# Your PDF Guides

You can read the recommendations in the user guide, the technical guide or the installation guide for HARMAN KARDON AVR 4000. You'll find the answers to all your questions on the HARMAN KARDON AVR 4000 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 4000
User guide HARMAN KARDON AVR 4000
Operating instructions HARMAN KARDON AVR 4000
Instructions for use HARMAN KARDON AVR 4000
Instruction manual HARMAN KARDON AVR 4000

AVR 4000 Audio/Video Receiver
OWNER'S MANUAL

harman/kardon AVR 4000
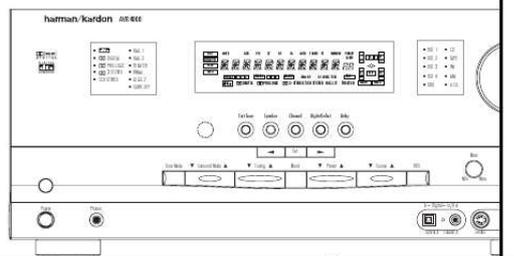
harman/kardon®
Power for the Digital Revolution™

Manual abstract:

With onboard Dolby* Digital and DTS decoding, the AVR 4000 delivers six discrete channels of audio that take advantage of the digital sound tracks from the latest DVD and LD releases and Digital Television broadcasts. While complex digital systems are hard at work within the AVR 4000 to make all of this happen, hookup and operation are simple. Color-keyed connections, programmable remote control, and on-screen menus make the AVR 4000 easy to use. @@@@@@@@He is your best local source of information. Description and Features The AVR 4000 is among the most versatile and multi-featured A/V receivers available, incorporating a wide range of listening options. In addition to Dolby Digital and DTS decoding for digital sources, a broad choice of analog surround modes are available for use with sources such as CD, VCR, TV broadcasts and the AVR's own FM/AM tuner. Along with Dolby Pro Logic* , Dolby 3 Stereo, 5 Ch Stereo and custom Hall and Theater modes, only Harman Kardon receivers offer Logic 7® to create a wider, more enveloping field environment and more defined fly-overs and pans. Finally, the AVR 4000 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. Another Harman Kardon exclusive is VMAxTM, which uses proprietary processing to create an open, spacious sound field even when only two front speakers are available. In addition to providing a wide range of listening options, the AVR 4000 is easy to configure so that it provides the best results with your speakers and specific listening-room environment.

On-screen menus make it simple to enter settings for speakers, inputs and delay times, while our exclusive EzSetTM remote measures a system 's sound levels and automatically calibrates them for perfectly balanced soundfield presentation. For the ultimate in flexibility, the AVR 4000 features connections for five video devices, all with both composite and S-Video inputs. Two additional audio inputs are available, and a total of six digital inputs make the AVR 4000 capable of handling all the latest digital audio sources. Coax and optical digital outputs are available for direct connection to digital recorders, and the front-panel coaxial jack may be switched to an output for use with portable recorders a Harman Kardon exclusive. Two video recording outputs, preamp outputs for use with external power amplifiers, and a six channel input make the AVR 4000 virtually future-proof, with everything needed to accommodate tomorrow's new formats right on board.

The AVR 4000's flexibility and power extend beyond your main home theater or listening room. The AVR includes a sophisticated multizone control system that allows you to select one source for use in the main room and a different one in a second room. Left and right front channel audio is routed to the remote room location, with complete control over volume provided by a separate infrared control link. To make it easy to operate the AVR 4000 from a remote room, a separate Zone II remote is included. The AVR 4000'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 stateof-the-art circuitry and time-honored circuit designs, the AVR 4000 is one of the finest receivers ever offered by Harman Kardon. s Onboard Dolby Digital and DTS Decoding Using Crystal® Chip Technology s Harman Kardon's Exclusive Logic 7 and VMAx Modes s MP3 Decoding for Use with compatible Computers and Digital Audio Players s Remote Automatically Sets Output Levels for Optimum Performance TM s Front-Panel Digital Inputs and Coax Digital Output Capability for Easy Connection to Portable Digital Devices and the Latest Video Game Consoles s Multiple Digital Inputs and Outputs s On-Screen Menu and Display System s 6-Channel Direct Input and Preamp Outputs for Easy Expansion and Use with Future Audio Formats s Complete Multi-Zone System with Separate "Zone II" Remote IncludedTM s Main Remote with Both Internal Codes and Learning Capability INTRODUCTION 3 Safety Information Important Safety Information Verify Line Voltage Before Use Your AVR 4000 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 s 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. s 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. s Do not place the unit directly on a carpeted surface.

