23** jacks on the receiver to the composite or S-Video input of your television monitor or video projector.
6. If your DVD player and monitor both have component video connections, connect the component outputs of the DVD player to the **DVD Component Video Inputs 15**. Even when component video connections are used, the audio connections should still be made to either the analog **DVD Audio Inputs 1** or any of the **Optical or Coaxial Digital Input Jacks 29 32**.
7. If another device with component video outputs is available, connect it to the **Video 2 Component Video Inputs 16**. The audio connections for this device should be made to either the **Video 2 Inputs 9** or any of the **Optical or Coaxial Digital Input Jacks 17 19 29 32**.
8. If the component video inputs are used, connect the **Component Video Monitor Outputs 17** to the component video inputs of your TV, projector or display device.
9. If you have a camcorder, video game or other audio/video device that is connected to the AVR on a temporary, rather than permanent, basis, connect the audio, video and digital audio outputs of that device to the **Front-Panel Inputs 17 19 20**. A device connected here is selected as the Video 4 input, and the digital inputs must be assigned to the Video 4 input. (See page 19 for more information on input configuration.)

Video Connection Notes:

- When the component video jacks are used, the on-screen menus are not visible and you must switch to the standard composite or S-Video input on your TV to view them.
- The AVR 7200 will accept either standard composite, S-Video or Y/Pr/Pb component video signals. However, it will not convert composite or S signals to component video.
- Component or composite video signals may only be viewed in their native formats.

System and Power Connections

The AVR 7200 is designed for flexible use with multi-room systems, external control components and power amplifiers.

Main Room Remote Control Extension

If the receiver is placed behind a solid or smoked glass cabinet door, the obstruction may prevent the remote sensor from receiving commands. In this event, an optional remote sensor may be used. Connect the output of the remote sensor to the **Remote IR Input 6** jack.

If other components are also prevented from receiving remote commands, only one sensor is needed. Simply use this unit's sensor or a remote eye by running a connection from the **Remote IR Output 5** jack to the Remote IR Input jack on Harman Kardon or other compatible equipment.

Multiroom IR Link

The remote room IR receiver should be connected to the AVR 7200 via standard coaxial cable. Plug the IR connection cable into the **Multiroom IR Input 7** jack on the AVR 7200's rear panel.

If other Harman Kardon compatible source equipment is part of the main room installation, the **Remote IR Output 5** jack on the rear panel should be connected to the IR IN jack on source equipment. This will enable the remote room location to control source equipment functions.

NOTE: All remotely controlled components must be linked together in a "daisy chain": Connect the **IR OUT** jack of one unit to the **IR IN** of the next to establish this chain.

Multiroom Connections

The AVR 7200 is equipped with multizone capabilities that allow it to send a separate audio source to the remote zone from the one selected for use in the main room.

Depending on your system's requirement, three options are available for audio connection:

Option 1: Use high-quality, shielded audio interconnect cable from the AVR 7200's location to the remote room. In the remote room, connect the interconnect cable to a stereo power amplifier. The amplifier will be connected to the room's speakers. At the AVR 7200, plug the audio interconnect cables into the **Multiroom Audio Output 25** jacks on the AVR 7200's rear panel.

Option 2: Connect the **Multiroom Audio Output 25** jacks on the AVR 7200 to the inputs of an optional stereo power amplifier. Run high-quality speaker wire from the amplifier to the speakers in the remote room.

Option 3: Taking advantage of the AVR 7200's built-in seven-channel amplifier, it is possible to use two of the amplifier channels to power speakers in the remote room. When using this option you will not be able to use the full 7.1-channel capabilities of the AVR 7200

in the main listening room, but you will be able to add another listening room without additional external power amplifiers. To use the internal amplifiers to power a remote zone, connect the speakers for the remote room location to the **Surround Back/Multiroom Speaker Outputs 1**. Before using the remote room, you will need to configure the amplifiers for surround operation by changing a setting in the Advanced Select menu, following the instructions shown on page 34.

NOTE: For all options, you may connect an optional IR sensor in the remote room to the AVR 7200 via an appropriate cable. Connect the sensor's cable to the **Multiroom IR Input 7** on the AVR 7200 and use the Zone II remote to control the room volume. Alternatively, you may install an optional volume control between the output of the amplifiers and the speakers.

A-BUS Installation Connections

The AVR 7200 is among the very few receivers available today that offers built-in A-BUS Ready® operation. When used with an optional A-BUS keypad or control module, you have all the benefits of remote zone operation without the need for an external power amplifier.

To use the AVR 7200 with an approved A-BUS product, simply connect the keypad or module that is in the remote room to the AVR 7200 using standard "Category 5" wiring that is properly rated for the in-wall use specific to the installation. Terminate the wiring at the receiver end to a standard RJ-45 jack in compliance with the instructions furnished with the A-BUS module.

No further installation or adjustment is needed, as the A-BUS connector on the AVR 7200 routes the signals in and out of the keypad to their proper destination for power, signal source and control. The output fed to the A-BUS jack is determined by the AVR 7200's multiroom system, and the menus may be used as is.

RS-232 Connections

The AVR 7200 features an RS-232 serial port connection that may be used to control the unit via optional compatible, external keypads or control systems. The physical connection to the AVR 7200 from the control device is a standard D-9 connection, but to ensure compatible and proper operation, specific software commands and pin wiring schemes are required. Due to the complexity of RS-232 connections, they must be made only by trained installers familiar with their use. To obtain additional information on the use of the AVR 7200 with RS-232 control, please contact Harman Kardon's customer service department or consult our Web site at www.harmankardon.com.

AC Power Connections

This unit is equipped with three accessory AC outlets. They may be used to power accessory devices, but they should not be used with high-current draw equipment such as power amplifiers. The total power draw to each outlet may not exceed 100 watts.

The **Switched AC Accessory Outlets 20** will receive power only when the unit is on. This is recommended for devices that have no power switch or a mechanical power switch that may be left in the "ON" position.

NOTE: Many audio and video products go into a Standby mode when they are used with switched outlets, and cannot be fully turned on using the outlet alone without a remote control command.

The **Unswitched AC Accessory Outlet 19** will receive power as long as the unit is plugged into a powered AC outlet.

The AVR 7200 features a removable power cord that allows wires to be run to a complex installation so that the unit itself need not be installed until it is ready for connection. When all connections described above have been made, connect the AC Power cord to the **AC Power Cord Jack 18**.

The AVR 7200 draws significantly more current than other household devices such as computers that use removable power cords. For that reason, it is important that only the cord supplied with the unit (or a direct replacement of identical capacity) be used.

Once the power cord is connected, you are almost ready to enjoy the AVR 7200's incredible power and fidelity!

SYSTEM CONFIGURATION

When all audio, video and system connections have been made, there are a few configuration adjustments that must be made. A few minutes spent to correctly configure and calibrate the unit will greatly add to your listening experience.

Speaker Selection and Placement

The placement of speakers in a multichannel home theater system can have a noticeable impact on the quality of sound reproduced.

No matter which type or brand of speakers is used, the same model or brand of speaker should be used for the left front, center and right front speakers. This creates a seamless front soundstage and eliminates the possibility of distracting sonic disturbances that occur when a sound moves across mismatched front-channel speakers.

Speaker Placement

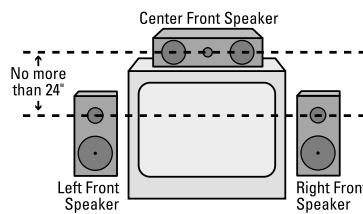
Depending on the type of center channel speaker in use and your viewing device, place the center speaker either directly above or below your TV, or in the center behind a perforated projection screen.

Once the center channel speaker is installed, position the front left and front right speakers so that they are as far away from one another as the center channel speaker is from the preferred listening position. Ideally, the front channel speakers should be placed so that their tweeters are no more than 24" above or below the tweeter in the center channel speaker.

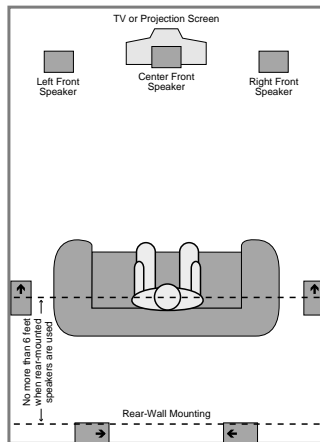
Depending on the specifics of your room acoustics and the type of speakers in use, you may find that imaging is improved by moving the left front and right front speakers slightly forward of the center channel speaker. If possible, adjust all front loudspeakers so that they are aimed at ear height when you are seated in the listening position.

Using these guidelines, you'll find that it takes some experimentation to find the correct location for the front speakers in your particular installation. Don't be afraid to move things around until the system sounds correct. Optimize your speakers so that audio transitions across the front of the room sound smooth, and that sounds from all speakers appear to arrive at the listening position at the same time (without delay from the center speaker compared to the left and right speakers).

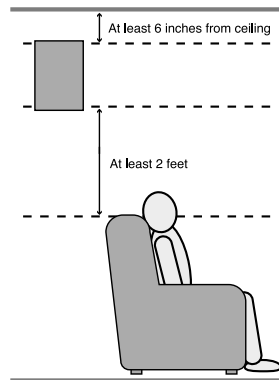
When the AVR 7200 is used in 5.1-channel operation, the preferred location for surround speakers is on the side walls of the room, at or slightly behind the listening position. In a 7.1-channel system, both side surround and back surround speakers are required. The center of the speaker should face into the room. The



A) Front-Channel Speaker Installation With Direct-View TV Sets or Rear-Screen Projectors



B) Rear speaker mounting is an alternate location for 5.1 systems. It is required for 7.1 operation.



speakers should be located so that the bottom of the cabinet is at least two feet higher than the listeners' ears when the listeners are seated in the desired area.

Rear surround speakers are required when a full 7.1-channel system is installed, and they may also be used in 5.1 channel systems as an alternative mounting position when it is not practical to place the main surround speakers on the sides of the room. Speakers may be placed on a rear wall, behind the listening position. As with the side speakers, rear surrounds

should be located so that the bottom of the cabinet is at least two feet higher than the listeners' ears. The speakers should be no more than six feet behind the rear of the seating area.

If dipole-type speakers are used on either the side or rear walls of the room, please note that if there are arrows on the speakers they should face the front of the room for the side speakers, or towards the center of the wall for the rear speakers.

Subwoofers produce nondirectional sound, so they may be placed almost anywhere in a room. Actual placement should be based on room size and shape and the type of subwoofer used. One method of finding the optimal location for a subwoofer is to begin by placing it in the front of the room, about six inches from a wall, or near the front corner of the room. Another method is to temporarily place the subwoofer at your normal listening position, and then walk around the room until you find a spot where the subwoofer sounds best. Place the subwoofer in that spot. You should also follow the instructions of the subwoofer's manufacturer, or you may wish to experiment with the best location for a subwoofer in your listening room.

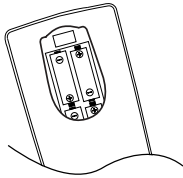
System Setup

Once the speakers have been placed in the room and connected, the remaining steps in the setup process are to program the AVR 7200's bass management system for the type of speakers used in your system, calibrate the output levels, and set the delay times used by the surround sound processor.

You are now ready to power up the AVR 7200 to begin these final adjustments.

1. Make certain that the AC power cord is firmly inserted in to the **AC Power Cord Jack 18** and plug the cord into an unswitched AC outlet. To maintain the unit's safety rating, DO NOT substitute the power cord for one with lower current capacity.
2. Press the **Main Power Switch 1** in until it latches and the word "OFF" on the top of the switch disappears inside the front panel. Note that the **Power Indicator 3** will turn amber, indicating that the unit is in the Standby mode.
3. Remove the protective plastic film from the front panel lens. If left in place, the film may affect the performance of your remote control.
4. Install the four supplied AAA batteries in the remote as shown. Be certain to follow the (+) and (-)

polarity indicators that are printed inside the battery compartment.



- Turn the AVR 7200 on either by pressing the **System Power Control 2** on the front panel, or via the remote by pressing the **Power On Button 2**, the **AVR Selector 5** or any of the **Input Selectors 4 42** on the remote. The **Power Indicator 3** will turn green to confirm that the unit is on, and the **Main Information Display 29** will also light.

Using the On-Screen Display

When making the following adjustments, you may find it easier to use the AVR 7200's on-screen display system. These easy-to-read displays give you a clear picture of the current status of the unit and make it easy to see which speaker, delay, input or digital selection you are making.

To view the on-screen menus, make certain you have made a connection from the **Video Monitor Output Jack 28** on the rear panel to the composite or S-Video input of your TV or projector. In order to view the AVR 7200's displays, the correct video source must be selected on the video display. The on-screen menus are not available when a component video display is in use.

IMPORTANT NOTE: When viewing the on-screen menus using a CRT-based projector, plasma display or any direct-view CRT monitor or television, it is important that they not be left on the screen for an extended period of time. The constant display of a static image such as these menus or video game images may cause the image to be permanently "burned into" the projection tubes, plasma screen or CRT. This type of damage is not covered by the AVR 7200 warranty and may not be covered by the projector/TV set's warranty.

The AVR 7200 has two on-screen display modes, "Semi-OSD" and "Full-OSD." When making configuration adjustments, it is recommended that the Full-OSD mode be used. This will place an option listing on the screen, making it easier to view the available options.

Making Configuration Adjustments

The full-OSD system is available by pressing the **OSD Button 31**. When this button is pressed, the **MASTER MENU** (Figure 1) will appear, and adjustments are made from the individual menus.

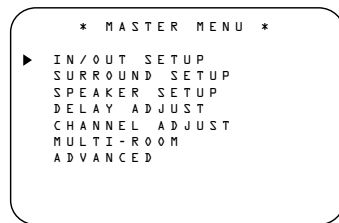


Figure 1

The semi-OSD system is also available, allowing you to make adjustments directly, by pressing the appropriate buttons on the front panel or remote control for the specific parameter to be adjusted. For example, to change the digital input for any of the sources, press the **Digital Select Button 15 26** and then press the **▲/▼ Buttons 31 10 13** to scroll through the list of options as they appear in the on-screen display or the **Lower Display Line B**.

To use the full-OSD menu system, press the **OSD Button 31**. When the menu is on the screen, press the **▲/▼ Navigation Button 14** until the on-screen **▶** cursor is next to the item you wish to adjust, and then press the **Set Button 16** to adjust that item. The menu will remain on the screen for 20 seconds, and then they will "time-out" and disappear from the screen. The time-out may be increased to as much as 50 seconds by going to the **ADVANCED** menu, and changing the item titled **FULL OSD TIME OUT**.

When the full-OSD system is in use, the menu selections are not shown in the **Main Information Display 29 A B**. When the full-OSD menu system is used, **OSD ON** will appear in the **Upper Display Line A** and the **OSD Indicator C** will light to remind you that a video display must be used. When the semi-OSD system is used in conjunction with the discrete configuration buttons, the on-screen display will show a single line of text with the current menu selection. That selection will also be shown in the **Upper Display Line A** or the **Lower Display Line B**, depending on which parameter is being adjusted.

Setting the System Configuration Memory

The AVR 7200 features an advanced memory system that enables you to establish different configurations for the speaker configuration, digital input, surround mode, delay times, crossover frequency and output levels for each input source. This flexibility enables you to custom-tailor the way in which you listen to each source and have the AVR 7200 memorize those settings. This means, for example, that you may use different output levels or trims for different sources, or set different speaker configurations with the resultant changes to the bass management system. Once these

settings are made, they will automatically be recalled whenever you select that input.

The factory default settings for the AVR 7200 have all inputs except for DVD configured for an analog audio input except for the DVD input, where the **Coaxial Digital Audio Input 1 32** is the default. The default speaker settings are for "Large" speakers at the front left/right, "Small" at all other positions, and for the Subwoofer set as being on. However, once the DSP processing system is used for the first time for any input, the speaker settings will automatically default to "Small" at all positions with the subwoofer set to "LFE." The default setting for the surround modes is "Surround Off," or two-channel stereo, although Dolby Digital or DTS will automatically be selected as appropriate when a source with digital encoding is in use.

Before using the unit, you will probably want to change the settings for most inputs so that they are properly configured to reflect the use of digital or analog inputs, the type of speakers installed and the surround mode specifics of your home theater system. Remember that since the AVR 7200 memorizes the settings for each input individually, you will need to make these adjustments for each input used. However, once they are made, further adjustment is only required when system components are changed.

To make this process as quick and as easy as possible, we suggest that you use the full-OSD system with the on-screen menus, and step through each input. Once you have completed the settings for the first input, many settings may be duplicated for the remaining inputs. It is also a good idea to set the configuration data in the order these items are listed in the **MASTER MENU**, as some settings require a specific entry in a prior menu item. Remember that once the settings are made for one input, they must be made for all other input sources in your system.

Input Setup

The first step in configuring the AVR 7200 is to configure each input. Once an input is selected, all settings for the Digital Input, Speaker Configuration, Surround Mode and Delay Timing will "attach" themselves to that input and be stored in a non-volatile memory. This means that once made, the selection of an input will automatically recall those settings. For that reason, the procedures described below must be repeated for each input source so that you have the opportunity to custom tailor each source to your specific listening requirements. However, once made they need not be changed again unless you need to alter a setting.

When using the full-OSD system to make the setup adjustments, press the **OSD Button 31** once so that

SYSTEM CONFIGURATION

the **MASTER MENU** (Figure 1) appears. The ► cursor will be next to the **IN/OUT SETUP** line. Press the **Set Button 16** to enter the menu and the **IN/OUT SETUP** menu (Figure 2) will appear on the screen. Press the ◀► **Navigation Button 14** until the desired input name appears in the highlighted video, as well as being indicated in the front-panel **Input Indicators 28** by the green LED next to the desired input name. If the input will use the standard left/right analog inputs, no further adjustment is needed.

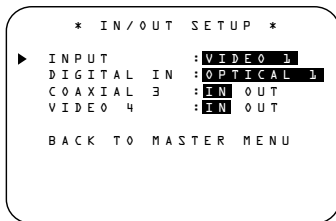


Figure 2

If you wish to associate one of the digital inputs with the selected input source, press the ▼ **Navigation Button 14** on the remote while the **IN/OUT SETUP** menu (Figure 2) is on the screen, and the on-screen cursor will drop down to the **DIGITAL IN** line. Press the ◀► **Navigation Button 14** until the name of the desired digital input appears. To return to the analog input, press the button until the word **ANALOG** appears. When the correct input source appears, press the ▼ **Navigation Button 14** once so that the ► cursor appears next to **BACK TO MASTER MENU**, and press the **Set Button 16**.

To change the digital input at any time using the discrete function buttons and the semi-OSD system, press the **Digital Select Button 15** on the remote. Within five seconds, make your input selection using the ▲/▼ **Navigation Button 14** until the desired digital or analog input is shown in the **Upper Display Line A** and in the lower line of the on-screen display. Press the **Set Button 16** to enter the new digital input assignment.

NOTE: When a source such as an HDTV receiver or a digital cable set-top box is used, you may wish to connect both the coaxial digital output and the standard, analog output of the source to the AVR's VID 2 and Coax 2 inputs since the program sources and channels received by these devices often switch between analog and digital audio. To simplify operation, the AVR 7200 will automatically select whichever output is active and change the AVR's input setting.

An exclusive Harman Kardon feature is the ability to switch the front-panel coaxial digital audio and analog audio/video jacks from their normal use as inputs to output connections so that portable recording devices may easily be connected. On the AVR 7200, the **Digital Coax 3 Jack 19** is normally an input, but this may also be switched to a digital output for use with CD-R/RW decks, MD recorders or other A/V recorders. To change the jack to an output, press the ▲/▼ **Navigation Button 14** while the **IN/OUT SETUP** menu is on the screen until the ► cursor is next to **COAXIAL 3**. Then press the ◀► **Navigation Button 14** so that the word **OUT** is highlighted. The **Input/Output Status Indicator 18** will turn red, indicating that the jack is now a record output.

NOTE: A signal will be sent to this jack only when the input selected for use by the AVR 7200 is digital. Digital signals will be passed through regardless of their format, and which digital input (optical or coax) they are fed from. However, analog signals are not converted to digital, and the format of the signal (e.g., PCM, Dolby Digital or DTS) may not be changed.

