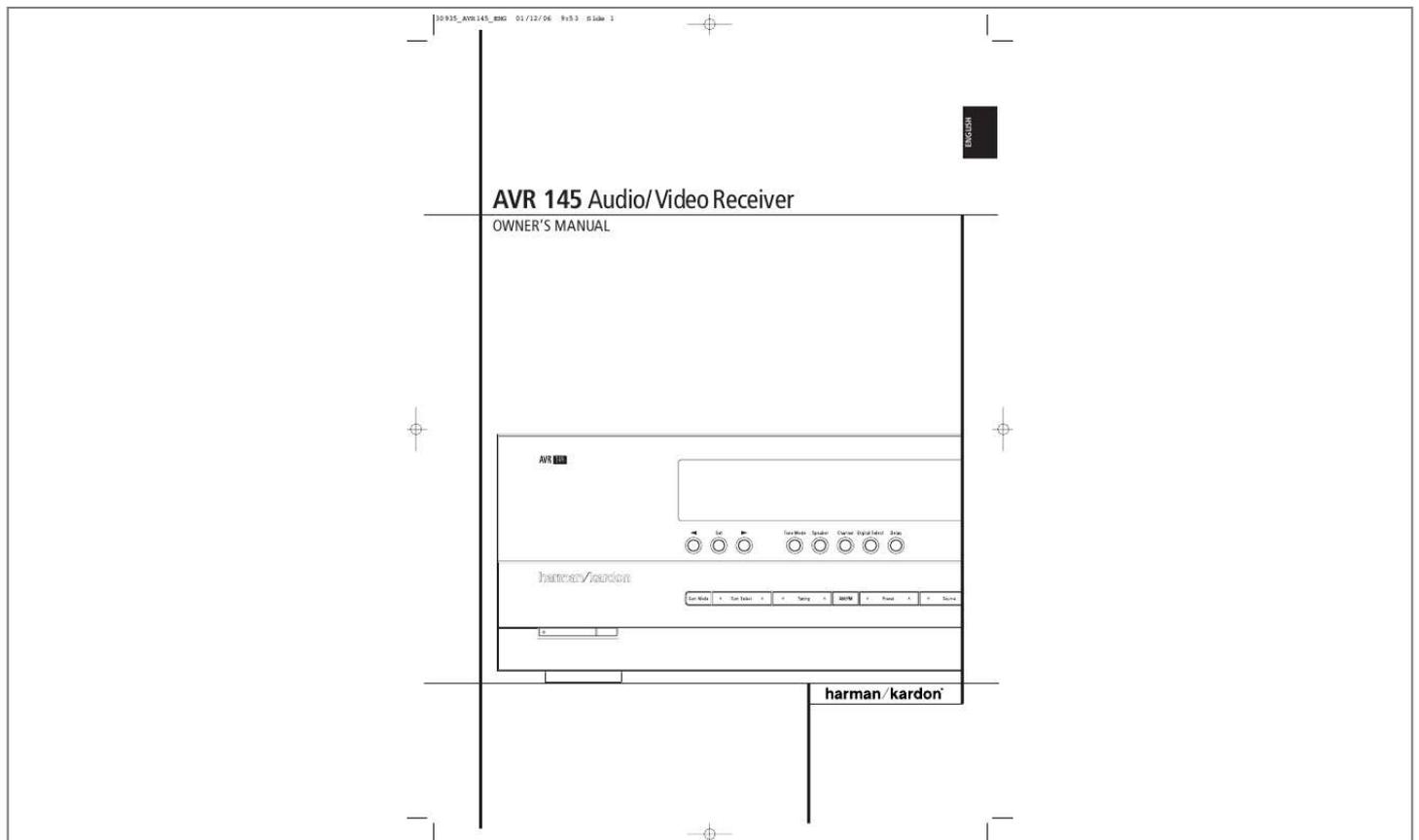




# Your PDF Guides

You can read the recommendations in the user guide, the technical guide or the installation guide for HARMAN KARDON AVR 145. You'll find the answers to all your questions on the HARMAN KARDON AVR 145 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 145**  
**User guide HARMAN KARDON AVR 145**  
**Operating instructions HARMAN KARDON AVR 145**  
**Instructions for use HARMAN KARDON AVR 145**  
**Instruction manual HARMAN KARDON AVR 145**



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**Manual abstract:**

2 TABLE OF CONTENTS 30935\_AVR145\_ENG 01/12/06 9:53 Side 3 Introduction Thank you for choosing Harman Kardon! With the purchase of a Harman Kardon AVR 145 you are about to begin many years of listening enjoyment. Designed to provide all the excitement and detail of movie soundtracks and every nuance of musical selections, the AVR is truly a multichannel receiver for the new millennium. In addition to the traditional 5.1 digital decoding modes such as Dolby Digital and DTS, it offers the latest advancements in surround technology such as Dolby Pro Logic II, the full suite of DTS modes, DTS Neo:6 and the latest 5.1 channel versions of Harman's own Logic 7 technology. @@@@If you have any questions about this product, its installation or its operation, please contact your retailer or custom installer. They are your best local sources of information. Description and Features The AVR is among the most versatile and multifeatured A/V receivers available, incorporating a wide range of listening options. In addition to Dolby Digital and DTS decoding for digital sources, a broad choice of surround modes for Matrix surround-encoded or Stereo recordings are available for use with sources such as CD, VCR, TV broadcasts and the AVR's own FM/AM tuner. Along with Dolby Digital, Dolby Pro Logic II, DTS Neo:6, DTS 96/24, Dolby 3 Stereo, 5 Channel Stereo and Hall and Theater modes, the AVR offers Harman International's exclusive Logic 7 process in 5.

1 versions to create a wider, more enveloping field environment and more defined fly-overs and pans. Dolby Virtual Speaker is available to create enveloping sound fields from front left and right speakers, and the latest Dolby Headphone circuitry creates an amazing sense of openness with headphones. In addition to providing a wide range of listening options, the AVR is easy to configure so that it provides the best results with your speakers and specific listening-room environment. A Stereo-Direct mode bypasses the digital processor to preserve all of the subtleties of older analog, two-channel materials, while bass management, available in the surround and Stereo-Digital modes, improves your ability to tailor the sound to suit your room acoustics or taste. The AVR 145 takes the "video" part of its name seriously.

Along with two 100MHz analog component video inputs, the AVR 145 provides A/V sync delay so that the lip sync errors commonly seen when digital video processing is used in a source, program or video display are eliminated. For the ultimate in flexibility, the AVR features connections for four video devices, all with both composite and S-Video inputs. Two additional audio inputs are available, and a total of six digital inputs and two outputs make the AVR 145 capable of handling all the latest digital audio sources. Coax and optical digital outputs are available for direct connection to digital recorders. A video recording output and a color-coded eight-channel input make the AVR 145 virtually future-proof, with everything needed to accommodate tomorrow's new formats right on board.

