Harman Kardon
AVR5
Audio/Video Receiver

Volume

Center Channel Delay

◄ Set ►

▼ TUNING ▲ PRESET SCAN ▼ PRESET ▲ FM MODE ⊡PRO LOGIC ⊡3-STEREO HALL 1 HALL 2 THEATER TEST TONE SURR. OFF

Mute

Bass Treble Balance ┌─ VIDEO 3 ─┐

Min Max Min Max L R Video L─Audio─R
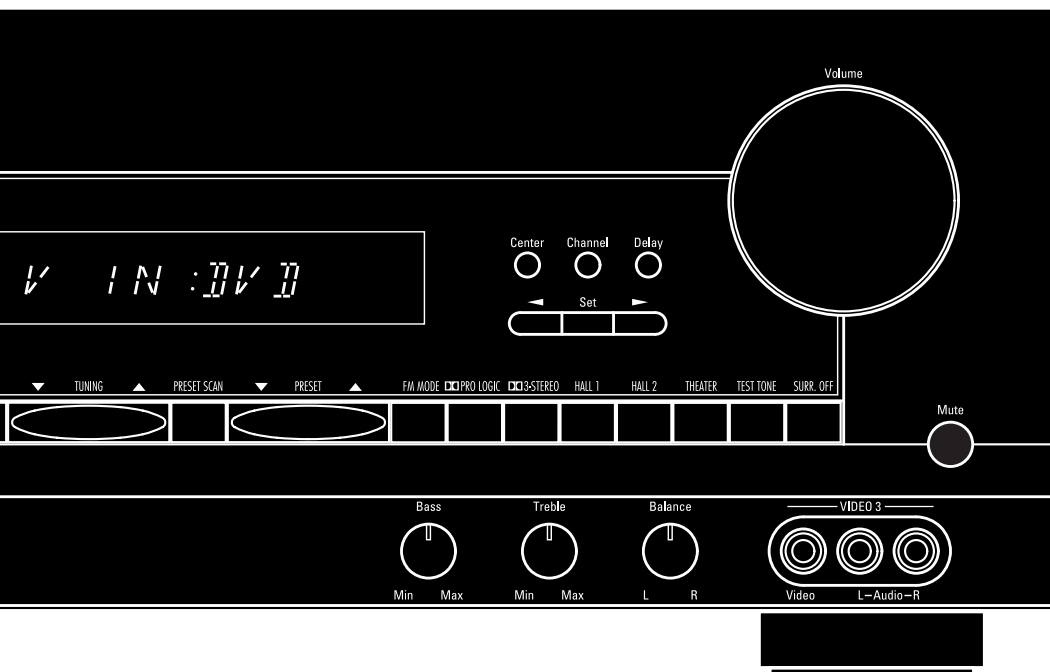
Owner's Manual

harman/kardon

Owner's Manual
AVR5 Audio/Video Receiver

Table of Contents

Introduction

Congratulations! With the purchase of the Harman Kardon AVR5 you are about to begin many years of listening enjoyment. The AVR5 has been custom designed to provide all the excitement and detail of movie sound tracks and every subtle nuance of musical selections.

While complex systems are hard at work within the AVR5 to make all of this happen, hookup and operation are simple. Color-keyed connections and a comprehensive programmable remote control make the AVR5 easy to use.

To obtain maximum enjoyment from your new receiver, we urge you to take a few minutes to read through this manual. This will ensure that connections to speakers, source playback units and other external devices are made properly. In addition, a few minutes spent learning the functions of the various controls will enable you to take advantage of all the power the AVR5 is able to deliver.

If you have any questions about this product, its installation or operation, please contact your dealer. They are your best local source of information.

Description and Features
The AVR5 is a full-featured A/V receiver, incorporating a wide variety of listening options. In addition to Dolby* Pro Logic* and Dolby 3 Stereo, with "6-Channel Direct" inputs, the AVR5 is ready for the future. The AVR5 is digital ready, and may be connected to an optional, external digital decoder, or the outputs of a DVD player, Digital TV or any product that has its own Dolby Digital or DTS† decoder. A choice of Hall and Theater modes is also available for use with both encoded sources and traditional two-channel stereo recordings.