s Avoid installation in extremely hot or cold locations, or an area that is exposed to direct sunlight or heating equipment. s Avoid moist or humid locations. s 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 30 29 AVR 4000 Volume · DIGITAL · PRO LOGIC · 3 STEREO · · 5CH STEREO · · · · · · HALL 1 HALL 2 THEATER VMAx LOGIC 7 SURR. OFF DTS DOLBY D PCM MP3 MUTE RDS PTY CT RT TA AUTO TUNED ST MEMncy 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 Û (see page 33 for more information on tuning stations). 9 Tuner Band Selector: Pressing this button will automatically switch the AVR to the Tuner mode. Pressing it again will switch between the AM and FM frequency bands, holding it pressed for some seconds will switch between stereo and mono receiving and between automatic and manual tuning mode (See page 33 for more information on the tuner).) 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 33 for more information on tuner programming.) ! 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 4000's tuner. (See page 34 for more information on RDS). # 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.

$ Digital Coax 3 Status Indicator: This LED indicator will normally light green to show that the Digital Coax 3 jack is operating as an input. When the jack has been configured 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 Digital Coax 3 jack.) % 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 31 for information on configuring the Digital Coax 3 Jack to an output.) ^ 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. 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 ±10dB. Set this control to a suitable position for your taste or room acoustics. Ó 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. Ô 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 Û into the AVR 4000's memory. The set button may also be used to change the display brightness. (See page 36.) Input indicators: A green LED will light in front of the input that is currently being used as the source for the AVR 4000. Ò Delay: Press this button to begin the sequence of steps required to enter delay time settings.

(See pages 23 for more information on delay times.) Ú Digital Input Selector: When playing a source that has a digital output, press this button to select between the Optical # R and Coaxial % S Digital inputs. (See pagescators in this display do not function when the On Screen Display is being used. N Theater Mode Indicator: This indicator illuminates to show that the Theater mode is in use. O Night Mode Indicator: This indicator lights when the AVR 4000 is in the Night mode, which preserves the dynamic range of digital program material at low volume levels. P 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 38 for more information on the Multiroom system.) 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 and left 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 page 30 for more information on the Channel Indicators). R Preset Number/Sleep Timer: When the tuner is in use, these numbers indicate the specific preset memory location in use.

