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You can read the recommendations in the user guide, the technical guide or the installation guide for HARMAN KARDON AVR 660. You'll find the answers to all your questions on the HARMAN KARDON AVR 660 in the user manual (information, specifications, safety advice, size, accessories, etc.). Detailed instructions for use are in the User's Guide.

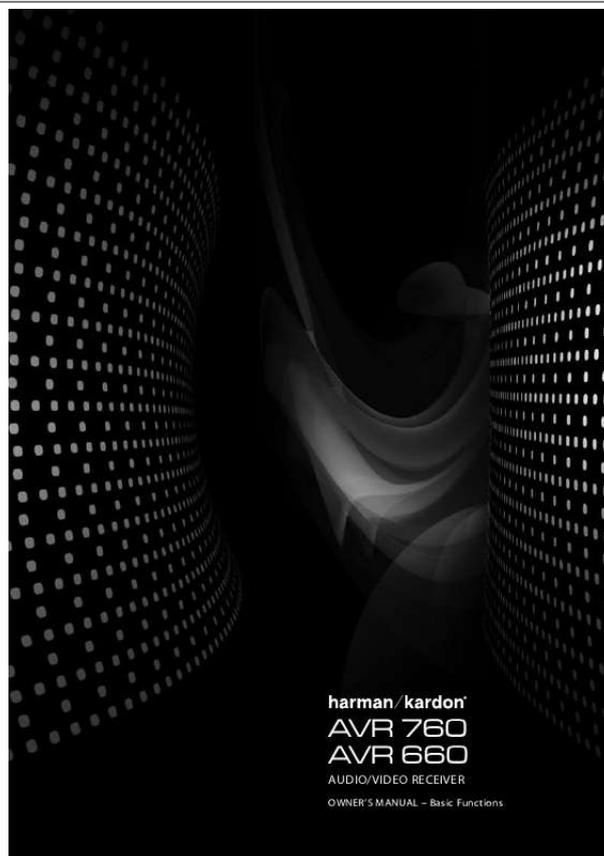
User manual HARMAN KARDON AVR 660

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Operating instructions HARMAN KARDON AVR 660

Instructions for use HARMAN KARDON AVR 660

Instruction manual HARMAN KARDON AVR 660



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Manual abstract:

2. Keep these instructions. 3. Heed all warnings. 4. Follow all instructions. 5. Do not use this apparatus near water. 6. Clean only with a dry cloth.

7. Do not block any ventilation openings. Install in accordance with the manufacturer's instructions. 8. @ @9.

@ @A polarized plug has two blades with one wider than the other. A grounding-type plug has two blades and a third grounding prong. The wide blade or the third prong is provided for your safety. @ @10. Protect the power cord from being walked on or pinched, particularly at plugs, convenience receptacles and the point where they exit from the apparatus.

11. Only use attachments/accessories specified by the manufacturer. 12. Use only with the cart, stand, tripod, bracket or table specified by the manufacturer or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over. 13. Unplug this apparatus during lightning storms or when unused for long periods of time. 14. Refer all servicing to qualified service personnel. @ @15.

@ @16. @ @17. @ @18. Do not expose batteries to excessive heat such as sunshine, fire or the like. 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 product. WARNING: To reduce the risk of fire or electric shock, do not expose this apparatus to rain or moisture. Important Safety Information Verify Line Voltage Before use Your AVR 760/AVR 660 has been designed for use with 230-240 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 supplied with your unit. We do not recommend that extension cords be used with this product. As with all electrical devices, do not run power cords under rugs or carpets or place heavy objects on them. Damaged power cords should be replaced immediately by an authorized service center with a cord meeting factory specifications. Handle the ac power cord Gently When disconnecting the power cord from an AC outlet, always pull the plug; never pull the cord.

If you do not intend to use the unit for any considerable length of time, disconnect the plug from the AC outlet. Do not open the cabinet There are no user-serviceable components inside this product. Opening the cabinet may present a shock hazard, and any modification to the product will void your warranty. If water or any metal object such as a paper clip, wire or staple accidentally falls inside the unit, disconnect it from the AC power source immediately, and consult an authorized service center. 2 SAFETY INFORMATION 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 760/AVR 660 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.

Some surface finishes may be particularly sensitive to absorbing such marks, due to a variety of factors beyond our control, including the nature of the finish, cleaning materials used, and normal heat and vibration caused by the use of the product, or other factors. We recommend that caution be exercised in choosing an installation location for the component and in normal maintenance practices, as your warranty will not cover this type of damage to furniture. 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. 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. It is important that you remove the protective plastic film from the frontpanel lens. Leaving the film in place will affect the performance of your remote control. ENGLISH cleaning When the unit gets dirty, wipe it with a clean, soft, dry cloth. If necessary, and only after unplugging the AC power cord, wipe it with a soft cloth dampened with mild soapy water, then a fresh cloth with clean water.

Wipe it dry immediately with a dry cloth. NEVER use benzene, aerosol cleaners, thinner, alcohol or any other volatile cleaning agent. Do not use abrasive cleaners, as they may damage the finish of metal parts. Avoid spraying insecticide near the unit. 3 TABLE OF CONTENTS 2 5 7 9 11 13 14 15 15 15 15 16

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CONNECTIONS Speaker Connections Subwoofer Connecting Source Devices to the AVR Audio Connections Digital Audio Analog Audio Video Connections Digital Video Analog Video Antennas RS-232 Serial Port SPEAKER PLACEMENT GETTING STARTED INSTALLATION Connect Source Devices Connect USB Device Connect to Internet Connect Remote In and Out Install a Multizone System Program Sources into the Remote Learn Other Remote Codes Turn On the AVR 760/AVR 660 26 26 26 27 30 30 30 31 31 31 31 31 32 32 33 33 34 34 34 36 37 37 37 38 40 41 INITIAL SETUP Using the On-Screen Menu System Configure the AVR 760/AVR 660, Using EzSet/EQTM II Technology Set Up Sources OPERATION Turning On the AVR 760/AVR 660 Volume Control Dolby Volume Mute Function Sleep Timer Audio Effects Video Modes Headphones Source Selection Using the Tuner RDS Functions USB Playback Internet Radio Network Playback Recording Using Docking Station Selecting a Surround Mode Processor Reset Memory TROUBLESHOOTING GUIDE APPENDIX TECHNICAL SPECIFICATIONS Trademark Acknowledgments NOTE: This Owner's Manual is the Basic version.