The front-panel analog **Video 4 Inputs 20** are normally set as an input for use with camcorders, video games and other portable audio/video products, but they may be switched to an output for connection to portable audio/video recorders. To temporarily switch them to outputs, you must first be at the **IN/OUT SETUP** menu. Press the ▼ **Navigation Button 14** until the on-screen ► cursor is pointing to the **VIDEO 4** line. Press the ► **Navigation Button 14** so that the word **OUT** is highlighted. The **Input/Output Status Indicator 18** between the S- and composite video jacks will turn red, indicating that the analog Video 4 jacks are now record outputs.

Selection of the front-panel jacks as an output will remain effective as long as the AVR 7200 is on. Once the unit is turned off, the jacks will revert to their normal use as an input when the unit is turned on again.

When all needed adjustments have been made, press the ▼ **Navigation Button 14** until the ► cursor is next to **BACK TO MASTER MENU** to continue with the system configuration.

Surround Setup

The next step is to set the surround mode you wish to use with the input that was previously selected in the **IN/OUT** menu. Since surround modes are a matter of personal taste, feel free to select any mode you wish – you may change it later. However, to make it easier to establish the initial parameters for the AVR 7200, it is best to select Dolby Pro Logic II or Logic 7 for most analog inputs and Dolby Digital for

inputs connected to digital sources. In the case of inputs such as a CD player, tape deck or tuner, you may wish to set the mode to Stereo ("Surround off") as they are not typically used with multichannel program material, and it is unlikely that surround-encoded material will be used. Alternatively, the Logic 7 Music mode is a good choice for stereo-only source material. See page 29 for more information on available surround modes.

When selecting surround modes for digital program material, the AVR 7200 will always examine the data stream and automatically select Dolby Digital or DTS as applicable.

It is easiest to complete the surround setup using the full-OSD on-screen menus. From the **MASTER MENU** (Figure 1), press the ▲/▼ **Navigation Button 14** until the ► cursor is next to the **SURROUND SELECT** menu. Press the **Set Button 16** until the **SURROUND SELECT** menu (Figure 3) is on the screen.

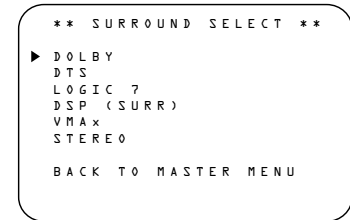


Figure 3

Each of the option lines on this menu (Figure 3) selects the surround mode group, and within each of those groups there will be a choice of the specific mode options. The choice of modes will vary according to the speaker configuration in your system. When the **SURR BACK** line of the **SPEAKER SETUP** menu (Figure 5) is set to **NONE** the AVR 7200 will be configured for 5.1-channel operation, and only the modes appropriate to a five-speaker system will appear. When the **SURR BACK** line of the **SPEAKER SETUP** menu (Figure 5) is set to **SMALL** or **LARGE** the AVR 7200 will be configured for 6.1/7.1-channel operation, and additional modes such as Dolby Digital EX and DTS-ES will appear, as they are only available when seven main speakers are present. In addition, some of the modes available in the AVR 7200 will not appear unless a digital source is selected and is playing the correct bitstream.

To select the mode that will be used as the initial default for an input, first press the ▲/▼ **Navigation Button 14** until the on-screen cursor is next to the desired mode's master group name, such as

DOLBY, DTS, DSP (SURR) or VMaX.

Next, press the **Set Button 16** to view the sub-menu. Press the **Navigation Button 14** to scroll through the available choices, and then press the **Navigation Button 14** so that the cursor is next to **BACK TO MASTER MENU** to continue the setup process.

The following few paragraphs detail the instructions needed for modes with multiple choices.

On the **DOLBY** menu (Figure 4), the selection choices include Dolby Digital, Dolby Pro Logic II-Music, Dolby Pro Logic II-Movie, Dolby Pro Logic II-Emulation and Dolby 3 Stereo. The Dolby Digital EX mode is only available when the system is set for 6.1/7.1 operation by configuring the Surround Back speakers to "Small" or "Large" as described on page 22. When a disc is playing that contains a special "flag" signal in the digital audio data stream, the EX mode will be selected automatically. It may also be selected using this menu or through the front-panel or remote controls as shown on page 28. A complete explanation of these modes is found on page 29.

When the Dolby Digital mode is selected there are additional settings available for the Night mode.

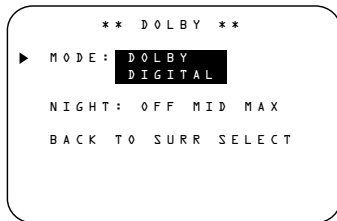


Figure 4

The Night mode is a feature of Dolby Digital that uses special processing to preserve the dynamic range and full intelligibility of a movie sound track while reducing the peak level. This prevents abruptly loud transitions from disturbing others, without reducing the sonic impact of a digital source. The Night mode is only available when specially encoded Dolby Digital signals are played.

To adjust the Night mode setting, make certain that the **Navigation Button 14** cursor is on the **NIGHT** line of the **DOLBY** menu. Next, press **Navigation Button 14** to choose between the following settings, as they appear in the on-screen display:

OFF: When **OFF** is highlighted, the Night mode will not function.

MID: When **MID** is highlighted, a mild compression will be applied.

MAX: When **MAX** is highlighted, a more severe compression algorithm will be applied.

We recommend that you select the **MID** setting as a starting point and change to the **MAX** setting later, if desired.

The Night mode may also be adjusted directly any time a Dolby Digital source is playing by pressing the **Night Mode Button 30**. When the button is pressed, **D-RANGE** will appear in the lower third of the video screen and in the **Main Information Display 29**. Press the **Navigation Button 14** within three seconds to select the desired setting.

When all settings for the surround setup have been made, press the **Navigation Button 14** so that the **Navigation Button 14** cursor is next to **BACK TO MASTER MENU**, and press the **Set Button 16** to return to the **MASTER MENU**.

On the **DTS** menu, the selection choices made with the **Navigation Button 14** on the remote are determined by a combination of the type of program material in use and whether the 5.1 or 6.1/7.1 channel configuration is in use.

When a DTS source is playing, the choice of modes for 7.1 systems will vary according to the type of program source (DTS 5.1, DTS-ES Matrix or DTS-ES Discrete). Press the **Navigation Button 14** to scroll through the choices that are available for your system and the program in use. The DTS Neo:6 Music mode is available with analog stereo sources and the DTS Neo:6 Cinema mode is available with analog matrix surround-encoded sources to deliver an enhanced 5.1-channel sound field.

When the 5.1 configuration is in use the AVR will automatically select the 5.1 version of DTS processing when a DTS data stream is selected. When the 6.1/7.1 mode is selected, the DTS-ES Discrete mode will automatically be activated when a DTS source with the ES Discrete "flag" is in use. When a non-ES DTS disc is in use, you may select the DTS-ES Matrix mode through this menu to create a full eight-speaker surround mode. See page 29 for a complete explanation of the DTS modes.

On the **LOGIC 7** menu, the selection choices made with the **Navigation Button 14** on the remote are determined by whether the 5.1 or 6.1/7.1 channel configuration is in use. In either case, the selection of a Logic 7 mode enables Harman Kardon's exclusive Logic 7 processing to create fully enveloping, multichannel surround from either two-channel Stereo or Matrix-encoded programming such as VHS cassettes, laser discs or television broadcasts produced with Dolby surround.

In the 5.1 configuration you may select the Logic 7/5.1 Music, Cinema or Enhance mode. They work best with two-channel music, surround-encoded programs or standard two-channel programming of any type, respectively. For 6.1/7.1 configurations the Music and Cinema modes may be selected. The Logic 7 modes are not available when either Dolby Digital or DTS Digital soundtracks are in use. See page 29 for a complete explanation of the DSP Surround modes.

On the **DSP (SURR)** menu, the selection choices made with the **Navigation Button 14** on the remote select from one of the DSP surround modes that are designed for use with two-channel stereo programs to create a variety of sound field presentations. The choices available are Hall 1, Hall 2, Theater, VMaX Near and VMaX Far. The Hall and Theater modes are designed for multichannel installations, while the two VMaX modes are optimized for use in delivering a full surround field when only the front left and front right speakers are installed. See page 29 for a complete explanation of the DSP surround modes.

On the **STEREO** menu, the selection choices made with the **Navigation Button 14** on the remote may either turn the surround processing off for a traditional two-channel stereo presentation, or select **5 Stereo** or **7 Stereo** depending on whether the 5.1 or 6.1/7.1 output is in use. The latter modes feed a two-channel presentation to all speakers, regardless of the number of speakers in use. See page 29 for a complete explanation of the 5 Stereo and 7 Stereo modes.

After the selections are made on the Dolby, DTS, Logic 7, DSP (Surround) or Stereo menus, press the **Navigation Button 14** so that the cursor moves to the **BACK TO MASTER MENU** line and press the **Set Button 16**.

Speaker Setup

This menu tells the AVR 7200 which type of speakers are in use. This is important as it adjusts the settings that decide whether your system will use the "5-channel" or "6-channel/7-channel" modes, as well as determining which speakers receive low-frequency (bass) information.

For each of these settings, use the **LARGE** setting if the speakers for a particular position are traditional full-range loudspeakers. Use the **SMALL** setting for smaller, frequency-limited satellite speakers that do not reproduce sounds below 200Hz. Note that when "small" speakers are used, a subwoofer is required to reproduce low-frequency sounds. Remember that the "large" and "small" descriptions do not refer to the

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actual physical size of the speakers, but to their ability to reproduce low-frequency sounds. If you are in doubt as to which category describes your speakers, consult the specifications in the speakers' owner's manual, or ask your dealer.

This menu screen also allows you to enter the settings for the AVR 7200's Triple Crossover feature which allows a different crossover point to be used for the front left/right, center and surround speakers. In systems where full-range or lower speakers are used for the front soundstage or where different brands or models are in use at the various speaker positions, this feature allows you to customize the bass management and redirection circuits with a precision not previously possible.

It is easiest to enter the proper settings for the speaker setup through the **SPEAKER SETUP** menu (Figure 5). If that menu is not already on your screen from the prior adjustments, press the OSD Button **31** to bring up the **MASTER MENU** (Figure 1), and then press the **Navigation Button 14** until the cursor is on the **SPEAKER SETUP** line. At this point, press the **Set Button 16** to bring up the **SPEAKER SETUP** menu (Figure 5).

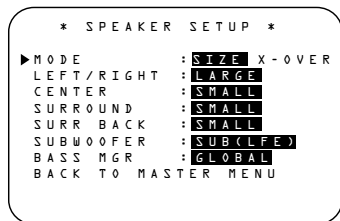


Figure 5

The first line of the **SPEAKER SETUP** menu (Figure 5) allows you to switch the menu to change either the underlying speaker size setting or the exact crossover point used for that speaker group. For the first pass through the menu, leave the setting at its default option of **SIZE**, and then proceed as outlined below. Once the speaker choices have been set you may wish to return to this line to change the option so that the crossover settings may be adjusted.

Begin the speaker setup process by making certain that the cursor is pointing toward the **LEFT/RIGHT** line, which sets the configuration for the front left and right speakers. If you wish to make a change to the front speakers' configuration, press the **Navigation Button 14** so that either **LARGE** or **SMALL** appears, matching the appropriate description from the definitions shown above.

When **SMALL** is selected, low-frequency sounds will be sent only to the subwoofer output. If you choose this option and there is no subwoofer connected, you will

not hear any low-frequency sounds from the front channels.

When **LARGE** is selected, a full-range output will be sent to the front left and front right outputs. Depending on the choice made in the **SUBWOOFER** line in this menu, bass information may also be directed to the front left/right speakers, a subwoofer or both.

NOTE: When the front speakers are set to the **LARGE** option and the surround mode is set to "Surround Off", or pure two-channel stereo, when an analog signal source is present it will be routed directly from the input to the volume control without being digitized or processed. If you have full-range front speakers and wish to remove all digital processing from the circuit path, select this configuration. If you wish to set this option for use with only one input, such as a CD player that uses an external DAC or an optional, external phono preamp, you may also wish to choose the **INDEPENDENT** setting on the **BASS MGR** line at the bottom of this menu so that the only those inputs where the analog bypass is desired will be routed in this fashion, while other analog inputs such as a VCR or cable box will be digitized for surround processing.

When you have completed your selection for the front channel, press the **Navigation Button 14** on the remote to move the cursor to **CENTER**.

Press the **Navigation Button 14** on the remote to select the option that best describes your system, based on the speaker definitions shown below.

When **SMALL** is selected, low-frequency center channel sounds will be sent only to the subwoofer output. If you choose this option and there is no subwoofer connected, you will not hear low-frequency sounds from the center channel.

When **LARGE** is selected, a full-range output will be sent to the center speaker output, and NO center channel signal will be sent to the subwoofer output.

NOTE: If you choose Logic 7 as the surround mode for the particular input source for which you are configuring your speakers, the AVR 7200 will not make the **LARGE** option available for the center speaker. This is due to the requirements of Logic 7 processing, and does not indicate a problem with your receiver.

When **NONE** is selected, no signals will be sent to the center channel output. The receiver will operate in a "phantom" center channel mode and center channel information will be sent to the left and right front channel outputs. When only front left and right speakers are used, with no center or surround speakers, VMAx is a good alternative mode.

When you have completed your selection for the center channel, press the **Navigation Button 14** on the remote to move the cursor to **SURROUND**.

Press the **Navigation Button 14** on the remote to select the option that best describes the surround speakers in your system based on the speaker definitions shown on this page.

When **SMALL** is selected, low-frequency surround channel sounds will be sent to the subwoofer output only. If you choose this option and there is no subwoofer connected, you will not hear any low-frequency sounds from the surround channel.

When **LARGE** is selected, a full-range output will be sent to the surround channel outputs, and NO surround channel signals will be sent to the subwoofer output.

When **NONE** is selected, surround sound information will be split between the front left and front right outputs. For optimal performance when no surround speakers are in use, the Dolby 3 Stereo mode should be used.

When you have completed your selections for the main surround channels, press the **Navigation Button 14** on the remote to move the cursor to **SURR BACK**. This line serves two functions in that it not only configures the setting for the surround back channels when they are present; it also tells the AVR 7200's processing system to configure the unit for either 5.1 or 6.1/7.1 operation.

Press the **Navigation Button 14** on the remote to select the option that best describes the speakers in use at the left and right surround back positions based on the definitions on this page:

When **NONE** is selected, the system will adjust so that only 5.1-channel surround processing/decoding modes are available and the surround back amplifier channels will not be used. When this is the case for your system you may wish to take advantage of the availability of this amplifier channel pair for use in powering a second set of speakers that have their source selected by the AVR 7200's multiroom control system. See page 34 for more information.

When **SMALL** is selected the system will adjust so that the full complement of 6.1/7.1 surround processing/decoding modes are available, and low-frequency information below the crossover point will be sent to the subwoofer output. If you choose this option and there is no subwoofer connected, you will not hear any low-frequency sounds from the surround back channel.

When **LARGE** is selected the system will adjust so that the full complement of 6.1/7.1 surround processing/decoding modes are available, and a full-range signal will be sent to the surround back channels, with no low-frequency information sent to the subwoofer output.

When you have completed your selection for the back surround channels, press the **Navigation Button 14** on the remote to move the cursor to **SUBWOOFER**.

Press the **Navigation Button 14** on the remote to select the option that best describes your system.

The choices available for the subwoofer position will depend on the settings for the other speakers, particularly the front left/right positions.

If the front left/right speakers are set to **SMALL**, the subwoofer will automatically be set to **SUB**, which is the "on" position.

If the front left/right speakers are set to **LARGE**, three options are available:

- If no subwoofer is connected to the AVR 7200, press the **Navigation Button 14** on the remote so that **SUB NONE** appears in the on-screen menu. When this option is selected, all bass information will be routed to the front left/right "main" speakers.
- If a subwoofer is connected to the AVR 7200, you have the option to have the front left/right "main" speakers reproduce bass frequencies at all times, and have the subwoofer operate only when the AVR 7200 is being used with a digital source that contains a dedicated Low-Frequency Effects, or LFE soundtrack. This allows you to use both your main and subwoofer speakers to take advantage of the special bass created for certain movies. Press **Navigation Button 14** on the remote so that **SUB (LFE)** appears in the on-screen menu.
- If a subwoofer is connected and you wish to use it for bass reproduction in conjunction with the main front left/right speakers, regardless of the type of program source or Surround mode you are listening to, press the **Navigation Button 14** on the remote so that **SUB LFE+L/R** appears in the on-screen menu. When this option is selected, a full-range signal will be sent to the front left/right "main" speakers, and the subwoofer will receive the bass frequencies under frequency selected, as described below.

When all initial speaker "size" settings have been made, you now have the option to take advantage of the AVR 7200's Triple Crossover system, which allows individual crossover settings to be made for each speaker grouping. The low-frequency crossover point is set by the design of your speakers. Depending on the design and driver complement of your speakers, it is defined as the frequency which is either the lowest possible frequency the speaker is capable of reproducing, or the frequency at which sound is sent to the speaker's internal low-frequency driver, as opposed to the mid-range driver. Before making any changes to the settings for the crossover point we suggest that you find the crossover point for the speakers in each of the three groupings, front left/right, center front and surrounds by looking at the specifications page of the speaker's owner's manual, by getting that information from the manufacturer's Web site, or by contacting your dealer or the manufacturer's customer service department. You will need this figure to accurately configure the next group of settings.

The factory default setting for all speaker positions is 100Hz. If that setting is acceptable for all channels, then no adjustments are needed and you may skip this section. However, should you wish to change one of the settings, please proceed by pressing the **Navigation Button 14** so that the cursor moves back up to the top of the list of setting options. Press the **Navigation Button 14** so that **X-OVER** is highlighted and the menu data will change to the screen shown in Figure 6.

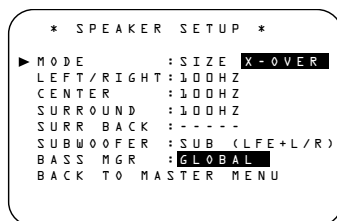


Figure 6

To change the setting for any of the three speaker groups, press the **Navigation Button 14** until the cursor is next to the line where you wish to make a change and then press the **Navigation Button 14** until the desired setting appears. The available choices at which point low-frequency information will be sent to the subwoofer, rather than to the main speaker channel, are 40Hz, 60Hz, 80Hz, 100Hz, 120Hz and 200Hz. Pick the choice that is identical to the information for the speakers or, if an exact match is not possible, pick the closest choice that is ABOVE the speaker's low-frequency limit or crossover point to avoid the creation of a low-frequency "hole" where your system will have no bass information.

In cases where **LARGE** has been selected as the front channel speaker option and **LFE+L/R** has been selected as a the subwoofer option, the front channel sound information below the setting shown will be sent to BOTH the front channel speakers and the subwoofer. Note, also, that when the **LARGE - LFE+L/R** setting has been selected, the crossover point is set by making adjustments at the **SUBWOOFER** line, but the setting for the front left/right speakers will automatically change in tandem so that the same setting appears for both speaker positions. This ensures that there is no "hole" in the sound field due to different crossover points at the front and subwoofer speakers.

When all crossover settings have been made, or in those cases where none are needed, press the **Navigation Button 14** so that the cursor is next to the **BASS MGR** line to make the final setting on this menu.

This setting allows you to use the same speaker configuration and crossover settings for all inputs, or to have different settings for each input. In most cases the factory default setting of **GLOBAL** will be appropriate, as most listeners do not need to have individualized speaker settings. However, some listeners, particularly those with full-range front speakers that are used for both movies and music may prefer that different crossover points be used when listening to music through a CD player as opposed to a movie from a DVD player, VCR or cable/satellite set top.

If you wish to customize the crossovers to each input, make certain that the cursor is on the **BASS MGR** line and press the **Navigation Button 14** so that **INDIVIDUAL** appears in highlighted video. When this setting is entered by exiting the menu, the configuration settings just entered will apply to the current input ONLY, and you will need to go back to the **IN/OUT** menu to select another input, and then return to this menu page again to change the settings for the next input. Repeat the procedure for any input where you wish to have a different set of speaker configuration and crossover settings.

When all speaker selections have been made, press the **Navigation Button 14** and then the **Set Button 16** to return to the **MASTER MENU**.