(See page 33 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. FRONT PANEL INFORMATION DISPLAY 7 Front Panel Information Display 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 31 for more information on tuner presets.) T Sleep Indicator: This indicator lights when the Sleep function is in use. The numbers in the Preset/Sleep Number Indicators will show the minutes remaining before the AVR 4000 goes into the Standby mode. (See page 27 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 unit's operation. Z Mute Indicator: This indicator illuminates to remind you that the AVR 4000's output has been silenced by pressing the Mute button °b. 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 somtimes transmits traffic information (see page 32 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 32 33 31 j ki g hf e d c b a · ° L R IN L R VIDEO S-VIDEO AC INPUT ~230V/50Hz A ¡ TM £ ANTENNA VID 3 1 VID 3 TAPE OPT OUT IN 2 IN IN MULTI VID 2 OUT IN VID 2 OUT 1 MODEL NO. AVR 4000 NORTHRIDGE CALIFORNIA, USA MADE IN CHINA OUT COAX AM IN 2 IN REMOTE ¢ GND VID 1 OUT VID 1 DIGITAL IN OUT § · ¶ FM 75 AC OUTLETS ~230V/50Hz OPT DVD COAX CD MON. OUT DVD UNSWITCHED / 100W MAX + + DIGITAL OUT CENTER SL FL ML ª SUBWOOFER SR FR MR FL FR SL SR CENTER SUBWOOFER SWITCHED / 50W MAX RIGHT LEFT CENTER SPKR (8) RIGHT LEFT SERIAL NO. 6 CH. DIRECT INPUT MULTI OUT PRE OUT FRONT SPKRS (8) SURR. SPKRS (8) , /¤< > fi fl 0 1 2 3 4 5 6 7 8 9 A B C D Tape Inputs Tape Outputs Video 1 Audio Inputs AM Antenna Video 1 Audio Outputs DVD Audio Inputs FM Antenna CD Inputs 6-Channel Direct Inputs Multiroom Outputs Preamp Outputs Subwoofer Output Video Monitor Outputs Front/Center Speaker Outputs E F G H I J K L M N O P Q R Surround Speaker Outputs Switched AC Accessory Outlet Unswitched AC Accessory Outlet AC Power Cord Remote IR Output Remote IR Input Multiroom IR Input DVD Video Inputs Video 1 Video Outputs Video 3 Video Inputs Video 2 Video Inputs Video 2 Video Outputs Video 1 Video Inputs Optical Digital Inputs S T U V W Coaxial Digital Inputs Digital Audio Outputs Video 3 Audio Inputs Video 2 Audio Inputs Video 2 Audio Outputs 0 Tape Inputs: Connect these jacks to the PLAY/OUT jacks of an audio recorder. 1 Tape Outputs: Connect these jacks to the RECORD/INPUT jacks of an audio recorder.
2 Video 1 Audio Inputs: Connect these jacks to the PLAY/OUT audio jacks on a VCR or other video source. 3 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. 4 Video 1 Audio Outputs: Connect these jacks to the RECORD/INPUT audio jacks on a VCR or any other Audio recorder. 5 DVD Audio Inputs: Connect these jacks to the analog audio jacks on a DVD or other video source.
6 FM Antenna: Connect the supplied indoor or an optional external FM antenna to this terminal. 7 CD Inputs: Connect these jacks to the analog output of a compact disc player or CD changer. 8 6-Channel Direct Inputs: If an external digital audio decoder is used, connect the outputs of that decoder to these jacks. 9 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. A Preamp Outputs: These jacks may be connected to an external power amplifier. B 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. REAR PANEL CONNECTIONS 9 Rear Panel Connections C Video Monitor Outputs: Connect these jacks to the composite and/or S-Video input of a TV monitor or video projector to view the onscreen menus and the output of any video source selected by the receiver's video switcher. D Front/Center Speaker Outputs: Connect these outputs to the matching + or terminals on your front/center speakers. When making speaker connections, always make certain to maintain correct polarity by connecting the red (+) terminals on the AVR 4000 to the red (+) terminals on the speaker and the black () terminals on the AVR 4000 to the black () terminals on the speakers.

(See page 15 for more information on speaker polarity.) E Surround Speaker Outputs: Connect these outputs to the matching + or terminals on your left and right surround speakers. When making speaker connections always make certain to maintain correct polarity by connecting the red (+) terminals on the AVR 4000 to the red (+) terminals on the speakers and the black () terminals on the AVR 4000 to the black () terminals on the speakers. See page 15 for more information on speaker polarity. F Switched AC Accessory Outlet: This outlet may be used to power any device that you wish to have turn on when the unit is turned on with the System Power Control switch 2. G 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 4000 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 G and 50 W from the Switched Outlet F.

H AC Power Cord: Connect the AC plug to an unswitched AC wall output. I 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. J Remote IR Input: If the AVR 4000'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. K Multiroom IR Input: Connect the output of an IR sensor in a remote room to this jack to operate the AVR 4000's multiroom control system. L DVD Video Inputs: Connect these jacks to the composite or S-Video output jacks on a DVD player or other video source.

