



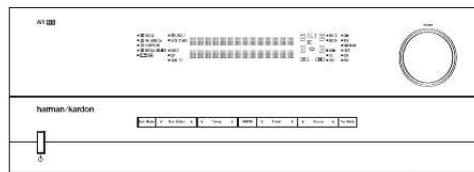
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You can read the recommendations in the user guide, the technical guide or the installation guide for HARMAN KARDON AVR 445. You'll find the answers to all your questions on the HARMAN KARDON AVR 445 in the user manual (information, specifications, safety advice, size, accessories, etc.). Detailed instructions for use are in the User's Guide.

User manual HARMAN KARDON AVR 445
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AVR 445
AUDIO/VIDEO RECEIVER
OWNER'S MANUAL



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Manual abstract:

At the same time, you can choose to be notified about our new products and/or special promotions. 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 1 (number in a square) indicates a specific front-panel control A (letter in a square) indicates a front-panel control that is normally concealed behind the drop-down door j (number in a circle) indicates a rear-panel connection a (number in an oval) indicates a button or indicator on the main remote control ã (letter in an oval) indicates a button on the ZR 10 remote control Important note about the instructions in this manual: The appearance of the menus, text and/or cursor in your receiver's on-screen menus may vary slightly from the illustrations in this manual. Whether the text appears in all uppercase or upper- and lowercase characters, performance and operation remain the same. 2 TABLE OF CONTENTS INTRODUCTION Thank you for choosing Harman Kardon! With the purchase of a Harman Kardon® AVR 445, you are about to begin many years of listening enjoyment. The AVR 445 has the most extensive range of audio and video processing, control and connectivity options ever offered by Harman Kardon, enabling it to provide the best possible audio and video reproduction with any type of source material. Teaming advanced processing circuitry with proprietary technologies such as EzSet/EQ, the AVR 445 seamlessly integrates every component in your entertainment system to deliver the best possible sound and images. Some of the leading-edge features that are available with the AVR 445, such as HDMITM switching and XM Ready® operation, are new to even the most experienced home theater enthusiast. Although the power of the AVR 445 makes them easy to use, we strongly recommend that you take a few minutes to read this owner's manual to familiarize yourself with how the full suite of AVR 445 features and capabilities are configured and used in day-to-day operation. This small investment of time will yield significant dividends in taking the maximum advantage of this new addition to your home theater system. If you have any questions about this product, its installation or its operation, you may also access a wealth of information and assistance by visiting our Web site at www.harmankardon.com. Description and Features The AVR 445 serves as the hub of your home entertainment system, providing a wide range of listening possibilities for almost any audio or video program source, whether it is the broadcast of a movie or sporting event in HDTV or a vintage mono or stereo recording. When playing digital audio sources, the AVR 445 decodes Dolby® Digital, Dolby Digital EX, DTS® and DTS-ES® data streams. Two-channel stereo and matrix surround sources benefit from all current Dolby Pro Logic® IIx modes and DTS Neo:6.® The latest version of our proprietary Logic 7® process is on-board to create a wider, more enveloping sound field and more defined surround channel positioning, regardless of the type of source material. Additional audio playback options include a direct connection to compatible computer-based sources through a direct USB connection. The AVR 445 takes the "video" part of its name seriously. Along with two HDMI inputs and three 60MHz analog component video inputs, the AVR 445 converts composite and S-video to component for single video connections. The AVR 445 also provides A/V sync delay so that lip sync errors commonly seen when digital video processing is used in a source, program or video display are eliminated. Thanks to a wide range of multizone options and a standard ZR 10 remote control, the AVR 445 makes it possible to watch and listen to a separate source in one room while the main home theater uses a different source. Using the assignable rear surround channel amplifiers, you may create a basic remote listening zone without any additional equipment, or the unit's multiroom outputs may be used to feed an optional, external power amplifier and volume control. For one-wire multiroom connectivity, the AVR 445 is A-BUS/READY®, requiring only a single Category 5/5e cable run and an optional remote module to power a pair of remote speakers while controlling volume and enabling full control over the program source and connected IR-controlled devices. Along with the latest advances in digital audio and video technology, Harman Kardon recognizes that some things remain constant, and in the case of the AVR 445 that is a requirement for audio power best served by our time-honored high-current, ultrawidebandwidth amplifier design. The AVR 445's sevenchannel amplifier provides the power to reproduce the loudest crescendos or cinema sound effects while remaining virtually free from distortion or system noise. With a combination of state-of-the-art circuitry, digital technology and proven performance with an elegant design that is compatible with the latest source components and video displays, the AVR 445 represents the culmination of Harman Kardon's fifty-plus-year history of delivering the finest sonic performance. Í All popular digital and matrix surround modes, including Dolby® Digital, Dolby Digital EX, Dolby Pro Logic® II, DTS®, DTS-ES® Discrete and Matrix, DTS Neo:6® and DTS 96/24® Seven channels of high-current, ultrawide-bandwidth amplification with the surround back channels assignable to either main-room or remote-room use Two HDMITM inputs and three assignable high-bandwidth analog component inputs for switching the latest high-definition video sources Converts composite and S-video sources to component video EzSet/EQ for quick and accurate system setup and room correction Harman Kardon's Logic 7® processing brings a new sense of reality to stereo and matrix surround sources Dolby Virtual Speaker processing for use when less than a full 5.1 or 7.1 speaker complement is available Dolby Headphone for spacious, open sound when using headphones USB connectivity for audio playback with compatible computers and quick system upgrades Full bass management for all inputs, including the analog direct inputs for high-resolution DVDs, DVD-Audio and SACDTM players, including Quad Crossover settings and individual settings for each input A/V sync delay adjustable for each video input delivers perfect lip sync with digital programs or video displays Front-panel analog audio/video jacks may be used as either inputs or outputs for connection to the latest portable products or video game consoles Extensive multiroom options, including a standard ZR 10 remote, audio and video outputs to the remote zone, assignable rear channel amplifier channels and A-BUS/READY® capability for listening to a separate source in a remote zone Í Í Í Í Í Í Í Í Í Í INTRODUCTION 3 SAFETY INFORMATION Important Safety Information Verify Line Voltage Before Use Your AVR 445 has been designed for use with 120-volt AC current.



