



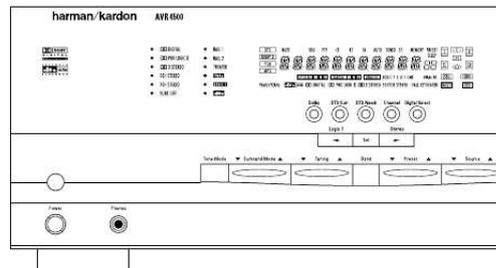
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You can read the recommendations in the user guide, the technical guide or the installation guide for HARMAN KARDON AVR 4500. You'll find the answers to all your questions on the HARMAN KARDON AVR 4500 in the user manual (information, specifications, safety advice, size, accessories, etc.). Detailed instructions for use are in the User's Guide.

User manual HARMAN KARDON AVR 4500
User guide HARMAN KARDON AVR 4500
Operating instructions HARMAN KARDON AVR 4500
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AVR 4500 Audio/Video Receiver

OWNER'S MANUAL



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Manual abstract:

I 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-ES 6.1 modes, DTS Neo:6 and the latest 7.1 channel versions of Harman's own Logic 7 technology. The AVR 4500 has been engineered so that it is easy to take advantage of all the power of its digital technology. On-screen menus, fully color coded connection jacks and terminals and our exclusive EzSet™ remote make installation fast and simple. However, to obtain the maximum enjoyment from your new receiver, we urge you to read this manual. A few minutes spent learning the functions of the various controls will enable you to take advantage of all the power the AVR 4500 is able to deliver. If you have any questions about this product, its installation or its operation, please contact your retailer or custom installer. They are your best local sources of information.

Description and Features The AVR 4500 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 4500's own FM/AM tuner. Along with Dolby Pro Logic II, DTS Neo:6, Dolby 3 Stereo, 5 Channel or 7 Channel Stereo and Hall and Theater modes, the AVR 4500 offers Harman International's exclusive Logic 7 process in both 5.1 and 7.1 versions to create a wider, more enveloping field environment and more defined fly-overs and pans. Another Harman Kardon exclusive is VMaX, which uses proprietary processing to create an open, spacious sound field even when only two front speakers are available.

Finally, the AVR 4500 is among the very few A/V receivers that offer decoding of MP3 data, so that you may listen to the latest music selections directly from compatible computers or playback devices with the power and fidelity you expect from Harman Kardon. In addition to providing a wide range of listening options, the AVR 4500 is easy to configure so that it provides the best results with your speakers and specific listening-room environment. Onscreen menus make it simple to enter settings for speaker configurations and bass management, and the EzSet remote measures a system's sound levels and automatically calibrates them for perfectly balanced sound field presentation. For the ultimate in flexibility, the AVR 4500 features connections for six video devices, all with both composite and S-Video inputs. Two additional audio inputs are available, and a total of six digital inputs and three outputs make the AVR 4500 capable of handling all the latest digital audio sources.

For compatibility with the latest HDTV video sources and progressive scan DVD players, the AVR 4500 also features wide-bandwidth, lowcrosstalk component video switching. Coax and optical digital outputs are available for direct connection to digital recorders, and the front panel coaxial digital jack may be switched to output for use with portable digital recorders a Harman Kardon exclusive. Two video recording outputs, preamp-out jacks, and a colorcoded eight-channel input make the AVR 4500 virtually future-proof, with everything needed to accommodate tomorrow's new formats right on board. The AVR 4500's flexibility and power extend beyond your main home theater or listening room. The AVR 4500 includes a sophisticated multizone control system that allows you to select one source for use in the main room and a different one (Audio only) in a second room. Complete control over volume is possible with a separate infrared control link. To make it easy to operate the AVR 4500 from a remote room, a separate "Zone II" remote is included. The AVR 4500'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 forty-seven years ago. With state-of-the-art circuitry and time-honored circuit designs, the AVR 4500 is the perfect combination of the latest in digital audio technology, a quiet yet powerful analog amplifier in an elegant, easy-to-use package.