M Video 1 Video Outputs: Connect these jacks to the RECORD/INPUT composite or S-Video jack on a VCR. N Video 3 Video Inputs: Connect these jacks to the PLAY/OUT composite or S-Video jacks on any video source. 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 2 Video Outputs: Connect these jacks to the RECORD/INPUT composite or S-Video jacks on a second 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, LD player, MD player or CD player to these jacks. The signal may be either a Dolby Digital signal, a DTS signal or a standard PCM digital source. S Coaxial Digital Inputs: Connect the coax digital output from a DVD player, HDTV receiver, LD player, MD player or CD player to these jacks. The signal may be either a Dolby Digital signal, DTS signal or a standard PCM digital source. Do not connect the RF digital output of an LD player to these jacks. T Digital Audio Outputs: Connect these jacks to the matching digital input connector on a digital recorder such as a CD-R or MiniDisc recorder. U Video 3 Audio Inputs: Connect these jacks to the PLAY/OUT audio jacks on any audio or video source. V Video 2 Audio Inputs: Connect these jacks to the PLAY/OUT audio jacks on a VCR or other video source. W Video 2 Audio Outputs: Connect these jacks to the RECORD/INPUT audio jacks on a VCR or any Audio recorder. Note: Either the Video or S-Video output of any S-Video source must be connected to the AVR 4000, 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 Power On Button IR Transmitter Window Program/SPL Indicator Power Off Button Input Selectors AVR Selector AM/FM Tuner Select Learn Button 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 Macro Buttons Transport Controls Skip Up/Down Buttons RDS Select Button Preset Up/Down Clear Button Memory Button Delay/Prev. Ch. > Button Speaker Select Multiroom Volume Up/Down TV/Video Selector SPL Indicator Select 6-Channel Direct Input Mute EzSet Sensor Microphone c ba 39 POWER d e f g i OFF TM ON 38 TAPE VID4 AVR VCR VID1 DVD TV VID2 CD CBL/SAT VID3 6 CH. h j 37 LEARN AM/FM SPL 36 35 k l m n o q r n p SLEEP PR SURR. TEST NIGHT M-ROOM VOL. 34 33 32 CH . SP K ME N U R SET 31 30 NO 1 5 2 6 9 DIRECT 3 7 0 CLEAR 4 8 MEM t v s u w x RM AL TA L L DE AY TUN-M TUNING OSD RDS I DIG 29 28 `z PRESET M1 M2 M3 M4 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. y DWN UP SKIP 4000 MAIN REMOTE CONTROL FUNCTIONS 11 Main Remote Control Functions IMPORTANT NOTE: The AVR 4000's remote may be programmed to control up to seven devices, including the AVR 4000.

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 4000's remote is shipped from the factory to operate the AVR 4000 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 39 to program the proper codes for the products in your system. It is also important to remember that many of the buttons on the remote take on different functions, depending on the product selected using the Input Selectors.

The descriptions shown here primarily detail the functions of the remote when it is used to operate the AVR 4000. (See page 44 for information about alternate functions for the remote's buttons.) 0 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). 1 IR Transmitter Window: Point this window towards the AVR 4000 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 4000's remote code memory and it is also used as a level indicator when using the remote's EzSet capabilities.

(See page 25 for more information on setting output levels, and see page 39 for information on programming the remote.) 3 Power Off Button: Press this button to place the AVR 4000 or a selected device unit in the Standby mode. Note that when the AVR 4000 is switched off this will turn off the main room functions, but if the Multiroom system is activated, it will continue to function. 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 Learn Button: Press this button to begin the process of "learning" the codes from another product's remote into the AVR 4000's remote.

(See page 40 for more information on using the remote's learning function.) 8 Test Tone: Press this button to begin the sequence used to calibrate the AVR 4000's output levels. (See page 40 for more information on calibrating the AVR 4000.) 9 Sleep Button: Press this button to place the unit in the Sleep mode. After the time shown in the display, the AVR 4000 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 C Channel Select Button: This button is used to start the process of setting the AVR 4000'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 again, to change the level setting.

(See page 32 for more information.) D //¤ Buttons: These are multi-purpose buttons. They will be used most frequently to select a surround mode. To change the surround mode, first press the SURR/CH ¤ button A. Next press these buttons to scroll up or down through the list of surround modes that appear in the Main Information Display Û.

These buttons are also used to increase or decrease output levels when configuring the unit with either the internal test tone or an external source. They are also used to enter delay time settings after the Delay button T has been pressed. When the AVR 4000 remote is being programmed for the codes of another device, these buttons are also used in the "Auto Search" process (See page 39 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. F Set Button: This button is used to enter settings into the AVR 4000'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 R S #% to a source. (See page 30 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 K8 will move the frequency up or down in singlestep 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 week stations audible. (See page 33 for more information.) 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 selected. A Surround Mode Selector: Press this button to begin the process of changing the surround mode. After the button has been pressed, use the //¤ buttons D to select the desired surround mode (See page 29 for more information). Note that this button is also used to tune channels when the TV, VCR and SAT receiver is selected using the Input Selector 4. B Night Mode: Press this button to activate the Night mode. This mode is available only with Dolby Digital encoded digital sources, and it preserves dialog (center channel) intelligibilty at low volume levels (See page 31 for more information). 12 MAIN REMOTE CONTROL FUNCTIONS Main Remote Control Functions 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 33 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 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 33 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 4000's parameters. M 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 41 for more information on storing and recalling macros.