Until now, Harman Kardon AVRs have been able to accommodate almost any source device equipped with line-level analog, optical digital or coaxial digital outputs, including most digital media players. With one simple connection between the AVR 145 and the optional Harman Kardon , you are able to listen to materials stored on your compatible Apple® iPod®\*\*. Your AVR's system remote control has been preprogrammed with control codes that enable you to select tracks for playback and navigate many of your iPod's functions, even from across the room. The Bridge™ will even let you charge your iPod. The AVR 145's powerful amplifier uses traditional Harman Kardon high-current design technologies to meet the wide dynamic range of any program selection.

Harman Kardon invented the high-fidelity receiver more than fifty years ago. With state-of-the-art circuitry and time-honored circuit designs, the AVR 145 is the perfect combination of the latest in digital audio technology, a quiet yet powerful analog amplifier in an elegant, easy-to-use package. Dolby\* Digital, Dolby Digital and Dolby Pro Logic\* II Decoding, and the full suite of DTS® modes, including DTS Neo:6® Five channels of high-current amplification Harman Kardon's exclusive Logic 7® processing, for 5.1 processing in a variety of modes remote automatically sets output levels for optimum performance TM Stereo-Direct Mode for Two-Channel Sources Bypasses DSP Processing to Preserve the Integrity of Analog Materials Stereo-Digital Mode for Programmable Bass Management of Low Frequencies Between Main Speakers and Subwoofer Front panel analog A/V inputs Front panel digital inputs for easy connection to portable digital devices and the latest video game consoles Connects to Harman Kardon's (optional) for charging, playback and control of a compatible Apple® iPod® device Input titling for all input sources (except tuner) Multiple digital inputs and outputs On-screen menu and display system with choice of blue or black background screen A/V Sync delay adjustable for each input delivers perfect lip sync with digital programs or video displays 6-Channel Direct Input for Use with Future Audio Formats Extensive bass management options, including three separate crossover groupings Main Remote with Internal Codes \*\*Compatible with all iPod models equipped with a dock connector, including third-generation "Click Wheel" models and newer. Not compatible with iPod shuffle models.

Although iPod photo models are compatible, images stored on the iPod may not be viewed. INTRODUCTION 3 ENGLISH 30935\_AVR145\_ENG 01/12/06 9:53 Side 4 Safety Information Important Safety Information READ THIS BEFORE OPERATING YOUR UNIT. Do not install this equipment in a confined space such as a case or similar away from direct sunlight, heat sources, vibration, dust, moisture, and/or cold. Avoid installing this unit where foreign object may fall onto this unit and/or this unit may be exposed to liquid dripping or splashing. On the top of this unit, do not place: Burning objects (i.e. candles), as they may cause fire, damage to this unit, and/or personal injury. Containers with liquid in them, as they may fall and liquid may cause electrical shock to the user and/or damage to this unit. Do not cover this unit with a newspaper, tablecloth, curtain, etc. in order not to obstruct heat radiation.

If the temperature inside this unit rises, it may cause fire, damage to this unit, and/or personal injury. Install this unit near the AC outlet and where the AC power plug can be reached easily. This unit is not disconnected from the AC power source as long as it is connected to the wall outlet, even if this unit itself is turned off. This state is called the standby mode. In this state, this unit is designed to consume a very small quantity of power.



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**WARNING TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.** Verify Line Voltage Before Use Your AVR has been designed for use with 220-240-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 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 depot 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 station. Installation Location To assure 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. Unde the front panel so that the word "OFF" may be read at the top of the switch. NOTE:

This switch is normally left in the "ON" position. 2 System Power Control: When the Main Power Switch 1 is "ON," press this button to turn on the AVR; press it again to turn the unit off (to Standby). Note that the Power Indicator 3 will turn blue when the unit is on. 3 Power Indicator: This LED will be illuminated in orange when the unit is in the Standby mode to signal that the unit is ready to be turned on. When the unit is in operation, the indicator will turn blue. 4 Headphone Jack: This jack may be used to listen to the AVR's output through a pair of headphones. Be certain that the headphones have a standard 6.

3 mm stereo phone plug. Note that the speakers will automatically be turned off when the headphones are connected. 5 Surround Mode Group Selector: Press this button to select the top-level group of surround modes. Each press of the button will select a major mode grouping in the following order: Dolby Modes DTS Digital Modes DSP Modes Stereo Modes Logic 7 Modes Once the button is pressed so that the name of the desired surround mode group appears in the Main Information Display Ò, press the Surround Mode Selector 9 to cycle through the individual modes available. For example, press this button to select Dolby modes, and then press the Surround Mode Selector 9 to choose from the various mode options.

6 Speaker Select Button: Press this button to begin the process of selecting the speaker positions that are used in your listening room. (See page 16 for more information on setup and configuration.) FRONT PANEL CONTROLS 5 30935\_AVR145\_ENG 01/12/06 9:53 Side 6 Front Panel Controls 7 Selector Buttons: When you are establishing the AVR's configuration settings, use these buttons to select from the choices available, as shown in the Main Information Display Ò. 8 Tone Mode: Pressing this button enables or disables the Balance, Bass and Treble tone controls. When the button is pressed so that the words TONE I N appear in the Main Information Display Ò, the settings of the Bass and Treble controls and of the Balance control will affect the output signals.

When the button is pressed so that the words TONE OUT appear in the Main Information Display Ò, the output signal will be "flat," without any balance, bass or treble alteration. 9 Surround Mode Selector: Press this button to select from among the available surround mode options for the mode group selected. The specific modes will vary based on the number of speakers available, the mode group and if the input source is digital or analog. For example, press the Surround Mode Group Selector 5 to select a mode grouping such as Dolby or Logic 7, and then press this button to see the mode choices available. For more information on mode selection, see page 28. ) Tuning Selector: Press the left side of the button to tune lower frequency stations and the right side of the button to tune higher frequency stations. When a station with a strong signal is reached, MANUAL TUNED or AUTO TUNED will appear in the Main Information Display Ò (see page 40 for more information on tuning stations). ! Tuner Ban See page 18 for more information on input tiling. Û Digital Input Selector: When playing a source that has a digital output, press this button to select between the Optical L and Coaxial 9 Digital inputs. (See pages 18 and 31 for more information on digital audio).