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It describes all functions essential for the use of the unit. For more in-depth information, please download the Advanced Functions Manual from the [harmankardon.com](http://www.harmankardon.com) web site. All references to the Advanced Functions Manual in the Basic Manual refer to the web-only, additional manual which explains functions that go beyond the basic use of the receiver. This Advanced Functions Manual also contains more worksheets and the remote control function list. 4 INTRODUCTION Please register your AVR 760/AVR 660 at www.harmankardon.com. NOTE: You'll need the product's serial number. At the same time, you can choose to be notified about new products and/or special promotions.

Harman Kardon aVr 760/aVr 660 7.2-channel audio/Video receiver Audio Section · AVR 760: 85 Watts x 7, seven channels driven at full power at 8 ohms, 20Hz-20kHz, <0.07% THD, 595 watts total. AVR 660: 75 Watts x 7, 525 watts total. · High-current capability, ultrawide-bandwidth amplifier design with low negative feedback · All-discrete amplifier circuitry · Quadruple-crossover bass management with DVD-Audio bass management capability · Dual 32-bit TI DA 710 DSP processors · 192kHz/24-bit A/D and D/A conversion · Sampling upconversion to 96kHz · Dolby® Volume processing ENGLISH 5 thank you for choosing a Harman Kardon® product! For more than fifty years, the Harman Kardon® mission has been to share a passion for music and entertainment, using leading-edge technology to achieve premium performance. Harman Kardon, Inc., invented the receiver, a single component designed to simplify home entertainment without compromising performance. Over the years, Harman Kardon products have become easier to use, while offering more features and sounding better than ever. The AVR 760 multizone 7.2-channel digital audio/video receiver (AVR 660 is 7.

1-channel) continues this tradition with some of the most advanced audio and video processing capabilities yet, and a wealth of listening and viewing options.

To obtain the maximum enjoyment from your new receiver, please read this manual and refer back to it as you become more familiar with its features and their operation. If you have any questions about this product, its installation or its operation, please contact your Harman Kardon retailer or custom installer, or visit the Web site at www.harmankardon.com.

Surround Modes · Dolby Digital EX, Dolby Digital Plus, Dolby TrueHD · Dolby Pro Logic® II and IIx (Movie, Music and Game), up to 96kHz · Dolby Virtual Speaker Version 2 (Reference or Wide, 2-channel) · Dolby Headphone Version 2, up to 96kHz · DTS-HD High Resolution Audio™, DTS-HD Master Audio™ · DTS® (5.1; DTS Stereo; DTS-ES® 6.1 Discrete and Matrix) · DTS 96/24TM (DTS Stereo) · DTS Neo:6® (Cinema 5-, 6- or 7-channel; Music 5-, 6- or 7-channel), up to 96kHz · Logic 7® (Movie, Music and Game), up to 96kHz · 5- or 7-Channel Stereo, up to 96kHz · Surround Off (DSP or Analog Bypass)

INTRODUCTION audio Inputs · AM/FM tuner · Analog Audio 1 through 5 · Front-panel Analog Audio · 6-/8-Channel Analog Audio ease of use · EzSet/EQTM II automated setup (microphone supplied) · Full-color user interface and setup menu, generated in high-definition video · Text-based on-screen menus available to Zone 2 (AVR 760 only) · Two-line dot-matrix front-panel display · Color-coded connections · Programmable, learning seven-device main remote control (includes AVR control over The Bridge II) · Source input renaming · Lip Sync Delay (up to 180msec) · RS-232 serial port for AVR's video output resolution is set higher than the capabilities of the actual connection, you will not see a picture. If the best available video connection from the AVR to the TV is either composite or S-video, press this button and change the resolution to 576i. Audio Effects: Press this button to directly access the Audio Effects submenu, which allows adjustment of the tone and other audio controls.

See the Initial Setup section for more informdio output, and if you are not using an HDMI connection for audio for the device, connect it to one of these jacks to hear digital audio formats, such as Dolby Digital, DTS and linear PCM. Use only one type of digital audio connection for each source. Coaxial and Optical Digital Audio Outputs: If a source is also an audio recorder, connect one of the Digital Audio Outputs to the recorder's matching input for improved recording quality. Only PCM digital audio signals are available for recording. Both coaxial and optical digital audio signals are available at either Digital Audio Output. Network Jack: Plug in an RJ-45-compatible cable that connects to a personal computer (PC), router or Internet access. When connected to a PC, the AVR 760/AVR 660 is capable of playing audio and JPEG files stored on the PC. When connected to the Internet, the AVR 760/AVR 660 may be used to enjoy Internet Radio. See pages 33 and 34 for more information. RS-232 Serial Port: This bi-directional port may be used to control the AVR 760/AVR 660 using an RS-232 serial control link to a compatible computer or programmable remote control system.

Due to the complexity of programming RS-232 commands, connections and programming for control purposes should be performed by a qualified custom installer. Trigger 1 and 2 Outputs: Connect these control jacks to the trigger input jack of an external component, such as an audio power amplifier, that you want to power on any time the AVR 760/AVR 660 is turned on, without using the AVR's Switched Accessory Outlet for power. When this connection is used, the AVR 760/AVR 660 will automatically send a low-voltage signal to the connected device that triggers it to turn on when the AVR 760/AVR 660 is on, and off when the AVR 760/AVR 660 is placed in the Standby Mode. The connected component must respond to 6-volt presence as the control signal. The Trigger 2 Output may be programmed to transmit its signal only when certain of the AVR's source inputs are selected. For example, to lower a screen when watching a DVD movie, but not while listening to the tuner, connect the Trigger 2 Output to the screen and program it to be on when the DVD source is selected, but off when the AM or FM bands are in use. See the Initial Setup section for more information on programming this setting in the Info Settings menus for each source. Zone 2 Infrared (IR) Input: Connect a remote IR receiver located in the remote zone of a multizone system to this jack to control the AVR (and any source devices connected to the Remote IR Output) from the remote zone. Remote Infrared (IR) Input and Output: When the remote IR receiver on the front panel is blocked, connect an optional IR receiver to the Remote IR Input jack. The Remote IR Output may be connected to the Remote IR Input of a compatible product to enable remote control through the AVR.



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Remote IR Carrier Output: This output is similar in function to the Remote IR Output, with the difference that this jack outputs the full infrared signal as received by the AVR's IR sensor or the Remote IR Input, while the Remote IR Output jack outputs a "stripped" signal that has no carrier frequency. 9 ENGLISH Analog 1-5 Inputs Video Monitor Outputs REAR-PANEL CONNECTIONS HDMI Inputs and Output: HDMI (High-Definition Multimedia Interface) is a connection for transmitting digital audio and video signals between devices. Connect up to four HDMI-equipped source devices to the HDMI inputs using a single-cable connection. When you connect the HDMI Output to your video display, the AVR 760/ AVR 660 will automatically transcode analog video signals to the HDMI format, upscaling to as high as 1080p. NOTES: When connecting a DVI-equipped display to one of the HDMI Outputs: · Use an HDMI-to-DVI adapter.