I Dolby Digital and Dolby Pro Logic* II Decoding, and the full suite of DTS® modes, including DTS-ES® 6.1 Discrete & Matrix and Neo:6® using the latest 24bit, twin-core Crystal® DSP engine I Harman Kardon's exclusive Logic 7® processing, available for the first time with both 7.1 and 5.1 processing in a variety of modes and two modes of VMaX® I MP3 decoding for use with compatible computers and digital audio players I remote automatically sets output levels for optimum performance TM I High-bandwidth, HDTV-compatible component video switching I Front panel analog A/V inputs I Front panel digital inputs with coax digital output capability for easy connection to portable digital devices and the latest video game consoles I Multiple digital inputs and outputs I On-screen menu and display system I Complete multizone system with separate "Zone II" remote included I 6-Channel/8-Channel Direct Input and Preamp Outputs for Easy Expansion and Use with Future Audio Formats I Main Remote with Internal Codes and Learning Capability INTRODUCTION 3 Safety Information Important Safety Information Verify Line Voltage Before Use Your AVR 4500 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 I To assure proper operation and to avoid the potential for safety hazards, place the unit on a firm and level surface.



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When placing the unit on a shelf, be certain that the shelf and any mounting hardware can support the weight of the product. Make certain that proper space is provided both above and below the unit for ventilation. If this product will be installed in a cabinet or other enclosed area, make certain that there is sufficient air movement within the cabinet. Under some circumstances a fan may be required.

Do not place the unit directly on a carpeted surface. Avoid installation in extremely hot or cold locations, or an area that is exposed to direct sunlight or heating equipment. Avoid moist or humid locations. Do not obstruct the ventilation slots on the top of the unit, or place objects directly over them.

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

Moving the Unit Before moving the unit, be certain to disconnect any interconnection cords with other components, and make certain that you disconnect the unit from the AC outlet. Unpacking The carton and shipping materials used to protect your new receiver during shipment were specially designed to cushion it from shock and vibration. We suggest that you save the carton and packing materials for use in shipping if you move, or should the unit ever need repair. To minimize the size of the carton in storage, you may wish to flatten it. This is done by carefully slitting the tape seams on the bottom and collapsing the carton.

Other cardboard inserts may be stored in the same manner. Packing materials that cannot be collapsed should be saved along with the carton in a plastic bag. If you do not wish to save the packaging materials, please note that the carton and other sections of the shipping protection are recyclable. Please respect the environment and discard those materials at a local recycling center. 4 SAFETY INFORMATION Front Panel Controls 4500 ~ ^les or disables the Balance, Bass and Treble tone controls.

When the button is pressed so that the words TONE IN appear in the Main Information Display ~, the settings of the Bass and Treble Ú controls and of the Balance control Ó will affect the output signals. When the button is pressed so that the words TONE OUT appear in the Main Information Display ~, the output signal will be "flat," without any balance, bass or treble alteration, no matter how the actual Controls ÓÚ are adjusted. 9 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 32 for more information about surround modes.)

) Tuning Selector: Press the left side of the button to tune lower frequency stations and the right side of the button to tune higher frequency stations. When a station with a strong signal is reached, the TUNED indicator W will illuminate in the Main Information Display ~ (see page 40 for more information on tuning stations). ! Tuner Band Selector: Pressing this button will automatically switch the AVR 4500 to the Tuner mode. Pressing it again will switch between the AM and FM frequency bands. Holding it pressed for 3 seconds will switch between stereo or mono receiving and automatic or manual tuning mode.

When the button is pressed so that the AUTO Indicator X lights, the tuner will search for the next station with an acceptable signal when the Tuning Selector)Ké is pressed. When the button is pressed so that the AUTO Indicator X is not lit, each press of the Tuning Selector)Ké will increase the frequency. (See page 40 for more information on using the tuner.) @ Set Button: When making choices during the setup and configuration process, press this button to enter the desired setting as shown in the Main Information Display Ũ into the AVR 4500's memory. # Preset Stations Selector: Press this button to scroll up or down through the list of stations that have been entered into the preset memory. (See page 40 for more information on tuner programming.) \$ Stereo Mode Selector /> Button: This button has two functions: In normal use, pressing this selector button cycles through the stereo modes, and it is also used to turn off all surround processing and place the unit in a traditional two-channel Stereo mode. The first press selects 5-Channel Stereo or 7-Channel Stereo, depending on the selection (5.1 or 6.1/7.