Û Channel Select Button: Press this button to begin the process of trimming the channel output levels using an external audio source. (For more information on output level trim adjustment, see page 36). i Volume Control: Turn this knob clockwise to increase the volume, counterclockwise to decrease the volume. If the AVR is muted, adjusting volume control will automatically release the unit from the silenced condition. 6 FRONT PANEL CONTROLS

30935\_AVR145\_ENG 01/12/06 9:53 Side 7 Rear Panel Connections ENGLISH 0 1 2 3 4 5 6 7 8 9 A AM Antenna FM Antenna Tape Inputs Tape Outputs Subwoofer Output DVD Audio Inputs CD Inputs Video 1 Audio Outputs DMP Connector 6-Channel Direct Inputs Digital Audio Outputs B C D E F G H I J K L Video Monitor Outputs DVD Video Inputs Front Speaker Outputs Center Speaker Outputs Surround Speaker Outputs Switched AC Accessory Outlet Video 1 Audio Inputs AC Power Cord Video 2 Component Video Inputs Component Video Outputs Video 1 Component Video Inputs M N O P Q R S T U Video 2 Audio Inputs Coaxial Digital Inputs Video 2 Video Inputs Video 1 Video Outputs Video 1 Video Inputs Optical Digital Inputs RS-232 Serial Port RS-232 Mode RS-232 Reset NOTE: To assist in making the correct connections for multichannel input/output and speaker connections, all connection jacks and terminals have been color coded in conformance with the latest CEA standards as follows: Front Left: White Front Right: Red Center: Green Surround Left: Blue Surround Right: Gray Surround Back Left: Brown Surround Back Right: Tan Subwoofer (LFE): Purple Digital Audio: Orange Composite Video: Yellow Component Video "Y": Green Component Video "Pr": Red Component Video "Pb": Blue 0 AM Antenna: Connect the AM loop antenna supplied with the receiver to these terminals.



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If an external AM antenna is used, make connections to the AM and GND terminals in accordance with the instructions supplied with the antenna. 1 FM Antenna: Connect the supplied indoor or an optional external FM antenna to this terminal. 2 Tape Inputs: Connect these jacks to the PLAY/OUT jacks of an audio recorder. 3 Tape Outputs: Connect these jacks to the RECORD/INPUT jacks of an audio recorder. 4 Subwoofer Output: Connect this jack to the line-level input of a powered subwoofer.

If an external subwoofer amplifier is used, connect this jack to the subwoofer amplifier input. 5 DVD Audio Inputs: Connect these jacks to the analog audio jacks on a DVD or other audio or video source. 6 CD Inputs: Connect these jacks to the analog output of a compact disc player or CD changer or any other audio source. 7 Video 1 Audio Outputs: Connect these jacks to the RECORD/INPUT audio jacks on a VCR or any other Audio recorder. 8 Digital Media Player (DMP) Connector: With the AVR 145 turned off, connect one end of the optional Harman Kardon to this proprietary connector, and the other to your compatible Apple iPod.

When the Digital Media Player source is selected, you may view your iPod's control and navigation messages on your video display (if one is connected to one of the Video Monitor Outputs B), and in the Upper and Lower Display Lines Ö. You may navigate the iPod and select tracks for playback using the /&/</> Buttons DEa, the Set Button F and Transport Controls P on your AVR remote. See page 35 for more information. REAR PANEL CONNECTIONS 7 30935\_AVR145\_ENG 01/12/06 9:53 Side 8 Rear Panel Connections 9 6-Channel Direct Inputs: These jacks are used for connection to source devices such as DVD-Audio or SACD players with discrete analog outputs. A Digital Audio Outputs: Connect these jacks to the matching digital input connector on a digital recorder such as a CD-R or MiniDisc recorder.

B Video Monitor Outputs: Connect this jack to the composite and/or S-Video input of a TV monitor or video projector to view the on-screen menus and the output of any standard Video or S-Video source selected by the receiver's video switcher. C DVD Video Inputs: Connect these jacks to the composite or S-Video output jacks on a DVD player or other video source. D Front Speaker Outputs: Connect these outputs to the matching + or - terminals on your left and right speakers. In conformance with the new CEA color code specification, the White terminal is the positive, or "+" terminal that should be connected to the red (+) terminal on Front Left speaker with the older color coding, while the Red terminal is the positive, or "+" terminal that should be connected to the red (+) terminal on Front Right speaker. Connect the black (-) terminals on the AVR to the black (-) terminals on the speakers. See page 12 for more information on speaker polarity. E Center Speaker Outputs: Connect these outputs to the matching + and - terminals on your center channel speaker. In conformance with the new CEA color code specification, the Green Terminal is the positive, or "+" 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 12 for more information on speaker polarity.

) F Surround Speaker Outputs: Connect these outputs to the matching + and - terminals on your surround channel speakers. In conformance with the new CEA color code specification, the Blue terminal is the positive, or "+" 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 12 for more information on speaker polarity.) G Switched AC Accessory Outlet: This outlet may be used to power any device that you wish to have turn on when the AVR is turned on with the System Power Control switch 2. Note: The total power consumption of all devices connected to the accessory outlets should not exceed 50 W from the Switched Outlet G. H Video 1 Audio Inputs: Connect these jacks to the PLAY/OUT audio jacks on a VCR or other audio or video source. I AC Power Cord: Connect the AC plug to an unswitched AC wall output. J Video 2 Component Video Inputs: Connect the Y/Pr/Pb component video outputs of an HDTV Set-top convertor, satellite receiver, or other video source device with component video outputs to these jacks. K Monitor Component Video Outputs: Connect these outputs to the component video inputs of a video projector or monitor.

When a source connected to one of the two Component Video Inputs JL is selected the signal will be sent to these jacks. L Video 1 Component Video Inputs: Connect the Y/Pr/Pb component video outputs of a DVD player to these jacks. Note: All component inputs/outputs can be used for RGB signals too, in the same way as described for the Y/Pr/Pb signals, then connected to the jacks with the corresponding color. RGB connection is not possible if the source outputs a separate sync signal (see page 14). M Video 2 Audio Inputs: Connect these jacks to the PLAY/OUT audio jacks on a second VCR or other audio or video source.

N Coaxial Digital Inputs: Connect the coax digital output from a DVD player, HDTV receiver, the output of a compatible computer sound card playing MP3 files or streams, LD player, MD player or CD player to these jacks. The signal may be either a Dolby Digital signal, DTS signal, a 2 channel MPEG 1 signal, or a standard PCM digital source. Do not connect the RF digital output of an LD player to these jacks. O Video 2 Video Inputs: Connect these jacks to the PLAY/OUT composite or S-Video jacks on a second VCR or other video source. P Video 1 Video Outputs: Connect these jacks to the RECORD/INPUT composite or S-Video jack on a VCR.

Q Video 1 Video Inputs: Connect these jacks to the PLAY/OUT composite or S-Video jacks on a VCR or other video source. R Optical Digital Inputs: Connect the optical digital output from a DVD player, HDTV receiver, the output of a compatible computer sound card playing MP3 files or streams, LD player, MD player or CD player to these jacks. The signal may be either a Dolby Digital signal, a DTS signal, a 2 channel MPEG 1 signal, or a standard PCM digital source. S RS-232 Serial Port: This specialized connector may be used with your personal computer in case Harman Kardon offers a software upgrade for the receiver at some time in the future. T RS-232 Mode: Leave this switch popped out in the Operate position unless the AVR 145 is being upgraded. U RS-232 Reset: This switch is only used during a software upgrade. A standard processor reset is performed by pressing and holding the front-panel Tone button.