Delay Settings

Due to the different distances between the listening position for the front channel speakers and the surround speakers, the amount of time it takes for sound to reach your ears from the front versus surround speakers differs. You may compensate for this difference through the use of the delay settings to adjust the timing for the speaker placement and acoustic

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conditions in your listening room or home theater.

The AVR 7200's advanced software enables you to quickly and easily set delay times without the need to calculate them using a complex formula. Instead, all you need to do is measure the approximate distance between your listening position and each of the speakers in your system. When you enter those distances into the AVR's memory as shown below, the AVR's microprocessor does the rest of the work, calculating the proper delay time. The measurements need not be accurate to the inch, as the system is designed to accommodate a typical listening area rather than require the precise measurement to one "sweet spot" position.

Due to the differences between the way each surround mode operates, some modes allow for a greater range of delay times than others. To avoid problems, we recommend that delay times be adjusted using the Dolby Digital mode. If a different mode is selected at a later time, the AVR 7200 will automatically restrict the delay settings to those required by the surround mode in use.

Delay times are only adjustable for the Dolby modes, so you will notice that the **DELAY** menu may not be accessed when any other mode, such as a DTS or Logic 7 option, has been selected. In addition, when a non-Dolby Digital mode such as Dolby 3 Stereo or Pro Logic II is selected, adjustments may be made to the Surround speakers only.

To set the delay time for a specific input, the **DELAY ADJUST** menu (Figure 7) should be visible on your on-screen display. If the system is not already at that point, press the **OSD Button 31** to bring up the **MASTER MENU**, press the **Navigation Button 14** until the on-screen cursor is pointing at the **DELAY ADJUST** line. Press the **Set Button 16** to call up the menu.

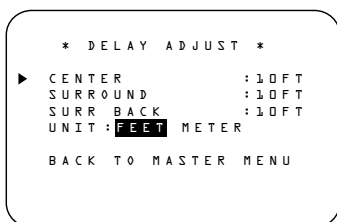


Figure 7

Once the **DELAY ADJUST** menu is on your screen, note that the default setting to enter the distances from the speakers to the listening position is in feet. If your measurements are in feet, proceed to the next step; if your measurements are made in meters, press the **Navigation Button 14** until the on-

screen cursor is at the **UNIT** line on the menu. Then, press the **Navigation Button 14** so that **METER** is highlighted. When the change in measurement units is made, press the **Navigation Button 14** to return the cursor to the **CENTER** position.

With the on-screen cursor pointing to **CENTER**, press the **Navigation Button 14** until the distance from the center speaker to the preferred listening position is entered. Next, press the **Navigation Button 14** to move the cursor to the **SURROUND** line and use the **Navigation Button 14** again to enter the distance from the video display at the front of the room to the surround speakers. Finally, if the system is configured for 7.1 operation by entering **LARGE** or **SMALL** on the **SURR BACK** line of the **SPEAKER SETUP** menu, press the **Navigation Button 14** again and use the **Navigation Button 14** to enter the distance from the video display at the front of the room to the surround speakers. Remember that this last adjustment will only be needed when you have surround back speakers installed and Dolby Digital chosen as the surround mode.

When the speaker-to-listening-position distance has been entered for all active speaker positions, press the **Navigation Button 14** until the on-screen cursor is next to **BACK TO MASTER MENU** and press the **Set Button 16**.

The delay settings may be changed at any time directly from the remote control by pressing the **Delay Select Button 35**. **CENTER DELAY** will appear in the Lower Display Line **B**, but you may press the **Navigation Button 14** to select any of the speaker groups.

Press the **Set Button 16** when the desired speaker group appears, and then press the **Navigation Button 14** again to enter the distance from the speaker to the listening position. Press the **Set Button 16** again to enter the data. You may then press the **Navigation Button 14** to select another speaker group to repeat the procedure as needed, or wait five seconds for the system to return to normal operation.

Output Level Adjustment

Output level adjustment is a key part of the configuration of any surround sound product. It is particularly important for a digital receiver such as the AVR 7200, as correct outputs ensure that you hear soundtracks with the proper directionality and intensity.

IMPORTANT NOTE: Listeners are often confused about the operation of the surround channels. While

some assume that sound should always be coming from each speaker, most of the time there will be little or no sound in the surround channels. This is because they are only used when a movie director or sound mixer specifically places sound there to create ambience, a special effect or to continue action from the front of the room to the rear. When the output levels are properly set, it is normal for surround speakers to operate only occasionally. Artificially increasing the volume to the surround or surround back speakers may destroy the illusion of an enveloping sound field that duplicates the way you hear sound in a movie theater or concert hall.

Before beginning the output level adjustment process, make certain that all speaker connections have been properly made. The system volume should be set to the level that you will use during a typical listening session. While the AVR 7200 allows you to set output levels manually, we recommend that the EzSet system be used when the AVR is first installed to establish the initial level settings.

Using EzSet

Harman Kardon's exclusive EzSet remote makes it possible to quickly and accurately set the AVR 7200's output levels without the use of a sound-pressure meter, although manual adjustment is also available. However, for the easiest setup, follow these steps while seated in the listening position that will be used most often:

1. Make certain that all speaker positions have been properly configured for their "large" or "small" settings (see pages 21 – 23) and turn off the OSD system if it is in use.
2. Adjust the volume so that it is at **-1.5dB**, as shown in the on-screen display or Lower Display Line **B**.
3. Press and hold the **SPL Select Button 43** on the remote until the red LED under the **Set Button 16** lights and the LCD screen in the remote changes to the display shown in Figure 8.
4. Press the **Set Button 16** within five seconds to move to the next step.
5. Press the **Navigation Button 14** until the lower line of the remote's LCD display shows the number of speakers in your system. (Don't count the subwoofer or speakers that are part of a multizone system.) For example, if you have left, center, right, surround left and right, and surround back left and right speakers for a



Figure 8

full 7.1 system, press the button twice so that the bottom line reads **7 CHANNELS**, as shown in Figure 9.



Figure 9

- Hold the remote in front of you at arm's length, being sure not to cover the **EzSet Microphone Sensor 44** at the top of the remote, and press the **Set Button 16** within five seconds to begin the EzSet calibration process. At this point, EzSet will take control of your AVR, starting the test tone at the front left speaker, and automatically adjusting the output level so that this is correct. During the adjustment the on-screen display and the **Lower Display Line B** will display the speaker position on the left side of the display and the offset from reference level on the right side of the display. As the levels are adjusted, the speaker position and a level indication will appear in the bottom line of the remote's LCD display.



Figure 10

- The channel position being adjusted will flash in the **Speaker/Channel Input Indicators E**. If the test noise is heard from a channel other than the one shown in the Indicator, there is an error in the speaker connections. If this is the case, press the **Test Button 6** TWICE to stop the adjustment. Then, turn the unit off and verify that all speakers are connected to the proper **Speaker Outputs 1 3 2 2** and that any connections made to speakers powered by optional amplifiers through the **Preamp Outputs 18** are correct.
- During the adjustment process for each channel, you will see indications of **LOW**, **HIGH** and a level readout in **dB**. This is normal, and it confirms that EzSet is doing its job of changing the levels to match the desired reference.
- If a channel cannot be adjusted to the proper reference level, you will see **FAIL** displayed in the remote's bottom LCD line before the test tone moves to the next channel. This is usually an indication that the volume control was set too low. When EzSet stops circulating the tone through all channels and returns to normal, adjust the volume level and repeat the procedure from Step 3.

- After the test noise has circulated once through each channel, it will send the tone to each channel once again, to verify the settings.

- After two complete circulations of the tone, the levels are set. Upon completion of the second circulation, the **LCD Information Display 3** will flash **COMPLETE** three times and then go out. The tone will stop and the AVR 7200 will return to normal operation.

If you find that the output levels chosen by EzSet are either uncomfortably low or high, you may repeat the procedure. Return to Step 2 and adjust the master volume either slightly higher or lower to accommodate your particular room layout and your tastes. You may repeat this procedure as many times as necessary to achieve a desired result. In order to prevent possible damage to your hearing or your equipment, we emphasize that you should avoid setting the master volume above OdB.

NOTE: The subwoofer output is not adjusted when the test tone is in use. To adjust the subwoofer output you must use an external source, following the instructions on page 33.

Manual Output Level Adjustment

Output levels may also be adjusted manually, either to set them to a specific level with an SPL meter, or to make fine tuning adjustments to the levels obtained using the EzSet remote.

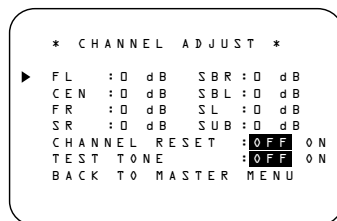


Figure 11

Manual output level adjustment is most easily done through the **CHANNEL ADJUST** menu (Figure 11). If you are already at the **MASTER MENU**, press the **Navigation Button 14** until the on-screen ▶ cursor is next to the **CHANNEL ADJUST** line. If you are not at the **MASTER MENU**, press the **OSD Button 31** to bring up the **MASTER MENU** (Figure 1), and then press the **Navigation Button 14** until the on-screen ▶ cursor is next to the **CHANNEL ADJUST** line. Press the **Set Button 16** to bring the **CHANNEL ADJUST** menu (Figure 11) to the screen.

When the **CHANNEL ADJUST** menu appears, press the **Navigation Button 14** until the on-screen ▶ cursor is next to the **TEST TONE** line. Press the **Navigation Button 14** so that **ON** is highlighted and the AVR's internal test tone will begin to circulate from speaker to speaker in

a clockwise direction into all speakers. The test noise will play for two seconds in each speaker before circulating, and a blinking on-screen cursor will appear next to the name of each speaker location when the sound is at that speaker.

NOTE: Remember to verify that the speakers have been properly connected. As the test noise circulates, listen to make certain that the sound comes from the speaker position shown in the **Main Information Display 29**. If the sound from a speaker location does NOT match the position indicated in the display, turn the AVR 7200 off using the **Main Power Switch 1** and check the speaker wiring or connections to external power amplifiers to make certain that each speaker is connected to the correct output terminal.

After checking for speaker placement, let the test noise circulate again, and listen to see which channels sound louder than the others. Using the front left speaker as a reference, press the **Navigation Button 14** on the remote to bring all speakers to the same volume level. When the **Navigation Button 14** is pushed, the test noise circulation will pause on the channel being adjusted to give you time to make the adjustment. When you release the button, the circulation will resume after five seconds.

Continue to adjust the individual channels until the volume level sounds the same from each speaker. Adjustments should be made with the **Navigation Button 14** on the remote only, NOT the main volume controls. If you are using a sound-pressure level (SPL) meter for precise level adjustment, set the volume so that the meter reads 75dB, C-Weighting Slow.

The AVR's EzSet feature may also be used as an SPL meter to assist in accurate setting of the output levels, when either the internal test tone or an external source such as a test disc is used. To use the remote as an SPL meter, follow these steps:

- Press and hold the **SPL Select Button 43** on the remote until the red LED under the **Set Button 16** lights and the LCD screen in the remote changes to the display shown in Figure 8.
- Press the **Navigation Button 14** once to change the bottom line of the remote's LCD display to read **MANUAL SPL** as shown in Figure 12.



Figure 12

- Press the **Set Button 16** within five seconds to activate the remote's manual mode, so that it functions as an SPL meter. The right corner of the bottom line of the remote's display will show the output level of the speakers as the test tone circulates. The

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level will show as a direct SPL indication between **66dB** and **79dB**. Below **66dB** the remote will read **LOW** and above **79dB** it will read **HIGH**.

4. When you are finished with all adjustments, press the **Clear Button** **10** to return the remote to normal operation.

NOTE: The subwoofer level is not adjustable when the normal test tone is in use. The subwoofer output level may also be adjusted when the channel levels are being trimmed to a program source rather than the test tone, as shown on page 33.

When all channels have an equal volume level, the adjustment is complete. To exit this menu, press the **▲/▼ Navigation Button** **14** until the on-screen ► cursor is next to the **BACK TO MASTER MENU** line, and then press the **Set Button** **16** to return to the **MASTER MENU**.

The output levels may also be adjusted at any time using the remote control and semi-OSD system. To adjust the output levels in this fashion, press the **Test Button** **6**. As soon as the button is pressed, the test tone will begin to circulate as indicated earlier. The correct channel from which the test noise should be heard will be shown in the lower third of the video screen and in the **Lower Display Line** **B**. While the test noise is circulating, the proper channel position will also be indicated in the **Speaker/Channel Input Indicators** **E** by a blinking letter within the correct channel.

To adjust the output level, press the **▲/▼ Navigation Button** **14** until the desired level is shown in the display or on screen. Once the buttons are released, the test noise will begin to circulate again in five seconds.

When all channels have the same output level, press the **Test Button** **6** again to complete the process.

NOTE: Output level adjustment is not available for the VMaX or Surround Off modes.

Additional Input Adjustments

After one input has been adjusted for Surround mode, digital input (if any), speaker type, and output levels, go back to the **IN/OUT SETUP** line on the **MASTER MENU** (Figure 1) and enter the settings for each input that you will use. In most cases, only the digital input and surround mode will be different from one input to the next, while the speaker type, crossover frequency, Night mode and output level settings will usually be the same and may be quickly entered by entering the same data used for the original input.

When all settings and adjustments have been made, press the **OSD Button** **31** to return to normal operation of the AVR.

Once the settings outlined on the previous pages have been made, the AVR 7200 is ready for operation. While there are some additional settings to be made, these are best done after you have had an opportunity to listen to a variety of sources and different kinds of program material. These advanced settings are described on pages 34 to 35 of this manual. In addition, any of the settings made in the initial configuration of the unit may be changed at any time. As you add new or different sources or speakers, or if you wish to change a setting to better reflect your listening taste, simply follow the instructions for changing the settings for that parameter as shown in this section.

Having completed the setup and configuration process for your AVR 7200, you are about to experience the finest in music and home theater listening. Enjoy!

Basic Operation

Once you have completed the initial setup and configuration of the AVR 7200, it is simple to operate and enjoy. The following instructions will help you maximize the enjoyment of your new receiver:

Turning the AVR 7200 On or Off

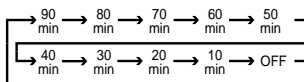
- When using the AVR 7200 for the first time, you must press the **Main Power Switch 1** on the front panel to turn the unit on. This places the unit in a Standby mode, as indicated by the amber color of the **Power Indicator 3**. Once the unit is in Standby, you may begin a listening session by pressing the **System Power Control 2** on the front panel, or the **Power On Button 2** or **AVR Selector 5** on the remote. The **Power Indicator 3** will turn green. This will turn the unit on and return it to the input source that was last used. The unit may also be turned on from Standby by pressing any of the **Input Selector Buttons 4 5 3 4 2 B C D** on the remote or the **Input Source Selector Button 15** on the front panel.

NOTE: After pressing one of the **Input Selector Buttons 4 42** to turn the unit on, press the **AVR Selector 5** to set the remote control to the AVR 7200 functions.

To turn the unit off at the end of a listening session, simply press the **System Power Control 2** on the front panel or the **Power Off Button 1 A** on the remote. Power will be shut off to any equipment plugged into the rear-panel **Switched AC Accessory Outlet 20** and the **Power Indicator 3** will turn amber.

When the remote is used to turn the unit "off" it is actually placing the system in a Standby mode, as indicated by the amber color of the **Power Indicator 3**.

- To program the AVR 7200 for automatic turn-off, press the **Sleep Button 29** on the remote. Each press of the button will decrease the time before shutdown in the following sequence:



The sleep time will be displayed in the **Lower Display Line B** and it will count down until the time has elapsed.

When the programmed sleep time has elapsed, the unit will automatically turn off. The front-panel display will dim to one half brightness when the Sleep function is programmed. To cancel the Sleep function, press and hold the **Sleep Button 29** until the information display returns to normal brightness; the Sleep indicator numbers will disappear and the

words **SLEEP OFF** will appear in the **Lower Display Line B**.

When you will be away from home for an extended period of time it is always a good idea to completely turn the unit off with the front-panel **Main Power Switch 1**.

NOTE: All preset memories are lost if the unit is left turned off by using the **Main Power Switch 1** for more than two weeks.

Remote Control Operation

The AVR 7200's advanced remote includes a two-line LCD display that makes it easy to operate both the AVR and any other product that the remote has been programmed for. Complete information on programming the remote for operation with other devices and configuring its options are found on pages 38 – 47.

The following items provide some additional details on using the remote with the AVR 7200:

- The name of the command code transmitted when a button is pressed printed on the button key or just to the top of the button on the remote itself. In addition, when a button is pressed, the function being transmitted will also appear in the bottom line of the remote's LCD display.
- In order to send a command to the AVR 7200, the **AVR Selector 5** must be pressed. To send a command to another device, first press the **Input Selector 4** for that device.
- The remote will automatically return to the controls for the AVR 7200 within five seconds after the button for another device is pressed.
- The factory default setting for the remote is to have the **Volume Up/Down 18** and **Mute 32** buttons operate the AVR 7200, regardless of which device (such as a DVD or another video source) is in use.
- The factory setting for the remote is to have the **Transport Forward/Reverse Play Buttons 17**, **Transport Fast Play/Scan Forward/Reverse Buttons 19**, **Main Transport Controls 20** and **Track Skip Up/Down Buttons 21** operate the DVD player, regardless of which device (including the AVR) is in use. This simplifies operation, as in normal use you will use the AVR controls, and this means that you do not have to press the DVD button to control a player.

You may change the "punch-through" setting which allows the buttons for Volume, Transport Control or Channel Up/Down to be assigned into another device by following the instructions on pages 42 – 43.

- The remote has a built-in backlight that may be activated by pressing the **Light Button 26**. This button is made from a special "glow" material so that it is easier to find in dark rooms. This glow

feature does not use any electricity, but the glow will fade when the remote is kept in a dark location for an extended period of time. Restore the "glow" feature by placing the remote in normal room light for a few hours.

- The remote's backlight will remain lit for approximately five seconds after the **Light Button 26** is pressed, and it will stay lit for another five seconds if any key is pressed while the backlight is on. You may keep the backlight lit by holding the Light button, but note that extensive use of the backlight will reduce battery life.
- The LCD display will remain on for 10 seconds after a key is pressed and then turn off to conserve battery life.
- When any button is held for more than 30 seconds the LCD will turn off and the remote will stop transmitting the codes to conserve battery life.
- Some of the buttons on the remote do not have a function on certain devices. For example, the Channel Up/Down buttons do not operate in the normal AVR mode unless they have been assigned for this purpose using the "punch-through" process as explained on pages 42 – 43. This is normal and does not indicate any problem with the remote. When it is normal for a button not to have a function, you will see the device name in the top left side of the remote's LCD display, but you will not see the transmit icon on the upper right side of the display or any button function name on the bottom line of the display.

Source Selection

- To select a source, press any of the remote **Input Selector Buttons 4 42 C D**.
- The input source may also be changed by pressing the front panel **Input Source Selector Button 15**. Each press of the button will move the input selection through the list of available inputs.
- As the input is changed, the AVR 7200 will automatically switch to the digital input (if selected), surround mode, speaker configuration, output levels, crossover frequency and night mode status that were entered during the configuration process for that source.
- The front-panel **Video 4 Inputs 20**, **Optical Digital 3 Input 17** or the **Coaxial Digital 3 Input 19** may be used to connect a device such as a video game or camcorder to your home entertainment system on a temporary basis.
- As the input source is changed, the new input name will appear momentarily as an on-screen display in the lower third of the video display. The input name will also appear in the **Main Information Display 29** and a green LED will light next to the selected input's name in the front-panel **Input Indicators 28**.

OPERATION

- When an audio source is selected, the last video input used remains routed to the **Video 1/Video 2 Outputs** 41 and **Video Monitor Outputs** 23. This permits simultaneous viewing and listening to different sources.
- When a composite or S-Video source is selected, the video signal for that input will be routed to the **Video Monitor Output** 23 and will be viewable on a TV monitor connected to the AVR 7200.

6-Channel/8-Channel Direct Input

- There are four input choices available for use with sources such as a DVD-Audio or SACD player that are connected to the **8-Channel Direct Inputs** 34. Select the appropriate input according to the way your system and source equipment is configured:

- The **6 CH DIRECT** input should be used when the SBR and SBL inputs are NOT in use and the input source device has its own internal bass management system. This input passes the input from the source directly through to the volume control without any analog to digital conversion and it mutes the unused input jacks to prevent unwanted noise from interfering with system performance.