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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. Interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures: 1 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. 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 the following controls and indicators are available on the AVR 445's front panel: 1 Standby/On Switch 2 Surround Mode Group Selector 3 Surround Mode Selector 4 Tuning Selector 5 Tuner Band Selector 6 Preset Station Selector 7 Input Source Selector 8 Tuning Mode Selector 9 Front-Panel Door) Volume Control ! Input Indicators @ Speaker/Channel Input Indicators # Upper Display Line \$ Lower Display Line % Surround Mode Indicators ^ Remote Sensor Window The following controls and jacks are located behind the front-panel door. To open the door, place the edge of a finger on the left or right edge of the panel and gently swing the door down toward you. A Main Power Switch F Digital Input Selector K Optical 4 Digital Input B Headphone Jack G Delay Adjust Selector L Coaxial 4 Digital Input C Tone Mode Button H </> Buttons M Input/Output Status Indicator D Speaker Selector Button I Set Button N Video 4 Input/Output Jacks E Channel Adjust Selector J EzSet/EQ Microphone Jack 1 Standby/On Switch: When the Main Power Switch A is "ON," press this button to turn on the AVR 445; press it again to turn the unit off. Note that the illumination surrounding the switch will turn blue when the unit is on, or in the Multiroom mode. 2 Surround Mode Group Selector: Press this button to select the top-level group of surround modes. Each press of the button will select one of the surround mode categories. Once the button is pressed so that the name of the desired surround mode category appears in the on-screen display and in the Lower Display Line \$, press the Surround Mode Selector 3 to cycle through the individual modes available. For example, press this button to select Dolby modes, and then press the Surround Mode Selector 3 to choose from the various mode options.

3 Surround Mode Selector: Press this button to select from among the available surround mode options for the surround mode category selected. The specific modes will vary based on the number of speakers available, the surround mode category and whether the input source is digital or analog. For example, press the Surround Mode Group Selector 2 to select a category 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 pages 24, 35 and 58. FRONT-PANEL CONTROLS 5 FRONT-PANEL CONTROLS 4 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 the tuner is in the MANUAL/MONO mode, each tap of the Selector will increase or decrease the frequency by one increment. When the tuner receives a signal strong enough for adequate reception, MANUAL TUNED will appear in the Lower Display Line \$ and in the on-screen display. When the tuner is in the AUTO/STEREO mode, press the button once, and the tuner will scan for a station with acceptable signal strength. When the next higher- or lower-frequency station is tuned, the frequency scan will stop and the Lower Display Line \$ and the on-screen display will indicate AUTO TUNED. When an FM stereo station is tuned, the display will read AUTO ST TUNED.

See page 39 for more information on using the tuner. When an XM Ready module is connected and activated, and when there is sufficient signal strength for the XM system to operate, pressing this button will also change the XM Radio channel. 5 Tuner Band Selector: Pressing this button will automatically switch the AVR 445 to the Tuner mode. Pressing it again will select the AM or FM frequency band, or XM Radio. (See page 39 for more information on the tuner.)

) 6 Preset Station Selector: Press this button to scroll up or down through the list of stations that have been entered into the preset memory.



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(See page 39 for more information on tuner programming.) 7 Input Source Selector: Press this button to change the input by scrolling up or down through the list of input sources. 8 Tuning Mode Selector: Press this button to select Auto or Manual tuning. When the button is pressed so that AUTO/STEREO appears in the Upper Display Line #, the tuner will search for the next station with an acceptable signal when the Tuning Selector 4M is pressed. When the button is pressed so that MANUAL/MONO appears in the Upper Display Line #, each press of the Tuning Selector 4M will increase the frequency. (See page 39 for more information on using the tuner.) This button may also be used to switch between Stereo and Mono modes for FM radio reception. When weak reception is encountered, select the Manual/Mono tuning mode. Press and hold again to switch back to Stereo mode. (See pages 39 for more information on using the tuner.) When an optional XM Connect & Play module is connected and activated, and when there is sufficient signal strength for the XM system to operate, this button has a different set of functions than when traditional AM or FM radio is in use. See page 39 for more information on XM Radio operation. 9 Front-Panel Door: To open the door so that the front-panel jacks and controls behind this door may be accessed, gently pull the door down and toward you, using either upper corner of the door.) Volume Control: Turn this knob clockwise to increase the volume, counterclockwise to decrease the volume.