· Make sure the display is HDCP-compliant. If it isn't, do not connect it to an HDMI Output; use an analog video connection instead. · Always make a separate audio connection. Analog 1 5 Inputs: Connect the left and right analog audio outputs of a source device to any of these inputs. These inputs may be paired with any video inputs.

NOTES: The Analog 3 and 4 inputs are each associated with a set of outputs. Consider using these connectors for an audio or video recorder. You may optionally connect a source to both an analog and digital audio input. This is useful for making recordings, for multizone applications or simply as a backup. Analog 3 and 4 Outputs: Connect either of these analog audio outputs to the analog audio inputs of a recording device. A signal is available at these outputs whenever an analog audio source is playing. Zone 2 Audio Outputs: Connect these jacks to an external amplifier to power the speakers in the remote zone of a multizone system. Subwoofer 1 and 2 Outputs: If you have a powered subwoofer with a line-level input, connect it to the Subwoofer 1 Output. For improved performance, connect a second powered subwoofer to the Subwoofer 2 Output (Subwoofer 2 on AVR 760 only). The Bridge II Input: Connect the included Harman Kardon docking station to this input for use with most docking iPod models, 4G and later (not included).

Turn the receiver off (Standby mode) when connecting The Bridge II. Fan Vents: This area contains vents used by the AVR 760/AVR 660's fan to cool the system. Maintain a clearance of at least 8 cm from the nearest surface to avoid overheating the unit. It is normal for the fan to remain off at most normal volume levels. An automatic temperature sensor turns the fan on only when it is needed. IMPORTANT NOTE: Never block the fan vents, as doing so could allow the AVR to overheat to dangerous levels. Zone 2 Video Output: Connect this composite video jack to a video display located in the remote zone of a multizone system. When the multizone system is in use, viewers in the remote zone will be able to see the AVR's on-screen text menus and any available source video, as long as the source is connected to a Composite Video Input, and that input is specified for that source in the Zone 2 Video setting of the Info Settings menu (AVR 760 only). Composite and S-Video 1, 2 and 3 Video Inputs: Use these jacks to connect your video-capable source components (e.g. , VCR, DVD player, cable TV box) to the receiver. Use only one type of video connection for each source. Composite and S-Video 2 Outputs: Connect one of these analog video outputs to the composite or S-video inputs of a recording device. A signal is available at these outputs whenever an analog video source is playing. Composite and S-Video Monitor Outputs: If any of your sources use composite or S-video connections, connect one or both of these monitor outputs to the corresponding inputs on your video display.

If your video display is equipped with HDMI or component video inputs, these connections are unnecessary, as the AVR 760/AVR 660 will convert the composite or S-video source signal to the correct format for a single video-cable connection to the TV. Component Video 1, 2 and 3 Inputs: If a video source has analog component video (Y/Pb/Pr) capability, and if you are not using an HDMI connection, connect the component video outputs of the source to one of the sets of component video inputs. Do not make any other video connections to that source. Component Video Monitor Outputs: If you are using one of the Component Video Inputs and your television or video display is componentvideo-capable (but does not have HDMI), connect these jacks to the video display.

NOTES: · Due to copy-protection restrictions, there is no output at the Component Video Monitor Outputs for copy-protected sources. · Composite and S-video signals are upscaled to as high as 1080i and available at these outputs. If your video display's best connection is component video, it is the only video connection required from the AVR to the display. AM and FM Antenna Terminals: Connect the included AM and FM antennas to their respective terminals for radio reception. Preamp Outputs: Connect these jacks to an external amplifier if more power is desired. The Surround Back/Zone 2 Preamp Outputs may be used with an external amplifier to power the remote zone of a multizone system. A-BUS Port: Use a Category 5/5e cable to connect this port to optional A-BUS equipment for multizone operation. When the A-BUS system is used, it is possible to have a full 7.2-channel system in the main listening room at the same time the multizone system is in use. Front, Center and Surround Speaker Outputs: Use twoconductor speaker wire to connect each set of terminals to the correct speaker. Remember to observe the correct polarity (positive and negative connections).

Surround Back/Zone 2 Speaker Outputs: These speaker outputs are used for the surround back channels in a 7.2-channel home theater, or may be reassigned to a remote room for multizone operation. Switched AC Accessory Outlet: You may plug the AC power cord of one source device into this outlet, and it will turn on whenever you turn on the receiver. Do not use a source that consumes more than 50 watts of power. AC Power Input: After you have made all other connections, plug the AC power cord into this receptacle and into an unswitched wall outlet. A-BUS Power Input: When using optional A-BUS equipment, connect an optional A-BUS power supply to this port. 10 REMOTE CONTROL FUNCTIONS IR Transmitter Lens AVR Power Off AVR Power On Device Power On Device Power Off LCD Display Source Selectors Video Modes Audio Effects Alphanumeric Keys Surround Modes Last Back/Exit Activity Menu IR Transmitter KLM N Navigation OK Light Soft Keys Disc Menu Power Off USB Mute Source Selectors Network Volume Channel Back/Exit BACK/EXIT MENU Sleep Settings AVR Settings Menu KLM N Navigation Mute Transport Controls Volume Controls Record Info Settings AVR Settings/Remote Menu Zone Selector OK Transport Controls Source Settings Sleep Settings Zone Selector Zone Indicator MAIN REMOTE CONTROL ZONE 2 REMOTE CONTROL The AVR 760/AVR 660 remote is capable of controlling up to 14 devices, including the AVR itself, an iPod docked in the included The Bridge II, a USB device and a Network device (see page 34 for details).



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During the installation process, you may program the codes for your source components into the remote. To operate a component, press its Selector button to change the device mode. The device mode will appear on the top line of the remote's LCD Display.

NOTE: Four of the sources do not have dedicated Source Selectors: Source A, Source B, Source C and Source D. To select one of these sources, first press the AVR Settings Button, then press the appropriate Soft Key: Red for Source A, Green for Source B, Yellow for Source C and Blue for Source D. These sources may also be selected using the AVR Settings menu. Each Source Selector has been preprogrammed to control certain types of components, with only the codes specific to each brand and model changing, depending on which product code is programmed. The AUX and Cable/SAT Source Selectors may be used for multiple device types.

All of the external Source Selectors may be reassigned to other device types (see Initial Setup section). AUX Source Selector: CD player, VCR, HDTV set-top box, PVD or TiVo® set-top box. Refer to page 23 for details on Source Selection. Cable/SAT Source Selector: Cable set-top box or satellite set-top box.