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**NOTE ON VIDEO CONNECTIONS:** When connecting a video source product such as a VCR, DVD player, satellite receiver, cable set-top box, personal video recorder or video game to the AVR 145, you may use either a composite or S-video connection, but not both. **8 REAR PANEL CONNECTIONS**  
30935\_AVR145\_ENG 01/12/06 9:53 Side 9 Main Remote Control Functions 0 1 2 3 4 5 6 7 8 9 A B C D E F G H I J K L M N O P Q R S T U V W X Y Z a b c  
d e f g h i Power Off Button IR Transmitter Window Program Indicator Power On Button Input Selectors AVR Selector AM/FM Tuner Select 6-Channel Direct Input Test Button Sleep Button Surround Mode Selector Night Mode Channel Select Button //⌂ Buttons < Button Set Button Digital Select Numeric Keys Tuner Mode Direct Button Tuning Up/Down OSD Button Dolby Mode Select Button DTS Digital Mode Selector Logic 7 Mode Select Button Transport Controls EzSet Sensor Microphone Skip Up/Down Buttons Stereo Mode Select Button DTS Neo:6 Mode Select Macro Buttons RDS Selector Button Preset Up/Down Clear Button Memory Button Delay/Prev. Ch.

> Button Speaker Select Mute Volume Up/Down DMP Selector TV/Video Selector Dim Button Tone Mode EzSet (SPL) Button ENGLISH SPL DMP OSD NIGHT DIM **NOTE:** The function names shown here are each button's feature when used with the AVR. Most buttons have additional functions when used with other devices. See page 44-45 for a list of these functions. **MAIN REMOTE CONTROL FUNCTIONS** 9 30935\_AVR145\_ENG 01/12/06 9:53 Side 10 Main Remote Control Functions **IMPORTANT NOTE:** The AVR 145's remote may be programmed to control up to seven devices, including the AVR. Before using the remote, it is important to remember to press the Input Selector button 4 that corresponds to the unit you wish to operate. In addition, the AVR's remote is shipped from the factory to operate the AVR and most Harman Kardon CD or DVD players and cassette decks. The remote is also capable of operating a wide variety of other products using the control codes that are part of the remote. Before using the remote with other products, follow the instructions on pages 41-43 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 Selector Button 4. The descriptions shown here primarily detail the functions of the remote when it is used to operate the AVR.

(See page 44-45 for information about alternate functions for the remote's buttons.) 0 Power Off Button: Press this button to place the AVR or a selected device unit in the Standby mode. 1 IR Transmitter Window: Point this window towards the AVR when pressing buttons on the remote to make certain that infrared commands are properly received. 2 Program Indicator: This three-color indicator is used to guide you through the process of programming the remote. (See page 41 for information on programming the remote.)

) 3 Power On Button: Press this button to turn on the power to a device selected by pressing one of the Input Selectors 4 (except Tape). 4 Input Selectors: Pressing one of these buttons will perform three actions at the same time. First, if the AVR 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. Finally, it will change the remote control so that it controls the device selected.

After pressing one of these buttons you must press the AVR Selector button 5 again to operate the AVR's functions with the remote. 5 AVR Selector: Pressing this button will switch the remote so that it will operate the AVR's functions. If the AVR is in the Standby mode, it will also turn the AVR on. 6 AM/FM Tuner Select: Press this button to select the AVR's tuner as the listening choice. Pressing this button when the tuner is in use will select between the AM and FM bands. 7 6-Channel Direct Input: Press this button to select the device connected to the 6-Channel Direct Inputs. 8 Test Tone: Press this button to begin the sequence used to calibrate the AVR's output levels. (See page 22 for more information on calibrating the AVR). 9 Sleep Button: Press this button to place the unit in the Sleep mode. After the time shown in the display, the AVR will automatically go into the Standby mode.

Each press of the button changes the time until turn-off in the following order: E < Button: This button is used to change the menu selection or setting during some of the setup procedures for the AVR. F Set Button: This button is used to enter settings into the AVR's memory. It is also used in the setup procedures for delay time, speaker configuration and channel output level adjustment. G Digital Select: Press this button to assign one of the digital inputs NR\*Ó to a source. (See page 32 for more information on using digital inputs.) H Numeric Keys: These buttons serve as a ten-button numeric keypad to enter tuner preset positions. They are also used to select channel numbers when TV, VCR or Sat receiver 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. I Tuner Mode: Press this button when the tuner is in use to select between automatic tuning and manual tuning. When the button is pressed so MANUAL appears in the Main Information Display Ó, pressing the Tuning buttons K) will move the frequency up or down in single-step increments. When the FM band is in use and AUTO appears in the Main Information Display Ó, pressing this button will change to monaural reception making even weak stations audible.

(See page 40 for more information.) J Direct Button: Press this button when the tuner is in use to start the sequence for direct entry of a station's frequency. After pressing the button simply press the proper Numeric Keys H to select a station (See page 39 for more information on the tuner). K Tuning Up/Down: When the tuner is in use, these buttons will tune up or down through the selected frequency band. If the Tuner Mode button I has been pressed or the Band button ! on the front panel was held pressed so that AUTO appears in the Main Information Display Ó, pressing either of the buttons will cause the tuner to seek the next station with acceptable signal strength for quality reception.

When the MANUAL appears in the Main Information Display Ó, pressing these buttons will tune stations in single-step increments. (See page 39 for more information.) L OSD Button: Press this button to activate the On Screen Display (OSD) system used to set up or adjust the AVR's parameters. M Dolby Mode Selector: This button is used to select one of the available Dolby Surround processing modes. Each press of this button will select one of the Dolby Pro Logic II modes, Dolby 3 Stereo or Dolby Digital.

Note that the Dolby Digital mode is only available with a digital input selected and the other modes only as long as a Dolby Digital source is not playing (except Pro Logic II with Dolby Digital 2).



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0 recordings, see Hold the button pressed for two seconds to turn off the Sleep mode setting. Note that this button is also used to change channels on your TV, VCR and Sat receiver when the appropriate source is selected, using the device Input Selectors 4. A Surround Mode Selector: Press this button to select any of the HALL, THEATER or VMAx surround modes. Note that depending on the type of input, some modes are not always available. (See page 28-29 for more information about surround modes.) Note that this button is also used to tune channels on your TV, VCR and Sat receiver when the appropriate source is selected using the device Input Selector 4. B Night Mode: Press this button to activate the Night mode. This mode is available only with Dolby Digital encoded sources, and it preserves dialog (center channel) intelligibility at low volume levels (See page 20 for more information). C Channel Select Button: This button is used to start the process of setting the AVR's output levels with an external source.