1) made in the surround mode setting, see page 23, and the second selects "SURROUND OFF," which is true Stereo. When an adjustment is being made using the Channel Select Ũ or Digital Select Ũ buttons, this button may be pressed to scroll through the available options. % Input Source Selector: Press this button to change the input by scrolling through the list of input sources. ^ RDS Select Button: Press this button to display the various messages that are part of the RDS data system of the AVR 4500's tuner. (See page 30 for more information on RDS). & DTS Neo:6 Mode Selector: Pressing this selector button cycles the AVR through the various DTS Neo:6 modes, which extract a five- or seven-channel 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 in the following order: DTS Neo:6 MUSIC DTS Neo:6 MOVIES * Digital Optical 3 Input: Connect the optical digital audio output of an audio or video product to this jack. When the Input is not in use, be certain to keep the plastic cap installed to avoid dust contamination that might degrade future performance. (Input/Output Status Indicator: This LED indicator will normally light green to show that the Coaxial 3 digital Ó jack is operating as an input. When this jack has been configured for use as an output, the indicator will turn red to show that the jack may be used for recording.

(See page 21 for more information on configuring the front panel jack as output, rather than input.) Ó Digital Coax 3 Jack: This jack is normally used for connection to the output of portable audio devices, video game consoles or other products that have a coax digital jack. It may also be configured as an output jack, to feed a digital signal to a CD-R, MiniDisc or other digital recording device. (See page 21 for information on configuring the Digital Coax 3 Jack to an output.) Ő Video 4 Input Jacks: These audio/video jacks may be used for temporary connection to video games or portable audio/video products such as camcorders and portable audio players.

Bass Control: Turn this control to modify the low frequency output of the left/right channels by as much as ±10dB.



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Set this control to a suitable position for your taste or room acoustics. **Balance Control:** Turn this control to change the relative volume for the front left/right channels. **NOTE:** For proper operation of the surround modes this control should be at the midpoint or "12 o'clock" position. **Treble Control:** Turn this control to modify the high frequency output of the left/right channels by as much as ± 10 dB.

Set this control to a suitable position for your taste or room acoustics. **Digital Select Button:** When playing a source that has a digital output, press this button to select between the Optical * W and Coaxial **X** Digital inputs (See page 33 for more information). **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 35). **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. **Input indicators:** A green LED will light in front of the input that is currently being used as the source for the AVR 4500. **Main Information Display:** This display delivers messages and status indications to help you operate the receiver. (See pages 78 for a complete explanation of the Information Display.) **Remote Sensor Window:** The sensor behind this window receives infrared signals from the remote control.

Aim the remote at this area and do not block or cover it unless an external remote sensor is installed. **Surround Mode Indicators:** A green LED will light in front of the surround mode that is currently in use. **FRONT PANEL CONTROLS** Front Panel Information Display A B C D E F G H I J K Bitstream Indicators Optical Source Indicators Sample Rate Indicators DTS Mode Indicator Dolby Digital Indicator Coaxial Source Indicators Dolby Pro Logic II Indicator Analog Input Indicator Dolby 3 Stereo Indicator Logic 7 Mode Indicators 5 Channel/7 Channel Stereo Indicators L M N O P Q R S T U V Hall Mode Indicator Theater Mode Indicator VMaX Mode Indicator Multiroom Indicator OSD Indicator Speaker/Channel Input Indicators Preset Number/Sleep Timer Preset Indicator Sleep Indicator Memory Indicator Stereo Indicator W Tuned Indicator X Auto Indicator Y Main Information Display Z Mute Indicator AA Traffic Indicator AB Radiotext Indicator AC Clock Time Indicator AD Program Type Indicator AE RDS Indicator A BitstreamTM Indicators: When the input is a digital source, one of these indicators will light to display the specific type of signal in use. B Optical Source Indicators: These indicators light to show when a Optical Digital Input has been selected. C Sample Rate Indicators: One of these indicators will light when 96kHz or 192kHz source material is in use. D DTS Mode Indicator: This indicator illuminates when the DTS mode is selected E Dolby Digital Indicator: This indicator illuminates when the Dolby Digital mode is selected. F Coaxial Source Indicators: These indicators light to show when a Coaxial Digital Input has been selected. G Dolby Pro Logic II Indicator: This indicator lights when any Dolby Pro Logic II mode has been selected. **NOTE:** It is possible to see the Dolby Pro Logic II indicator lit simultaneously with the Dolby Digital indicator, even though the Dolby Digital surround mode has been selected. This is due to the specifications for Dolby Digital processing, which require that the Dolby Pro Logic II mode be applied when a 2-channel Dolby Digital signal (2.