- The **6 CH DVD AUDIO** input should be used when the SBR and SBL inputs are NOT in use and the input source device does NOT have its own internal bass management system. When this input is in use the analog source is converted to digital so that you may use the same Triple Crossover bass management options for the direct input as you do with all other outputs. This input also mutes the unused input jacks to prevent unwanted noise from interfering with system performance.

- The **8 CH DIRECT INPUT** should be used when an input is connected to all eight **8-Channel Direct Inputs** 34 and when the input source device has its own internal bass management system. This input passes the input from the source directly through to the volume control without any analog to digital conversion and it mutes the unused input jacks to prevent unwanted noise from interfering with system performance.

- The **8 CH DVD AUDIO** input should be used when an input is connected to all eight **8-Channel Direct Inputs** 34 and the input source device does NOT have its own internal bass management system. When this input is in use the analog source is converted to digital so that you may use the same Triple Crossover bass

management options for the direct input as you do with all other outputs. This input also mutes the unused input jacks to prevent unwanted noise from interfering with system performance.

Volume Control

- Adjust the volume to a comfortable level using the front panel **Volume Control** 27 or remote **Volume Up/Down Buttons** 18 19.
- To temporarily silence all speaker outputs, press the **Mute Button** 32 K. This will interrupt the output to all speakers and the headphone jack, but it will not affect any recording or dubbing that may be in progress. When the system is muted, the word **MUTE** will flash in the **Main Information Display** 29. Press the **Mute Button** 32 K again to return to normal operation.
- You may adjust the bass and treble tone controls at any point during a listening session by simply turning the **Bass Control** 21 or **Treble Control** 23 until the desired setting is achieved. You may also totally remove the tone controls (including the **Balance Control** 22) from the circuit so that the output is "flat" at any time by pressing the **Tone Mode Button** 5 and then pressing the **◀▶ Buttons** 10 13 so that **TONE OFF** appears in the on-screen display and the **Lower Display Line** B.
- For private listening, plug the 1/4" stereo phone plug from a pair of stereo headphones into the front-panel **Headphone Jack** 4. When the headphone's plug is connected, the word **HEADPHONE** will scroll once across the **Lower Display Line** B and all speakers will be silenced. When the headphone plug is removed, the audio feed to the speakers will be restored.

Surround Mode Selection

Selection of a surround mode is based on personal taste, as well as the type of program source material being used. For example, motion pictures or TV programs bearing the logo of one of the major surround-encoding processes, such as Dolby Surround, DTS Stereo or UltraStereo® may be played in either the Dolby Digital, Dolby Pro Logic II Cinema, DTS Neo:6 Cinema, or Logic 7 Cinema surround modes depending on the source material.

NOTE: Once a program has been encoded with matrix surround information, it retains the surround information as long as the program is broadcast in stereo. Thus, movies with surround sound may be decoded via any of the analog surround modes such as Pro Logic II Cinema, Logic 7 Cinema or DTS Neo:6 Cinema, when they are broadcast via conventional TV stations, cable, pay-TV and satellite transmission. In addition, a growing number of made-for-television programs, sports broad-

casts, radio dramas and music CDs are also recorded in surround sound. You may view a list of these programs at the Dolby Laboratories Web site at www.dolby.com.

Even when a program is not listed as carrying intentional surround information, you may find that the Pro Logic II, Logic 7 Enhanced or DTS Neo:6, VMAx and the Hall or Theater modes often deliver enveloping surround presentations through the use of the natural information present in all stereo recordings.

Surround modes may be changed at any time by using either the front panel or remote control. To select a new surround mode from the front panel, first press the **Surround Mode Group Selector Button** 7 until the desired major surround mode group such as Dolby, DTS or Logic 7 is selected. Next, press the **Surround Mode Selector Button** 8 to choose the specific individual surround mode.

To select a surround mode using the remote, press the button for the major surround mode group that you wish to choose from: **Dolby** 41, **DTS Surround** 40, **DTS Neo:6** 39, **Logic 7** 8, **Stereo** 38 or **DSP Surround** 7. The first press of the button will show the current mode from that group if it is already in use, or the first available mode if you are currently using another mode. To cycle through the modes in that group, press the button again until the desired mode appears in the **Lower Display Line** B and the on-screen display.

As the surround modes change, a green LED will light next to the current mode in the **Surround Mode Indicators** 31 list on the front panel.

The Dolby Digital, Dolby Digital EX and DTS 5.1, DTS-ES Matrix and DTS-ES Discrete modes may only be selected when a digital input is in use. In addition, when a digital source is present, the AVR 7200 will automatically select and switch to the correct mode, regardless of the mode that has been previously selected. For more information on selecting digital sources, see the Digital Audio Playback section below.

NOTE: When a single speaker is used for the rear surround channels as a 6.1 configuration, the Logic 7/7.1 and 7-Channel Stereo modes should not be used. However, Dolby Digital EX and DTS will function normally.

When the 6-channel/8-channel direct inputs are in use there is no surround processing, as these inputs take the analog output signals from an optional, external DVD-Audio or SACD player, or another source device and carry them straight through to the volume control without any further digital processing.

Surround Mode Chart

MODE	FEATURES
Dolby Digital	Available only with digital input sources encoded with Dolby Digital data. It provides up to five separate main audio channels and a special dedicated Low-Frequency Effects channel. When the Dolby Digital data stream contains a two-channel (2.0) signal, the Dolby Pro Logic II-Movie processing circuits will automatically be activated to produce a multichannel surround presentation.
Dolby Digital EX	Available when the receiver is configured for 6.1/7.1 channel operation, Dolby Digital EX is the latest version of Dolby Digital. When used with movies or other programs that have special encoding, Dolby Digital EX reproduces specially encoded soundtracks so that a full 6.1/7.1 soundfield is available. When the receiver is set for 6.1/7.1 operation and a Dolby Digital signal is present, the EX mode is automatically selected. Even if specific EX encoding is not available to provide the additional channel, the special algorithms will derive a 6.1/7.1 output.
DTS 5.1	When the speaker configuration is set for 5.1-channel operation, the DTS 5.1 mode is available when DVD, audio-only music or laser discs encoded with DTS data are played. DTS 5.1 provides up to five separate main audio channels and a special dedicated low-frequency channel.
DTS-ES 6.1 Matrix DTS-ES 6.1 Discrete	When the speaker configuration is set for 6.1/7.1 operation, playback of a DTS-encoded program source will automatically trigger the selection of one of the two DTS-ES modes. Newer discs with special DTS-ES discrete encoding will be decoded to provide six discrete, full-bandwidth channels plus a separate low-frequency channel. All other DTS discs will be decoded using the DTS-ES Matrix mode, which creates a 6.1-channel sound field from the original 5.1-channel soundtrack.
Dolby Pro Logic II Movie Music Emulation	Dolby Pro Logic II is the latest version of Dolby Laboratory's benchmark surround technology that decodes full-range, discrete left, center right, right surround and left surround channels from either matrix surround encoded programs and conventional stereo sources when an analog input is in use. The Dolby Pro Logic II Movie mode is optimized for movie soundtracks, while the Pro Logic II Music mode should be used with musical selections. The Pro Logic II Emulation mode re-creates original Pro Logic processing for those who prefer that presentation.
Logic 7 Cinema Logic 7 Music Logic 7 Enhance	Exclusive to Harman Kardon for A/V receivers, Logic 7 is an advanced mode that extracts the maximum surround information from either surround-encoded programs or conventional stereo material. Depending on the number of speakers in use and the selection made in the SURROUND SELECT menu, the "5.1" versions of Logic 7 modes are available when the 5.1 option is chosen, while the "7.1" versions of Logic 7 produce a full sound field presentation, including back surround speakers when the "6.1/7.1" option is chosen. The Logic 7 C (or Cinema) mode should be used with any source that contains Dolby Surround or similar matrix encoding. Logic 7 C delivers increased center-channel intelligibility, and more accurate placement of sounds with fades and pans that are much smoother and more realistic than with other decoding techniques. Logic 7 M (Music) enhances the listening experience by presenting a wider front soundstage and greater rear ambience. When a PCM digital audio signal is detected, the Logic 7 Music mode will automatically be selected. Both Logic 7 modes also direct low-frequency information to the subwoofer (if installed and configured) to deliver maximum bass impact. The Logic 7 E (or Enhance) mode, available only when the 5.1 option is chosen, is an extension of the Logic 7 modes that is primarily used with musical programs. Logic 7 E adds additional bass enhancement that circulates low frequencies in the 40Hz to 120Hz range to the front and surround speakers to deliver a less localized soundstage that appears broader and wider than when the subwoofer is the sole source of bass energy.
DTS Neo:6 Cinema DTS Neo:6 Music	These two modes are available when any analog source is playing to create a six-channel surround presentation from conventional Matrix-encoded and traditional Stereo sources. Select the Cinema version of Neo:6 when a program with any type of analog Matrix surround encoding is present. Select the Music version of Neo:6 for optimal processing when a nonencoded, two-channel stereo program is being played.
Dolby 3 Stereo	Uses the information contained in a surround-encoded or two-channel stereo program to create center-channel information. In addition, the information that is normally sent to the rear-channel surround speakers is carefully mixed in with the front-left and front-right channels for increased realism. Use this mode when you have a center channel speaker but no surround speakers.
Theater	The Theater mode creates a sound field that resembles the acoustic feeling of a standard live performance theater.
Hall 1, Hall 2	The two Hall modes create sound fields that resemble a small (Hall 1) or medium-sized (Hall 2) concert hall.
VMAx Near VMAx Far	When only the two front-channel loudspeakers are used, Harman's patented VMAx mode delivers a three-dimensional sound space with the illusion of "phantom speakers" at the center and surround positions. The VMAx N, or "Near Field," mode should be selected when your listening position is less than five feet from the speakers. The VMAx F, or "Far Field," mode should be selected when your listening position is greater than five feet from the speakers. The VMAx modes are also available using the Headphones Output 4 . When headphones are being used, the Far Field mode will appear to push the sound field away from your ears, reducing the "inside the head" sensation often experienced when using headphones.
5-Channel Stereo 7-Channel Stereo	This mode takes advantage of multiple speakers to place a stereo signal at both the front and back of a room. Depending on whether the AVR has been configured for either 5.1 or 6.1/7.1 operation, one of these modes, but not both, is available at any time. Ideal for playing music in situations such as a party, it places the same signal this mode at the front-left and surround-left, and front-right and surround-right speakers. The center channel is fed a summed mono mix of the in-phase material of the left and right channels.
Surround Off (Stereo)	This mode turns off all surround processing and presents the pure left- and right-channel presentation of two-channel stereo programs.

To listen to a program in traditional two-channel stereo, using only the front left and front right speakers (plus a subwoofer, if installed and configured), press the **Stereo Button** **33** on the remote once or twice until **SURR OFF** appears in the **Main Information Display** **29**. From the front panel, press the **Surround Mode Group Selector** **7** until **STEREO MODES** appears in the on-screen display and **Lower Display Line** **B**. Next, press the **Surround Mode Select Button** **8** until the display message reads **SURROUND OFF**.

Digital Audio Playback

Digital audio is a major advancement over older analog surround processing systems such as Dolby Pro Logic. It delivers five discrete channels: left front, center, right front, left surround and right surround. Each channel reproduces full frequency range (20Hz to 20kHz) and offers dramatically improved dynamic range and significant improvements to signal-to-noise ratios. In addition, digital systems have the capability to deliver an additional channel that is specifically devoted to low-frequency information. This is the ".1" channel referred to when you see these systems described as "5.1," "6.1" or "7.1". The bass channel is separate from the other channels, but since it is intentionally bandwidth-limited, sound designers have given it that unique designation.

Dolby Digital

Dolby Digital is a standard on DVDs, and is available on specially encoded LD discs and satellite broadcasts and high-definition television (HDTV) broadcasts.

An optional, external RF demodulator is required to use the AVR 7200 to listen to the Dolby Digital soundtracks available on laser discs. Connect the RF output of the LD player to the demodulator and then connect the digital output of the demodulator to the **Optical or Coaxial Inputs** **17 19 29 32** of the AVR 7200. No demodulator is required for use with DVD players or DTS-encoded laser discs.

DTS

DTS is another digital audio system that is capable of delivering 5.1 or 6.1 discrete or matrix sound field reproduction. Although both DTS and Dolby Digital are digital, they use different methods of encoding the signals, and thus they require different decoding circuits to convert the digital signals back to analog.

DTS-encoded soundtracks are available on select DVD and LD discs, as well as on special audio-only DTS discs. You may use any LD or CD player equipped with a digital output to play DTS-encoded discs with the AVR 7200. All that is required is to connect the

player's output to either an **Optical or Coaxial Input** on the rear panel **29 32** or front panel **17 19**.

In order to listen to DVDs encoded with DTS soundtracks, the DVD player must be compatible with the DTS signal as indicated by a DTS logo on the player's front panel. Early DVD players may not be able to play DTS-encoded DVDs. This does not indicate a problem with the AVR 7200, as some players cannot pass the DTS signal through to the digital outputs. If you are in doubt as to the capability of your DVD player to handle DTS discs, consult the player's owner's manual.

NOTE: Some DVD players have a default setting that does not pass through the DTS signal. Before playing DVDs with a DTS soundtrack, make certain that the settings in your DVD player have been properly adjusted so that DTS audio is passed through. Consult the Owner's Manual for your DVD player for more information on making these settings.

Selecting a Digital Source

To utilize either digital mode, you must have properly connected a digital source to the AVR 7200. Connect the digital outputs from DVD players, HDTV receivers, satellite systems or CD players to the **Optical or Coaxial Inputs** **17 19 29 32**. In order to provide a backup signal and a source for analog stereo recording, the analog outputs provided on digital source equipment should also be connected to their appropriate inputs on the AVR 7200 rear panel (e.g., connect the analog stereo audio output from a DVD to the **DVD Inputs** **12** on the rear panel when you connect the source's digital outputs).

If you have not already configured an input for a digital source using the on-screen menus as shown on pages 19 – 20, first select the input using the remote or front panel controls as outlined in this manual. Next, select the digital source by pressing the **Digital Select Button** **15 26** and then using the **▲/▼ Navigation Button** **14** on the remote or the **◀▶ Selector Buttons** **10 13** on the front panel to choose any of the **OPTICAL** or **COAXIAL** inputs, as they appear in the **Upper Display Line** **A** or on-screen display. When the digital source is playing, the AVR 7200 will automatically detect which type of digital data stream is being decoded and display that information in the **Upper Display Line** **A**.

Digital Bitstream Indicators

When a digital source is playing, the AVR 7200 senses the type of bitstream data that is present. Using this information, the correct surround mode will automatically be selected. For example, DTS bitstreams will cause the unit to switch to DTS decoding, and Dolby Digital bitstreams will enable Dolby Digital decoding.

When the unit senses PCM data from CDs and LDs, it will allow the appropriate surround sources to be selected manually. Since the range of available surround modes is dependent on the type of digital data that is present, the AVR 7200 uses display indicators to let you know what type of signal is present. This will help you to understand the choice of modes.

To help you see which type of digital source is playing, the **Surround Mode Indicators** **31** in combination with the **Information Display** **29** also serve as bitstream indications to show which type of bitstream is present, as well as the surround mode in use, if applicable.

Dolby Digital: When the green LED next to the Dolby Digital or Dolby Digital EX modes is lit, a Dolby Digital bitstream is being received. Depending on the settings on the source player and specific surround information and number of channels on the disc, a number of surround modes are possible. For discs with full 5.1 audio, only the Dolby Digital and VMaX modes are available.

DTS: When the green LED next to the DTS logo lights, a DTS bitstream is being received. When the unit senses this type of data, only the applicable DTS mode may be used.

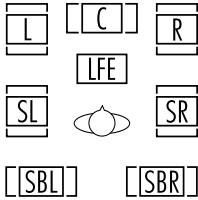
PCM: When the green LED next to the word **DIGITAL** lights, a standard Pulse Code Modulation, or PCM, signal is being received. This is the type of digital audio used by conventional compact disc and laser disc recordings. When a PCM bitstream is present, all modes except Dolby Digital and DTS are available.

HDCD: When the letters **HDCD** appear on the **Lower Display Line** **B** in conjunction with the PCM indicator, the CD that is playing is encoded through the special High Definition Compatible Digital® process. HDCD® discs use 20-bit encoding and other proprietary processing to provide the ultimate in CD listening. HDCD processing is only available in the Stereo (Surround Off) mode.

MP3: When **MP3** appears on the **Lower Display Line** **B** a compatible MPEG 1/Layer 3 digital signal is being received. This is the popular audio format used by many computer programs for recording compressed audio files. When an MP3 bitstream is present, the sound will automatically be played in the Stereo (Surround Off) mode. The surround modes are not available during MP3 playback. There are many different forms of MP3 encoding available and the format is used at a number of different bit rates. The AVR 7200 may not be compatible with all forms of MP3, particularly when the data file is encoded at 128kb/s or above.

Speaker/Channel Indicators

In addition to the bitstream indicators, the AVR 7200 features a set of unique channel-input indicators (shown below) that tell you how many channels of digital information are being received and/or whether the digital signal is interrupted.



These indicators are the L/C/R/LFE/SL/SR/SBL/SBR letters that are inside the center boxes of the **Speaker/Channel Input Indicators E** in the front-panel **Main Information Display 29**. When a standard analog signal is in use, only the "L" and "R" indicators will light, as analog signals have only left and right channels.

Digital signals, however, may have two, five, six or seven channels, depending on the program material, the method of transmission and the way in which it was encoded. When a digital signal is playing, the letters in these indicators will light in response to the specific signal being received. It is important to note that although Dolby Digital, for example, is referred to as a "5.1" system, not all Dolby Digital DVDs or programs are encoded for 5.1. Thus, it is sometimes normal for a DVD with a Dolby Digital soundtrack to trigger only the "L" and "R" indicators.

NOTE: Many DVD discs are recorded with both "5.1" and "2.0" versions of the same sound-track. When playing a DVD, always be certain to check the type of material on the disc. Most discs show this information in the form of a listing or icon on the back of the disc jacket. When a disc does offer multiple soundtrack choices, you may have to make some adjustments to your DVD player (usually with the "Audio Select" button or in a menu screen on the disc) to send a full 5.1 feed to the AVR 7200. It is also possible for the type of signal feed to change during the course of a DVD playback. In some cases, the previews of special material will only be recorded in 2.0 audio, while the main feature is available in 5.1 audio. The AVR 7200 will automatically sense changes to the bitstream and channel count and reflect them in these indicators.

The letters used by the **Speaker/Channel Input Indicators E** also flash to indicate when a bitstream has been interrupted. This will happen when a digital input source is selected before the playback starts, or when a digital source such as a DVD is paused. The flashing indicators remind you that the playback has stopped due to the absence of a digital signal and not

through any fault of the AVR 7200. This is normal, and the digital playback will resume once the playback is started again.

Night Mode

A special feature of Dolby Digital is the Night mode, which enables specially encoded Dolby Digital input sources to be played back with full digital intelligibility while reducing the minimum peak level by 1/4 to 1/3. This prevents abruptly loud transitions from disturbing others, without reducing the impact of the digital source. The Night mode is available only when Dolby Digital signals with special data are being played.

The Night mode may be engaged when a Dolby Digital DVD is playing by pressing the **Night Mode Button 30** on the remote. Next, press the **▲/▼ Navigation Button 14** to select either the middle range or full compression versions of the Night mode. To turn the Night mode off, press the **▲/▼ Navigation Button 14** until the message in the lower third of the video display and in the **Lower Display Line B** reads **D - RANGE OFF**.

The Night mode may also be selected to always be on at either level of compression using the options in the **DOLBY** menu. See page 21 for information on using the menus to set this option.

IMPORTANT NOTES ON DIGITAL PLAYBACK:

- When the digital playback source is stopped, or in a pause, fast forward or chapter search mode, the digital audio data will momentarily stop, and the channel position letters inside the **Speaker/Channel Input Indicators E** will flash. This is normal and does not indicate a problem with either the AVR 7200 or the source machine. The AVR 7200 will return to digital playback as soon as the data is available and when the machine is in a standard play mode.
- Although the AVR 7200 will decode virtually all current DVD movies, CDs and HDTV sources, it is possible that some future digital sources may not be compatible with the AVR 7200.
- Not all digitally encoded programs contain full 5.1 or 6.1 channel audio. Consult the program guide that accompanies the DVD or laser disc to determine which type of audio has been recorded on the disc. The AVR 7200 will automatically sense the type of digital surround encoding used and adjust to accommodate it.
- When a digital source is playing, you may not be able to select some of the analog surround modes such as Dolby Pro Logic II, Dolby 3, Stereo, Hall, Theater or Logic 7.