A total of four audio/video inputs, as well as two additional audio-only inputs, and an FM stereo/FM/AM tuner provide for the utmost flexibility. Front-panel A/V inputs simplify connections to video games or camcorders. A high-quality phono input is available so that you may continue to enjoy your existing record collection as well as the latest surround technologies.

The AVR5's powerful amplifiers use traditional Harman Kardon High-Current Design philosophies to meet the wide dynamic range of any program selection.

Harman Kardon invented the high-fidelity receiver more than forty-five years ago. With state-of-the-art features and time-honored circuit designs, the AVR5 is one of the finest receivers ever offered by Harman Kardon.

- **Five Analog Surround Modes**
- **Pre-Programmed Remote Control**
- **Composite Video Switching**
- **Six-Channel Direct Input Enables Seamless Integration of Future Decoding Systems**
- **Preamp Output for ALL Channels Permits Ease of Expansion**
- **Phono Input Section**

Important Safety Information

Verify Line Voltage Before Use

Your AVR5 has been designed for use with 120-volt AC current. Connection to a line voltage other than that for which it is intended can create a safety and fire hazard, and may damage the unit.

If you have any questions about the voltage requirements for your specific model, or about the line voltage in your area, contact your selling dealer before plugging the unit into a wall outlet.

Do Not Use Extension Cords

To avoid safety hazards, use only the power cord 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 with cords 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 staple accidentally falls inside the unit, disconnect it from the AC power source immediately, and consult an authorized service station.

CATV or Antenna Grounding

If an outside antenna or cable system is connected to this product, be certain that it is grounded so as to provide some protection against voltage surges and static charges. Section 810 of the National Electrical Code, ANSI/NFPA No. 70-1984, provides information with respect to proper grounding of the mast and supporting structure, grounding of the lead-in wire to an antenna discharge unit, size of grounding conductors, location of antenna discharge unit, connection to grounding electrodes and requirements of the grounding electrode.

NOTE TO CATV SYSTEM INSTALLER:

This reminder is provided to call the CATV (Cable TV) system installer's attention to article 820-40 of the NEC that provides guidelines for proper grounding and, in particular, specifies that the cable ground shall be connected to the grounding system of the building, as close to the point of cable entry as possible.

Installation Location

- To assure proper operation, and to avoid the potential for safety hazards, place the unit on a firm and level surface. When placing the unit on a shelf, be certain that the shelf and any mounting hardware can support the weight of the product.

- Make certain that proper space is provided both above and below the unit for ventilation. If this product will be installed in a cabinet or other enclosed area, make certain that there is sufficient air movement within the cabinet. 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.

CAUTION
RISK OF ELECTRIC SHOCK
DO NOT OPEN

CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

WARNING: TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.

CAUTION: TO PREVENT ELECTRIC SHOCK, MATCH WIDE BLADE OF PLUG TO WIDE SLOT, FULLY INSERT.
ATTENTION: POUR EVITER LES CHOCS ELECTRIQUES, INRODUIRE LA LAME LA PLUS LARGE DE LA FICHE DANS LA BORNE CORRESPONDANTE DE LA PRISE ET POUSSER JUSQU'AU FOND.

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.

Important Information For the User

NOTE: This equipment has been tested and found to comply with the limits for a Class-B digital device, pursuant to Part 15 of the FCC Rules. The limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio-frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communication. However, there is no guarantee that harmful interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

■ Reorient or relocate the receiving antenna.

■ Increase the separation between the equipment and receiver.

■ Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

■ Consult the dealer or an experienced radio/TV technician for help.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept interference received, including interference that may cause undesired operation.

NOTE: Changes or modifications may cause this unit to fail to comply with Part 15 of the FCC Rules and may void the user's authority to operate the equipment.

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 down to a more two-dimensional appearance. 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.

Typographic Conventions

In order to help you use this manual with the remote control, front panel controls and rear panel connections, certain conventions have been used.