IMPORTANT NOTE: All of the AVR 760/AVR 660's audio and video inputs are independently assignable.

Select the inputs to which the device is physically connected during Initial Setup. Any device may be connected to any compatible input and given any name (e.g., DVD or Game). **11 ENGLISH REMOTE CONTROL FUNCTIONS** Most of the buttons on the remote have dedicated functions, although the precise codes transmitted vary, depending on the device mode. Due to the wide variety of functions for various source devices, only a few of the most often used functions on the remote have been included: alphanumeric keys, transport controls, television-channel control, menu access, and power on and off. Buttons dedicated to the AVR are available at any time, even in another device mode: AVR Power On and Off, Audio Effects, Video Modes, Surround Modes, Volume, Mute and Sleep Settings. Press the AVR Settings Button near the bottom of the remote to return it to AVR mode. A button's function depends on which component is being controlled. See Table A14 in the Advanced Functions Manual for listings of the functions for each type of component.

IR Transmitter Lens: As buttons are pressed on the remote, infrared codes are emitted through this lens. **AVR Power On Button:** Press to turn on the AVR. The Master Power Switch behind the front-panel door must be on. **AVR Power Off Button:** Press to turn off the AVR 760/AVR 660. **Device Power On Button:** Press a device's Source Selector, then press this button to turn on the device. **Device Power Off Button:** Press a device's Source Selector, then press this button to turn off the device. **LCD Display:** This two-line text display informs you of the current device mode (i.e., which source is active) on the upper line.

When you press a key, the command will appear briefly on the lower line.

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

Each successive press changes the band. Similarly, the Network Button toggles between the Network and Internet Radio sources. **Audio Effects:** Press to directly access the Audio Effects submenu, which allows adjustment of the AVR's tone and other audio controls. See the Initial Setup section for more information. **Video Modes:** Press for direct access to the Video Modes submenu, which contains picture settings to be used after you have adjusted the picture settings on the video display or TV.

See the Advanced Functions Manual for more information. **Surround Modes:** Press to directly access the Surround Modes submenu. Scroll to the lines for the Surround Mode categories: Auto Select, Virtual Surround, Stereo, Movie, Music or Video Game. The surround mode will change when the menu line is highlighted. To change the surround mode for the selected category, press the OK Button when the menu line for the Surround Mode category matching the audio program is highlighted, and select one of the available surround mode options using the KL Buttons. Press the OK Button. See the Advanced Functions Manual for more information on surround modes. **Alphanumeric Keys:** Use these buttons to enter numbers for radio station frequencies or channels, or to select station presets. **Last Channel:** When controlling the tuner; a cable, satellite or HDTV settop box; or a TV, press this button to return to the previous station or channel. For Internet Radio, this is only available to toggle between stations previously saved as presets.

Activity: With this button, up to 11 Activities may be programmed to transmit a series of commands with a single press. Execute an Activity by pressing this button, then the Alphanumeric Key (or the AVR Power On or Off Button by themselves) into which it was programmed. See the Advanced Functions Manual for more information on Activities. **Back/Exit:** Press to return to the previous menu or to exit the menu system. **Menu Button:** This button is used within the Now Playing menu for the tuner, USB, The Bridge II, Internet Radio and the Network, and to display the main menu on some source devices. To display the AVR 760/AVR 660's main menu, press the AVR Settings Button. **Navigation (KLM N) and OK Buttons:** These buttons are used to make selections within the menu system and to operate the tuner. **Light:** Press to illuminate the buttons on the remote. Press it again to turn the back light off, or wait 10 seconds after the last button press for the light to turn off on its own. **Disc Menu:** While a DVD is playing, press the DVD Source Selector, then this button, to display the disc's menu.

Soft Keys: These buttons are used to select sources A, B, C and D (see note on page 11), or for other functions with some source devices. See Table A14 in the Advanced Functions Manual for details. They are also used with a Teletext-capable television if your broadcast, cable or satellite provider offers Teletext service. **Volume Control:** Press to raise or lower the volume. **12 REMOTE CONTROL FUNCTIONS Mute Button:** Press to mute the AVR 760/AVR 660's speaker and headphone outputs.

To end the muting, press this button, adjust the volume, or turn off the receiver. **Channel/Page Control:** When the tuner has been selected, this control changes the station. When using The Bridge II or a USB drive, this control allows you to scroll a page at a time through a long list of content. While operating a cable, satellite or HDTV set-top box or a television, press these buttons to change channels. **Transport Controls:** These buttons are used to control source playback.

Record Button: Use this button to make recordings when an audio or video recorder is in use. **AVR Settings/Remote Menu Button:** Press to display the AVR's Main Menu, or to switch the remote to AVR device mode.



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Press and hold for 3 seconds to access the menu for the remote control. The menu commands and options will appear in the LCD Display. The functions are: program the codes for a device, learn codes for an individual key, change the device type of a selector, program an activity (macro), program punch-through functions for channel control or transport control, rename a device or a key's function, change the brightness of the back light, reset the remote to its factory-default status, or exit the remote menu. See the Initial Setup section for details on programming the remote, and see the Advanced Functions Manual for further information. Info Settings Button: Press to display the AVR's Info Menu, which contains the settings for the current source. Source Settings Button: Press a Source Selector and then this button to display a source device's settings menu. Sleep Settings Button: Press to activate the sleep timer, which turns off the receiver after a programmed period of time of up to 90 minutes. Each press decreases the timer by 10 minutes, ending with the "Sleep Off" message.

Zone Selector: Use this switch to select whether AVR commands will affect the main listening area (Zone 1) or the remote zone of a multizone system (Zone 2). For normal operation, leave the switch in the Zone 1 position. Zone 2 remote control The Zone 2 remote control is used in the remote zone of a multizone system with an IR receiver connected to the Zone 2 IR Input or an A-BUS device. It may be used to control the power, volume and mute functions or to select a source input for the remote zone, and to control a Harman Kardon source connected to one of the AVR's Remote IR Outputs or the A-BUS IR Output. The Zone 2 remote may also be used in the main listening room to directly control the AVR 760/AVR 660 and Harman Kardon DVD, CD or tape players. When the Zone Selector is pressed to switch the remote to Zone 1 mode (the Zone Indicator will turn green), the power, volume and mute controls will only affect the main listening area. To control operation for the remote zone, press the Zone Selector so that the Zone Indicator turns red. The Zone 2 remote requires two AAA batteries (included) that are installed in the battery compartment on the back of the remote. Make sure to observe proper polarity by matching the + and - symbols on the batteries to the symbols printed inside the compartment. The following explanations describe the buttons that are not similar in function to the main remote control, or are found on the Zone 2 remote control only.