Once this button is pressed, use the // buttons D to select the channel being adjusted, then press the Set button F, followed by the // buttons D again, to change the level setting. (See page 34 for more information.) D // Buttons: These multipurpose buttons are used to change or scroll through items in the on-screen menus or on the front panel or to make configuration settings such as digital inputs or delay timing. When changing a setting, first press the button for the function or setting to be changed (e.g., press the Digital Select Button G to change a digital input) and then press one of these buttons to scroll through the list of options or to increase or decrease a setting. The sections in this manual describing the individual features and functions contain specific information on using these buttons for each application. When the AVR remote is being programmed for the codes of another device, these buttons are also used in the "Auto Search" process (See page 41 for more information on programming the remote.) 10 MAIN REMOTE CONTROL FUNCTIONS 30935\_AVR145\_ENG 01/12/06 9:53 Side 11 Main Remote Control Functions page 28-29). See page 28-29 for the available Dolby surround mode options.

N DTS Digital Mode Selector: When a DTS source is in use the AVR will select the appropriate mode automatically and no other mode will be available. Pressing this button will display the mode currently selected by the AVR's decoder, depending on the surround material played and the speaker setting. When a DTS source is not in use, this button has no function. (See page 28-29 for the available DTS options.) O Logic 7 Selector: Press this button to select one of the available Logic 7 surround modes.

(See page 28-29 for the available Logic 7 options.) P Transport Control Buttons: These buttons do not have any functions for the AVR, but they may be programmed for the forward/reverse play operation of a wide variety of CD or DVD players, and audio or video-cassette recorders. (See page 41 for more information on programming the remote.) Q EzSet Sensor Microphone: The sensor microphone for the EzSet microphone is behind these slots. When using the remote to calibrate speaker output levels using EzSet, be sure that you do not hold the remote in a way that covers these slots. (See page 21 for more information on using EzSet). R Skip Up/Down Buttons: These buttons do not have a direct function with the AVR, but when used with a compatibly programmed CD or DVD player/changer they will change the tracks on the disc currently being played. S Stereo Mode Selector: Press this button to select a stereo playback mode. When the button is pressed so that SURROUND OFF appears in the Main Information Display Ò, with only the Surr Off Surround Mode Indicator ( lit, 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 Main Information Display Ò, with both the DSP and Surr Off Surround Mode Indicators ( lit, you may enjoy a two-channel presentation of the sound along with the benefits of bass management. When the button is pressed so that 5 C H STEREO appears, the stereo signal is routed to all five speakers, if installed. (See page 20 for more information on stereo playback modes). T DTS Neo:6 Mode Selector: Pressing this selector button cycles the AVR through the various DTS Neo:6 modes, which extract a fivechannel surround field from two-channel program material (from PCM source or analog input signal). The first press selects the last DTS Neo:6 surround mode that was in use, and each subsequent press selects the next mode. U Macro Buttons: Press these buttons to store or recall a "Macro", which is a pre-programmed sequence of commands stored in the remote.

(See page 42 for more information on storing and recalling macros). V RDS Select Button: Press this button to display the various messages that are part of the RDS data system of the AVR's tuner. (See page 40 for more information on RDS). W Preset Up/Down: When the tuner is in use, press these buttons to scroll through the stations programmed into the AVR's memory. When CD or DVD is selected using the Input Selector button 4, these buttons may function as Slow Fwd/Rev (DVD) or "+10" (CD, CDR). X Clear Button: Press this button to clear incorrect entries when using the remote to directly enter a radio station's frequency. Y Memory Button: Press this button to enter a radio station into the AVR's preset memory. Two underline indicators will flash at the right side of the Main Information Display Ò, you then have five seconds to enter a preset memory location using the Numeric Keys H. (See page 40 for more information). Z Delay/Prev Ch.

: Press this button to begin the process for setting the delay times used by the AVR when processing surround sound. After pressing this button, the delay times are entered by pressing the Set button F and then using the // buttons D to change the setting. Press the Set button again to complete the process. (See page 24 for more information). a > Button: Press this button to change a setting or selection when configuring many of the AVR's settings.

b Speaker Select: Press this button to begin the process of configuring the AVR's Bass Management System for use with the type of speakers used in your system. Once the button has been pressed, use the // buttons D to select the channel you wish to set up. Press the Set Button F and then select the speaker type (Large, Small or None) appropriate with the speaker in use. (See page 22 for more information). c Mute: Press this button to momentarily silence the AVR or TV set being controlled, depending on which device has been selected.

When the AVR remote is being programmed to operate another device, this button is pressed with the Input Selector button 4 to begin the programming process.



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(See page 41 for more information on programming the remote). *d* Volume Up/Down: Press these buttons to raise or lower the system volume. *e* Digital Media Player (DMP) Selector: When Harman Kardon's (optional) is connected to Digital Media Player (DMP) Connector K and a compatible Apple® iPod® is docked in pressing this selector will select the iPod as the audio source input device for the AVR 145. In addition, if a video display is connected to one of the Video Monitor Outputs B, the iPod's messages will appear on screen, and in the Upper and Lower Display Lines Ö. The /&/> Buttons DEa, the Set Button F and the Transport Controls P may be used to navigate the iPod and to operate many functions. See page 36, and the manuals for The Bridge and your iPod for more information. *f* TV/Video Button: This button does not have a direct function on the AVR, but when used with a compatibly programmed VCR, DVD or satellite receiver that has a "TV/Video" function, pressing this button will switch between the output of the player or receiver and the external video input to that player. Consult the Owner's Manual for your specific player or receiver for the details of how it implements this function. NOTE: With the press of any remote button the Input Selector button 45 associated with the button pressed will briefly flash red to confirm the transmission of the command, as long as there is a function for that button with the device selected (see function list on pages 44-45).

*g* Dim Button: Press this button to activate the Dimmer function, which reduces the brightness of the front-panel display, or turns it off entirely. The first press of the button shows the default state. Press the button again to change the display to reduce the brightness by 50%, and press it again within five 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 Power Indicator 3 will always remain at full brightness regardless of the setting to remind you that the

AVR is still turned on. *h* Tone Mode: Press this button to access the tone controls (bass and treble). Use the Navigation buttons to make your selections. *i* EzSet (SPL) Button: Press this button to run the EzSet output-level calibration procedure. Make sure to point the remote toward the receiver during EzSet. ENGLISH MAIN REMOTE CONTROL FUNCTIONS 11 30935\_AVR145\_ENG 01/12/06 9:53 Side 12 Installation and Connections After unpacking the unit, and placing it on a solid surface capable of supporting its weight, you will need to make the connections to your audio and video equipment.

When connecting wires to the speakers, be certain to observe proper polarity. Note that the positive (+) terminal of each speaker connection now carries a specific color code as noted on page 8. However, most speakers will still use a red terminal for the positive (+) connection. Connect the "negative" or "black" wire to the same terminal on both the receiver and the speaker. NOTE: While most speaker manufacturers adhere to an industry convention of using black terminals for negative and red ones for positive, some manufacturers may vary from this configuration.