If the AVR 445 is muted, adjusting the volume control will automatically release the unit from the silenced condition. ! Input Indicators: One of these indicators will light to identify the currently selected input. Note that the entire list will light briefly each time the unit is turned on, as a test. @ Speaker/Channel Input Indicators: These indicators are multipurpose, indicating both the speaker type selected for each channel and the incoming datasignal configuration. The left, center, right, right surround and left surround speaker indicators are composed of three boxes, while the subwoofer is indicated by one 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 assigned that position. The letters inside each box display the active input channels. For standard analog inputs, only the L and R will light, indicating a stereo input. For a digital source, 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 38 for more information on the Channel Indicators.) # Upper Display Line: Depending on the unit's status, a variety of messages will appear here. In normal operation, this line will show the current input source and identify whether an analog or digital input is in use. When the tuner is selected as the input, this line will identify the station as AM or FM and show the frequency and preset number, if any.

When an XM Connect & Play module is connected and activated, and when there is sufficient signal strength for the XM system to operate, the XM channel number and signal strength will appear here. \$ Lower Display Line: Depending on the unit's status, a variety of messages will appear here. In normal operation, the current surround mode will appear on this line. When an XM Ready module is connected and activated, and when there is sufficient signal strength for the XM system to operate, a variety of messages and information, including the XM channel title name, the current artist and track title, the XM Radio channel category and, when available, local traffic and weather information, will appear here. % Surround Mode Indicators: One of these indicators will light to show the surround mode in use.

Depending on the specific combination of input sources and surround mode selected, more than one indicator may light. (See page 36 for more information.)

^ Remote Sensor Window: The sensor behind this window receives infrared signals from the remote control. Aim the remote control at this area, and do not block or cover it unless an external remote sensor is installed. 6 FRONT-PANEL CONTROLS VIRTUAL SPEAKER DIRECT DSP SURR. OFF HDMI 12 CDMI DVD TAPE 6CH 8CH FRONT-PANEL CONTROLS A B CDEFG HIH J K L M N The following controls and jacks are located behind the front-panel door. To open the door, place the edge of a finger on the left or right edge of the panel and gently swing the door down toward you. A Main Power Switch: Press this switch to apply power to the AVR 445. When the switch is pressed in, the unit is placed in a Standby mode, as indicated by the amber illumination surrounding the Standby/On Switch 1. 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. B Headphone Jack: This jack may be used to listen to the AVR 445's output through a pair of headphones. Be certain that the headphones have a standard 1/4" stereo phone plug, or that you use an adapter, as needed, to convert the plug on your headphones to the 1/4" jack used on the AVR. When the headphone jack is in use, the main room speakers will automatically be turned off and the unit will output a standard stereo signal. You may also use the Dolby Headphone mode for an enhanced listening experience. C Tone Mode Button: This button controls the tone mode settings, enabling adjustment of the bass and treble boost/cut. You may also use it to take the tone controls out of the signal path completely for "flat" response. The first press of the button displays a TONE MODE message in the Lower Display Line \$ and in the on-screen display. To take the controls out of the signal path, press either of the </> Buttons H until the display reads TONE OUT.

To change the bass or treble settings, press the button again until the desired option appears in the Lower Display Line \$ and in the on-screen display and then press either of the </> Buttons H to enter the desired boost or cut setting. See page 35 for more information on the tone controls. D Speaker Selector Button: Press this button to begin the process of manually configuring the AVR 445 for the type of speakers it is being used with. For complete information on configuring the speaker settings, see page 29. E Channel Adjust Selector: Press the button to begin the process of manually adjusting the channel level outputs using the source currently playing through your AVR.

For complete information on adjusting the channel output level, see page 41. F Digital Input Selector: Press this button to begin the process of selecting a digital source for use with the currently selected input.



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Once the button has been pressed, use the </> Buttons H to choose the desired input and then press the Set Button I to enter the setting into the unit's memory. See page 35 for more information on digital audio. G Delay Adjust Selector: Press this button to begin the process of adjusting the delay settings. See page 30 for more information on delay adjustments. H </> Buttons: When making system configuration changes using the front-panel controls, press these buttons to scroll through the available choices for the option being adjusted. I Set Button: When making system configuration changes using the front-panel controls, press this button to enter a setting into the unit's memory. J EzSet/EQ Microphone Jack: Before starting the EzSet/EQ automated setup process, plug the microphone into this jack. The microphone does not need to be plugged in at other times. K Optical 4 Digital Input: Connect the optical digital output of an audio or video product to this jack. L Coaxial 4 Digital Input: Connect the coaxial digital output of a digital audio product such as a portable audio player or video game to this jack. M Input/Output Status Indicator: This LED indicator will normally light green to show that the frontpanel Video 4 Input/Output Jacks N are operating as inputs. When these jacks are configured for use as outputs, the indicator will turn red to show that the jack may be used as an output for recording. (See pages 22 and 40 for more information on configuring the frontpanel jacks as outputs, rather than inputs.