0 recording) with Pro Logic information (Pro Logic flag on) is detected. For more information see page 34. If you desire 5.1-channel audio, check the audio settings in the menus for your DVD disc to make sure that a 5.1-channel Dolby Digital soundtrack has been selected. H Analog Input Indicator: This indicator lights when an analog input source has been selected. I Dolby 3 Stereo Indicator: This indicator lights when the Dolby 3 Stereo Mode has been selected. J Logic 7 Mode Indicators: These indicators light to indicate that one of the Logic 7 modes is in use. Along with the main Logic 7 indicator, either 5.1 or 7.

I will light to indicate the selected speaker configuration. One of the three letters to the far right of this segment will light to show which version of Logic 7 processing is in use: C for the Cinema mode, M for the Music mode and E for the Enhanced mode used with two-channel sources. (See page 29 for a description of the Logic 7 modes.) K 5-Channel/7-Channel Stereo Indicators: These indicators light to show if the 5-Channel or 7-Channel Stereo mode has been selected. Only the indicator STEREO will light when "Surround Off" has been selected. Then all Surround Modes are turned off and the unit will play in pure stereo mode. L Hall Mode Indicators: These indicators light when one of the Hall modes has been selected. M Theater Mode Indicator: This indicator illuminates to show that the Theater mode is in use. N VMaX Mode Indicators: One of these indicators lights when the VMaX mode is in use. V M A x F appears when the Far Field VMaX mode is selected; V M A x N appears when the Near Field VMaX mode is selected.

(See page 29 for a description of the VMaX modes.) O Multiroom Indicator: This indicator lights when the multiroom system is active. Note that it will remain lit when the multiroom system is in use even though the main room system is in the Standby mode and all other indicators are dark. (See page 39 for more information on the Multiroom system.) P OSD Indicator: When the OSD system is in use, this indicator lights to remind you that the other indicators in this display do not function when the On Screen Display is being used. **FRONT PANEL INFORMATION DISPLAY 7** Front Panel Information Display Q Speaker/Channel Input Indicators: These indicators are multipurpose, indicating either the speaker type selected for each channel or the incoming data-signal configuration. The left, center, right, right surround, left back surround, right back surround and left back surround speaker indicators are composed of three boxes, while the subwoofer is a single box. The center box lights when a "Small" speaker is selected, and the two outer boxes light when "Large" speakers are selected. When none of the boxes are lit for the center, surround or subwoofer channels, no speaker has been selected for that position. (See page 21 for more information on configuring speakers.

) The letters inside each of the center boxes display active input channels. For standard analog inputs, only the L and R will light, indicating a stereo input. When a digital source is playing, the indicators will light to display the channels begin received at the digital input. When the letters flash, the digital input has been interrupted. (See pages 23 and 34 for more information on the Channel Indicators).



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R Preset Number/Sleep Timer: When the tuner is in use, these numbers indicate the specific preset memory location in use. (See page 40 for more information on preset stations.) When the Sleep function is in use, these numbers show how many minutes remain before the unit goes into the Standby mode. S Preset Indicator: This indicator lights when the tuner is in use to show that the Preset Number/Sleep Timer R is showing the station's preset memory number. (See page 40 for more information on tuner presets.)

T Sleep Indicator: This indicator lights when the Sleep function is in use. The numbers in the Preset Number/Sleep Timer R indicators will show the minutes remaining before the AVR 4500 goes into the Standby mode. (See page 31 for more information on the Sleep function.) U Memory Indicator: This indicator flashes when entering presets and other information into the tuner's memory. V Stereo Indicator: This indicator illuminates when an FM station is being tuned in stereo. W Tuned Indicator: This indicator illuminates when a station is being received with sufficient signal strength to provide acceptable listening quality.

X Auto Indicator: This indicator illuminates when the tuner's Auto mode is in use. Y Main Information Display: This display shows messages relating to the status, input source, surround mode, tuner, volume level or other aspects of the AVR 4500's operation. Z Mute Indicator: This indicator illuminates to remind you that the AVR 4500's output has been silenced by pressing the Mute button. Press the Mute button again to return to the previously selected output level.