- When a Dolby Digital or DTS source is playing, it is not possible to make an analog recording using the **Tape Outputs 30** and **Video 1 or Video 2 Outputs 411**. However, the digital signals will be passed through to the **Digital Audio Outputs 25-2719**.

PCM Audio Playback

PCM (Pulse Code Modulation) is the noncompressed digital audio system used for compact discs and laser discs. It is also the format used as an output by audio transcoders such as the Harman Kardon DAL 150. The digital circuits in the AVR 7200 are capable of high-quality digital-to-analog decoding, and they may be connected directly to the digital audio output of your CD or LD player.

Connections may be made to either the rear-panel **Optical or Coaxial Inputs 29 32** or the front-panel **Digital Inputs 1719**.

To listen to a PCM digital source, first select the input for the desired source (e.g., CD). Next press the **Digital Select Button 2615** and then use the **▲/▼ Navigation Button 14** on the remote, or the **◀▶ Selector Buttons 1013** on the front panel, until the desired choice appears in the **Main Information Display 29**.

During PCM playback, you may select any Surround mode except Dolby Digital or DTS. When an HDCD-encoded disc is being played and the DVD or CD player is connected to the AVR 7200 via a digital connection, select Surround Off as the Surround mode to enjoy the benefits of the HDCD process.

MP3 Audio Playback

The AVR 7200 is one of the few receivers equipped for onboard decoding for the MP3 audio format used by computers and portable audio devices. By offering MP3 decoding, the AVR 7200 is able to deliver precise conversion of the digital signals to an analog output, along with the benefits of listening to the MP3 audio through the AVR 7200's high-current amplifier and the speakers from your surround system, rather than the smaller speakers and low-powered amplifiers typically used with computers.

To take advantage of the AVR 7200's MP3 capabilities, simply connect the PCM output of a computer's sound card or the PCM output of a portable digital audio device to either the rear panel **Digital Inputs 29 32** or the front panel **Digital Inputs 1719**. When the digital signal is available, the **Lower Display Line B** will indicate that an MP3 bitstream is present, and the audio will begin playing.

OPERATION

NOTES:

- The AVR 7200 is only capable of playing signals in the MP3 (MPEG 1/Layer 3) format. It is not compatible with other computer audio codecs.
- The digital audio input signal may be either optical or coaxial, but the signal must be in the S/P-DIF format. Direct connection of USB or serial data outputs is not possible, even though the signals are in the MP3 format. If you have any questions about the data output format from your computer or a sound card, check with the device's owner's manual or contact the manufacturer's technical support area.
- If your computer or sound card's digital output is not capable of direct connection to the AVR 7200, you may use an optional, external transcoder, available from Harman Kardon, to convert the USB output of a computer to a format compatible with the AVR. Contact your Harman Kardon dealer for additional details.
- Due to the wide variation in MP3 formats and encoding speeds, it is possible that the AVR 7200 may not be compatible with all MP3 input signals. Some may produce unacceptable results and some may not be decoded. This is not a fault of either the computer or the AVR 7200, but rather a by-product of the unpredictable nature of MP3 playback.

Tuner Operation

The AVR 7200's tuner is capable of tuning AM, FM and FM Stereo broadcast stations. Stations may be tuned manually, or they may be stored as favorite station presets and recalled from a 30-position memory.

Station Selection

1. Press the **AM/FM Tuner Select Button** **33** **C** on the remote to select the tuner as an input. The tuner may be selected from the front panel by pressing either the **Input Source Selector** **15** until the tuner is active or the **Tuner Band Selector** **11** at any time.
2. Press the **AM/FM Tuner Select Button** **33** **C** or **Tuner Band Selector** **11** again to switch between AM and FM so that the desired frequency band is selected.
3. Press the **Tuner Mode Selector** **16** or **Tuning Mode Button** **12** to select manual or automatic tuning.

When the **AUTO Indicator** **J** is illuminated in the **Main Information Display** **29** the tuner will only stop at those stations that have a strong-enough signal to be received with acceptable quality.

When the **AUTO Indicator** **J** is not lit, the tuner is in a manual mode and will stop at each frequency increment in the selected band.

4. To select stations, press the **Tuning Selector Button** **9** **23** **E**. When the **AUTO Indicator** **J** is lit, press the button to cause the tuner to search for the next highest- or lowest-frequency station that has an acceptable signal. Hold the **Tuning Selector Button** **9** **23** **E** to scan through the stations with acceptable signals. Press the **Tuner Mode Button** **16** **12** to switch to the manual tuning mode, in which each press of the **Tuning Selector Button** **9** **23** **E** advances one frequency increment, or pressing and holding scans through all frequency increments.

When tuning FM stations in the Auto mode, the tuner will only select stereo stations. To tune to the next station, press the button again. If the **STEREO Indicator** **H** is not lit, tap the **Tuning Selector Button** **9** **23** **E** to advance one frequency increment at a time, or press and hold it to locate a specific station. When the **TUNED Indicator** **I** lights, the station is properly tuned and should be heard with clarity.

5. Stations may also be tuned directly by pressing the **Direct Button** **9**, and then pressing the **Numeric Keys** **11** that correspond to the station's frequency. The desired station will automatically be tuned. If you press an incorrect button while entering a direct frequency, press the **Clear Button** **10** to start over.

NOTE: When the FM reception of a station is weak, audio quality will be increased by switching to Mono mode by pressing the **Tuner Mode Button** **16** **12** until the **STEREO Indicator** **H** goes out.

Preset Tuning

Using the remote, up to 30 stations may be stored in the AVR 7200's memory for easy recall using the front-panel controls or the remote.

To enter a station into the memory, first tune the station using the steps outlined above. Then:

1. Press the **Memory Button** **37** on the remote. The **MEMORY Indicator** **G** will light and flash in the **Main Information Display** **29**.
2. Within five seconds, press the **Numeric Keys** **11** corresponding to the location where you wish to store this station's frequency. Once entered, the preset number will appear in the **Main Information Display** **29**.

3. Repeat the process after tuning any additional stations to be preset.

Recalling Preset Stations

- To manually select a station previously entered in the preset memory, press the **Numeric Keys** **11** that correspond to the desired station's memory location.
- To manually tune through the list of stored preset stations one by one, press the **Preset Stations Selector Buttons** **14** **22** **G** on the front panel or remote.

Recording

In normal operation, the audio or video source selected for listening through the AVR 7200 is sent to the record outputs. This means that any program you are watching or listening to may be recorded simply by placing machines connected to the outputs for **Tape Outputs** **40** or **Video 1/Video 2 Outputs** **4** **11** in the record mode.

When a digital audio recorder is connected to the **Digital Audio Outputs** **29** **32** **19**, you are able to record the digital signal using a CD-R, MiniDisc or other digital recording system.

NOTES:

- The digital outputs are active only when a digital signal is present, and they do not convert an analog input to a digital signal, or change the format of the digital signal. In addition, the digital recorder must be compatible with the output signal. For example, the PCM digital input from a CD player may be recorded on a CD-R or MiniDisc, but Dolby Digital or DTS signals may not.
- Please make certain that you are aware of any copyright restrictions on any material you copy. Unauthorized duplication of copyrighted materials is prohibited by federal law.

Front-Panel Connections

In addition to the rear-panel digital and analog outputs, the AVR 7200 offers Harman Kardon's exclusive configurable front-panel output jack feature. For easy connection of portable devices, you may switch the front-panel **Video 4 Jacks** **20** or the **Coaxial Digital 3 Jack** **19** from an input to an output by following these steps:

1. Press the **OSD Button** **31** to view the **MASTER MENU** (Figure 1).
2. Press the **Set Button** **16** to enter the **IN/OUT SETUP** menu (Figure 2).

3. Press the **▼ Navigation Button 14** so that the on-screen **►** cursor is next to **VIDEO 4** or **COAXIAL 3**.
4. Press the **Set Button 16** and then press the **◀/► Navigation Button 14** so that the word **OUT** is highlighted.
5. Press the **Set Button 16** to enter the change.
6. Press the **OSD Button 31** to exit the menus and return to normal operation.

Once the setting is made, the **Input/Output Status Indicator 18** will turn red, indicating that the jacks are now an output, instead of in the default setting as an input. Once changed to an output, the setting will remain as long as the AVR 7200 is turned on, unless the setting is changed in the OSD menu system, as described above. However, once the AVR 7200 is turned off, the setting is cancelled. When the unit is turned on again, the front panel jacks will return to their normal default setting as an input. If you wish to use their jacks as an output at a future time, the setting must be changed again using the OSD menu system, as described above.

Output Level Trim Adjustment

Normal output level adjustment for the AVR 7200 is established using the test tone, as outlined on pages 24 – 26. In some cases, however, it may be desirable to adjust the output levels using program material such as a test disc, or a selection you are familiar with. Additionally, the output level for the subwoofer can only be adjusted using this procedure.

To adjust the output levels using program material, first set the reference volume for the front left and front right channels using the **Volume Control 27 18 1**.

If you are using a disc with test signals or an external signal generator as the source from which to trim the output levels, you may use the EzSet feature of the remote as an SPL meter to guide you to the correct SPL level. To use the remote for this purpose, follow the instructions shown on page 25 for using the remote in the SPL meter mode.

Once the reference level has been set, press the **Channel Select Button 13** and **FRONT LEVEL** will appear in the Lower Display Line **B**. To change the level, first press the **Set Button 16**, and then use the **▲/▼ Navigation Button 14** to raise or lower the level. DO NOT use the volume control, as this will alter the reference setting.

Once the change has been made, press the **Set Button 16** and then press the **▲/▼ Navigation**

Button 14 to select the next output channel location that you wish to adjust. To adjust the subwoofer level, press the **▲/▼ Navigation Button 14** until **WOOFER LEVEL** appears in the **Main Information Display 29** or on-screen display.

Repeat the procedure as needed until all channels requiring adjustment have been set. When all adjustments have been made and no further adjustments are made for five seconds, the AVR 7200 will return to normal operation.

The channel output for any input may also be adjusted using the full-OSD on-screen menu system. First, set the volume to a comfortable listening level using the **Volume Control 27 18 1**. Then, press the **OSD Button 31** to bring up the **MASTER MENU** (Figure 1). Press the **▼ Navigation Button 14** until the on-screen **►** cursor is next to the **CHANNEL ADJUST** line. Press the **Set Button 16** to activate the **CHANNEL ADJUST** menu.

Once the menu appears on your video screen, first use the **▲/▼ Navigation Button 14** to move the on-screen **►** cursor so that it is next to the **TEST TONE** line. Press the **◀/► Navigation Button 14** so that **OFF** is highlighted. This will turn off the test tone and allow you to use your external test disc or other source material as the reference. Then, use the **▲/▼ Navigation Button 14** to select the channels to be adjusted. At each channel position, use the **◀/► Navigation Button 14** to change the output level. Remember, the goal is to have the output level at each channel be equal when heard at the listening position.

If you wish to reset all the levels to their original factory default of 0dB offset, press the **▲/▼ Navigation Button 14** so that the on-screen cursor is next to the **CHANNEL RESET** line and then press the **◀/► Navigation Button 14** so that the word **ON** is highlighted. After the levels are reset, resume the procedure outlined above to reset the levels to the desired settings. When all adjustments are done, press the **▲/▼ Navigation Button 14** to move the on-screen **►** cursor so that it is next to **BACK TO MASTER MENU** and then press the **Set Button 16** if you wish to go back to the main menu to make other adjustments. If you have no other adjustments to make, press the **OSD Button 31** to exit the menu system.

NOTE: The output levels may be separately trimmed for each digital and analog surround mode. If you wish to have different trim levels for a specific mode, select that mode and then follow the instructions in the steps shown earlier.

Memory Backup

This product is equipped with a memory backup system that preserves the system configuration information and tuner presets if the unit is accidentally unplugged or subjected to a power outage. This memory will last for approximately two weeks, after which time all information must be reentered.

ADVANCED FEATURES

The AVR 7200 is equipped with a number of advanced features that add extra flexibility to the unit's operation. While it is not necessary to use these features to operate the unit, they provide additional options that you may wish to use.

Surround Amplifier Channel Assignment

The AVR 7200 is equipped with seven full-power amplifier channels to allow for complete 7.1-channel operation without the need for additional external amplifiers. However, in some installations you may wish to use the traditional 5.1-channel configuration for the main listening room, which allows the surround back left/right amplifier channels to be used to power speakers placed in a remote zone location.

If you wish to use the Surround Back channel amplifiers to power the remote zone, you must change a setting in the **ADVANCED SELECT** menu. To make that change, first call up the menu system by pressing the **OSD Button 31** to bring the **MASTER MENU** (Figure 1) to the screen. Next, press the **Navigation Button 14** until the **ADVANCED** line is highlighted. Press the **Set Button 16** to enter the **ADVANCED SELECT** menu (Figure 13).

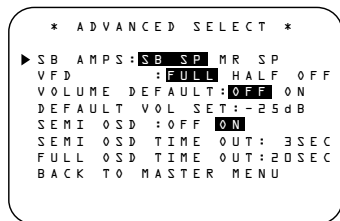


Figure 13

To change the setting so that the Surround Back amplifiers are fed by the source selected through the Multiroom system, press the **Navigation Button 14** so that **MR SP** is highlighted in reverse video and press the **Set Button 16**.

Remember that once this setting is made you will not be able to take advantage of any of the 6.1/7.1-channel decoding or processing modes, and that the speakers used for the remote zone must be connected to the **Surround Back/Multiroom Speaker Outputs 1**. The volume for these speakers is set by the multiroom system, as explained on page 36 of this manual.

Once this setting is made, you may press the **Navigation Button 14** to make any of the other adjustments available on this menu. If no other adjustments are needed, press the **OSD Button 31** to exit the menu system.

Display Brightness

The AVR 7200's **Main Information Display 29** is set at a default brightness level that is sufficient for viewing in a normally lit room. However, in some home theater installations, you may wish to occasionally lower the brightness of the display, or turn it off completely.

To change the display brightness setting for a specific listening session, you will need to make an adjustment in the **ADVANCED SELECT** menu. To start the adjustment, press the **OSD Button 31** to bring the **MASTER MENU** to the screen. Press the **Navigation Button 14**, until the on-screen **ADVANCED** line is highlighted. Press the **Set Button 16** to enter the **ADVANCED SELECT** menu (Figure 13).

To change the brightness setting, at the **ADVANCED SELECT** menu, make certain that the on-screen **ADVANCED** cursor is next to the **VFD** line, and press the **Navigation Button 14** until the desired brightness level is highlighted in the video display. When **FULL** is highlighted, the display is at its normal brightness. When **HALF** is highlighted, the display is at half the normal brightness level. When **OFF** is highlighted, all of the indicators in the **Main Information Display 29** will go dark. However, the green LEDs for the **Input Indicators 28** and the **Surround Mode Indicators 31**, as well as for the **Power Indicator 3**, will always remain lit to remind you that the unit is turned on.

Once the desired brightness level is selected, it will remain in effect until it is changed again or until the unit is turned off.

If you wish to make other adjustments, press the **Navigation Button 14** until the on-screen **ADVANCED** cursor is next to the desired setting or the **BACK TO MASTER MENU** line and press the **Set Button 16**. If you have no other adjustments to make, press the **OSD Button 31** to exit the menu system.

Turn-On Volume Level

As is the case with most audio/video receivers, when the AVR 7200 is turned on, it will always return to the volume setting in effect when the unit was turned off. However, you may prefer to always have the AVR 7200 turn on at a specific setting, regardless of what was last in use when the unit was turned off. To change the default condition so that the same volume level is always used at turn-on, you will need to make an adjustment in the **ADVANCED SELECT** menu. To start the adjustment, press the **OSD Button 31** to bring the **MASTER MENU**

(Figure 1) to the screen. Press the **Navigation Button 14**, until the on-screen **ADVANCED** cursor is next to the **ADVANCED** line. Press the **Set Button 16** to enter the **ADVANCED SELECT** menu (Figure 13).

At the **ADVANCED SELECT** menu make certain that the on-screen **ADVANCED** cursor is next to the **VOLUME DEFAULT** line by pressing the **Navigation Button 14** as needed. Next, press the **Navigation Button 14** so that the word **ON** is highlighted in the video display. Next, press the **Navigation Button 14** once so that the on-screen **ADVANCED** cursor is next to the **DEFAULT VOLUME SET** line. To set the desired turn-on volume, press the **Navigation Button 14** until the desired volume level is shown on the **DEFAULT VOLUME SET** line. This setting may NOT be made with the regular volume controls.

NOTE: Since the setting for the turn-on volume cannot be heard while the setting is being made, you may wish to determine the setting before making the adjustment. To do this, listen to any source and adjust the volume to the desired level using the regular **Volume Controls 27/18/1**. When the desired volume level to be used at turn-on is reached, make a note of the setting as it appears in the lower third of the video screen or in the **Lower Display Line B**. (A typical volume level will appear as a negative number such as -25dB .) When making the adjustment, use the **Navigation Button 14** to enter this setting.

Unlike some of the other adjustments in this menu, the turn-on volume default will remain in effect until it is changed or turned off in this menu, even when the unit is turned off.

If you wish to make other adjustments, press the **Navigation Button 14** until the on-screen **ADVANCED** cursor is next to the desired setting or the **BACK TO MASTER MENU** line and press the **Set Button 16**. If you have no other adjustments to make, press the **OSD Button 31** to exit the menu system.

Semi-OSD Settings

The semi-OSD system places one-line messages at the lower third of the video display screen whenever the Volume, Input Source, Surround mode or tuner frequency of any of the configuration settings are changed. The semi-OSD system is helpful in that it enables you to have feedback on any control changes or remote commands using the video display when it is difficult to view the front panel displays. However, you may occasionally prefer to turn these displays off for a particular listening session. You may also want to

adjust the length of time the displays remain on the screen. Both of those options are possible with the AVR 7200.

To turn off the semi-OSD system, you'll need to make an adjustment in the **ADVANCED SELECT** menu (Figure 13). To start the adjustment, press the **OSD Button 31** to bring the **MASTER MENU** to the screen. Press the **▼ Navigation Button 14**, until the on-screen ► cursor is next to the **ADVANCED** line. Press the **Set Button 16** to enter the **ADVANCED SELECT** menu.

At the **ADVANCED SELECT** menu, make certain that the on-screen ► cursor is next to the **SEMI OSD DEFAULT** line by pressing the **▲/▼ Navigation Button 14** as needed. Next, press the **► Navigation Button 14** so that the word **OFF** is highlighted in the video display.

This setting is temporary and will remain active only until it is changed or until the AVR 7200 is turned off. Once the unit is turned off, the semi-OSD displays will remain activated, even if they were switched off for the previous listening session.

To change the length of time that the semi-OSD displays remain on the screen, go to the **ADVANCED SELECT** menu as outlined earlier, and press the **▲/▼ Navigation Button 14** as needed, until the on-screen ► cursor is next to the **SEMI OSD TIME OUT** line. Next, press the **◀/► Navigation Button 14** until the desired time in seconds is displayed. Unlike most of the other options in this menu, this is a permanent setting change, and the time-out entry will remain in effect until it is changed, even when the unit is turned off.

If you wish to make other adjustments, press the **▲/▼ Navigation Button 14** until the on-screen ► cursor is next to the desired setting or the **BACK TO MASTER MENU** line and press the **Set Button 16**. If you have no other adjustments to make, press the **OSD Button 31** to exit the menu system.

Full-OSD Time-Out Adjustment

The **FULL OSD** menu system is used to simplify the setup and adjustment of the AVR 7200, using a series of on-screen menus. The factory default setting for these menus leaves them on the screen for 20 seconds after a period of inactivity before they disappear from the screen (Time-Out). Time-Out is a safety measure to prevent image retention of the menu text in your monitor or projector, which might happen if it were left on indefinitely. However, some viewers may prefer a slightly longer or shorter period before the Time-Out display.