) N Video 4 Input/Output Jacks: These audio/video jacks may be used as either inputs or outputs for temporary connection to video games or portable audio/video products such as camcorders and portable audio players. (See pages 22 and 40 for more information on switching these jacks between inputs and outputs.) FRONT-PANEL CONTROLS 7 REAR-PANEL CONNECTIONS NOTE: To make it easier to follow the instructions that refer to this illustration, a larger copy may be downloaded from the Product Support section for this product at www.harmanardon.com. 0 Preamp Outputs 1 Subwoofer Output 2 Tape Outputs 3 A-BUS Connector 4 Tape Inputs 5 Surround Speaker Outputs 6 CD Audio Input 7 Front Speaker Outputs 8 Multiroom Audio Outputs 9 TheBridge Digital Media Player (DMP) Input A Fan Vents B Full Carrier IR Output C IR Output D Center Channel Speaker Outputs E Surround Back/Multiroom Speaker Outputs F IR Input TM G Switched AC Accessory Outlet H Trigger Output I AC Power Cord Socket J RS-232 Port K HDMI Output L HDMI Inputs M Component Video Monitor Outputs N Multiroom IR Input O Component Video Inputs P Video Monitor Outputs Q DVD Video Inputs R Video 1 Video Inputs S Video 1 Video Outputs T Video 2 Video Inputs U Video 3 Video Inputs V XM Ready Input W USB Connector X Optical Digital Audio Output Y Coaxial Digital Audio Output Z DVD Audio Inputs a Coaxial Digital Audio Inputs b Optical Digital Audio Inputs c 8-Channel Direct Inputs d Video 1 Audio Inputs e Video 2 Audio Inputs f Video 3 Audio Inputs g Video 1 Audio Outputs h FM Antenna Jack i AM Antenna Connections NOTE: To assist in making the correct connections for multichannel input, output and speaker connections, all connection jacks and terminals are color-coded as follows: Front Left: White Front Right: Red Green Center: Surround Left: Surround Right: Surround Back Left: Surround Back Right: Subwoofer: Coaxial Digital Audio: Blue Gray Brown Tan Purple Orange Composite Video: Component Video "Y": Component Video "Pr": Component Video "Pb": Optical Digital In: Optical Digital Out: Yellow Green Red Blue Black Gray 8 REAR-PANEL CONNECTIONS REAR-PANEL CONNECTIONS 0 Preamp Outputs: Connect these jacks to an optional, external power amplifier for applications where higher power is desired. 1 Subwoofer Output: Connect this jack to the linelevel input of a powered subwoofer. If an external subwoofer amplifier is used, connect this jack to the subwoofer amplifier input. 2 Tape Outputs: Connect these jacks to the Record/Input jacks of an audio recorder. 3 A-BUS Connector: Connect this jack to optional A-BUS®-certified products to extend the multiroom capabilities of your AVR 445.

See page 19 for more information on A-BUS. 4 Tape Inputs: Connect these jacks to the Play/Out jacks of an audio recorder. 5 Surround Speaker Outputs: Connect these outputs to the matching + and terminals on your surround channel speakers. In conformance with the 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 negative () terminals for each surround speaker.

(See page 17 for more information on speaker polarity.) 6 CD Audio Inputs: Connect these jacks to the left/right analog audio output of a compact disc player or CD changer or other audio source. 7 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 445 to the red (+) terminals on the speakers and the black () terminals on the AVR 445 to the black () terminals on the speakers. See page 17 for more information on speaker polarity.

8 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. 9 TheBridge Digital Media Player (DMP) Input: With the AVR 445 turned off, connect the optional Harman Kardon TheBridge to this connector. Once this is done and with a compatible iPod® (optional) docked in The Bridge, selecting the The Bridge/DMP input allows you to play audio from the iPod and view navigation menus on the AVR's front panel and any video display connected to the AVR. You may control the iPod's functions and select tracks using the //B/</>n©, Set Foe and Transport GIJ buttons. See page 39 for more information. TM TM A Fan Vents: These ventilation holes are the output of the AVR 445's airflow system. To ensure proper operation of the unit and to avoid possible damage to delicate surfaces, make certain that these holes are not blocked and that there is at least 3 inches of open space between the vent holes and any wooden or fabric surface. 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. B Full Carrier IR Output: The output of this jack is the full signal received at the Remote Sensor Window ^ or input through the IR Input F including the carrier frequency that is removed from signals at the IR Output C.



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Use this output to extend IR signals to the input of compatible products either by direct connection or through the use of optional, external IR "blasters". If you are in doubt as to which of the IR Output jacks to use, we recommend that you consult with your dealer or installer, or check with the manufacturer of the external equipment you wish to control. C IR Output: This connection permits the IR sensor in the receiver to serve remote controlled devices with "stripped carrier." Connect this jack to the "IR IN" jack on compatible Harman Kardon equipment. D Center Channel Speaker Outputs: Connect these outputs to the matching + and terminals on your center channel speaker. In conformance with the 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 negative () terminal on your speaker. (See page 17 for more information on speaker polarity.) E 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 Multiroom menu of the OSD system. See page 44 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.

F IR Input: If the AVR 445'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. G Switched AC Accessory Outlet: This outlet may be used to power any device you wish to have turned on when the AVR 445 is turned on with the Standby/ On Switch 1. **IMPORTANT NOTE:** The power consumption of any device connected to the accessory outlet should not exceed 100 watts. Never connect high-power devices such as amplifiers or video displays to the accessory outlet.

H Trigger Output: Connect this jack to the "Trigger In" jack of an optional external component such as an audio power amplifier that you want to be controlled to mirror the power state of the AVR 445. When this connection is used, the AVR 445 will automatically send a low-voltage signal to the connected device that turns it on when the AVR 445 is on, and off when the AVR 445 is placed in the Standby mode. The connected component must respond to a 6-volt presence as the control signal. I AC Power Cord Socket: Connect the AC power cord here 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. J RS-232 Port: This jack may be used to control the AVR 445 over a bidirectional RS-232 serial control link to a compatible computer or programmable remote control system. Due to the complexity of programming RS-232 commands, we strongly recommend that connections to this port for control purposes be made by a trained and qualified technician or installer. K HDMI Output: Connect this jack to the HDMI input on a compatible HDMI-equipped video display. L HDMI Inputs: Connect the HDMI output of video sources such as a DVD player, set-top box or HDTV tuner to either of these jacks.