For explanations of all other Zone 2 remote control functions, see the descriptions above that cover functions that are common to the two Remote Controls as well as functions available on the Main Remote Control only. Power: Press to turn the AVR 760/AVR 660 on or off. The AVR also turns on its multizone system automatically when any of the Input Selectors is pressed, even if the AVR itself is in Standby mode. When in the main listening room, press any Input Selector or the AVR Selector to turn on the AVR 760/ AVR 660. Zone Selector and Zone Indicator: Each press of the Zone Selector determines whether the AVR commands will affect the main listening area (Zone 1) or the remote zone (Zone 2).

The Zone Indicator will turn green when Zone 1 has been selected, and red for Zone 2. The Zone Indicator will also light briefly whenever any button is pressed. Instructions for users on removal and disposal of used batteries. Specification of included battery types. These symbols shown on the product, the packaging or in the manual or separate information sheet mean that the product itself, as well as the batteries included or built into the product, should never be thrown away with general household waste.

Take them to suitable collection points, where proper treatment, recycling and recovery take place, in accordance with national or local legislation, or European Directives 2002/96/EC and 2006/66/ EC. Correct handling of the product and batteries to be disposed of helps to save resources and prevents possible negative effects on the environment or human health. The batteries included with your equipment may be Alkaline, Carbon Zinc/ Manganese or Lithium (button cells) type. All types should be disposed of according to the above instructions. To remove the batteries from your equipment or remote control, reverse the procedure described for inserting batteries in the Owners Manual. For products with a built-in battery that lasts for the lifetime of the product, removal may not be possible for the user. In this case, recycling or recovery centers handle the dismantling of the product and the removal of the battery. If, for any reason, it becomes necessary to replace such a battery, this procedure must be performed by authorized service centers. 13 ENGLISH INTRODUCTION TO HOME THEATER This introductory section will help you to familiarize yourself with some basic concepts unique to multichannel surround sound receivers, which will make setup and operation smoother. Surround modes There are different theories as to the best way to present surround sound and to distribute information to the speakers.

A variety of algorithms have been developed in an effort to reproduce the way we hear sounds in the real world, resulting in a rich variety of options. Several companies have taken surround sound in different directions: · Dolb Laboratories Dolby TrueHD, Dolby Digital Plus, Dolby Digital, Dolby Digital EX, Dolby Pro Logic II and IIx, Dolby Virtual Speaker, Dolby Headphone · DTS DTS-HD High Resolution Audio, DTS-HD Master Audio, DTS, DTS-ES (Discrete and Matrix), DTS Neo:6, DTS 96/24 · Harman International (the Harman Kardon parent company) Logic 7 · Stereo Modes Generic modes that expand upon conventional 2-channel stereo, including 5- and 7-channel stereo Table A13 in the Advanced Functions Manual contains detailed explanations of the mode groups and the mode options available within each group. Digital modes, such as Dolby Digital and DTS, are only available with specially encoded programs, such as HDTV, Blu-ray Disc media and digital cable or satellite television. Other modes may be used with digital and analog signals to create a different surround presentation, or to use a different number of speakers. Surround Mode selection depends upon the number of speakers in your system, the materials you are watching or listening to, and your personal tastes. typical Home theater System A home theater typically includes an audio/video receiver, which controls the system; a disc player; a source component for television broadcasts (cable box, satellite dish receiver, HDTV tuner or antenna connected to the TV); a video display (television); and loudspeakers. multichannel audio The main benefit of a home theater system is the placement of loudspeakers around the room to produce "surround sound." Surround sound immerses you in the presentation for increased realism.



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The AVR 760/AVR 660 may have up to seven speakers connected directly to it (plus up to two subwoofers). Each main speaker is powered by its own amplifier channel inside the receiver.

A system with more than two speakers is called a multichannel system. · Front Left and Right The main speakers are used as in a 2-channel system. In many surround modes, these speakers are secondary, while the main action, especially dialogue, is moved to the center speaker. · Center The center speaker is used for dialogue in movies and television programs, allowing the dialogue to originate near the actors' faces, for a more natural sound. · Surround Left and Right The surround speakers improve directionality of ambient sounds.

In addition, more loudspeakers play dynamic soundtracks without risk of overloading any one speaker. · Surround Back Left and Right Additional surround speakers may be placed behind the listening position, improving the precision of ambient sounds and allowing for more realistic pans. The surround back speakers are used with surround modes designed for 7.1-channel systems, such as Dolby Digital EX, Dolby Digital Plus, Dolby TrueHD, DTS-ES (Discrete and Matrix), DTS-HD High Resolution Audio, DTS-HD Master Audio and Logic 7 (7.1 and 7.

2 modes). The surround back speakers are optional, and the AVR 760/AVR 660 may be set up with a 5.1- or 5.2-channel system in the main listening area, and the surround back channels reassigned to a multizone system, where the surround back channels power loudspeakers located in another room. Many people expect the surround speakers to play as loudly as the front speakers. Although all of the speakers in the system will be calibrated to sound equally loud at the listening position, most artists use the surround speakers for ambient effects only, and they program their materials to steer very little sound to these speakers. · Subwoofer A subwoofer is designed to play only the lowest frequencies (the bass). It augments smaller, limited-range satellite speakers used for the other channels. Many digital-format programs, such as movies recorded in Dolby Digital, contain a low-frequency effects (LFE) channel which is directed to the subwoofer. The LFE channel packs the punch of a rumbling train or airplane, or the power of an explosion, adding realism and excitement to your home theater.

Some people use two subwoofers, for additional power and even distribution of the sound. 14 CONNECTIONS There are different types of audio and video connections used to connect the receiver, the speakers, the video display, and the source devices. The Consumer Electronics Association has established the CEA® color-coding standard. See Table 1. Subwoofer The subwoofer is dedicated to the low frequencies (bass), which require more power. To obtain the best results, most speaker manufacturers offer powered subwoofers that contain their own amplifier. Usually, a line-level (nonamplified) connection is made from the receiver's Subwoofer Output to a corresponding jack on the subwoofer, as shown in Figure 3. The AVR 760 offers the option of connecting two subwoofers to independent outputs, which enables the EzSet/EQ II process to configure each subwoofer precisely to account for its unique characteristics and placement within the room. ENGLISH Although the purple subwoofer outputs look similar to full-range analog audio jacks, they are filtered to allow only the low frequencies to pass. Don't connect these outputs to any other devices.