To assure proper phase and optimal performance, consult the identification plate on your speaker or the speaker's manual to verify polarity. If you do not know the polarity of your speaker, ask your dealer for advice before proceeding, or consult the speaker's manufacturer. We also recommend that the length of cable used to connect speaker pairs be identical. For example, use the same length piece of cable to connect the front-left and front-right or surround-left and surround-right speakers, even if the speakers are a different distance from the AVR. 9.

Connections to a subwoofer are normally made via a line level audio connection from the Subwoofer Output 4 to the line-level input of a subwoofer with a built-in amplifier. When a passive subwoofer is used, the connection first goes to a power amplifier, which will be connected to one or more subwoofer speakers. If you are using a powered subwoofer that does not have line-level input connections, follow the instructions furnished with the speaker for connection information. 10. If an external multi-channel audio source with 5.1 outputs such as an external digital processor/decoder, DVD-Audio or SACD player is used, connect the outputs of that device to the 6-Channel Direct Inputs 9. Audio Equipment Connections We recommend that you use high-quality interconnect cables when making connections to source equipment and recorders to preserve the integrity of the signals. When making connections to audio source equipment or speakers it is always a good practice to unplug the unit from the AC wall outlet. This prevents any possibility of accidentally sending audio or transient signals to the speakers that may damage them. 1.

Connect the analog output of a CD player to the CD inputs 6. NOTE: When the CD player has both fixed and variable audio outputs it is best to use the fixed output unless you find that the input to the receiver is so low that the sound is noisy, or so high that the signal is distorted. 2. Connect the analog Play/Out jacks of a cassette deck, MD, CD-R or other audio recorder to the Tape Input jacks 2. Connect the analog Record/In jacks on the recorder to the Tape Output jacks 3 on the AVR. 3. Connect the digital output of any digital sources such as a CD or DVD changer or player, advanced video game, a digital satellite receiver, HDTV tuner or digital cable set-top box or the output of a compatible computer sound card to the Optical and Coaxial Digital Inputs NR\*Ö. We recommend connecting the coaxial digital audio output of your DVD player to the Coax 1 Digital Audio Input N, since that digital input is assigned to the DVD source by default. The Video 2/Cable/Sat source defaults to the Optical 1 Digital Audio Input R. If your cable television set-top box or satellite receiver is equipped with an optical digital audio output, we recommend that you connect it to this input to obtain the benefits of higher-quality digital audio (such as

PCM, Dolby Digital 2.

0 or Dolby Digital 5.1 signals when broadcast by your cable or satellite provider). 4. Connect the Coaxial or Optical Digital Outputs A on the rear panel of the AVR to the matching digital input connections on a CD-R or MiniDisc recorder. 5.

Assemble the AM Loop Antenna supplied with the unit as shown below. Connect it to the AM and GND screw terminals 0. 6. Connect the supplied FM antenna to the FM (75 ohm) connection 1. The FM antenna may be an external roof antenna, an inside powered or wire lead antenna or a connection from a cable system.

Note that if the antenna or connection uses 300-ohm twin-lead cable, you should use a 300-ohm-to-75-ohm adapter to make the connection. 7.



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With the AVR 145 turned off, connect the optional Harman Kardon to Digital Media Player (DMP) Connector 8. Your compatible Apple® iPod® may be docked in when you wish to use it as your audio source device. Video materials stored on the iPod are not able to be viewed using the AVR. 8. Connect the front, center and surround speaker outputs DEF to the respective speakers. To assure that all the audio signals are carried to your speakers without loss of clarity or resolution, we suggest that you use high-quality speaker cable. Many brands of cable are available and the choice of cable may be influenced by the distance between your speakers and the receiver, the type of speakers you use, personal preferences and other factors. Your dealer or installer is a valuable resource to consult in selecting the proper cable.

Regardless of the brand of cable selected, we recommend that you use a cable constructed of fine, multistrand copper with an area greater than 2 mm<sup>2</sup>. Cable with an area of 1.5 mm<sup>2</sup> may be used for short runs of less than 4 m. We do not recommend that you use cables with an area less than 1mm<sup>2</sup> due to the power loss and degradation in performance that will occur. Cables that are run inside walls should have the appropriate markings to indicate listing with any appropriate testing agency standards. Questions about running cables inside walls should be referred to your installer or a licensed electrician who is familiar with the applicable local building codes in your area. Video Equipment Connections Video equipment is connected in the same manner as audio components. Again, the use of highquality interconnect cables is recommended to preserve signal quality. To ensure best video performance S-Video sources should be connected to the AVR only with their S-Video In/Outputs, not with their composite video connectors too. 1.

Connect a VCR's audio and video Play/Out jacks to the Video 1 Q H or Video 2 In jacks MO on the rear panel. The Audio and Video Record/In jacks on the VCR should be connected to the Video 1 Out jacks P 7 on the AVR. 12 INSTALLATION AND CONNECTIONS 30935\_AVR145\_ENG 01/12/06 9:53 Side 13 Installation and Connections 2. Although any video device may be connected to these jacks, we recommend connecting your video recorder to the Audio 1 Audio/Video Input Jacks HQ so that you may take advantage of the fact that the remote control is preprogrammed with video recorder product codes for the Video 1 device. For the same reason, we recommend connecting your cable TV converter or satellite receiver to the Video 2 Audio/Video Input Jacks MO. 3. Connect the analog audio and video outputs of a DVD or laser disc player to the DVD jacks 5C. 4. Connect the digital audio outputs of a CD, MD or DVD player, satellite receiver, cable box or HDTV converter to the appropriate Optical or Coaxial Digital Inputs NR\*Ó. Remember that the DVD source defaults to the Coaxial 1 Digital Input N.

All other sources default to their analog inputs, although any source may be assigned to any digital audio input on the receiver. NOTE: When connecting a device such as a digital cable box or other set-top tuner product with a digital audio output, we recommend that you connect both the digital and analog outputs of the product to your AVR. The audio input polling feature of the AVR will then be able to make certain that you have a constant audio feed, since it will automatically switch the audio input to the analog jacks if the digital feed is interrupted or not available for a particular channel. 5. Connect the Composite and S-Video (if S-Video device is in use) Monitor Output B jacks on the receiver to the composite and S-Video input of your television monitor or video projector. 6. If your DVD player and monitor both have component video connections, connect the component outputs of the DVD player to the Video 1 Component Video Inputs L. Note that even when component video connections are used the audio connections must still be made to either the analog DVD Audio Inputs 5 or any of the Coaxial or Optical Digital Input jacks NR. 7. If another component video device is available, connect it to the Video 2 Component Video Input jacks J.