M Component Video Monitor Outputs: Connect these outputs to the component video inputs of a video display. N Multiroom IR Input: Connect the output of an IR sensor in a remote room to this jack to operate the AVR 445's multiroom control system. O Component Video Inputs: These inputs may be used with any source device that is equipped with analog component video outputs, as assigned through the IN/OUT SETUP menu. See page 23 for more information on configuring the component video inputs. REAR-PANEL CONNECTIONS 9 REAR-PANEL CONNECTIONS P 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. Q DVD Video Inputs: Connect the composite or S-video outputs of a DVD player or other video source to these jacks. R Video 1 Video Inputs: Connect the composite or S-video PLAY/OUT jacks of a VCR or other video source to these jacks. S Video 1 Video Outputs: Connect the 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. T Video 2 Video Inputs: Connect the composite or S-video PLAY/OUT jacks of a VCR or other video source to these jacks. U Video 3 Video Inputs: Connect the composite or S-video PLAY/OUT jacks of a VCR or other video source to these jacks.

V XM Ready Input: When an optional XM Connect & Play module is connected to this jack, and the XM service activated, you will be able to enjoy the XM Radio through your AVR 445. See page 39 for more information. W USB Connector: Connect a cable with a USB "Mini B" connector to the AVR and the other end to a compatible computer running Windows® 2000, Windows XP or higher with the latest service packs installed, to use this port to listen to audio from the computer through the AVR 445. This connection is also used to connect a compatible computer to the AVR for system upgrades, when available. See page 37 for more information on playback of computer audio with the AVR.

Instructions for upgrades will accompany the upgrade file download package. X Optical Digital Audio Output: Connect this jack to the optical digital input connector on a CD-R/RW, MiniDisc or other compatible digital recorder. Y Coaxial Digital Audio Output: Connect this jack to the coaxial digital input of a CD-R/RW, MiniDisc or other compatible digital recorder. Z DVD Audio Inputs: Connect the left/right analog outputs of a DVD player or other audio source to these jacks. a Coaxial Digital Audio Inputs: Connect the coax digital output from a DVD player, HDTV receiver, 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. b Optical Digital Audio Inputs: Connect the optical digital output from a DVD player, HDTV receiver, 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.

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c 8-Channel Direct Inputs: These jacks are used for connection to source devices such as high-resolution DVD players, DVD-Audio or SACD players with discrete analog audio 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 (subwoofer input) jacks will be used for 5.1 audio signals. d Video 1 Audio Inputs: Connect the left/right PLAY/OUT audio output jacks on a VCR or other video source to these jacks. e Video 2 Audio Inputs: Connect the left/right PLAY/OUT audio output jacks on a VCR or other video source to these jacks. f Video 3 Audio Inputs: Connect the left/right PLAY/OUT audio output jacks on a VCR, PVR, cable set-top, satellite receiver, HDTV receiver or other video source to these jacks.

g Video 1 Audio Outputs: Connect the left/right REC/IN audio input jacks on a VCR or other video source to these jacks. h FM Antenna Jack: Connect the supplied indoor or an optional external FM antenna to this terminal. i AM Antenna Connections: 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. 10 REAR-PANEL CONNECTIONS MAIN REMOTE CONTROL FUNCTIONS 0 Power Off Button 1 Power On Button 2 LCD Information Display 3

Input Selectors 4 AVR Selector 5 Test Button 6 DSP Surround Mode Selector 7 Logic 7 Mode Select Button 8 Direct Button 9 Clear Button A EzSet/EQ On/Off Button B Tuning Mode Button m Channel Select Button n Navigation Button o Digital Select Button F Set Button G Transport Play Buttons H Volume Up/Down Selectors I Transport Fast-Play/Scan Buttons J Main Transport Controls K Track Skip Up/Down Buttons L Preset Up/Down Button M Tuning Up/Down Button N Disc Skip Button O Program Button P Light Button Q Multiroom Button R Macro Buttons S Sleep Button T Night Mode Button U OSD

Button V Tone Control Button W Dim Button X Tuner/FM Select Button Y Channel Up/Down Selector Z Delay Select Button a Speaker Select Button b Memory Button c Numeric Keys d Stereo Mode Select Button e DTS Neo:6 Mode Select Button f DTS Digital Mode Select Button g Dolby Mode Select Button h 6-Channel/8-Channel Input Select i Mute Button j Lens j 0 1 2 3 4 5 6 7 8 9 A B C D E F H I J L N P K M O Q X W V U T S R G Y Z h g f e d c b a i NOTES:

· The function names shown here are each button's feature when used with the AVR 445. 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 c. · 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. · To make it easier to follow the instructions that refer to this illustration, a larger copy may be downloaded from the Product Support section for this product at www.harmancardon.com.

MAIN REMOTE CONTROL FUNCTIONS 11 MAIN REMOTE CONTROL FUNCTIONS IMPORTANT NOTE: The AVR 445's remote may be programmed to control up to thirteen devices, including the AVR 445. Before using the remote, it is important to remember to press the Input Selector Button 3 that corresponds to the unit you wish to operate. In addition, the AVR 445's remote is shipped from the factory to operate the AVR 445 and most Harman Kardon brand products.