Example – (bold type) indicates a specific remote control or front panel button, or rear panel connection

`Example` – (OCR type) indicates a message that is visible on the front panel information display

EXAMPLE – (bold type) indicates a lit indicator in the front panel information display

1 – (number in a square) indicates a specific front panel control

❶ – (number in a circle) indicates a rear panel connection

Ⓐ – (letter in a circle) indicates a button on the main portion of the remote control

Ⓐ – (letter in a square) indicates a button under the sliding panel on the lower portion of the remote control

Front Panel Controls
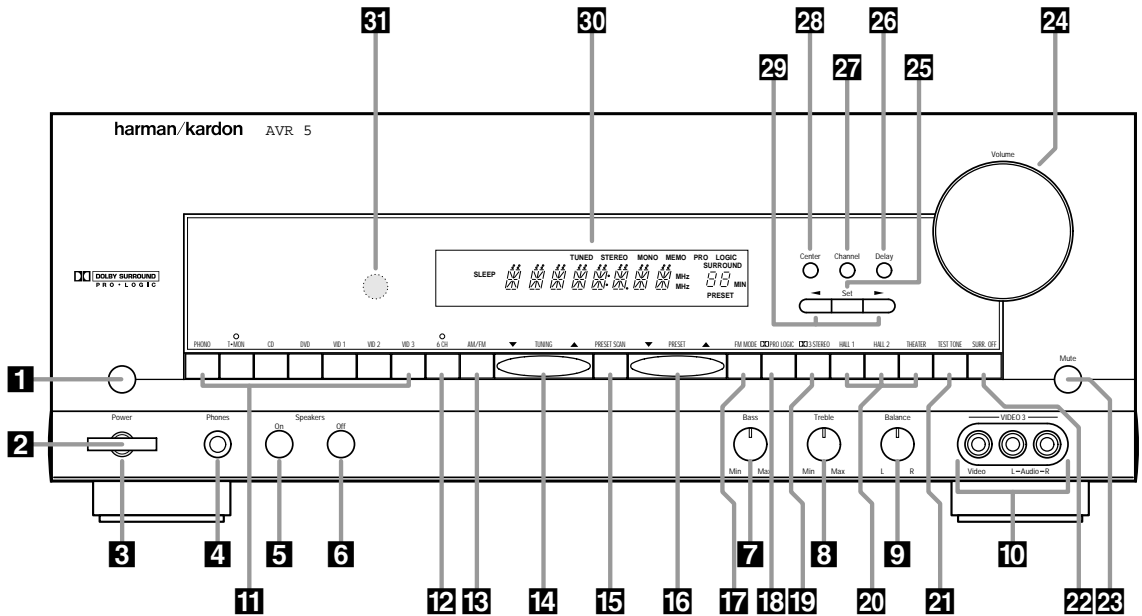
1 Main Power Switch
2 System Power Control
3 Power Indicator
4 Headphone Jack
5 Speakers ON
6 Speakers OFF
7 Bass Control
8 Treble Control
9 Balance Control
10 Video 3 Inputs
11 Input Selectors

12 6-Channel Direct Selector
13 AM/FM
14 Tuning Button
15 Preset Scan
16 Preset Stations Selector
17 FM Mode
18 Dolby Pro Logic Selector
19 Dolby 3 Stereo Selector
20 Analog Surround Mode Selectors
21 Test Tone
22 Surround Off

23 Mute
24 Volume Control
25 Set Button
26 Delay
27 Channel Select
28 Center Speaker Select Button
29 Selector Buttons
30 Information Display
31 Remote Sensor Window

1 Main Power Switch: Press this button to apply power to the AVR5. When the switch is pressed in the unit is placed in a Standby mode, as indicated by the amber LED **3** surrounding the **System Power Control 2**. This button MUST be pressed in to operate the unit. To turn the unit off and prevent the use of the remote control, this switch should be pressed until it pops out from the front panel so that the word "OFF" may be read at the top of the switch.

NOTE: In normal operation this switch is left in the "ON" position.