) N Transport 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 39 for more information on programming the remote.) O Skip Up/Down Buttons: These buttons do not have a direct function with the AVR 4000, but when used with a compatibly programmed CD or DVD changer they will change the tracks on the disc currently being played in the changer. P RDS Select Button: Press this button to display the various messages that are part of the RDS data system of the AVR 4000's tuner. (See page 34 for more information on RDS.)

Q Preset Up/Down: When the tuner is in use, press these buttons to scroll through the stations programmed into the AVR 4000'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). R Clear Button: Press this button to clear incorrect entries when using the remote to directly enter a radio station's frequency. S Memory Button: Press this button to enter a radio station into the AVR 4000'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 33 for more information.) T Delay/Prev Ch.: Press this button to begin the process for setting the delay times used by the AVR 4000 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 23 for more information.) U > Button: Press this button to change a setting or selection when configuring many of the AVR's settings. V Speaker Select: Press this button to begin the process of configuring the AVR 4000'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 (see page 21 for more information.) W 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 38 for more information on the Multiroom system.) X Volume Up/Down: Press these buttons to raise or lower the system volume. Y TV/Video Button: This button does not have a direct function on the AVR 4000, 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.

Z SPL Indicator Select: This button activates the AVR 4000's EzSet function to quickly and accurately calibrate the AVR 4000's output levels. Press and hold the button for three seconds and then release it. Note that the Test Tone will begin circulating, and the Program Indicator 2 will change colors. During this sequence, EzSet will automatically adjust the output levels for all channels until they are equal, as shown by the Program Indicator lighting green for each channel. (See page 25 for more information on EzSet.

) a 6-Ch. Direct Input: Press this button to select the component connected to the 6-Ch. Direct Input 8 as the source b Mute: Press this button to momentarily silence the AVR 4000 or TV set being controlled, depending on which device has been selected. When the AVR 4000 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 39 for more information on programming the remote.

) c 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 25 for more information on using EzSet). NOTE: As any of the remote buttons pressed is active with the device selected, the corresponding Selector button 45 will briefly flash red to confirm your selection. 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 4000 is located, or it may be used in a separate room with an optional infrared sensor that is connected to the AVR 4000's Multi IR input jack K. Record/Pause: Press this button to activate the Record or Pause function on compatible Harman Kardon CD, DVD or Cassette Deck products. © 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 4000 is located, press this button to raise or lower the volume in that room.

When it is used in a remote room with a sensor that is connected to the Multi IR Jack K, 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 4000 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 K, 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. 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 å Power Off: When used in the room where the AVR 4000 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 K, 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 4000. I VOLUME å 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 4000 is located, or it may be used in a separate room with an optional infrared sensor that is connected to the AVR 4000's Multi IR input jack b. When it is used in the same room as the AVR 4000, it will control the functions of the AVR 4000 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 38 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 DE 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 UL, CSA or other appropriate testing agency standards. Questions about running cables inside walls should be referred to your installer or a licensed electrical contractor who is familiar with the applicable local building codes in your area. When connecting wires to the speakers, be certain to observe proper polarity. Remember to connect the "negative" or "black" wire to the same terminal on both the receiver and the speaker. Similarly, the "positive" or "red" wire should be connected to like terminals on the AVR 4000 and 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 4000.

8. Connections to a subwoofer are normally made via a line level audio connection from the Subwoofer Output B 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. Note: Speaker sets with two front satellites and a passive subwoofer must be connected to the front speaker outputs D only rather than to the Subwoofer Output B.

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 7.

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 0. Connect the analog Record/In jacks on the recorder to the Tape Output jacks 1 on the AVR 4000. 3. Connect the output of any digital sources to the appropriate input connections on the AVR 4000 front or rear panel. Note that the Optical and Coaxial digital inputs R S #% may be used with a Dolby Digital or DTS source or the output of a conventional CD, MD or LD player's PCM (S/P-DIF) output. 4. Connect the Coaxial or Optical Digital Outputs T 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 3. 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 AVR4000 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 2 O Q V 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 4 M P W on the AVR 4000. 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 2 O V (if not in use) or Video 3 N U jacks.