To change the full-OSD Time-Out, you will need to make an adjustment in the **ADVANCED SELECT** menu (Figure 13). To start the adjustment, press the **OSD Button 31** to bring the **MASTER MENU** to the screen. Press the **▼ Button 14**, until the on-screen ► cursor is next to the **ADVANCED** line. Press the **Set Button 16** to enter the **ADVANCED** menu (Figure 13).

At the **ADVANCED SELECT** menu (Figure 10) make certain that the on-screen ► cursor is next to the **FULL OSD TIME OUT** line by pressing the **▲/▼ Navigation Button 14** as needed. Next, press the **◀/► Navigation Button 14** until the desired time is displayed in seconds. Unlike most of the other options in this menu, this is a permanent setting change, and the Time-Out entry will remain in effect until it is changed, even if the unit is turned off.

If you wish to make other adjustments, press the **▲/▼ Navigation Button 14** until the on-screen ► cursor is next to the desired setting or the **RETURN TO MASTER MENU** line and press the **Set Button 16**. If you have no other adjustments to make, press the **OSD Button 31** to exit the menu system.

MULTIROOM OPERATION

The AVR 7200 is fully equipped to operate as the control center for a complete multiroom system that is capable of sending one source to a second zone in the house while separate source is listened to in the main room. In addition to providing for control over the selection of the remote source and its volume, the AVR 7200 offers a comprehensive range of options for powering the speakers in the second zone.

- Using the line-level **Multiroom Audio Outputs** 26, the selected source may be fed to optional, external power amplifiers that may be matched to the specifics of the installation.
- When the main room system is configured for 5.1 operation, the Surround Back Left/Right amplifier channels may be used to power the remote zone so that no additional amplifiers are required.
- Using built-in A-BUS Ready technology, an optional A-BUS module may be connected to the AVR 7200 via a single Category Five wire, so that remote zone speakers may be powered directly from the module without the need for additional power, IR sensor or volume control wires to be run to the second zone. The use of more than one A-BUS module requires an optional, external powered hub. See your dealer or www.harmankardon.com for more details.

In addition, the AVR 7200 includes a remote IR sensor input so that remote control commands from the Zone II remote included with the unit may be transmitted to the unit, while standard IR input/output jacks allow the remote zone's commands to be sent to compatible IR-controlled source devices.

Installation

Although simple remote room systems may be installed by the average do-it-yourself hobbyist, the complexity of your multizone/multiroom system involves running wires inside of walls where the services of a specially trained installer may be required. Regardless of who does the work, please remember that local building codes may govern in-wall electrical work, including proper specification of any wiring used and the way in which it is connected. You are responsible for making certain that all Multiroom installation work is done properly and in compliance with all applicable codes and regulations.

For standard installations, follow the instructions shown on page 16 for the connection of speaker wire and IR remote wiring to the AVR 7200.

For installations where the Surround Back Left/Right amplifier channels are used to power the remote zone, make certain that the system is configured for that type of operation, as shown on page 34.

For installations where A-BUS modules are used, follow the instructions provided with the A-BUS remote modules or keypads. Additional information will also be made available through the Harman Kardon Web site at www.harmankardon.com.

RS-232 Control

The AVR 7200 is rare among A/V receivers in that it provides the capability for full remote control from compatible computers or specialized remote control systems. RS-232 programming requires specialized programming knowledge and for that reason we recommend that it only be done by qualified installers. For more information on using the RS-232 port for remote control, visit the Harman Kardon Web site at www.harmankardon.com or contact our customer service department.

Multiroom Setup

Once the audio and IR link connections have been made, the AVR 7200 needs to be configured for multiroom operation. Press the **OSD Button** 31 to bring the **MASTER MENU** (Figure 1) to the screen. Press the **Navigation Button** 14, until the on-screen **►** cursor is next to the **MULTI-ROOM** line. Press the **Set Button** 16 to enter the **MULTI-ROOM** menu (Figure 14).

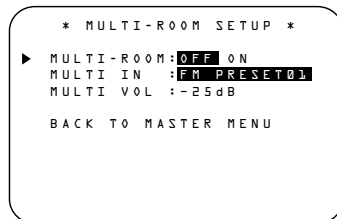


Figure 14

When the **MULTI-ROOM** menu appears, the on-screen **►** cursor will be at the **MULTI-ROOM** line. Since this line is used to turn the system on and off, don't make an adjustment here unless you wish to turn the system on at this time. To turn the system on, press the **Navigation Button** 14 so that **ON** is highlighted. If you do not wish to turn the system on at this time or to proceed to the next step, press the **Navigation Button** 14 once so that the **►** on-screen cursor is next to the **MULTI IN** line.

At the **MULTI IN** line, press the **Navigation Button** 14 until the desired input to the multiroom system appears in the highlighted video. When the selection has been made, press the **Navigation Button** 14 once so that the **►** on-screen cursor is next to the **MULTI VOL** line.

At the **MULTI VOL** line, press the **Navigation Button** 14 until the desired volume level for the multiroom system is entered. **DO NOT** use the regular volume control knobs for this setting. When all settings for the multiroom setup have been made, press the **Navigation Button** 14 until the on-screen **►** cursor is next to the **BACK TO MASTER MENU** line. If you have no other adjustments to make, press the **OSD Button** 31 to exit the menu system.

Multiroom Operation

When operating the AVR 7200 from a remote room location where an IR sensor link has been connected to the AVR 7200's rear-panel **Multiroom IR Input** 7, you may use either the main remote control or the Zone II remote. To turn on the multiroom feed, press any of the **Input Selector** buttons on the Zone II remote **B C D** or the main remote **4 33 42**. Press the **AVR Selector** **5 B** to turn the unit on to the last source, or any of the other **Selector** buttons to turn on to a specific source.

As long as an IR feed to the AVR 7200 has been established from the remote room, using any of the buttons on either remote will control the remote location volume **18 I**, change the tuner frequency **23 E**, change the tuner preset **22 G** or mute the output **32 ●**.

If the **Remote IR Output Jack** 5 on the AVR is connected to an IR Input jack on compatible Harman Kardon audio components such as CD, DVD or cassette players, the transport functions of those machines may also be controlled using the **Transport Controls** **20 F H J** on either remote control.

To turn the system off from the remote room, press the **Power Off Button** **1 A**. Remember that the AVR 7200 may be turned on or off from the remote room, regardless of the system's operation or status in the main room.

NOTE: When the tuner is selected as the source for the remote zone, any change to the frequency or preset will also change the station being listened to in the main room, if the tuner is in use there. Similarly, if someone in the main room changes the station, the change will also impact the remote room.

To activate the feed to the remote room, while you are in the main listening room where the AVR 7200 is located, press the **Multiroom Button** 27 on the remote. Next, press the **Set Button** 16. Press the **Navigation Button** 14 to turn the multiroom feed on or off. When the multiroom system is on, the **Multiroom Indicator** **D** will light in the Main

Information Display **29**, and the Lower Display Line **B** or OSD will display **MULTI ON**. Press the Set Button **16** to enter the setting.

When the multiroom system is turned on, the input selected using the multiroom menu will be fed to the **Multiroom Audio Outputs 26** on the rear panel as well as the **A-BUS Jack 24**. The volume will be as set in the previous selection, although it may also be adjusted using an optional IR sensor and the Zone II remote in the remote location, or the A-BUS keypad, or on the optional audio power amplifier connected to the **Multiroom Audio Outputs 26**.

Once the multiroom system is turned on, it will remain on even if the AVR 7200 is placed in the Standby mode in the main room by pressing the **Power Off Button A** or the **System Power Control 2** on the front panel. To turn off the multiroom system, even when the AVR is in Standby mode in the main listening room, press the **Multiroom Button 27** and then the **Set Button 16**. Press the **▲/▼ Navigation Button 14** so that the **Multiroom Indicator D** in the **Main Information Display 29** goes out, and the **Main Information Display 29** or OSD will display **MULTI OFF**. Press the **Set Button 16** to enter the setting and turn the unit off.

Even when the AVR 7200 is turned off in the main room, the multiroom system may be turned on at any time by pressing the **Multiroom Button 27**, or any of the **Selector Buttons B C D** in the remote room.

CONFIGURING THE REMOTE

The AVR 7200 remote is factory-programmed for all functions needed to operate the unit. In addition, it is also preprogrammed to operate most recent Harman Kardon DVD players and changers, CD players and changers, CD recorders and cassette decks. The codes for other brand devices may be programmed into the AVR 7200 remote using its extensive library of remote codes or a head-to-head learning process for codes not in the internal library.

Thanks to the remote's advanced technology and two-line LCD display, it is no longer necessary to look up cumbersome codes when programming the remote; following the steps outlined below, you simply search for the brand name from the remote's memory. We recommend that you first try the preprogrammed code entry method. If that procedure is not successful, then try the code learning method.

Preprogrammed Code Entry

The easiest way to program the DPR remote for operation with a source device from another brand is to follow these steps:

1. Turn on the power to the device you wish to program into the AVR remote. This is important, as in a later step you will need to see whether the device turns off to determine whether the remote has been programmed for the proper remote codes.
2. Press and hold the **Program Button** **25** for about three seconds while the message shown in Figure 16 appears in the remote's **LCD Information Display** **3**. Release the button when the red light under the **Set Button** **16** appears.



HOLD PROG BUTTON
FOR 3 SECONDS

Figure 15

3. The remote's **MAIN MENU** message (Figure 16), will appear in the LCD display and the **Set Button** **16** will remain illuminated in red. Press the **Set Button** **16** to begin the process of selecting a device and locating the proper remote codes.



MAIN MENU
PROGRAM DEVICE

Figure 16

4. **SELECT A DEVICE** will appear in the LCD display (Figure 17). Press the **▲/▼ Navigation Button** **14** to scroll through the list of device categories and press the **Set Button** **16** when the device you wish to set the codes for appears. For this example, we will select "TV" to enter the codes needed to operate your TV.



SELECT A DEVICE
TV

Figure 17

NOTE: The codes for hard-drive recorder products (PVR) such as TiVo and Replay are programmed by selecting VCR as the device. For satellite-based TiVo products, check under the brand name of the product.

5. At the next menu screen on the remote (Figure 18) press the **Set Button** **16** to enter the Manual mode, which means that you will select the brand name of the device from the list programmed into the remote's memory.



PROGRAM DEVICE
MANUAL

Figure 18

6. The next menu screen on the remote (Figure 19) will show the start of the list of available brands. Press the **▲/▼ Navigation Buttons** **14** until the brand name of the device you are programming into the remote appears on the lower line of the display and then press the **Set Button** **16**.

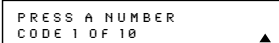


SELECT BRAND
RCA

Figure 19

NOTE: If the brand name for the product you wish to program does not appear in the list, the codes may still be available, as some manufacturers share codes. If the desired brand is not listed, press the **Clear Button** **10** to exit the programming process, and skip to the instructions shown on page 39 for the "Automatic" method of programming the remote. If desired, or if the codes for your brand are not part of the remote's library at all, you may still use the remote to program most infrared-controlled products by "learning" the commands from the product's original remote into the AVR remote. The instructions for Learning Commands are on page 39.

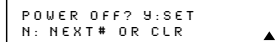
7. The next step is important, as it determines which codes will operate the source device or display. Point the AVR remote at the device being programmed and, following the instructions shown in the remote's **LCD Information Display** **3**, press and release the **Numeric Keys** **11** shown on the menu screen (Figure 20) one at a time, starting with the "1" button. After you press the "1" **Button** **11**, the remote's LCD screen will briefly go blank as the code is being transmitted, but you will see the "transmit" icon **26** in the upper right corner of the display to serve as confirmation that the remote is sending out commands.



PRESS A NUMBER
CODE 1 OF 10

Figure 20

8. After you press and release the number key, watch the device being programmed to see whether it turns off. As shown in the instructions that will appear on the next menu screen (Figure 21), if your device has turned off, press the **Set Button** **16**, and then skip to Step 10. If the unit does *not* turn off, proceed to the next step.



POWER OFF? Y: SET
N: NEXT # OR CLR

Figure 21

9. If the device being programmed into the AVR remote does *not* turn off after you have pressed the "1" key, repeat Steps 7 and 8 by pressing the available numeric keys shown until the device turns off. If the device still does not turn off after all choices have been tried, or if there is only one number key shown as available to try, the code for this specific device is not in the AVR remote library under that brand name. If that is the case, press the **Clear Button** **10** to exit the manual programming mode. Remember that the codes may still be stored in the AVR remote's library under another brand, and you can have the remote control search for them by following the instructions below for automatic programming. You may also manually "learn" the codes for most devices into the AVR remote by following the Learning Commands instructions on page 39.
10. When the device being programmed does turn off after a numeric key has been pressed, you must press the **Set Button** **16** within five seconds to enter the setting into the remote's memory. After you press the Set button, the top line of the LCD display will read **SAVING...** and then the word **SAVED** will flash four times in the center of the bottom line.
11. When the codes are saved the remote will return to normal operation, and whenever you press the **Input Selector Button** **4** that was just programmed, the codes for the new device will be used. If no further buttons are pressed, the remote will revert back to the default setting for AVR commands.

NOTE: Some brands share a common remote control code for "Power Off" for many models. For that reason it is possible that even though the remote appears to be properly programmed, you may find that some buttons do not appear to issue the correct command. If this is the case, repeat the procedure outlined above, but if more than one numeric key selection is suggested in Step 7, try a different number to see whether the remote operates correctly. Although the AVR remote is preprogrammed with an extensive library of codes for many major brands, it is also possible that you may have attempted to program a product that is too new

or too old, and thus not all of its commands will be in the code library. You may fill in the codes for any button that does not operate properly by using the learning technique shown on page 39.

Automatic Code Entry

In addition to manual code selection using the brand name list, it is also possible to automatically search through all the codes that are stored in the AVR remote's library to see whether a device will respond even if it is not listed among the brands that appear when you program the remote manually. To automatically search through the codes that are available for a specific device type (e.g., DVD, VCR), follow these steps:

1. Turn on the power to the device you wish to program into the AVR remote. This is important, as in a later step you will need to see whether the device turns off to determine whether the remote has been programmed for the proper remote codes.
2. Press and hold the **Program Button 25** for about three seconds while the message shown in Figure 16 appears in the remote's **LCD Information Display 3**. Release the button when the red light under the **Set Button 16** appears.
3. The remote's **MAIN MENU** message (Figure 16) will appear in the LCD display and the **Set Button 16** will remain illuminated in red. Press the **Set Button 16** to begin the process of selecting a device and locating the proper remote codes.
4. **SELECT A DEVICE** will appear in the LCD display (Figure 17). Press the **▲/▼ Navigation Buttons 14** to scroll through the list of device categories and press the **Set Button 16** when the device for which you wish to set the codes appears. For this example, we will select "TV" to enter the codes needed to operate your TV.
5. At the next menu screen on the remote (Figure 18), press the **▲ Navigation Button 14** so that the bottom line of the LCD display reads **AUTO** (Figure 22) and then press the **Set Button 16** to enter the Automatic programming mode.



Figure 22

6. As instructed on the next menu screen, press the **▲ Navigation Button 14** to begin the automatic code search process. Your confirmation that the remote is sending out commands is the movement of a square block across the top line of the LCD display screen while the bottom line reads **PLEASE WAIT...** You will also see the transmit icon in the upper right corner of the LCD display's

top line to remind you that the remote is working even though you may not see anything happening to the device being programmed.

7. It will take a few seconds for the remote to send out the first group of commands, after which you will see a new display in the LCD screen, as shown in Figure 23. Following the instructions, if the device being programmed has *not* turned off, press the **▲ Navigation Button 14** again to send another group of codes. If the device being programmed *has* turned off, skip to Step 9.

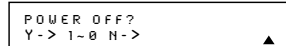


Figure 23

8. By pressing the **▲ Navigation Button 14** again, the remote will send out a new set of commands. When it pauses, follow the instructions shown in Step 7. Depending on how many codes are stored for a specific device type, you may have to repeat this process as many as fifteen times. Remember, if the device turns off, skip to Step 9. When all the codes for the device being programmed have been tried, the instruction shown in Figure 24 will appear. This means that the codes for the product you are trying to program are not in the AVR remote library and you will have to "learn" them into the remote following the instructions shown in the next section. Press the **Set Button 16** as instructed to exit the programming process.



Figure 24

9. If the device being programmed *does* turn off after following the instructions in Step 7, you will need to verify the code set by pressing the **Numeric Keys 11** in sequence, as instructed in Figure 23. Point the remote at the device being programmed, and press the **"1" Button 11** to see whether the device turns back on.
10. After pressing and releasing the **"1" Button 11**, check to see whether the device has turned back on. If it has, skip to Step 12. If it does not turn off, press the **"2" Button 11**, or the next button in the numeric sequence if you are repeating the procedure, as instructed by the LCD screen in Figure 25.
11. When pressing the "1" button does not turn the device being programmed back on, repeat the procedure by trying the remainder of the

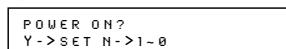


Figure 25

Numeric Keys 11 in sequence, each time pressing and then releasing the button to see whether the new device turns back on. When it does, skip to the next step. However, if you try all 10 numeric keys and find that the unit will not turn on, you won't be able to use this method to program the device. Press the **Clear Button 10** to exit the programming process. You'll need to follow the Learning Commands instructions below to enter the codes for this device into the AVR remote.

12. When pressing one of the numeric keys in Step 10 or 11 causes the device being programmed to turn back on, follow the instructions shown in Figure 23 and press the **Set Button 16** within five seconds of the device turning on. After you press the Set button, the top line of the LCD display will read **SAVING...** and then the word **SAVED** will flash four times in the center of the bottom line.
13. When the codes are saved, the remote will return to normal operation, and whenever you press the **Input Selector Button 4** that was just programmed, the codes for the new device will be used. If no further buttons are pressed, the remote will revert back to the default setting for AVR commands.

Learning Commands

On occasions when the AVR remote does not contain the codes for a particular product's remote in its built-in library, or when you wish to program a missing or special function into one button of a device, the AVR remote's learning capability allows you to do that. To teach commands from one product's remote into the AVR remote, follow these steps:

The process requires that both the device's original remote and the AVR remote be available. Before pressing any buttons on either remote, place them so that the IR transmitter on the remote from the device to be programmed is facing the **Infrared Lens 45** on the AVR remote. The two remotes should be no more than an inch apart, and there should not be any direct sunlight or other bright light source near the remotes.

1. Press and hold the **Program Button 25** for about three seconds while the message shown in Figure 16 appears in the remote's **LCD Information Display 3**. Release the button when the red light under the **Set Button 16** appears.
2. The remote's **MAIN MENU** message (Figure 16), will appear in the LCD display and the **Set Button 16** will remain illuminated in red. Press the **▲ Navigation Button 14** once so that **LEARN** appears on the bottom line of the LCD screen, as shown in Figure 26. Press the **Set Button 16** to

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begin the process of learning commands from another device's remote into the AVR remote.

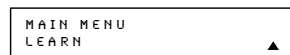


Figure 26

- The **SELECT A DEVICE** message will appear in the LCD display (Figure 17). Press the ▲/▼ **Navigation Buttons 14** to scroll through the list of device categories and press the **Set Button 16** when the device for which you wish to set the codes appears. For this example, we will select "TV" to enter the codes needed to operate your TV.

- The next menu screen (Figure 27) will prompt you to select the button, or "key," on the AVR remote that you wish to program. Press that button on the AVR remote.



Figure 27

- Once you press the button to be programmed on the AVR remote, press and hold the button on the remote control for the device to be programmed within five seconds, as instructed on the next menu screen (Figure 28).



Figure 28

- Continue to hold the button on the original remote until the menu on the AVR remote's LCD screen changes. If the code is successfully learned, you will see the display shown in Figure 29. If you see that menu, proceed to Step 8. If the code is *not* successfully learned, you will see the display shown in Figure 30. If that menu appears, proceed to Steps 7 and 8.



Figure 29



Figure 30

- If the message shown in Figure 30 appears in the display, press the **Set Button 16** to try programming the button again. When the remote prompts you to press and hold the key on the original remote again by showing the display shown in Figure 28, immediately press the button on the source remote again. To avoid another failed attempt, make certain that the windows on the two remotes are facing one another.