Table 1 Connection Color Guide Audio Connections Front (FL/FR) Center (C) Surround (SL/SR) Surround Back (SBL/SBR) Subwoofer (SUB) Digital Audio Connections Coaxial Optical Video Connections Component Composite S-Video HDMITM Connections (digital audio/video) HDMI Y Green Pb Blue Yellow Pr Red Input Orange Output Blue Brown Purple Left White Green Gray Tan Right Red Preout Subwoofer Figure 3 Subwoofer connectInG Source DeVIceS to tHe aVr Audio and video signals originate in "source devices," including your Blu-ray Disc or DVD player, CD player, DVR (digital video recorder) or other recorder, tape deck, game console, cable or satellite television box, MP3 player, USB drive or network device. The AVR's tuner also counts as a source, even though no external connections are needed, other than the FM and AM antennas. Separate connections are required for the audio and video portions of the signal, except for digital HDMI connections. The types of connections used depend upon the capabilities of the source device and video display. Figure 1

Speaker connections Speaker cables carry an amplified signal from the receiver's speaker terminals to each loudspeaker.

They contain two wire conductors, or leads, inside plastic insulation, that are differentiated in some way, such as with colors or stripes. The differentiation preserves polarity, without which low-frequency performance can suffer. Each speaker is connected to the receiver's speakeroutput terminals using two wires, one positive (+) and one negative (-). Always connect the positive terminal on the speaker, which is usually colored red, to the positive terminal on the receiver, which is colored as indicated in the Connection Color Guide above (Table 1). The negative terminals are both black.

The AVR 760/AVR 660 uses binding-post speaker terminals that can accept bare-wire cables. Bare wire cables are installed as follows (see Figure 2): 1. Unscrew the terminal cap until the pass-through hole is revealed. 2. Insert the bare end of the wire into the hole. 3. Hand-tighten the cap until the wire is held snugly. audio connections There are two types of audio connections: digital and analog. Digital audio signals are required for listening to sources encoded with digital surround modes, such as Dolby Digital and DTS, or for noncompressed PCM digital audio. There are three types of digital audio connections: HDMI, coaxial and optical.

Do not use more than one type of digital audio connection for each source device. However, it's okay to make both analog and digital audio connections to the same source. NOTE: HDMI signals may carry both audio and video. If your video display device has an HDMI input, make a single HDMI connection from each source device to the AVR. Usually, a separate digital audio connection is not required. Turn the volume on your television all the way down. Figure 2 Binding-Post Speaker Terminals With Bare Wires 15 CONNECTIONS Digital audio The AVR 760/AVR 660 is equipped with four HDMI (High-Definition Multimedia Interface) inputs, and one output. HDMI technology enables digital audio and video information to be carried using a single cable, delivering the highest quality picture and sound. The AVR 760/AVR 660 uses HDMI (V.1.

3a with Deep Color) technology and is capable of processing both the audio and video components of the HDMI data, minimizing the number of cable connections in your system.



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The AVR 760/AVR 660 implements Deep Color, which increases by an order of magnitude the shades of color that can be displayed, and the latest lossless multichannel audio formats, including Dolby TrueHD and DTS-HD Master Audio. NOTE: Some DVD-Audio, SACD, Blu-ray Disc and HD-DVD players only output multichannel audio through their multichannel analog outputs. Make a separate analog audio connection in addition to the HDMI connection, which is still used for video and to listen to Dolby Digital, DTS or PCM materials that may be stored on the disc. The AVR 760/AVR 660 converts analog video signals to the HDMI format, including its on-screen menus, upscaling to high-definition 1080p resolution.

The HDMI connector is shaped for easy plug-in (see Figure 4). If your video display has a DVI input and is HDCP-compliant, use an HDMI-to-DVI adapter (not included). A separate audio connection is required. HDMI cable runs are limited to about 3 meter. analog audio Analog connections require two cables, one for the left channel (white) and one for the right channel (red).

These two cables are often attached to each other. See Figure 7. For sources that are capable of both digital and analog audio, you may make both connections. The analog audio connection is required for multizone operation, as the AVR 760/AVR 660's multizone system is not capable of converting a digital signal to analog format. Use the analog audio connections even with the Surround Back/Zone 2 speaker outputs, in case another 2-channel digital audio source is in use in the main listening area. The AVR 760/AVR 660 is only capable of processing one PCM source at a time. You may only record materials from DVDs or other copy-protected sources using analog connections. Remember to comply with all copyright laws, if you choose to make a copy for your own personal use. Analog audio cable (RCA) L R Figure 7 Analog Audio Multichannel analog connections are used with high-definition sources that decode the copy-protected digital content, such as some DVD-Audio, SACD, Blu-ray Disc and HD-DVD players. See Figure 8.

The multichannel analog audio connection is not required for players compliant with HDMI version 1.1 or better, or that output linear PCM signals via an HDMI connection. Consult the owner's guide for your disc player for more information. Front Multichannel analog audio cable (RCA) White Surround Blue Center Green Subwoofer Red Gray Purple Figure 4 HDMI Connection If your video display or source device is not HDMI-capable, use one of the analog video connections (composite, S- or component video) and a separate audio connection. Coaxial digital audio jacks are usually color-coded in orange. Although they look similar to analog jacks, you should not connect coaxial digital audio outputs to analog inputs or vice versa. See Figure 5. Coaxial digital audio cable Coaxial Figure 8 Multichannel Analog Audio Figure 5 Coaxial Digital Audio Optical digital audio connectors are normally covered by a shutter to protect them from dust. The shutter opens as the cable is inserted. Input connectors are color-coded using a black shutter, while outputs use a gray shutter.

See Figure 6. Optical digital audio cable Optical Figure 6 Optical Digital Audio The AVR 760/AVR 660 also includes a proprietary, dedicated audio connection for The Bridge II docking station for iPod. If you own a docking iPod (most models, 4G or later), connect The Bridge II (included) to The Bridge II port on the receiver. See Figure 9. Dock your iPod (not included) in The Bridge II, and you may listen to your audio materials through your high-performance audio system.

You may view still images or video materials stored on a photo- or video-capable iPod that supports video browsing. Use the AVR 760/AVR 660 remote to control the iPod, with navigation messages displayed on the front panel and on a video display connected to the AVR. The Bridge II outputs analog audio to the AVR 760/AVR 660, and is available to the multiroom system. THE BRIDGE Figure 9 The Bridge II port 16 CONNECTIONS Video connections Many sources output both audio and video signals (e.g.