3. Connect the analog audio and video outputs of a DVD or laser disc player to the DVD jacks 5L. 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 R S #%. 5.

Connect the Video Monitor Out C jacks on the receiver to the composite and S-Video input of your television monitor or video projector. Video Connection Note: · S-Video or Composite video signals may only be viewed in their native formats and will not be converted to the other format. But the OSD will be viewed on the TV screen in any case, with Video or S-Video input selected on the TV. 6. Connect the supplied FM antenna to the FM (75 ohm) connection 6. 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 must use a 300-ohm-to-75-ohm adapter to make the connection. INSTALLATION AND CONNECTIONS 15 Installation and Connections 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 this 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. 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 C, and the volume on the TV must be reduced to minimum. Figure 1: SCART/Cinch-Adapter for playback; signal flow: SCART ¡ Cinch Black Black Yellow Yellow Red Red Black Black Red Red Blue Blue1 Figure 2: SCART/Cinch-Adapter for record and playback; signal flow: SCART Cinch Black Black Yellow Yellow Green Green1 White White Figure 3: Cinch/SCART-Adapter for playback; signal flow: Cinch ¡ SCART Figure 4: SCART/S-Video Adapter for playback; signal flow: SCART ¡ Cinch Yellow Yellow Red Red Rot Red Schwarz Black S-Video In S-Video In Schwarz Black Rot Red Blau Blue1 Figure 5: SCART/S-Video Adapter for record and playback; signal flow: SCART Cinch Rot Red Gelb Yellow S-Video In S-VideoIn S-VideoOut S-Video Out Figure 6: SCART/S-Video Adapter for playback; signal flow: Cinch ¡ SCART 1 Schwarz Black S-Video Out S-VideoOut Also other colours possible, e.g. brown and grey. 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 4000 (and with a VCR connect the "Out" plugs to the "Out" jacks on the AVR).

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 2).

2. Like most common AV units the AVR 4000 does not convert the Video signal to S-Video or vice versa. Thus both connections must be made from the AVR 4000 to the TV if both, Video and S-Video sources, are used, and the appropriate input on the TV must be selected. 16 INSTALLATION AND CONNECTIONS Installation and Connections 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 16:9 format (with switchable 4:3 TVs) 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. System and Power Connections The AVR 4000 is designed for flexible use with multiroom systems, external control components and power amplifiers. Main Room Remote Control Extension If the receiver is placed behind a solid or smoked glass cabinet door, the obstruction may prevent the remote sensor from receiving commands. In this event, the remote sensor of any Harman Kardon or other compatible device, not covered by the door, or an optional remote sensor may be used.

Connect the Remote IR Output of that device or the output of the remote sensor to the Remote IR Input jack J. If other components are also prevented from receiving remote commands, only one sensor is needed. Simply use this unit's sensor or a remote eye by running a connection from the Remote IR Output jack I to the Remote IR Input jack on Harman Kardon or other compatible equipment. NOTE: All remotely controlled components must be linked together in a daisy chain. Connect the IR OUT jack of one unit to the IR IN of the next to establish this chain. Multiroom IR Link The key to remote room operation is to link the remote room to the AVR 4000's location with wire for an infrared receiver and speakers or an amplifier. The remote room IR receiver (this can be an optional IR receiver or any other remotable Harman Kardon device in the remote room with IR sensor integrated) should be connected to the AVR 4000 via standard coaxial cable. Connect the Remote IR Output of the device or of the optional sensor with the Multiroom IR Input jack K on the AVR 4000's rear panel. If other Harman Kardon compatible source equipment is part of the main room installation, the Remote IR Output jack I on the rear panel should be connected to the IR IN jack on that source device. This will enable the remote room location to control source equipment functions.