- Continue to hold the button on the original remote until the LCD display changes again. If the code was successfully learned, you will see the display shown in Figure 29. In that case, go to Step 9. If

the **LEARN FAILED** display (Figure 30) appears again you may either try to program the key again, or press the ▲ **Navigation Buttons 14** to stop the process. It is possible that some remotes may use code sequences or infrared frequencies that are not compatible with the AVR remote, and those codes cannot be learned. When the display shown in Figure 31 appears, press the **Set Button 16** to exit the Learning system.



Figure 31

- When a code has been learned successfully, you have three options. When the display shown in Figure 29 is on the LCD screen on the AVR remote, you may press the **Set Button 16** to learn additional codes from the buttons on a source remote into the AVR remote. Follow Steps 4 through 6 as often as needed to complete the code-learning process.

- If you wish to change the name that appears in the LCD display when the button that has just had a new code learned is pressed, press the ▲ **Navigation Button 14** so that the display shown in Figure 32 appears in the LCD display. At this point you will be taken to a **RENAME KEY** display. Enter the new name for the key following the instructions shown in the Renaming Individual Keys section of this manual on pages 45 and 46. If you find it more convenient to rename the buttons at a later time, you may do that separately by following the instructions on page 45.

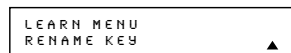


Figure 32

- When you have programmed all keys for the desired device, press the ▲ **Navigation Button 14** twice when the **LEARN MENU** (Figure 29) appears so that you see the display shown in Figure 33. The remote will return to normal operation.



Figure 33

- If you wish to program the codes for another device, repeat the procedure outline above, but select a different device in Step 3.

Changing Devices

In the factory default settings, the AVR remote is programmed so that the commands transmitted correspond to the device selected by pressing one of the **Input Selectors 4**. This is logical, as you want the remote to control the device you have selected. However, in some circumstances you may have config-

ured your system so that the devices connected to the AVR 7200 do not correspond to the default device settings and the legends printed on the remote. For example, if your system has two VCRs you may connect the second VCR to the VID 2 input. There is no problem in doing that, but in normal operation the commands issued after selecting the VID 2 input are for a television, not a VCR.

The AVR remote allows you to correct that situation through the "Changing Devices" process. That enables you to assign the codes from one type of device to a different button. For example, in the steps below, we will explain how to program the VID 2 buttons to provide the commands to operate a VCR. Of course, you may program the remote to have any of the devices take on the code set of any other device, as your system requires. And, with the AVR remote's "Rename" function, you can even change the way the name of the device appears on the remote's LCD display so that you see exactly which commands are being sent.

To program the buttons normally assigned to one device for the commands of another, follow these steps:

- Press and hold the **Program Button 25** for about three seconds while the message shown in Figure 16 appears in the remote's **LCD Information Display 3**. Release the button when the red light under the **Set Button 16** appears.
- The remote's **MAIN MENU** message (Figure 16), will appear in the LCD display and the **Set Button 16** will remain illuminated in red. Press the ▲ **Navigation Button 14** twice so that **CHANGE DEVICE** appears on the bottom line of the LCD screen, as shown in Figure 34. Press the **Set Button 16** to begin the process of reassigning the commands used for a particular device.



Figure 34

- The next menu display is where you select the Input Select, or device, that you wish to change. When the display shown in Figure 35 appears, press the ▲/▼ **Navigation Button 14** to scroll through the list to find the device you wish to use for another function. In this case we will select "TV," and show how to change it to take on the codes for operating a VCR. When that device's name appears, press the **Set Button 16**.

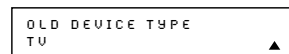


Figure 35

- Once the "old" device type has been selected, you need to tell the remote which set of remote codes to use as a replacement for the device just selected. When the instructions shown in Figure 36 appear, press the **▲/▼ Navigation Button 14** to scroll through the list of device categories to find the name of the device that you wish to use. The old device name will remain on the left side of the LCD screen, while the replacement device list will scroll to its right. For example, press the **▲ Navigation Button 14** until the display screen reads **TU<-VCR** to have the VID 2/TV Button transmit the commands used to control a VCR. Press the **Set Button 16** when the desired device combination appears.



Figure 36

- Once the new device is selected, the remainder of the process will select the codes for the specific brand to be used, and for that reason they are identical to the way a device is programmed using manual entry. Continue the process as outlined in the next few steps, remembering that if the codes for your specific device are not found you may select any brand and then "learn" the proper codes into the AVR remote using the process outlined on page 39. To begin the process, start by selecting the brand of device, as shown in Figure 19. Press the **▲/▼ Navigation Button 14** until the brand name of the device you are programming into the remote appears on the lower line of the display and then press the **Set Button 16**.
- The next step is important, as it determines which codes will operate the source device or display. Point the AVR remote at the device being programmed and, following the instructions shown on the remote's **LCD Information Display 3**, press and release the **Numeric Keys 11** one at a time, starting with the "1" button. After you press the "1" **Button 11** the remote's LCD screen will briefly go blank as the code is being transmitted, but you will see the "transmit" icon in the upper right corner of the display to serve as confirmation that the remote is sending out commands.
- After you press and release the number key, watch the device being programmed to see whether it turns off. As shown in the instructions that will appear on the next menu screen (Figure 21), press the **Set Button 16**, and then skip to Step 9. If the unit does *not* turn off, proceed to the next step.
- If the device being programmed into the AVR remote does *not* turn off after you have pressed

the "1" key, continue Steps 6 and 7 by pressing the available numeric keys shown until the device turns off. If the device still does not turn off after all choices have been tried, the code for this specific device is not in the AVR remote library under that brand name. If that is the case, we suggest that you press the **Set Button 16** to accept the codes from another brand so that the programming is completed, but remember that you will then have to program the remote manually by following the Learning Commands instructions on page 39.

- When the device being programmed does turn off after a numeric key has been pressed, you must press the **Set Button 16** within five seconds to enter the setting into the remote's memory. After you press the Set button, the top line of the LCD display will read **SAVING...** and then the word **SAVED** will flash four times in the center of the bottom line.
- When the codes are saved the remote will return to normal operation, and whenever you press the **Input Selector Button 4** that was just programmed, the display will show the original device type code at the far left side of the display, with the name of the new code set type in brackets. For example, the display will read **TU<-VCR** in our example of replacing the TV codes with those for a VCR.

Macro Programming

Macros enable you to easily repeat frequently used combinations of multiple remote control commands with the touch of a single button. Once a macro is programmed you may send up to 20 commands with one press of the Power On or Macro buttons. This will greatly simplify the process of turning on your system, changing devices or other common tasks. Thanks to the remote's two-line display, it is easier than ever for you to take advantage of the power of macro commands.

Recording a Macro

To record a macro into the remote's memory, follow these steps:

- Press and hold the **Program Button 25** for about three seconds while the message shown in Figure 15 appears in the remote's **LCD Information Display 3**. Release the button when the red light under the **Set Button 16** appears.
- The remote's **MAIN MENU** message (Figure 16), will appear in the LCD display and the **Set Button 16** will remain illuminated in red. Press the **▲ Navigation Button 14** three times so that

MACRO appears on the bottom line of the LCD screen, as shown in Figure 37. Press the **Set Button 16** to enter the main macro menu branch.

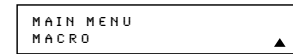


Figure 37

- At the next menu screen (Figure 38) press the **Set Button 16** to begin recording a macro.



Figure 38

- The next display screen (Figure 39) is where you select the button that will be used to recall the macro. The choices are the **Power On Button 2** or one of the discrete **Macro Buttons 28**. Press the **▲/▼ Navigation Button 14** until the name of the button you wish to program the macro into is shown. For this example we will show how to program a series of commands that will automatically be sent out every time the Power button is pressed.



Figure 39

- The next screen that appears (Figure 40) is where you select the device for the first command that will be sent out as part of the macro. Press the **▲/▼ Navigation Button 14** until the name of the device appears on the left side of the lower line in the LCD display. For this example, the first button we want to have the macro "press" is the Power On button, so the AVR device is selected. Press the **Set Button 16** when the desired device name appears to move to the next programming step.



Figure 40

- The next display (Figure 41) is where you begin entering the individual commands for the macro, in the order you wish them to be transmitted. Remember that when you want to change devices, you must first press the **Input Selector 4 5** for that button, and then press the Command or Function key. Since we want to program a series of events that occur each time the Power On button is pressed, press the AVR button. In your specific macro, this is the first command button.



Figure 41

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7. The next display (Figure 42) and the subsequent screens are where the actual macro programming takes place. The words at the left side of the top line of the display show the button that is being programmed (e.g., the **Power On Button 2** or one of the **Macro Buttons 28**) and the indication at the right side of the top line shows the number of macro steps available of 20 possible steps. Following the instructions on the remote's LCD screen, press the first key you wish to be transmitted in the macro. In our example, we first want the AVR 7200 to turn on, so the **Power Button 2** should be pressed.



```
POWER ON 00/20
SELECT KEY PRESS
```

Figure 42

8. Once the first command button for the macro has been pressed, continue to press the buttons you wish to be part of the macro, in the order they will be used. Press each button within five seconds of the last button, remembering to press the **Input Selector 4 5** when you are changing device functions. As the buttons on the remote are pressed, the remote's display screen will show the steps in the macro as they are programmed (Figure 43).



```
LAURJ
LAURJ POWER ON
```

Figure 43

9. For our example, we first want the AVR Power On button pressed, followed by the TV Power On, followed by the Cable Box On, followed by the selection of the Logic 7 mode. To do that, press the buttons in this order:

- Power On **2**
- VID 2/TV **4**
- Power On **2**
- VID 3/Cable **4**
- Power On **2**
- AVR **5**
- Logic 7 **8**

As each button is pressed to enter it into the macro, you will see the button names appear and then scroll up on the LCD display as your confirmation of the key entry (Figure 43).

10. When all commands for the macro have been entered, press the **Set Button 16** to save the macro. The display screen will show the button to which the macro has been programmed and the number of steps used, and the word **SAVED** will blink four times in the lower line of the LCD display. When the display returns to normal, the macro has been entered and the remote is ready for operation.

11. If a macro has been programmed into the **Power On Button 2**, it will play back anytime the Power On button is pressed. As the macro plays, you will see the steps appear in the remote's LCD display. Macros programmed into one of the four discrete Macro buttons may be activated at any time by pressing the appropriate button.

Erasing a Macro

Once a macro has been created and stored in the AVR remote's memory, you have the option of erasing it. You may do this at any time by following these steps:

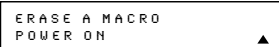
1. Press and hold the **Program Button 25** for about three seconds while the message shown in Figure 15 appears in the remote's **LCD Information Display 3**. Release the button when the red light under the **Set Button 16** appears.
2. The remote's **MAIN MENU** message (Figure 16), will appear in the LCD display and the **Set Button 16** will remain illuminated in red. Press the **▲ Navigation Button 14** three times so that **MACRO** appears on the bottom line of the LCD screen, as shown in Figure 37. Press the **Set Button 16** to enter the main macro menu branch.
3. At the next menu screen (Figure 44), press the **▲/▼ Navigation Button 14** until the bottom line in the remote's LCD display reads **ERASE A MACRO**. Press the **Set Button 16** to begin the process of erasing a macro.



```
MACRO
ERASE A MACRO
```

Figure 44

4. The next display screen (Figure 45) is where you select which macro will be erased. Press the **▲/▼ Navigation Buttons 14** until the number of the macro you wish to erase appears. For this example we will erase the Power On macro created in the previous section. When the name of the macro to be erased appears, press the **Set Button 16**.



```
ERASE A MACRO
POWER ON
```

Figure 45

5. The word **ERASED** will flash four times in the bottom line of the remote's LCD display, and then the display will return to its normal condition. When that happens the macro is erased and the remote is returned to normal operation.

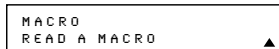
Read a Macro

To check the commands stored in the remote's memory for one of the buttons, follow these steps:

1. Press and hold the **Program Button 25** for about three seconds while the message shown in Figure 15 appears in the remote's **LCD Information Display 3**. Release the button when the red light under the **Set Button 16** appears.

2. The remote's **MAIN MENU** message (Figure 16), will appear in the LCD display and the **Set Button 16** will remain illuminated in red. Press the **▲ Navigation Button 14** three times so that **MACRO** appears on the bottom line of the LCD screen, as shown in Figure 37. Press the **Set Button 16** to enter the main macro menu branch.

3. At the next menu screen (Figure 46), press the **▲/▼ Navigation Button 14** until the bottom line in the remote's LCD display shows **READ A MACRO**. Press the **Set Button 16** to begin the process of erasing a macro.



```
MACRO
READ A MACRO
```

Figure 46

4. The next display screen (Figure 47) is where you select the macro to be read. Press the **▲/▼ Navigation Button 14** until the name of the macro you wish to read appears. For this example, we will read back the Power On macro created in a previous section. When the name of the macro to be erased appears, press the **Set Button 16**.



```
READ A MACRO
POWER ON
```

Figure 47

5. As soon as the Set button is pressed, the first two steps in the macro will be appear in the remote's LCD screen. You may then use the **▲/▼ Navigation Button 14** to step up or down through the list of commands stored as the macro. As you read the display, you will see **Device Selector Buttons 4 5** appear in brackets, (e.g., **[LAURJ]**). When the step in the macro is a function, navigation or any other button, it will appear next to the bracketed read-out of the underlying device (e.g., **[LAURJ] POWER ON**).

6. When you are finished reviewing the macro's contents, press the **Set Button 16** to return the remote to normal operation.

Punch-Through Configuration

Punch-through is a capability of the remote that allows the Volume controls, Channel Up/Down buttons or Transport keys (Play, Stop, Record, Fast Forward and Reverse, and Skip Up/Down) to link to a different device. For example, if your TV, cable box or satellite receiver is connected through the AVR 7200, you will

most likely want to use the AVR 7200's volume control commands even when the remote has been set to issue all other commands for the video device. "Punch-through" enables you to easily program the remote to do this.

Volume Punch-Through

Follow these steps to enable the Volume Up/Down and Mute controls from one device to be used when the remote is otherwise programmed for a different device.

NOTE FOR VOLUME PUNCH-THROUGH: The remote's default settings are for the AVR 7200's volume controls, to be used when any input or device is selected, with the exception of the VID 2/TV button. There is no need to program the remote for volume punch-through for the AVR 7200's controls with other sources, such as DVD. To have the AVR 7200's volume commands used when the TV device is selected, follow these steps:

1. Press and hold the **Program Button 25** for about three seconds while the message shown in Figure 15 appears in the remote's **LCD Information Display 3**. Release the button when the red light under the **Set Button 16** appears.
2. The remote's **MAIN MENU** message (Figure 16), will appear in the LCD display and the **Set Button 16** will remain illuminated in red. Press the **▲/▼ Navigation Button 14** until **PUNCH-THROUGH** appears on the bottom line of the LCD screen, as shown in Figure 48. Press the **Set Button 16** to enter the main punch-through menu branch.

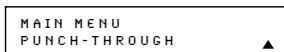


Figure 48

3. At the next menu screen (Figure 49) press the **Set Button 16** to begin programming the remote for Volume punch-through.

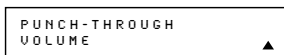


Figure 49

4. The next display screen (Figure 50) is where you select the device that will receive the punch-through commands. In our example, that is the VID 2/TV button, as that is where we want the AVR 7200's volume controls to be active. Press the **▲/▼ Navigation Button 14** until the name of the base device appears and then press the **Set Button 16**.

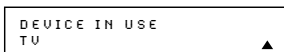


Figure 50

5. At the next display screen (Figure 51), you will select the device whose Volume Up/Down and Mute commands will be used. Press the **▲/▼ Navigation Button 14** until the desired device's name appears to the right of the device in use. In our example, that is the AVR 7200 (indicated by **AVR**). When the desired combination of devices appears, press the **Set Button 16**.



Figure 51

6. When the Set button is pressed, the display will change to show you that the new combination of control commands is being saved to the unit's memory, as shown in Figure 52. The word **SAVED** will flash four times and then the remote will return to normal operation.

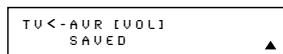


Figure 52

7. Once the punch-through is programmed, the Volume Up/Down and Mute buttons of the second device named will be used when those buttons **18 32** are pressed while the master device is in use.

Returning the Volume Control Settings to Default Operation:

If you wish to remove the Volume punch-through so that the commands for Volume and Mute are returned to the factory default setting, follow the steps shown above, except that in Steps 4 and 5, select the same device for both the **DEVICE IN USE** on the left side of the bottom line and the **PUNCH-THROUGH** device. In the example used, the display to return the remote to default settings will appear as shown in Figure 53.



Figure 53

Channel Punch-Through

Channel punch-through allows the Channel Up/Down buttons to send commands to a different device than the one that has been selected for other commands. For example, you may wish to use a cable box or satellite receiver as the source for a VCR, so you would want the **Channel Up/Down Selectors 34** to transmit commands to the cable box even though the other button commands are programmed to operate the VCR.

To program the remote for Channel punch-through, follow these steps. This example will show how to program channel punch-through so that the commands programmed for Channel Up/Down for the VID 3/

Cable device will be transmitted when the VID 1/VCR device has been selected as the current device.

1. Press and hold the **Program Button 25** for about three seconds while the message shown in Figure 15 appears in the remote's **LCD Information Display 3**. Release the button when the red light under the **Set Button 16** appears.
2. The remote's **MAIN MENU** message (Figure 16), will appear in the LCD display and the **Set Button 16** will remain illuminated in red. Press the **▲/▼ Navigation Button 14** until **PUNCH-THROUGH** appears on the bottom line of the LCD screen, as shown in Figure 48. Press the **Set Button 16** to enter the main punch-through menu branch.
3. At the next menu screen, press the **▲/▼ Navigation Button 14** until **CHANNEL** appears on the bottom line of the LCD screen, as shown in Figure 54. Press the **Set Button 16** to begin programming the remote for Channel punch-through.



Figure 54

4. The next display screen (Figure 55) is where you select the device that will receive the punch-through commands. In our example, that is the VID 2/TV button, as that is where we want the cable box's channel controls to be active. Press the **▲/▼ Navigation Button 14** until the name of the base device appears and then press the **Set Button 16**.

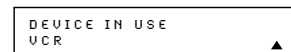


Figure 55

5. At the next display screen (Figure 56), you will select the device whose Channel Up/Down commands will be used. Press the **▲/▼ Navigation Button 14** until the desired device name appears to the right of the device in use. In our example, that is the cable box. When the desired combination of devices appears, press the **Set Button 16**.

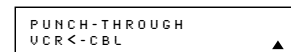


Figure 56

6. When the Set button is pressed, the display will change to show you that the new combination of control commands is being saved to the unit's memory, as shown in Figure 57. The word **SAVED** will flash four times and then the remote will return to normal operation.

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Figure 57

- Once the punch-through is programmed, the **Channel Up/Down Buttons** of the second device named will be used when those buttons (34) are pressed while the master device is in use.

Returning the Channel Control Settings to Default Operation:

If you wish to remove the Channel Punch-Through so that the commands for Channel Up/Down are returned to the factory default setting, follow the steps shown above, except that in Steps 4 and 5, select the same device for both the **DEVICE IN USE** on the left side of the bottom line and the **PUNCH-THROUGH** device. In the example used, the display to return the remote to default settings will appear as shown in Figure 58.

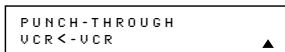


Figure 58

Transport Punch-Through

The Transport Controls **Play** (17), **Stop** (20), **Fast Forward/Reverse** (19), **Pause** (20), **Record** (20) and **Skip Up/Down** (21) are set at the factory to operate your DVD player, or the controls of a specific device such as a VCR or CD player when they are selected. However, by using the Transport Punch-Through feature you may program these controls to transmit the commands for a different device. For example, you may wish to operate the transport of a second VCR connected to the VID 2/TV input, as shown in the following example.

- Press and hold the **Program Button** (25) for about three seconds while the message shown in Figure 15 appears in the remote's **LCD Information Display** (3). Release the button when the red light under the **Set Button** (16) appears.
- The remote's **MAIN MENU** message (Figure 16), will appear in the LCD display and the **Set Button** (16) will remain illuminated in red. Press the **▲/▼ Navigation Button** (14) until **PUNCH-THROUGH** appears on the bottom line of the LCD screen, as shown in Figure 48. Press the **Set Button** (16) to enter the main punch-through menu branch.
- At the next menu screen, press the **▲/▼ Navigation Button** (14) until **TRANSPORT** appears on the bottom line of the LCD screen, as shown in Figure 59. Press the **Set Button** (16) to begin programming the remote for transport punch-through.