, Blu-ray Disc or DVD player, cable television box, HDTV tuner, satellite box, VCR, DVR). In addition to the audio connection, make one type of video connection for each of these sources (only one at a time for any source). antennaS The AVR 760/AVR 660 uses separate terminals for the included FM and AM antennas. The FM antenna uses a 75-ohm F-connector. See Figure 13. Digital Video If you have already connected a source device to one of the HDMI inputs, you have automatically made a video connection, as the HDMI signal includes both digital audio and video components. Figure 13 FM Antenna There are three types of analog video connections: composite video, S-video and component video. Composite video is the basic connection most commonly available. The jack is usually color-coded yellow, and looks like an analog audio jack. Do not plug a composite video cable into an analog or coaxial digital audio jack, or vice versa.

Both the chrominance (color) and luminance (intensity) components of the video signal are transmitted using a single cable. See Figure 10. Composite video cable Figure 14 AM Antenna Figure 10 Composite Video S-video, or "separate" video, transmits the chrominance and luminance components using separate wires contained within a single cable. The plug on an S-video cable contains four metal pins, plus a plastic guide pin. Align the plug correctly when you insert it into the jack. See Figure 11. S-video cable rS-232 SerIaL port The RS-232 serial port may be connected to an external computer or control device to allow the external device to transmit control commands to the AVR. The port is bidirectional, so that the AVR can transmit status updates to the control device. Connecting and using the RS-232 port requires technical knowledge, and is best left to a professional custom installer. Figure 11 S-Video Component video separates the video signal into three components one luminance ("Y") and two sub-sampled color signals ("Pb" and "Pr") that are transmitted using three separate cables.

See Figure 12. Y Component video cable Green Pb Blue Pr Red Figure 12 Component Video If it's available on your video display, an HDMI connection is recommended as the best quality connection, followed by component video, S-video and then composite video. NOTES: · Copy-protected sources are not available at the Component Video Monitor Outputs. · Standard and high-definition analog video signals may be upscaled to 1080i resolution for the Component Video Monitor Outputs. For improved video performance, consider upgrading to an HDMI-capable video display with 1080p resolution. 17 ENGLISH Analog Video The AM loop antenna needs to be assembled.



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Connect the two leads to the spring terminals on the receiver. The AM antenna leads have no polarity, and you may connect them to either terminal. See Figure 14. **SPEAKER PLACEMENT** Optimally, the speakers should be placed in a circle with the listening position at its center.

The speakers should be angled so that they directly face the listening position. Green Purple White SUB 1 SUB 2 C Purple front Speaker placement The center speaker is placed either on top of, below or mounted on the wall above or below the video display screen. The front left and right speakers are placed along the circle, about 30 degrees from the center speaker and angled toward the listener. Place the front left/right and center speakers at the same height, preferably at about the same height as the listener's ears. The center speaker should be no more than approx. 60 cm above or below the left/right speakers. If you're using only two speakers with the AVR 760/AVR 660, place them in the front left and right positions. Placement of the surround speakers depends on the number of speakers in your system. Green Purple White SUB 1 FL 30° 30° FR Red 90° 150° 150° 90° SL SR Blue Gray Brown SUB 2 C Purple (Optional) SBL SBR Tan FL 30° 30° FR Red Figure 16 Speaker Placement (7.1- or 7.

2-Channel System) 110° 150° 150° 110° NOTE: Some speaker manufacturers offer 6.1-channel speaker systems, for 6.1-channel surround sound formats, such as Dolby Digital EX, DTS-ES Discrete and Matrix modes and DTS Neo:6 mode. Using the AVR 760/ AVR 660 in a 6.1-channel configuration is not recommended. The 6.1-channel formats will sound better when played through a 7.1-channel system. The same surround back channel information is played through both surround back speakers, but with twice the power and clarity. To use the AVR 760/AVR 660 with a 6.

1-channel speaker system, place the single surround back speaker directly behind the listener, but do not connect it until after you have run the EzSet/EQ II procedure for a 5.1-channel system. After the EzSet/EQ II process finishes, connect the surround back speaker to the Surround Back Left Speaker Output. Then follow the directions in the Advanced Functions Manual for manual setup of the surround back speaker. SL SR Blue Gray Alternate placement for Side Surround Left Speaker (Blue) Alternate placement for Side Surround Right Speaker (Gray) Subwoofer placement Placement of the subwoofers is less critical, since low-frequency sounds are omnidirectional.

Placing each subwoofer close to a wall or in a corner will reinforce the low frequencies, and may create a "boomy" sound. Temporarily place one subwoofer where the listener normally sits, then walk around the room until the low frequencies sound best. Place the subwoofer in that spot. To place the optional second subwoofer, you may continue this method for finding a second optimal location, or place each subwoofer near the front left and right speakers, as shown in the diagrams (AVR 660 permits use of one subwoofer, AVR 760 two subwoofers). NOTE: Your receiver will sound its best when the same model or brand loudspeaker is used for all positions.

Figure 15 Speaker Placement (5.1- or 5.2-Channel System) placement of Surround Speakers in a 5.1- or 5.2-channel System The side surround speakers should be placed 110 degrees from the center speaker, slightly behind and angled toward the listener. Alternatively, place them behind the listener, with each surround speaker facing the oppositeside front speaker. See Figure 15. The surround speakers may be placed a little higher than the listener's ears. placement of Surround Speakers in a 7.1- or 7.

2-channel System In a 7.1- or 7.2-channel system, the side surround speakers are placed 90 degrees from the center speaker, directly to either side of the listening position. The surround back left and right speakers are placed 150 degrees from the center speaker, or directly facing the opposite-side front speaker. See Figure 16. 18 GETTING STARTED Installing the AVR 760/AVR 660 and connecting it to the other system components can be complex. To simplify installation, it is suggested that you design your system before you begin connecting wires and cables. Although the rear-panel jacks allow for a variety of audio and video connections to other components, the AVR's software organizes the connections into 10 conventional sources: CBL/SAT, DVD, TV, Game, Media Server, AUX, A, B, C and D. The internal sources (the tuner, The Bridge II dock for iPod, the USB Port, the Internet Radio and the Network) will be explained later. Table A1 in the appendix indicates the default device types for each source, and the default audio/video connection assignments. If the defaults suit your system, then connect your devices to the audio/video inputs shown. Otherwise, design your system as explained below. 1. Best video connection type for your system: Examine the video inputs on your TV or video display. Write down the best available video connection type here:

The options, in order of preference, are: HDMI, DVI (must be HDCPcompliant), component video, S-video or composite video. This is the "system-best" video connection for your system. 2. Decide which source will be used for each device: Match up to 10 devices to the 10 conventional sources listed in the Table 2 worksheet below. Use the AUX source for any of these device types: CD player, HDTV set-top box, personal video recorder (PVR), TiVo device or VCR. The A, B, C and D sources were added to the AVR 760/AVR 660 to enable you to benefit from the wide variety of audio and video inputs available, and these sources may be used for any device type. NOTE: You may match any device type to any source. The device type is only relevant for programming control codes into the handheld remote and, as explained on page 25, you may reassign any Source Selector's device type. Any audio or video source may be connected to any matching jack on the AVR, regardless of device type. 3. Best video connection for each source: Examine each source device and write down the best available type of video connection, but not better than the system-best connection. Leave blank audio-only sources, such as a CD player. 4. Best audio connection for each source: For each source device, write down the best available type of audio connection. See the note below, and if the HDMI connection may be used for audio, it is the best option.