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 4649 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 Input Selectors d. The descriptions shown here primarily detail the functions of the remote when it is used to operate the AVR 445. a Power Off Button: Press this button to place the AVR 445 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. 1 Power On Button: Press this button to turn on the power to a device selected by first pressing one of the Input Selectors 3. 2 LCD Information Display: This two-line screen displays various information, depending on the commands that have been entered into the remote. 3 Input Selectors: Pressing one of these buttons will perform three actions at the same time. First, if the AVR 445 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 445. Finally, it will change the remote control so that it controls the device selected. The buttons labeled DVD, DMP, XM and HDMI 1 are each used to select either of two input sources: · The first press of the DVD Button selects the component connected to the DVD inputs. A second press of this button selects the component connected to the CD inputs. · The first press of the button labeled DMP selects The Bridge as the input.

A second press of this button selects the device connected to the Tape inputs. · The first press of the XM button selects XM Radio as the input. A second press selects the source connected to the USB jack as the input. · The first press of the HDMI 1 button selects the device that is connected to the HDMI 1 jack. A second press selects the device connected to the HDMI 2 jack. In normal operation, the remote will revert to controlling the AVR when no button is pressed for 6 seconds. This allows the remote to automatically return to control of important functions such as volume, mute and surround mode selection after you have used the remote to control another device. If you wish to change the length of time that the remote operates another device, or to have the remote remain active for control of the other device (such as a DVD player or set-top box) until you manually return control to the AVR by pressing the AVR Selector 4, follow the instructions on page 55. 4 AVR Selector: Pressing this button will switch the remote so that it will operate the AVR 445's functions. If the AVR 445 is in the Standby mode, it will also turn the AVR 445 on.

5 Test Button: Press this button to begin the sequence used to manually calibrate the AVR 445's output levels. (See page 31 for more information on manually calibrating the AVR 445.) g DSP Surround Mode Selector: Press this button to select one of the DSP surround modes, such as Hall 1, Hall 2 or Theater. Each press of the button selects another mode. (See page 58 for more information on surround modes.)

) 7 Logic 7 Mode Select Button: Press this button to select from among the available Logic 7 surround modes. (See page 58 for available Logic 7 options.) 8 Direct Button: Press this button when the tuner is in use to start the sequence for direct entry of a station's frequency.



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After pressing the button, simply press the proper Numeric Keys to select a station. (See page 39 for more information on the tuner.)

9 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. **A EzSet/EQ Button:** Press this button to turn the filters used by EzSet/EQ on or off. This allows you to hear the difference in system performance when EzSet/EQ is engaged or out of the signal path. **B Tuning Mode Button:** When using listening to AM or FM stations, press this button to change the tuner mode between manual and automatic. When the button is pressed so that AUTO/STEREO appears in the Upper Display Line C and in the on-screen display, only stations with acceptable signal quality will be tuned, and the tuner will play FM stations in stereo, when available. In the AUTO mode, when the Tuning Up/Down Buttons 3M are pressed, the unit will automatically search for the next available station with good signal strength. When this button is pressed so that MANUAL/MONO appears in the Upper Display Line C and in the on-screen display, each press of the Tuning Up/Down Buttons 3M will move the frequency up or down in single-step increments. When the FM band is in use, pressing the button so that the MANUAL mode is activated will enable you to tune stations with weak signals by changing to monaural reception. (See page 39 for more information on AM/FM tuner operation.)

When listing to XM Radio, press this button to scroll through the following display options for the Lower Display Line D: Channel Name Channel Category Artist Title. (See pages 3940 for more information on XM Radio operation.) **C Channel Select Button:** This button is used to start the process of manually setting the AVR 445's output levels to an external source. Once this button is pressed, press the /↔ Navigation Button D to select the channel being adjusted, then press the Set Button p, followed by the /↔ Navigation Button D again, to change the level setting. (See page 41 for more information.) **D Navigation Button:** This disc-like button is used to navigate through the on-screen configuration menus, to scroll through option lists 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 specific task, pressing the button will either change the menu or a configuration choice, or change the option shown in the onscreen or front-panel display. The sections in this manual describing the unit's individual features and configuration options contain specific information on how navigation controls are used. **E Digital Select Button:** Press this button to assign one of the digital inputs abKL to a source.

p Set Button: This button is used to enter settings into the AVR 445's memory. It is also used in the setup procedures for delay time, speaker configuration and channel output level adjustment. **G Transport Play Buttons:** These buttons have no direct function on the AVR 445, 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.

H Volume Up/Down Selectors: These controls share the common disc in the lower section of the remote. To raise the volume, press the button marked / by pressing toward the top of the remote. To lower the volume, press the button marked ↔ by pressing toward 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 3 have been pressed. **s Transport Fast-Play/Scan Buttons:** These buttons have no direct function on the AVR 445, 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 fastforward 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. **J Main Transport Controls:** These buttons have no direct function on the AVR 445, but they are used when the remote is programmed for a compatible DVD, CD or tape player. Pressing these buttons will transmit a stop (Í), record (Î), 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. **K Track Skip Up/Down Buttons:** These buttons do not have a direct function with the AVR 445, but when used with a compatibly programmed CD or DVD changer, they 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. **L Preset Up/Down Button:** When the tuner is in use, press this button to scroll through the stations programmed into the AVR 445's memory. **NOTE:** When the AVR 445 is used with The Bridge (optional) and your iPod, some of the buttons that are used to control the various transport functions on source devices are used to control the iPod, and navigate through its menus and content. Consult the owner's manual packed with The Bridge for more information.