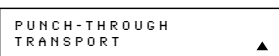


Figure 59

- The next display screen (Figure 60) is where you select the device that will receive the punch-through commands. In our example, that is the TV button, as that is where we want the VCR's transport controls to be active. Press the **▲/▼ Navigation Button** (14) until the name of the base device appears and then press the **Set Button** (16).

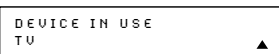


Figure 60

- At the next display screen (Figure 61), you will select the device whose transport commands will be used. Press the **▲/▼ Navigation Button** (14) until the desired device name appears to the right of the device in use. In our example, that is the VCR. When the desired combination of devices appears, press the **Set Button** (16).



Figure 61

- When the Set button is pressed, the display will change to show you that the new combination of control commands is being saved to the unit's memory, as shown in Figure 62. The word **SAVED** will flash four times and then the remote will return to normal operation.

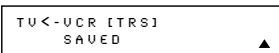


Figure 62

- Once the punch-through is programmed, the transport buttons of the second device named will be used when those buttons are pressed while the master device is in use.

Returning the Transport Control Settings to Default Operation:

If you wish to remove the Transport Punch-Through so that the transport commands are returned to the factory default setting, follow the steps shown above, except that in Steps 4 and 5, select the same device for both the **DEVICE IN USE** on the left side of the bottom line and the **PUNCH-THROUGH** device. In the example used, the display to return the remote to default settings will appear as shown in Figure 63.

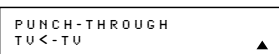


Figure 63

EzSet Configuration

Harman Kardon's patented EzSet feature makes it easier than ever to calibrate the output levels on your new receiver for maximum playback accuracy. In addition to automatically setting the levels, the AVR remote's LCD display allows the unit to be used as a direct read-out SPL meter. Complete instructions for using the EzSet features of the AVR remote are found on pages 24 through 26 of this owner's manual.

In most cases you will find it easier to access the EzSet capabilities directly by pressing the **SPL Select Button** (43) and following the menu prompts as detailed on pages 24 – 25. However, there is one function of the remote that is only available through the remote's menu system being described in this section.

To avoid having the calibration settings created with EzSet changed accidentally, the remote allows you to disable the **SPL Select Button** (43) on the remote. To de-activate the button, follow these steps:

- Press and hold the **Program Button** (25) for about three seconds while the message shown in Figure 15 appears in the remote's **LCD Information Display** (3). Release the button when the red light under the **Set Button** (16) appears.
- The remote's **MAIN MENU** message (Figure 16), will appear in the LCD display and the **Set Button** (16) will remain illuminated in red. Press the **▲/▼ Navigation Button** (14) until **SET SPKR LEVELS** appears on the bottom line of the LCD screen, as shown in Figure 64. Press the **Set Button** (16) to enter the main EzSet menu branch.
- At the next menu screen (Figure 65) press the **▲/▼ Navigation Buttons** (14) once so that **EZSET DISABLE** appears in the lower line of the LCD display.



Figure 64



Figure 65

- Within five seconds, press the **Set Button** (16) to disable the **SPL Select Button** (43). Once the **Set Button** (16) is pressed the word **EXITING** will flash four times in the lower line of the LCD display and then it will return to normal operation.

Once these steps are completed, when the **SPL Select Button** (44) is pressed the remote will show **EZSET DISABLE** and it will not be activated.

To restore the EzSet feature to normal operation, repeat the procedure outlined above, except that in Step 3 you should press the ▲/▼ **Navigation Button 14** so that **EZSET ENABLE** appears in the lower line of the LCD display. When that display appears, press the **Set Button 16** and the EzSet feature will be reactivated. You may then press the **Clear Button 10** to exit the remote's menu system and return to normal operation or press the **Set Button 16** again to immediately use the EzSet feature to calibrate the system as shown on pages 24 – 25.

Renaming

While the names given to the buttons and inputs on the remote represent recognizable categories of audio/video products, system operation may be easier if the displays shown in the remote's LCD screen are customized to reflect the specific characteristics of a playback source's brand name or the new function given to a specific button when one remote's controls are programmed into the AVR remote. The AVR remote allows you to change the name of either a master device or any button on the remote using the following steps.

Renaming a Device

To rename a specific device/input source button, follow these steps. For this example, we will show you how to rename the Device/Input Selector normally shown as "TV" to "HDTV TUNER":

1. Press and hold the **Program Button 25** for about three seconds while the message shown in Figure 15 appears in the remote's **LCD Information Display 3**. Release the button when the red light under the **Set Button 16** appears.
2. The remote's **MAIN MENU** message (Figure 16), will appear in the LCD display and the **Set Button 16** will remain illuminated in red. Press the ▲/▼ **Navigation Button 14** until **RENAME** appears on the bottom line of the LCD screen, as shown in Figure 66.

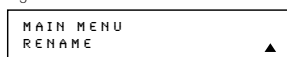


Figure 66

3. At the next menu screen press the ▲/▼ **Navigation Button 14** until **RENAME DEVICE** appears on the bottom line of the LCD screen, as shown in Figure 67. Press the **Set Button 16** to begin renaming a device.

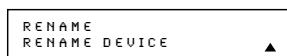


Figure 67

4. The next display screen (Figure 68) is where you select the device that will be renamed. In our example, that is the TV button. Press the ▲/▼

Navigation Button 14 until the name of the base device appears and then press the **Set Button 16**.

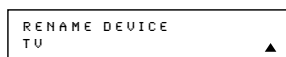


Figure 68

5. At the next menu screen you will see the device name on the bottom line of the display with a blinking cursor box to the right of the device name. Press the ◀ **Navigation Button 14** to return the blinking cursor to the far left side of the display line. You may then retitle the device name as shown in the next step.

6. To enter the new name, press the **Numeric Keys 11**. The letters above the numbered buttons indicate which letter or symbol will appear when the button is pressed during the renaming process. The first press of the button will enter the first letter shown, subsequent presses of the same button will change the display to the other letters above that numbered key. For example, since the first letter we need to rename the input to HDTV Tuner is an "H," you would locate the "H" above the "4" button, and press the button twice. The first press shows a "G," the second press changes it to an "H." Consult the table at the end of this section to see which characters pressing a particular button generates.

7. After you enter the first letter of the new device name, there are three options for entering the next character:

a. To enter a letter that requires a different numeric key to be pressed, simply press that button. The cursor will automatically move to the next position and the first letter accessed by the new button will appear. Following our example, the next letter needed is a "D," so you would press the "3" button once.

b. To enter a letter that uses the same numeric key, you must first press the ▶ **Navigation Button 14** to move the blinking cursor block to the next position. Then press the **Numeric Key 11** as required to enter the desired letter.

c. To enter a blank space, press the ▶ **Navigation Button 14** twice. The first press will move the cursor to the right, and the second press will move the cursor one more space to the right, leaving a blank space between the last letter and the next one.

8. Repeat Step 7 as needed to enter all the needed letters, numbers, characters and spaces.

9. When the text entry is complete, press the **Set Button 16**. The LCD display will blink **DEVICE RENAMED** three times and then return to normal operation.

Once a device is renamed you will see the new name on the top line of the remote's LCD display whenever the **Input//Device Selector 4** is pressed, or when any other command/function button on the remote is pressed after the main Device Selector is pressed. Note that renaming a device in the remote will *not* change the name of the input used by the on-screen menu system of the AVR 7200.

NOTES ON RENAMING DEVICES:

- To move the cursor to the right or left of the display during the renaming process, press the ◀/▶ **Navigation Buttons 14** as required.

- The table below shows the letters, numbers and characters that may be accessed by pressing the Numeric Keys:

Key	Characters	Key	Characters
1	[.,/,1	6	M,N,O,6
2	A,B,C,2	7	P,Q,R,S,7
3	D,E,F,3	8	T,U,V,8
4	G,H,I,4	9	W,X,Y,Z,9
5	J,K,L,5	0	-. ,# ,0

- Renaming a device changes the name of the device only, not any of the individual key functions within that device memory. To change the name of an individual device, follow the instructions in the next section.

Renaming Individual Keys

Thanks to the programming flexibility of the AVR remote, an individual button on the remote may be assigned a feature or function that is different from the name that appears as the factory default when the button is pressed. However, with the Rename Key function it is possible to rename almost any button on the remote so that when the button is pressed you will see a more descriptive or appropriate name displayed.

To rename a specific button on the remote, follow these steps. For this example, we will show you how to rename the **DSP Surround Mode Selector 7**, which is normally not used when DVD is selected, so that it reads **ZOOM** in the remote's display.

1. Press and hold the **Program Button 25** for about three seconds while the message shown in Figure 15 appears in the remote's **LCD Information Display 3**. Release the button when the red light under the **Set Button 16** appears.
2. The remote's **MAIN MENU** message (Figure 16), will appear in the LCD display and the **Set Button 16** will remain illuminated in red. Press the ▲/▼

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Navigation Button **14** until **RENAME** appears on the bottom line of the LCD screen, as shown in Figure 66.

- At the next menu screen press the ▲/▼ Navigation Button **14** until **RENAME KEY** appears on the bottom line of the LCD screen, as shown in Figure 69. Press the Set Button **16** to continue.

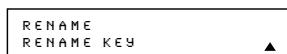


Figure 69

- The next display screen (Figure 70) is where you select the device within which the key to be renamed exists. Press the ▲/▼ Navigation Button **14** until the name of the base device appears. In our example, since we want to rename a button within the DVD device memory, **DVD** should appear in the lower line of the LCD. When the desired device name appears, press the Set Button **16**.



Figure 70

- At the next menu screen you will select the first button within the device to be renamed, as instructed in the display shown in Figure 71. Select the button by simply pressing it on the remote.



Figure 71

- Depending on whether or not the button pressed already has a named function within the device selected, one of two things will happen.
 - If the button to be renamed already has a pre-programmed, or previously renamed title in the remote's memory, you will see that name on the top line of the LCD display, and a blinking block cursor will appear on the far left side of the bottom line of the display, as shown in Figure 72.
 - If the button to be renamed does not have a function in the device selected, the top line of the LCD screen will be blank, and a blinking block cursor will appear on the far left side of the bottom line of the display, as shown in Figure 73.

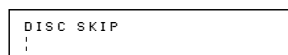


Figure 72

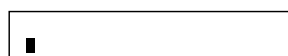


Figure 73

- To enter the new name for the key, press the Numeric Keys **11**. The letters above the numbered buttons indicate which letters or symbols will appear when the button is pressed during the renaming process. The first press of the button will enter the first character shown, subsequent presses of the same button will change the display to the other letters above that numbered key. For example, since the first letter we need to rename the Tone button to Zoom is a "Z," so you would locate the "Z" above the "9" button, and press the button four times. The first press shows a "W," the subsequent presses step through the other letters available until the "Z" appears. Consult the table on this page to see which characters are available by pressing a particular button.

- After you enter the first letter of the new device name, there are three options for entering the next character:

- To enter a letter that requires a different numeric key to be pressed, simply press that button. The cursor will automatically move to the next position and the first letter accessed by the new button will appear. Following our example, the next letter needed is an "O," so you would press the "6" button once.

- To enter a letter that uses the same numeric key, you must first press the ► Navigation Button **14** to move the blinking cursor block to the next position. Then press the Numeric Key **11** as required to enter the desired letter. This is the way you would enter the second "O" in the word ZOOM, and again for the letter "M."

- To enter a blank space, press the ► Navigation Button **14** twice. The first press will move the cursor to the right, and the second press will move the cursor one more space to the right, leaving a blank space between the last letter and the next one.

- Repeat Steps 7 and 8 as needed to complete entering the needed letters, numbers, characters and spaces.

- When the text entry is complete, press the Set Button **16**. The new name will be entered into the remote's memory, replacing the default name.

- At this point you have two options:

- If you wish to program an additional key within the same device, press the Set Button **16** as instructed by the bottom line of the LCD display reading **ANOTHER KEY**. The remote will return to the **SELECT A KEY** menu option as

shown in Step 6. Repeat the instructions in Steps 6 through 11 to rename the next key.

- If you have no additional keys to rename, press the ▲ Navigation Button **14** once so that the menu screen displays **EXIT** on the bottom line of the display. Press the Set Button **16** to return the remote to normal operation.

NOTES ON RENAMING KEYS:

- Renaming a key does not change its function. You may change the function of an individual key by learning a new code into the remote. See page 39 for more information.
- When a key is renamed it will only apply to the specific device selected in Step 4. The same key may be renamed as needed for each individual device with which it is used.

Resetting the Remote

Depending on the way in which the remote has been programmed, there may be a situation where you wish to totally erase all changes that have been made to the remote and return it to the factory defaults. You may do that by following the steps shown below, but remember that once the remote is reset, ALL changes that have been made, including programming for use with other devices, learned keys, macros, punch-through settings and key names, will be erased and any settings you had previously made will have to be reentered.

To erase all settings and reset the remote to the original factory default settings and displays, follow these steps:

- Press and hold the Program Button **25** for about three seconds while the message shown in Figure 15 appears in the remote's LCD Information Display **3**. Release the button when the red light under the Set Button **16** appears.
- The remote's **MAIN MENU** message (Figure 16), will appear in the LCD display and the Set Button **16** will remain illuminated in red. Press the ▲/▼ Navigation Button **14** until **USER RESET** appears on the bottom line of the LCD screen, as shown in Figure 74.



Figure 74

- Press the Set Button **16** to reset the remote. Note that once the Set Button is pressed the process may not be stopped. While the remote's memory is being cleared a **RESETTING...** message will appear in the upper line of the remote's LCD screen as shown in Figure 75. It may take a

few minutes for the reset process to take place, and the length of time will vary depending on how much customization and programming has taken place. Please be patient: as long as the message appears in the display the remote is functioning properly.



Figure 75

- When the remote has been totally reset and returned to the factory default condition, a **REMOTE RESET COMPLETE** message will appear (Figure 76) briefly, and then the remote will return to normal operation.



Figure 76

Additional Notes on Configuring and Operating the Remote:

- When the remote is being programmed, it will automatically time-out if no button is pressed within a thirty-second period. The message shown in Figure 78 will appear briefly, and the remote will then exit the feature being programmed and any data entered will be lost.



Figure 77

- The programming or configuration process may also be stopped at any time by pressing the **Clear Button 10**. The message shown in Figure 77 will appear, the data entered in the current process will be lost and the remote will return to normal operation. Any process that was underway when the button will be pressed must be restarted.
- Extensive use of the programming, learning and configuration functions of the remote may consume significantly more battery power than normal remote operation. While the batteries should last for four to six months in normal operation, you may find that they need to be changed sooner after the remote is programmed for the first time.
- When the batteries approach a level below which the remote will not function, the remote's LCD screen will display a **LOW BATTERY** warning as shown in Figure 78. We strongly recommend replacing the batteries as soon as this message appears to avoid the loss of programming and configuration settings. These settings are *not* lost when the batteries are changed quickly.

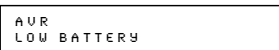



Figure 78

- The remote has a built-in backlight that may be activated by pressing the **Light Button 26**. This button is made from a special "glow" material so that it is easier to find in dark rooms. This glow feature does not consume any electricity, but the glow will fade when the remote is kept in a dark location for an extended period of time. The "glow" feature may be restored by placing the remote in normal room light for a few hours.
- The remote's backlight will remain lit for approximately five seconds after the **Light Button 26** is pressed, and it will stay lit for another five seconds if any key is pressed while the backlight is on. You may keep the backlight lit by holding the Light Button, but extensive use of the backlight will reduce battery life.
- The LCD display will remain on for ten seconds after a key is pressed and then turn off to conserve battery life.
- When any button is held for more than thirty seconds the LCD will turn off and the remote will stop transmitting the codes to conserve battery life.

TROUBLESHOOTING GUIDE

SYMPTOM	CAUSE	SOLUTION
Unit does not function when Main Power Switch is pushed	<ul style="list-style-type: none"> No AC Power 	<ul style="list-style-type: none"> Make certain AC power cord is plugged into a live outlet Check to see whether outlet is switch-controlled
Display lights, but no sound or picture	<ul style="list-style-type: none"> Intermittent input connections Mute is on Volume control is down 	<ul style="list-style-type: none"> Make certain that all input and speaker connections are secure Press Mute Button  Turn up volume control
Unit turns on, but front panel display does not light up	<ul style="list-style-type: none"> Display brightness is turned off 	<ul style="list-style-type: none"> Follow the instructions in the Display Brightness section on page 34 so that the display is set to VFD FULL
No sound from any speaker; light around power switch is red	<ul style="list-style-type: none"> Amplifier is in protection mode due to possible short Amplifier is in protection mode due to internal problems 	<ul style="list-style-type: none"> Check speaker wire connections for shorts at receiver and speaker ends Contact your local Harman Kardon service center
No sound from surround or center speakers	<ul style="list-style-type: none"> Incorrect surround mode Input is monaural Incorrect configuration Stereo or Mono program material 	<ul style="list-style-type: none"> Select a mode other than Stereo There is no surround information from mono sources Check speaker mode configuration The surround decoder may not create center- or rear-channel information from nonencoded programs
Unit does not respond to remote commands	<ul style="list-style-type: none"> Weak batteries in remote Wrong device selected Remote sensor is obscured 	<ul style="list-style-type: none"> Change remote batteries Press the AVR selector Make certain front panel sensor is visible to remote or connect remote sensor
Intermittent buzzing in tuner	<ul style="list-style-type: none"> Local interference 	<ul style="list-style-type: none"> Move unit or antenna away from computers, fluorescent lights, motors or other electrical appliances
Letters flash in the channel indicator display and digital audio stops	<ul style="list-style-type: none"> Digital audio feed paused 	<ul style="list-style-type: none"> Resume play for DVD Check that Digital Input is selected

Processor Reset

In the rare case where the unit's operation or the displays seem abnormal, the cause may involve the erratic operation of the system's memory or microprocessor.

To correct this problem, first unplug the unit from the AC wall outlet and wait at least three minutes. After the pause, reconnect the AC power cord and check the unit's operation. If the system still malfunctions, a system reset may clear the problem.

To clear the AVR 7200's entire system memory including tuner presets, output level settings, delay times and speaker configuration data, first put the unit in Standby by pressing the **System Power Control**

Button 2. Next, press and hold the **Surround Mode Group Selector 7** and the **Tuner Mode Selector 16** buttons for three seconds.

The unit will turn on automatically and display the **RESET** message in the **Main Information Display 29**.

NOTE: Resetting the processor will erase any configuration settings you have made for speakers, output levels, surround modes, digital input assignments as well as the tuner presets. After a reset the unit will be returned to the factory presets, and all settings for these items must be reentered.

If the system is still operating incorrectly, there may have been an electronic discharge or severe AC line interference that has corrupted the memory or microprocessor.

If these steps do not solve the problem, consult an authorized Harman Kardon service center.

AVR 7200 TECHNICAL SPECIFICATIONS

Audio Section

Stereo Mode	
Continuous Average Power (FTC)	
115 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:	
100 Watts per channel	
@ <0.07% THD, 20Hz–20kHz into 8 ohms	
Center channel:	
100 Watts @ <0.07% THD, 20Hz–20kHz into 8 ohms	
Surround (L & R Side, L & R back) channels:	
100 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)	95dB
Surround System Adjacent Channel Separation	
Pro Logic I/II	40dB
Dolby Digital (AC-3)	55dB
DTS	55dB
Frequency Response	
@ 1W (+0dB, –3dB)	10Hz – 100kHz
High Instantaneous	
Current Capability (HCC)	±75 Amps
Transient Intermodulation	
Distortion (TIM)	Unmeasurable
Slew Rate	40V/μsec

FM Tuner Section

Frequency Range	87.5–108.0MHz
Usable Sensitivity	IHF 1.3μV/13.2dB
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	520–1710kHz
Signal-to-Noise Ratio	45dB
Usable Sensitivity	Loop 500μV
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–50MHz (–3dB)

General

Power Requirement	AC 120V/60Hz
Power Consumption	112W idle, 1210W maximum (7 channels driven)
Dimensions	Width 17.3 inches (440mm) Height 7.6 inches (192mm) Depth 20.5 inches (520mm)
Weight	61 lb (29.9kg)

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

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