The other options, in order of preference, are: optical digital audio, coaxial digital audio, 2-channel analog audio. ENGLISH NOTES: · For multichannel disc players, if both the device and the TV use HDMI connections for video, then check the owner's manual for the device to determine whether it transmits multichannel audio via its HDMI output. If it does, then no separate audio connection is required.



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If not, write down the multichannel analog audio connection in addition to any other audio type. · If the device uses an HDCP-compliant DVI output for video, then connect it to one of the AVR's HDMI Inputs using an HDMI-to-DVI adapter, but a separate audio connection will always be required. table 2 Source assignment Worksheet Best Video Connection (HDMI, DVI, Component, S-Video, Composite) Second Composite Video Input for Multizone Operation Best Audio Connection (HDMI, Optical, Coaxial, 2-Ch Analog, 6-/8-Ch Analog) Audio Input Assigned (may be one digital plus one or more analog) Analog Audio Input for Recording or Multizone Operation Source Cable/SAT DVD TV Game Media Server AUX A B C D Device Type Video Input Assigned 19 GETTING STARTED 5. Decide which sources to connect to each of the video inputs: Assign only one unique video input to each source, except that you may add a composite video connection to make the source's video signal available to the multizone system. Use the best type of video connection available for each source. · If your system-best video connection is "HDMI", select up to four HDMI source devices and assign them to one of the four numbered HDMI Inputs. · If your system-best video connection is "Component", or if you have source devices with component video outputs that weren't assigned to one of the HDMI Inputs, assign up to three devices to one of the three numbered Component Video Inputs. · If your system-best video connection is "S-video", or if you have source devices with S-video outputs that have not been assigned to an HDMI or Component Video Input, then assign up to three devices to one of the three numbered S-video Inputs. · If your system-best video connection is "Composite Video", or if you have source devices with composite video outputs that have not been assigned to any other video input, then assign up to three devices to one of the three numbered composite video Inputs. NOTE: If the source device is a video recorder that will be used to record from other devices connected to the AVR, assign the recorder to the Composite or S-Video Video 2 Input, which has a recording output. Any of the Coaxial or Optical Digital Inputs may be assigned to the recorder for audio, if it is capable of making digital audio recordings. To make analog recordings, assign either the Analog 3 or 4 Audio Inputs to the recorder, as both have recording outputs.

It is not necessary to connect TiVo or Video Recorder devices that will only record from their direct cable or satellite television signals to the AVR's recording outputs. 6. Decide which audio inputs to connect to each source: Assign only one unique digital audio input to each digital source. Assign analog audio inputs to analog sources, or as secondary connections for digital sources for backup, for recording or to make the source available to the multizone system. · Any source using an HDMI Input requires no additional connection for audio unless: The source doesn't output multichannel audio through its HDMI output. Make a second connection to the 6-/8-Channel Analog Audio Inputs. The source has an HDCP-compliant DVI output for video only. Assign a digital or analog audio input. · For any source whose best audio connection is optical or coaxial digital audio, assign one of the four Optical or four Coaxial Digital Audio Inputs. Do not connect both types of digital audio to the same source device. · You may assign one of the 2-Channel Analog Audio Inputs to a digital source. · You may also assign the 6-/8-Channel Analog Audio Inputs, if available, to a digital source. · Assign one of the six 2-channel Analog Audio Inputs to an analog source. NOTE: If the source device is a digital audio recorder, it may be used with any of the Coaxial or Optical Digital Audio Inputs and Outputs. Both coaxial and optical signals are available at either digital audio output.

To make analog recordings, assign either the Analog 3 or 4 Audio Inputs to the recorder, as both have recording outputs. 20 INSTALLATION You are now ready to begin installing the AVR. Before beginning to connect the various components to the receiver, turn off all devices, including the AVR 760/AVR 660, and unplug their power cords. Don't plug in any of the power cords until you have finished making all of your connections. The receiver generates heat. Select a location that leaves several centimeters of space on all sides. Avoid completely enclosing the receiver inside an unventilated cabinet. Place components on separate shelves rather than stacking them directly on top of the receiver. Never block the AVR's ventilation slots on the top and side panels. Doing so could cause the AVR to overheat, with potentially serious consequences.

Some shelf surface finishes are delicate. Try to select a location with a sturdy surface finish. Maintain at least 7 cm of free space behind the receiver for free airflow to the fan. Almost all of the following installation steps are optional, depending on your system. Skip any step that does not apply to your system.

Step fIVE connect fm antenna Connect the included FM antenna to the 75-ohm FM antenna terminal. Step SIX connect am antenna Assemble the included AM antenna (see Figure 17) and connect it to the AM and Ground antenna terminals. The antenna is not polarized, and either lead may be connected to either terminal. Figure 17 AM Antenna Assembly Step one connect Source Devices Leaving all AC power cords unplugged, connect the source devices to the AVR using the audio and video inputs you assigned in Table 2. Step SeVen not active for aVr 760/aVr 660 Step eIGHt connect uSB Device To play MP3 or WMA audio files or JPEG still-image files stored on a USB storage device, connect the device to the front-panel USB Port, using a cable or connector that is attached to the device or provided by you.

Step tWo connect tV Connect the system-best video input on the TV to the corresponding video monitor output on the AVR. Step tHree connect Loudspeakers After you have placed your loudspeakers in the room as explained on page 18, connect each speaker to its color-coded terminal on the AVR. Maintain proper polarity by connecting the negative terminal on the speaker (usually colored black) to the negative terminal on the AVR (also colored black); and the positive terminal on the speaker (usually red) to the positive terminal on the AVR (color varies by channel; see Table 1 on page 15). If you have a subwoofer, connect its line-level or LFE input to the purple Subwoofer 1 Output. An optional second subwoofer may be connected to the Subwoofer 2 Output. NOTE: If the subwoofer only has speaker-level inputs, after you have configured the AVR using EzSet/EQ II technology as described on page 26, connect the subwoofer's left and right speaker input terminals to the AVR's Front Left and Front Right Speaker Outputs, then connect the front left and right main speakers to the subwoofer's left and right speaker output terminals.



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