2 System Power Control: When the **Main Power Switch 1** is "ON," press this button to turn on the AVR5; press it again to turn the unit off. Note that the **Power Indicator** surrounding the switch **3** will turn green when the unit is on.

3 Power Indicator: This LED will illuminate in amber when the unit is in the Standby mode to signal that the unit is ready to be turned on. When the unit is in operation, the indicator will turn green. A red indicator means that the unit is in the Protect mode, and should be turned off and then checked for a possible speaker wire short circuit.

4 Headphone Jack: This jack may be used to listen to the AVR5's output through a pair of headphones. Be certain that the headphones have a standard 1/4" stereo phone plug.

7 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 and room acoustics.

5 Speakers ON Button: This button turns the speakers on for normal listening.

6 Speakers OFF Button: This button turns the speakers off for private listening when the headphones are in use.

8 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 and room acoustics.

9 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.

10 Video 3 Inputs: These audio/video inputs may be used for temporary connection of video games, camcorders, digital still cameras or portable audio products. To select a source connected to these jacks, press the **Vid 3 Input Selector 11**.

11 Input Selectors: Press one of these buttons to select or change the input source. If the unit is in the Standby mode, pressing one of these buttons will also turn the AVR5 on.

12 6-Channel Direct Selector: Press this button to select the output of an optional, external 6-channel decoder connected to the **6 Ch Direct** inputs ⑱ as the listening source.

13 AM/FM: Press this button to select the tuner as the AVR5's input source. When it is first pressed the last station tuned will be heard. Press it again to change between AM and FM bands.

14 Tuning Button: 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 tuned, the **TUNED** indicator will illuminate in the **Information Display 30**. A brief (1/2 second) press of the button will manually tune to the next frequency increment, while pressing and holding the button for a longer period will automatically tune to the next station with a signal strong enough for acceptable reception.

15 Preset Scan: Press this button to automatically scan through the stations that have been programmed in the AVR5's memory. The tuner will play five seconds of each station before moving to the next preset station. To stop the scan when the desired station is heard, press the button again. (See page 21 for more information on the tuner memory system.)

16 Preset Stations Selector: Press this button to select stations that have been entered into the preset memory. (See page 21 for more information on tuner programming.)

17 FM Mode: Press this button to select the stereo or mono mode for FM tuning. In the STEREO mode a **Stereo** indicator will illuminate in the **Information Display 30**, and stereo reception will be provided when stations are transmitting stereo signals. In the MONO mode the left and right signals from stereo broadcasts will be mixed together and reproduced through all channels. Select MONO for better reception of weak signals.

18 Dolby Pro Logic Selector: Press this button to select the Dolby Pro Logic surround mode when listening to an analog program that is encoded with surround-sound information. (See page 19 for more information on surround modes.)

19 Dolby 3 Stereo Selector: Press this button to select the Dolby 3 Stereo listening mode. This mode is used primarily when a program has surround information when a center channel speaker, but no surround speakers, is installed. (See page 19 for more information on surround modes.)

20 Analog Surround Mode Selectors: Press one of these buttons to select the analog surround modes. These modes may be used with any analog program source to create a pleasing surround effect. (See page 19 for more information on surround modes.)

21 Test Tone: Press this button to begin the sequence of steps used to set the AVR5's output levels. When this button is pressed, a test tone will replace the currently selected listening source and the **Information Display 30** will show the channel where the

test tone appears. The test tone will automatically switch to the next channel after three seconds. (See page 16 for more information on using the test tone to set the output levels.)

22 Surround Off: Press this button to turn off all surround processing, and to listen to a program in traditional stereo from the left front and right front speakers only.

23 Mute: Press this button to momentarily silence the speaker output of the AVR5.

24 Volume Control: Turn the knob clockwise to increase volume, counterclockwise to decrease the volume.

25 Set Button: This button has two functions. If this button is pressed while in normal operation, the **Information Display 30** will show the Surround mode for three seconds. This button is also used to enter an output level setting when using the **Test Tone** and **Selector Buttons 21 29**. (See pages 15–17 for more information on setting output levels.)