The audio connections for this device should be made to either the Video 2 Input jacks O or any of the Coaxial or Optical Digital Input jacks NR. 8. If the component video inputs are used, connect the Component Video Output K to the component video inputs of your TV, projector or display device. 9. If you have a camcorder, video game or other audio/video device that is connected to the AVR on a temporary, rather than permanent basis, connect the audio, video and digital audio outputs of that device to the Front Panel Inputs \*ÓÓ. A device connected to the Video 3 jacks Ó is selected as the Video 3 input, and connected to the digital jacks \*Ó it is selected as "Optical 3" or "Coaxial 3" input. (See page 18 for more information on input configuration.) Video Connection Notes: · Y/Pr/Pb Component, RGB (see page 12), or Composite video signals may only be viewed in their native formats and will not be converted to the other formats. S-Video signals will be converted to composite signal. The OSD can be viewed on the TV screen in any case, with Video or S-Video input selected on the TV.

· When the component video jacks are used, the on-screen menus will not be visible. You must switch to the standard composite or S-Video input on your TV to view those menus. · All component inputs/outputs can be used for RGB signals too, in the same way as described for the Y/Pr/Pb signals, then connected to the jacks with the corresponding color. But this is only correct as long as only the three RGB video signals are output by the video source, with a sync signal in the "G" signal only, without any sync signal output separately by the source. SCART A/V Connections For the connections described above your video device needs RCA (cinch) connectors or/and SVideo connectors for all Audio and Video signals: Any normal video device (Not SVHS or High 8) for only playback needs 3 RCA jacks, VCRs for record and playback even 6 RCA jacks.

Any S-Video device (SVHS, High 8) needs 2 RCA (Audio) and 1 S-Video jack (Video), if it's a playback unit, or 4 RCA (Audio In/Out) and 2 S-Video (Video In/Out) jacks, if it's a recording VCR. Many european video devices are equipped with RCA (Cinch) or S-Video jacks only partially, not for all audio and video in/outputs needed as described above, but with a so called Scart or Euro-AV connector (almost rectangular jack with 21 pins, see drawings on next page). In that case the following Scart to Cinch adapters or cables are needed: · Units for playback, such as satellite receivers, camcorders, DVD or LD players, need an adapter from Scart to 3 RCA plugs, see fig. 1 (normal video devices) or from Scart to 2 RCA+1 S-Video plugs, see fig. 4 (S-Video devices). · HiFi VCRs need an adapter from Scart to 6 RCA plugs, see fig.



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2 (normal video), or from Scart to 4 Audio+2S-Video jacks, see fig. 5 (S-Video VCR). Read carefully the instruction attached to the adapter to find which of the six plugs is used for the record signal to the VCR (connect with the AVR's Out jacks) and for the playback signal from the VCR (connect with the AVR's In jacks). Do not misconnect Audio and Video signals. Don't hesitate to consult your dealer, if you are uncertain. - If you use only normal video devices the TV monitor needs an adapter from 3 RCA plugs to Scart (fig. 3) only. If also S-Video devices are used an adapter from 2 RCA+1S-Video plugs to Scart is needed additionally (fig. 6), connected to the SCART input on your TV that is provided for S-Video.

Note that only the video plugs (the "yellow" cinch plug in fig. 3 and the S-Video plug in fig. 6) must be connected to the TV Monitor Output B, and the volume on the TV must be reduced to minimum. **INSTALLATION AND CONNECTIONS 13 ENGLISH 30935\_AVR145\_ENG 01/12/06 9:53 Side 14 Installation and Connections Important Note for Adapter Cables:** If the cinch connectors of the adapter you'll use are labeled, connect the Audio and Video "In" plugs with the corresponding Audio and Video "In" jacks on the AVR (and with a VCR connect the "Out" plugs to the "Out" jacks on the VCR). Note that with some adapter types it may be just turned around: If no signal is audible/ visible when the VCR is playing connect the "Out" plugs to the "In" jacks on the AVR and turned around. If the adapter plugs are not labeled in that way, pay attention to the signal flow directions as shown in the diagrams above and in the instruction attached to the adapter. If uncertain, don't hesitate to consult your dealer. **Important Notes for S-Video connections:** 1. Only the S-Video In/Out of S-Video devices must be connected to the AVR, NOT both, normal video and S-Video In/Outputs (except the TV, see item below). When both connections are made, only the S-Video signal will be viewed on the screen.

**Important Note for the Use of SCART-Cinch Adapters:** When video sources are connected to the TV directly with a SCART cable, specific control signals apart from Audio/Video signals will be fed to the TV. These specific signals are: With all video sources, the signal for automatic input selection that switches the TV automatically to the appropriate input as soon as the video source is started. And with DVD players, the signals automatically turning the TV to 4:3/16:9 format (with 16:9 TVs or with 4:3 TVs with selectable 16:9 format) and turning the RGB video decoder of the TV on or off, depending on the DVD player's setting. With any adapter cable, these control signals will be lost and the appropriate setting of the TV must be made manually. Note for RGB signal with SCART: If you use a unit providing RGB signals on a SCART output (as e.

g. most DVD players do) and you want to use that RGB signal, this SCART output must be connected directly to your TV. Although the AVR can switch three-way video signals (like component signals Y/Pb/Pr), most TVs need separate sync signals for RGB (also with SCART) that cannot be switched and provided by the AVR. RGB signals can be pathed through the AVR only when no separate sync signal is needed (see last "Video Connection Note" on page 13). Black

Figure 1: SCART/Cinch-Adapter for playback; signal flow: SCART Cinch Yellow Red Black Red Blue1 Figure 2: SCART/Cinch-Adapter for record and playback; signal flow: SCART Cinch Black Figure 3: Cinch/SCART-Adapter for playback; signal flow: Cinch SCART Figure 4: SCART/S-Video Adapter for playback; signal flow: SCART Cinch Yellow Red Yellow Green1 White Red Black S-Video In Black Red Blue1 Figure 5: SCART/S-Video Adapter for record and playback; signal flow: SCART Cinch Figure 6: SCART/S-Video Adapter for playback; signal flow: Cinch SCART 1 Yellow S-Video In S-Video Out Red Black S-Video Out Also other colours possible, e.

g. brown and grey. **14 INSTALLATION AND CONNECTIONS 30935\_AVR145\_ENG 01/12/06 9:53 Side 15 Installation and Connections Power Connections AC Power Connections** This unit is equipped with one accessory AC outlets. It may be used to power Accessory devices, but it should not be used with high-current draw equipment such as power amplifiers. The total power draw to the Switched G Outlet must not exceed 50 watts. The Switched G outlet will receive power only when the unit is on completely. This is recommended for devices that have no power switch or a mechanical power switch that may be left in the "ON" position. **NOTE:** Many audio and video products go into a Standby mode when they are used with switched outlets, and cannot be fully turned on using the outlet alone without a remote control command. The AVR draws significantly more current than other household devices such as computers that use removable power cords. For that reason, it is important that only the cord supplied with the unit (or a direct replacement of identical capacity) be used.