AA TA Traffic Announcement Indicator: This indicator illuminates if the RDS station tuned sometimes transmits traffic information (see page 41 for more information on RDS). AB RT Text Indicator: This indicator illuminates when the RDS station tuned is transmitting radiotext (RT) data. AC Clock Time Indicator: This indicator illuminates when the RDS station tuned is transmitting the CT (clock time) code, indicating the current time of day. AD PTY Indicator: This indicator illuminates when the RDS station tuned is transmitting program type data, or during a PTY search. AE RDS Indicator: This indicator illuminates when the station tuned is transmitting RDS data.

8 FRONT PANEL INFORMATION DISPLAY Rear Panel Connections a Y WU XV T bZ S QO M RP N K L J I 230 V/50Hz 0 AC OUTLETS ~230V/50Hz 1 2 UNSWITCHED / 100W MAX H SWITCHED / 50W MAX 3 57 46 8 9B AC E F G H I J K L M N O P Q R D E F G 0 1 2 3 4 5 6 7 8 9 A B C D AM Antenna FM Antenna Tape Inputs Tape Outputs Subwoofer Output DVD Audio Inputs CD Inputs Multiroom Outputs 6-Channel Direct Inputs 8-Channel Direct Inputs Digital Audio Outputs Video Monitor Outputs DVD Video Inputs Front Speaker Outputs Center Speaker Outputs Surround Speaker Outputs Switched AC Accessory Outlet Unswitched AC Accessory Outlet AC Power Cord Video 2 Component Video Inputs Component Video Outputs DVD Component Video Inputs Remote IR Output Remote IR Input Multiroom IR Input Video 1 Video Outputs Video 1 Video Inputs Video 2 Video Outputs S T U V W X Y Z a b Video 3 Video Inputs Video 2 Video Inputs Optical Digital Inputs Coaxial Digital Inputs Video 2 Audio Outputs Video 2 Audio Inputs Video 3 Audio Inputs Video 1 Audio Inputs Video 1 Audio Outputs Preamp Outputs 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. 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 Multiroom Outputs: Connect these jacks to an optional audio power amplifier to listen to the source selected by the multiroom system in a remote room.

8 6-Channel Direct Inputs: If an external digital audio decoder is used, connect the outputs of that decoder to these jacks. 9 8-Channel Direct Inputs: When an optional, external processor or playback device with 6.1 or 7.1 audio capability is in use, connect the Surround Back Left and Surround Back Right channel outputs of the player to these input jacks and all other 6.1/7.1 outputs to the appropriate 6-Channel Direct Inputs 8. 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. REAR PANEL CONNECTIONS 9 Rear Panel Connections 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 4500 to the black (-) terminals on the speakers. See page 15 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.



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(See page 15 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 15 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 4500 is turned on with the System Power Control switch 2. **H Unswitched AC Accessory Outlet:** This outlet may be used to power any AC device. The power will remain on at this outlet regardless of whether the AVR 4500 is on or off (in Standby), provided that the Main Power switch 1 is on. Note: The total power consumption of all devices connected to the accessory outlets should not exceed 100 watts from the Unswitched Outlet H and 50 W from the Switched Outlet G.