M Tuning Up/Down Button: Press this button when the tuner is in use to change the station to one with a higher or lower frequency, or to change the XM channel. When the tuner is in the MANUAL/MONO mode, each tap of the selector will increase or decrease the frequency by one increment. When the tuner receives a signal sufficient for adequate reception, MANUAL TUNED will appear in the Lower Display Line \$ and in the on-screen display. When the tuner is in the AUTO/STEREO mode, press the button once, and the tuner will scan for a station with acceptable signal strength. When the next higher- or lower-frequency station with a strong enough signal is tuned, the frequency scan will stop and the Lower Display Line \$ and the on-screen display will indicate AUTO TUNED. When an FM Stereo station is tuned, the display will read AUTO ST TUNED. See page 39 for more information on using the tuner.



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N Disc Skip Button: This button has no direct function for the AVR 445 but may be used to change the disc in a CD or DVD changer when the remote is programmed for that type of device. **O Program Button:** This button is used to begin the process of programming the remote. Press and hold this button for 3 seconds to place the remote in the programming mode.

Once the red LED under the Set Button p lights, release the button. You may then select from the desired option. (See pages 4656 for more information on configuring the remote.) **P Light Button:** Press this button to activate the remote's backlight for ease of use in darkened rooms. **Q Multiroom Button:** Press this button to begin the process of activating the multiroom system or to change the input or volume level for the second zone.

(See page 44 for additional information on the multiroom system.) **R Macro Buttons:** Press these buttons to store or recall a "Macro", which is a preprogrammed sequence of commands stored in the remote. (See page 49 for more information on macros.) **S Sleep Button:** Press this button to place the unit in the Sleep mode. After the time shown in the display, the AVR 445 will automatically go into the Standby mode.

Each press of the button changes the time until turn-off in the following order: in the Lower Display Line \$. To take the controls out of the signal path, press either of the //⌂ Navigation Buttons n until the display reads TONE OUT. To change the bass or treble set-tings, press the button again until the desired option appears in the Lower Display Line \$ and in the on-screen display and then press either of the //⌂ Navigation Buttons n to enter the desired boost or cut setting. See page 35 for more information on the tone controls. **W Dim Button:** Press this button to activate the Dimmer function, which reduces the brightness of the front-panel display, or turns it off entirely. Press the button once to change the display to reduce the brightness by 50%, and press it again within 5 seconds and the main display will go completely dark. Note that this setting is temporary; regardless of any changes, the display will always return to full-brightness when the AVR is turned on. The blue illumination around the Standby/On Switch I will always remain at full-brightness, regardless of the setting, to remind you that the AVR is still turned on. The blue accent lighting inside the volume control will also remain at full-brightness when the panel is at 50%, but go out when the panel lights are fully dimmed. **X Tuner/FM Select Button:** This button functions in two ways.

Press it up, toward the top of the remote, to select the tuner as the AVR's input. The first press will call up the last-used station (or XM channel). Subsequent presses will select the last-used FM, AM and XM Radio station or channel. When the button is pressed down, toward the bottom of the remote, the last-tuned FM station is selected as the AVR's input. **Y 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 4656 for more information on programming the remote. **Z Delay Select Button:** This button selects adjustments to the A/V Sync Delay and the individual channel displays. The first press of the button displays an A/V SYNC DELAY message in the Lower Display Line \$ and in the on-screen display, which means that you may change the amount of time that all channels are delayed together behind the video. This enables you to compensate for the loss of lip sync that may be caused by digital video processing in your display or by television stations. To change the A/V Sync Delay, press the Set Button p while the A/V SYNC DELAY message is visible, and then use the //⌂ Navigation Buttons n to change the setting so that the sound and the video image are in sync.

To change the delay for an individual output channel, press the //⌂ Navigation Button n until the desired channel name is shown, and then press the Set Button p. When the Sleep timer is in use, the front-panel display indicators will dim to half-brightness. **T Night Mode Button:** Press this button to activate the Night mode. The Night mode is available in specially encoded Dolby Digital sources, and it preserves dialogue (center channel) intelligibility at low volume levels.

U OSD Button: Press this button to activate or turn off the On-Screen Display (OSD) system used to set up or adjust the AVR 445's parameters.

V Tone Control Button: This button controls the tone mode settings, enabling adjustment of the bass and treble boost/cut. You may also use it to take the tone controls out of the signal path completely for "flat" response. The first press of the button displays a TONE IN message in the on-screen display and MAIN REMOTE CONTROL FUNCTIONS 13 MAIN REMOTE CONTROL FUNCTIONS Use the //⌂ Navigation Buttons n to change the delay amount. (See page 30 for more information on delay options.) **a Speaker Select Button:** Press this button to begin the process of manually configuring the AVR 445's bass management system.

Then press the //⌂ Navigation Buttons n to select the channel you wish to set up. Press the Set Button p and then select another channel to configure. When all adjustments have been completed, press the Set Button p twice to exit the settings and return to normal operation. (See page 28 for more information on manual speaker setup.) **b Memory Button:** Press this button to enter a radio station in the AVR 445's preset memory. First, tune the desired station, and then press this button. Within 5 seconds of when you see the station's frequency flash in the Upper Display Line # and in the on-screen display, press the numeric keys for the preset number between 01 and 30 that you wish to assign to the station. (See page 39 for more information on the tuner, and see page 40 for information on storing XM channel numbers in the preset memory.) **c Numeric Keys:** These buttons serve as a 10button 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 53 for more information on renaming devices and keys.) **d Stereo Mode Select Button:** Press this button to select a stereo listening mode. When the button is pressed so that SURROUND OFF appears in the Lower Display Line \$, the AVR will operate in a bypass mode with true, fully analog, two-channel left/right stereo mode with no surround processing or bass management, as opposed to other modes where digital processing is used. When the button is pressed so that SURROUND OFF appears in the Lower Display Line \$, and both the DSP and Surround Off Surround Mode Indicators % are lit, you will enjoy a two-channel presentation of the sound, along with the benefits of bass management.