INSTALLATION AND CONNECTIONS 17 Installation and Connections Multiroom Audio Connections Depending on the distance from the AVR 4000 to the remote room, two options (A and B) are available for audio connection: Option 1: Use high-quality, shielded stereo audio interconnect cable with phono plugs on both ends from the AVR 4000's location to the remote room. At the remote room, connect the interconnect cable to a stereo power amplifier. The amplifier will be connected to the room's speakers. No volume control is required, as the AVR 4000 and the remote IR link will provide that function. At the AVR 4000, plug the audio interconnect cables into the Multi-Room Output jacks 9 on the AVR 4000's rear panel.

Option 2: Place the amplifier that will provide power to the remote location speakers in the same room as the AVR 4000, and connect the Multiroom Output jacks 9 on the rear panel of the AVR to the audio input of the remote room amplifier. Use the appropriate speaker wire to connect the optional power amplifier to the remote speakers. High-quality wire of at least 2.5 mm2 is recommended for long multiroom connections. IMPORTANT NOTE: Any cables run inside walls should carry any certification that is required by the local building and electrical codes.

To avoid interference, audio and speaker cables should not be parallel to, or run in the same conduits or path with, AC cables. If you have any questions about multiroom wiring, consult your dealer, custom installer or low-voltage electrical contractor. External Audio Power Amplifier Connections If desired, the AVR 4000 may be connected to optional, external audio power amplifiers. When an external amplifier is used, connect the Preamp Out jacks A to the inputs on the amplifier.

Note that when external amplifiers or devices are used, the volume control is still controlled by the AVR, although additional volume controls on the external device may impact the volume settings and output levels from the AVR. External Audio Decoder Connection To provide for ultimate flexibility, the AVR 4000 may be used in conjunction with optional, external decoders for digital audio systems other than the AVR 4000's own built-in Dolby Digital and DTS decoding system or with DVD players having those decoders integrated. If an external decoder is used, connect the output jacks of the decoder to the 6-Channel Direct inputs 8, making sure to match channels. These jacks may also be used for connections to devices such as DVD players or High Definition Television (HDTV) sets or decoders that feature built-in digital surround decoders. Although the digital decoding system in the AVR 4000 will typically provide audio performance that is superior to other decoders, you may use these jacks to provide an additional 6-channel input for connection to a DVD player or HDTV set with a built-in decoder and discrete 6-channel analog outputs. AC Power Connections This unit is equipped with two accessory AC outlets.

They may be used to power accessory devices, but they should not be used with highcurrent draw equipment such as power amplifiers. The total power draw to the Unswitched Outlet G must not exceed 100 watts, that to the Switched Outlet F 50 watts. The Switched F 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 Unswitched G outlet will receive power as long as the unit is plugged into a powered AC outlet and the Main Power Switch 1 is on. Finally, when all connections are complete, plug the power cord into a nonswitched 220-240-volt AC wall outlet. You're almost ready to enjoy the AVR 4000! 18 INSTALLATION AND CONNECTIONS System Configuration When all audio, video and system connections have been made, there are a few configuration adjustments that must be made. A few minutes spent to correctly configure and calibrate the unit will greatly add to your listening experience. 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. Surround speakers should be placed on the side walls of the room, at or slightly behind the listening position.

The center of the speaker should face you. If side-wall mounting is not practical, the speakers may be placed on a rear wall, behind the listening position. The speakers should be no more than two meters behind the rear of the seating area. 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 15cm 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. No more than 2m when rear-mounted speakers are used Center Front Speaker No more than 60cm 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. Left Front Speaker Right Front Speaker A) Front Channel Speaker Installation with Direct-View TV Sets or Rear-Screen Projectors TV or Projection Screen 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 front-projection 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. 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. Left Front Speaker Center Front Speaker Right Front Speaker Optional Rear-Wall Mounting B) The distance between the left and right speakers should be equal to the distance from the seating position to the viewing screen. You may also experiment with placing the left and right speakers slightly forward of the center speaker. SYSTEM CONFIGURATION 19 System Configuration First Turn On and Use of the OSD Once the speakers have been placed in the room and connected, the remaining steps are to program the system configuration memories. With the AVR 4000 two kind of memories are used, those associated individually with the input selected, e.g. surround modes, and others working independently from any input selected like speaker output levels, crossover frequencies or delay times used by the surround sound processor. You are now ready to power up the AVR 4000 to begin these final adjustments.
1. Plug the Power Cable H 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 amber, indicating that the unit is in the Standby mode.
3. Install the three supplied AAA batteries in the remote as shown.