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 DVD 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 16). **M Remote IR Output:** This connection permits the IR sensor in the receiver to serve other remote controlled devices. Connect this jack to the "IR IN" jack on Harman Kardon or other compatible equipment. **N Remote IR Input:** If the AVR 4500's frontpanel 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. **O Multiroom IR Input:** Connect the output of an IR sensor in a remote room to this jack to operate the AVR 4500's multiroom control system. **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 Video 2 Video Outputs:** Connect these jacks to the RECORD/INPUT composite or S-Video jacks on a second VCR. **S Video 3 Video Inputs:** Connect these jacks to the PLAY/OUT composite or S-Video jacks on any video source. **T Video 2 Video Inputs:** Connect these jacks to the PLAY/OUT composite or S-Video jacks on a second VCR or other video source. **U Optical Digital Inputs:** Connect the optical digital output from a DVD player, HDTV receiver, the S/PDIF 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, an MP3 data stream or a standard PCM digital source. **V Coaxial Digital Inputs:** Connect the coax digital output from a DVD player, HDTV receiver, the S/PDIF 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, an MP3 data stream or a standard PCM digital source. Do not connect the RF digital output of an LD player to these jacks. **W Video 2 Audio Outputs:** Connect these jacks to the RECORD/INPUT audio jacks on a VCR or any Audio recorder. **X Video 2 Audio Inputs:** Connect these jacks to the PLAY/OUT audio jacks on a second VCR or other audio or video source. **Y Video 3 Audio Inputs:** Connect these jacks to the PLAY/OUT audio jacks on any audio or video source. **Z Video 1 Audio Inputs:** Connect these jacks to the PLAY/OUT audio jacks on a VCR or other audio or video source. **a Video 1 Audio Outputs:** Connect these jacks to the RECORD/INPUT audio jacks on a VCR or any other Audio recorder. **b Preamp Outputs:** These jacks may be connected to an external power amplifier. Note: Either the Video or S-Video output of any S-Video source must be connected to the AVR 4500, not both in parallel, otherwise the video may be disturbed or its performance be adversely effected. **10 REAR PANEL CONNECTIONS 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**
Power On Button IR Transmitter Window Program/SPL Indicator Power Off Button Input Selectors AVR Selector AM/FM Tuner Select 6-Channel/8-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 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 Multiroom Volume Up/Down SPL Indicator Select Learn Button Mute EzSet Sensor Microphone NOTE: The function names shown here are each button's feature when used with the AVR 4500. Most buttons have additional functions when used with other devices. See page 48-49 for a list of these functions. **MAIN REMOTE CONTROL FUNCTIONS 11 Main Remote Control Functions IMPORTANT NOTE:** The AVR4500's remote may be programmed to control up to seven devices, including the AVR 4500.

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 4500's remote is shipped from the factory to operate the AVR 4500 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 or by learning commands from other remotes. Before using the remote with other products, follow the instructions on pages 42-45 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 4500.



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(See page 45 for information about alternate functions for the remote's buttons.) 0 Power Off Button: Press this button to place the AVR 4500 or a selected device unit in the Standby mode. Note that when the AVR 4500 is switched off this will turn off the main room functions, but if the Multiroom system is activated, it will continue to function. 1 IR Transmitter Window: Point this window towards the AVR 4500 when pressing buttons on the remote to make certain that infrared commands are properly received. 2 Program/SPL Indicator: This three-color indicator is used to guide you through the process of programming the remote or learning commands from a remote into the AVR 4500's remote code memory and it is also used as a level indicator when using the remote's EzSet capabilities. (See page 26 for more information on setting output levels, and see page 42 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/8 Channel Direct Input: Press this button to select the device connected to the 6-Channel Direct Inputs 8 or the 8-Channel Direct Inputs 89 (the input available will depend on the selection 5.1 or 6.1/7.

I made in the surround mode setting, see page 23 for more information). 8 Test Tone: Press this button to begin the sequence used to calibrate the AVR 4500's output levels. (See page 26 for more information on calibrating the AVR 4500.) 9 Sleep Button: Press this button to place the unit in the Sleep mode.

After the time shown in the display, the AVR 4500 will automatically go into the Standby mode.

Each press of the button changes the time until turn-off in the following order: 90 min 40 min 80 min 30 min 70 min 20 min 60 min 10 min 50 min OFF 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 4500 remote is being programmed for the codes of another device, these buttons are also used in the "Auto Search" process (See page 42 for more information on programming the remote.) E < Button: This button is used to change the menu selection or setting during some of the setup procedures for the AVR 4500. F Set Button: This button is used to enter settings into the AVR 4500'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 UV*Ó to a source. (See page 33 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 that the AUTO indicator X goes out, pressing the Tuning buttons K) will move the frequency up or down in single-step increments.

When the FM band is in use and the AUTO indicator X is on, pressing this button will change to monaural reception making even weak stations audible or improving the audio performance with noisy stereo stations. (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 40 for more information on the tuner). 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 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 25 for more information). C Channel Select Button: This button is used to start the process of setting the AVR 4500'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 35 for more information.)

) 12 MAIN REMOTE CONTROL FUNCTIONS Main Remote Control Functions 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 the AUTO indicator X is illuminated, pressing either of the buttons will cause the tuner to seek the next station with acceptable signal strength for quality reception. When the AUTO indicator X is NOT illuminated, pressing these buttons will tune stations in single-step increments. (See page 40 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 4500's parameters.