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Depending on whether your system is configured for 5.1 or 6.1/7.1 channels, the next press of the button will cause either 5 CH STEREO or 7 CH STEREO to appear, and the stereo signal will be routed to all five (or seven) speakers. (See page 58 for more information on stereo playback modes.)

) e DTS Neo:6 Mode Select Button: Press this button to select a DTS Neo:6 mode. (See page 58 for the available DTS Neo:6 options.) f 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 58 for the available DTS digital options.) g Dolby Mode Select Button: This button is used to select from the available Dolby Surround modes. Each press of this button selects a Dolby Pro Logic II, Dolby Pro Logic IIx or Dolby Virtual Speaker mode, as available for the number of speakers in your system.

When a Dolby Digital-encoded source is in use, the Dolby Digital mode may also be selected. (See page 58 for the available Dolby surround mode options.)

) h 6-Channel/8-Channel Input Select: Press this button to select the device connected to the 8-Channel Direct Inputs c. i Mute Button: Press this button to momentarily silence the AVR 445 or TV set being controlled, depending on which device has been selected. j Lens: The infrared emitters behind the plastic lens at the top of the remote communicate the remote codes to the AVR 445. 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 covers the jack on the upper right side of the remote. The jack is not active and is reserved for future use. 14 MAIN REMOTE CONTROL FUNCTIONS ZR 10 REMOTE CONTROL FUNCTIONS

• Power Off Button OSD Button ç AVR Selector Button Input Selectors Tuner Selector XM Radio Selector © Navigation Controls Volume Up/Down Buttons î Disc Skip Buttons Numeric Keys Blank Buttons ¬ Clear Button μ Direct Button ñ Memory Button ø Tuning Mode Button Transport Controls oe Set Button ® Bridge /DMP Selector The TM à ç β E E © oe î ® β Mute Button IR Transmitter Lens NOTES: ·

The ZR 10 remote may be used either in the same room where the AVR 445 is located or in a separate room with an optional infrared sensor or A-BUS® product that is connected to the AVR 445's Multiroom IR Input Jack n. When it is used in the same room as the AVR 445, it will control the functions of the AVR 445 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 Jack e, 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 Output Jacks a.

(See page 44 for complete information on using the Multiroom system.) · To make it easier to follow the instructions that refer to the controls and connectors in this illustration, a larger copy may be downloaded from the Product Support section for this product at www.harmankardon.com. ø ñ μ ¬ ZR 10 REMOTE CONTROL FUNCTIONS 15 ZR 10 REMOTE CONTROL FUNCTIONS

• Power Off Button: When used in the room where the AVR 445 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 Jack e, this button turns the Multiroom system on and off. OSD Button: Press this button to activate or turn off the On-Screen Display (OSD) menu system, used to set up or adjust the AVR 445's configuration settings. ç AVR Selector Button: Press this button to turn on the AVR 445. The input in use when the unit was last on will be selected. Input Selectors: When the AVR 445 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. Tuner Selector: Press this button to select the Tuner as the input source and listen to the tuner band last used. Press the button again to change between AM, FM and, if an XM Connect & Play module is connected and activated, XM Radio. XM Radio Selector: Press this button to select XM Radio as the input source when an XM Connect & Play module is connected and activated. ©

Navigation Controls: Depending on the menu or function in use, pressing these buttons will navigate through menus, scroll through option lists or configuration choices, or move the cursor position.

Press the left, right, up or down button, as appropriate to the adjustment being made. Volume Up/Down Buttons: When the ZR 10 remote is used in the room where the AVR 445 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 Jack e, this button will raise or lower the volume in the remote room. î Disc Skip Buttons: Press these buttons to change discs on compatible Harman Kardon CD or DVD changers or players. Numeric Keys: Press these buttons to enter a station's frequency or an XM Radio channel number after the Direct Button μ is pressed, or when programming the tuner memories.

These buttons may also be used for numeric entries when appropriate with other compatible sources. Blank Buttons: These buttons are not active. E Pressing them will not change or control any function on the AVR 445 or other IR devices. ¬ Clear Button: When programming the tuner memory, press this button to clear the current entry. μ Direct Button: Press this button when the tuner is in use to start the entry of a station's frequency or an XM channel number for direct access to that station or channel. After pressing this button, press the appropriate Numeric Keys . ñ Memory Button: Press this button to enter a station or XM channel number into the AVR 445's memory. First, tune to, or select, the desired station or channel, and then press this button. Within five seconds, while you see the station or channel flash in the Upper Display Line C and in the on-screen display, press the Numeric Keys for the preset number between 01 and 30 that you wish to assign to the station or channel. (See page 39 for more information.)

) ø Tuning Mode Button: When listening to AM or FM stations, press this button to change the tuner mode between manual and automatic. When the button is pressed so that AUTO/STEREO appears in the Upper Display Line C and in the on-screen display, only stations with acceptable signal quality will be tuned, and the tuner will play FM stations in stereo, when available.



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