Once the power cord is connected, you are almost ready to enjoy the AVR 145's incredible power and fidelity! **ENGLISH INSTALLATION AND CONNECTIONS 15 30935\_AVR145\_ENG 01/12/06 9:53 Side 16 Installation and Connections Speaker Selection** No matter which type or brand of speakers is used, the same model or brand of speaker should be used for the front-left, center and front-right speakers. This creates a seamless front soundstage and eliminates the possibility of distracting sonic disturbances that occur when a sound moves across mismatched front-channel speakers. Subwoofers produce largely nondirectional sound, so they may be placed almost anywhere in a room. Actual placement should be based on room size and shape and the type of subwoofer used. One method of finding the optimal location for a subwoofer is to begin by placing it in the front of the room, about 15 cm from a wall, or near the front corner of the room. Another method is to temporarily place the subwoofer in the spot where you will normally sit, and then walk around the room until you find a spot where the subwoofer sounds best. Place the subwoofer in that spot. You should also follow the instructions of the subwoofer's manufacturer, or you may wish to experiment with the best location for a subwoofer in your listening room. **Speaker Placement** The placement of speakers in a multichannel home-theater system can have a noticeable impact on the quality of sound reproduced. Depending on the type of center-channel speaker in use and your viewing device, place the center speaker either directly above or below your TV, or in the center behind a perforated frontprojection screen. Once the center-channel speaker is installed, position the left-front and right-front speakers so that they are as far away from one another as the center-channel speaker is from the preferred listening position.



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Ideally, the front-channel speakers should be placed so that their tweeters are no more than 60cm above or below the tweeter in the center-channel speaker. They should also be at least 0.5 meter from your TV set unless the speakers are magnetically shielded to avoid colourings on the TV screen. Note that most speakers are not shielded, even with complete surround sets only the Center speaker may be.

Depending on the specifics of your room acoustics and the type of speakers in use, you may find that imaging is improved by moving the front-left and front-right speakers slightly forward of the center-channel speaker. If possible, adjust all front loudspeakers so that they are aimed at ear height when you are seated in the listening position. Using these guidelines, you'll find that it takes some experimentation to find the correct location for the front speakers in your particular installation. Don't be afraid to move things around until the system sounds correct. Optimize your speakers so that audio transitions across the front of the room sound smooth.

When the AVR is used in 5.1-channel operation, the preferred location for surround speakers is on the side walls of the room, at or slightly behind the listening position. A) Front Channel Speaker Installation with Direct-View TV Sets or Rear-Screen Projectors 5.1-Channel System At least 15 cm from ceiling At least 60 cm 16 INSTALLATION AND CONNECTIONS 30935\_AVR145\_ENG 01/12/06 9:53 Side 17 System Configuration Once the speakers have been placed in the room and connected, the remaining steps are to program the system configuration memories. Although it is necessary to assign input/output settings and surround mode choices manually, we recommend that you take advantage of the power and precision of EzSet to automatically select and enter the settings for all other audio parameters. This will not only save you time; it will ensure that your room is calibrated and equalized with an accuracy not possible when these settings are made manually. You are now ready to power up the AVR 145 to begin these final adjustments. Using the On-Screen Display When making the following adjustments, you may find them easier to make via the unit's onscreen display system. These easy-to-read displays give you a clear picture of the current status of the unit and facilitate speaker, delay, input or digital selection you are making. To view the on-screen displays, make certain you have made a connection from the Video Monitor Out jack B on the rear panel to the composite or S-Video input of your TV or projector.

In order to view the AVR's displays, the correct video input must be selected on your video display. Note that the on-screen menus are not available when a component video display is in use. IMPORTANT NOTE: When viewing the on-screen menus using a CRT-based projector, plasma display or any direct-view CRT monitor or television, it is important that they not be left on the screen for an extended period of time. As with any video display, but particularly with projectors, constant display of a static image such as these menus or video game images may cause the image to be permanently "burned into" the CRT. This type of damage is not covered by the AVR warranty and may not be covered by the projector TV set's warranty. The AVR has two on-screen display modes, "Semi-OSD" and "Full-OSD." When making configuration adjustments, it is recommended that the Full-OSD mode be used. This will place a complete status report or option listing on the screen, making it easier to view the available options and make the settings on the screen. The Semi-OSD mode uses one-line displays only. Note that when the full OSD system is in use, the menu selections are not shown in the Information Display 0.

When the full OSD menu system is used, OSD O N will appear in the Main Information Display 0 to remind you that a video display must be used. When the semi-OSD system is used in conjunction with the discrete configuration buttons, the on screen display will show a single line of text with the current menu selection. That selection will also be shown in the Main Information Display 0. The full OSD system can always be turned on or off by pressing the OSD button L. When this button is pressed the MASTER MENU (Figure 1) will appear, and adjustments are made from the individual menus.

Note that the menus will remain on the screen for 20 seconds after the latest action was made on the screen menu, then they will "time-out" and disappear from the screen. The time-out may be increased to as much as 50 seconds by going to the SYSTEM SETUP menu, and changing the item titled FULL OSD TIME OUT. The semi-OSD system is also available as a system default, although it may be turned off by using the SYSTEM SETUP menu. (See page 37). With the semi-OSD system, you may make adjustments directly, by pressing the buttons on the front panel or remote control for the specific parameter to be adjusted.

For example, to change the digital input for any of the sources, press the Digital Select Button 0G and then any of the Selector buttons < / > 7 or /R D on the front panel or remote. First Turn On You are now ready to power up the AVR to begin these final adjustments. 1. Plug the Power Cable I into an unswitched AC outlet. 2. Press the Main Power Switch 1 in until it latches and the word "OFF" on the top of the switch disappears inside the front panel. Note that the Power Indicator 3 will turn orange, indicating that the unit is in the Standby mode. 3. Remove the protective plastic film from the main front-panel lens. If left in place, the film may affect the performance of your remote control.

4. Install the three supplied AAA batteries in the remote as shown. Be certain to follow the (+) and (-) polarity indicators that are on the top of the battery compartment. Figure 1 System Setup The AVR 145 features an advanced memory system that enables you to establish different configurations for the speaker configuration, digital input, surround mode, delay times, crossover frequencies and speaker setting for each input source. To ease the speaker setting, the same speaker setting can also be made for all inputs. This flexibility enables you to custom tailor the way in which you listen to each source and have the AVR memorize them. This means, for example, that you may associate different surround modes and analog or digital inputs with different sources, or set different speaker configurations with the resultant changes to the bass management system or the use of the center speaker and/or the Subwoofer. Once these settings are made, they will automatically be recalled whenever you select that input. The factory default settings for the AVR 145 have all inputs configured for an analog audio input except for the DVD input, where the Coaxial Digital Input N is the default and the Video 2 input, where the Optical Digital Audio Input R is the default.



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