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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 2.0 recordings, see Note on page 7). See page 29 for the available Dolby surround mode options. N DTS Digital Mode Selector: When a DTS source is in use the AVR 4500 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 (see item 6, page 5). When a DTS source is not in use, this button has no function. (See page 24, 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 29 for the available Logic 7 options.) P Transport Control Buttons: These buttons do not have any functions for the AVR 4500, 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 42 for more information on programming the remote.) Q Skip Up/Down Buttons: These buttons do not have a direct function with the AVR 4500, but when used with a compatibly programmed CD or DVD player/changer they will change the tracks on the disc currently being played. R Stereo Mode Select Button: Pressing this selector button cycles through the stereo modes, and it is also used to turn off all surround processing and place the unit in a traditional twochannel Stereo mode. The first press selects 5Channel Stereo or 7-Channel Stereo, depending on the selection (5.1 or 6.1/7.1) made in the surround mode setting, see page 23, and the second selects "SURROUND OFF," which is true Stereo. S DTS Neo:6 Mode Selector: Pressing this selector button cycles the AVR through the various DTS Neo:6 modes, which extract a five- or seven-channel 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 in the following order: DTS Neo:6 MUSIC DTS Neo:6 MOVIES T 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 44 for more information on storing and recalling macros.) U RDS Select Button: Press this button to display the various messages that are part of the RDS data system of the AVR 4500's tuner. (See page 41 for more information on RDS). V Preset Up/Down: When the tuner is in use, press these buttons to scroll through the stations programmed into the AVR 4500'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). W Clear Button: Press this button to clear incorrect entries when using the remote to directly enter a radio station's frequency. X Memory Button: Press this button to enter a radio station into the AVR 4500's preset memory. After pressing the button the MEMORY indicator U will flash; you then have five seconds to enter a preset memory location using the Numeric Keys H. (See page 40 for more information.)

) Y Delay/Prev Ch.: Press this button to begin the process for setting the delay times used by the AVR 4500 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 25 for more information.) Z > Button: Press this button to change a setting or selection when configuring many of the AVR's settings. a Speaker Select: Press this button to begin the process of configuring the AVR 4500'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 21 for more information.)

) b Multi-Room: Press this button to activate the Multiroom system or to begin the process of changing the input or volume level for the second zone. (See page 39 for more information on the Multiroom system.) c Volume Up/Down: Press these buttons to raise or lower the system volume. d SPL Indicator Select:

This button activates the AVR 4500's EzSet function to quickly and accurately calibrate the AVR 4500's output levels. During this sequence, EzSet will automatically adjust the output levels for all channels until they are equal, as shown by the Program Indicator 2 lighting green for each channel. (See page 26 for more information on EzSet.) e Learn Button: Press this button to begin the process of "learning" the codes from another product's remote into the AVR 4500's remote. (See page 43 for more information on using the remote's learning function.) f Mute: Press this button to momentarily silence the AVR 4500 or TV set being controlled, depending on which device has been selected. When the AVR 4500 remote is being programmed to operate another device, this button is pressed with the Input Selector button 4 to begin the programming process.

(See page 42 for more information on programming the remote.) g 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 26 for more information on using EzSet). 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 48, 49).

MAIN REMOTE CONTROL FUNCTIONS 13 Zone II Remote Control Functions The Zone II remote may be used in either the same room where the AVR 4500 is located, or it may be used in a separate room with an optional infrared sensor that is connected to the AVR 4500's Multi IR input jack O. © Preset Up/Down Track Skip: When the AVR's tuner is selected as the input source, these buttons will move up or down through the list of stations that have been stored in the preset memory. When a CD or DVD player is selected, these buttons activate the forward or reverse track or chapter skip functions. Disc Skip: Press this button to change discs on compatible Harman Kardon CD or DVD changers. î Volume Up/Down: When used in the room where the AVR 4500 is located, press this button to raise or lower the volume in that room.



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When it is used in a remote room with a sensor that is connected to the Multi IR Jack O, this button will raise or lower the volume in the remote room. Play Forward/Reverse/Stop: Press these buttons to control compatible Harman Kardon CD, DVD or cassette players. ° Mute: When used in the room where the AVR 4500 is located, press this button to temporarily silence the unit. When it is used in a remote room with a sensor that is connected to the Multi IR Jack O, this button will temporarily silence the feed to the remote room only. Press the button again to return to the previous volume level. Important Note: No matter in which room the Zone II remote is used, as with the main remote it is important to remember to press the Input Selector button that corresponds to the unit you wish to operate before you change the device to be controlled. POWER A OFF AVR VID1 MUTE K VID2 B AM/FM / VID3 VID4 C D E F G H DISC SKIP DVD CD TAPE DN TUNING UP DN PRESET UP â Power Off: When used in the room where the AVR 4500 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 Multi IR jack O, this button turns the Multi-Room system off. J DISC SKIP AVR Selector: Press this button to turn on the AVR. The input in use when the unit was last on will be selected.

ç AM/FM Tuner Select: Press this button to select the Tuner as the input to the Multiroom system. Press it again to change between the AM and FM bands. Input Selectors: When the AVR is off, press one of these buttons to turn the unit on and to select a specific input. When the unit is already in use, pressing one of these buttons will change the input. Tuning Up/Down Fast Play: These buttons may be used to change the frequency of the tuner. These buttons may also control the Fast Play or Fast Reverse functions of compatible Harman Kardon CD, DVD or cassette decks in the same room, or from a remote room when an IR link is connected to the AVR 4500. Record/Pause: Press this button to activate the Record or Pause function on compatible Harman Kardon CD, DVD or Cassette Deck products. I VOLUME â ç © î ° Power Off AVR Selector AM/FM Tuner Select Input Selectors Tuning Up/Down Fast Play Record/Pause Preset/Track Skip Disc Skip Volume Up/Down Play Forward/Reverse/Stop Mute NOTE: The Zone II remote may be used in either the same room where the AVR 4500 is located, or it may be used in a separate room with an optional infrared sensor that is connected to the AVR 4500's Multi IR input jack b. When it is used in the same room as the AVR 4500, it will control the functions of the AVR 4500 or any compatible Harman Kardon products in that room. When it is used in a separate room via a sensor connected to the Multi IR Jack b, the buttons for power, input source, volume and mute will control the source and volume for the second zone, as connected to the Multi Out Jacks .

(See page 39 for complete information on using the Multiroom system.) 14 ZONE II REMOTE CONTROL FUNCTIONS 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. 7. 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 mm². Cable with an area of 1.5 mm² may be used for short runs of less than 4 m.

We do not recommend that you use cables with an area less than 1mm² 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. 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 9. 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 4500. 8. 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. 9. 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 6Channel Direct Inputs 8. 10.

If an external multi-channel audio source with 7.1 outputs such as an external digital processor/decoder, DVD-Audio or SACD player is used, first connect the outputs of that device to the 6 Channel Direct Inputs as noted above, and then connect the Surround Back Left and Surround Back Right output channels of the source device to the 8-Channel Direct Inputs 9. 11. If a 7.1 channel source device is connected as noted in the item above, you must use an optional audio power stereo amplifier for the Surround Back channels.

Connect the SBL and SBR Preamp Outputs b to the inputs of the amplifier feeding those channels' speakers.



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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 4500. 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 U V *Ó. 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. **Video Equipment Connections** Video equipment is connected in the same manner as audio components. Again, the use of high-quality interconnect cables is recommended to preserve signal quality. To ensure best video performance S-Video sources should be connected to the AVR 4500 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 or Video 2 In jacks Q T X Z on the rear panel. The Audio and Video Record/In jacks on the VCR should be connected to the Video 1 or Video 2 Out jacks P R W a on the AVR 4500. 2. Connect the analog audio and video outputs of a satellite receiver, cable TV converter or television set or any other video source to the Video 3 S Y jacks.

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 U V *Ó. 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. **INSTALLATION AND CONNECTIONS 15 Installation and Connections** 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 DVD 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 UV. 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 X or any of the Coaxial or Optical Digital Input jacks UV. 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 4 jacks Ó is selected as the Video 4 input, and connected to the digital jacks *Ó it is selected as "Optical 3" or "Coaxial 3" input. (See page 21 for more information on input configuration.) **Video Connection Notes:** · Y/Pr/Pb Component, RGB (see page 17), S-Video or Composite video signals may only be viewed in their native formats and will not be converted to the other formats. But 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 SVideo 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.

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.



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