26 Delay: Press this button to enter delay time settings. (See page 17 for more information on delay times.)

27 Channel Select: Press this button during normal operation, or during the Test Tone operation, to begin the process that adjusts the output levels.

NOTE: Be sure to select the Dolby Pro Logic surround mode before calibration so that all five channels will be adjusted. (See page 16 for more information on setting output levels.)

28 Center Speaker Select Button: Press this button to select the center channel speaker. When it is first pressed, the **Information Display 30** will show the currently selected speaker type. Press it again to show another speaker type or no speaker option (this option is available with the Dolby Pro Logic surround mode only).

Release this button when a desired selection is shown in the **Information Display 30**. (See page 15 for more information on setting the center channel type.)

29 Selector Buttons: Press these buttons to adjust the AVR5's output levels. You may use these buttons while you are checking the output levels by pressing either the **Test Tone Button 21** or the **Channel Select Button 27**.

NOTE: Be sure to press the **Set Button 25** to enter a new output level each time you adjust the channel. (See pages 15–17 for information on setting output levels using the test tone, or page 22 for information on output level trim using a normal program source.)

30 Information Display: This display delivers messages and status indications to help you operate the receiver.

31 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.
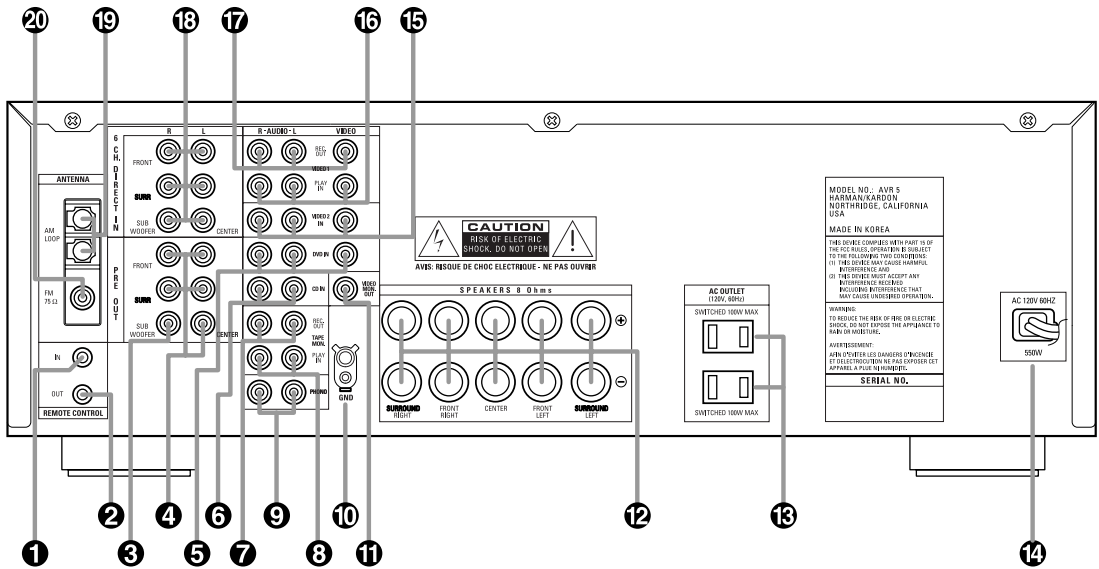
① Remote IR In
② Remote IR Out
③ Subwoofer Pre-Out
④ Pre-Outs
⑤ DVD Inputs
⑥ CD Inputs
⑦ Tape Monitor Out

⑧ Tape Monitor In
⑨ Phono Inputs
⑩ Phono Ground
⑪ TV Monitor Video Output
⑫ Speaker Terminals
⑬ Switched AC Outlets
⑭ Power Cable

⑮ Video 2 Inputs
⑯ Video 1 Inputs
⑰ Video Outputs 1
⑱ 6-Channel Direct Inputs
⑲ AM Antenna
⑳ FM Antenna

① Remote IR In: If the AVR5's front panel IR sensor is blocked due to cabinet doors or other obstructions, an external IR sensor may be used. Connect the output of the sensor to this jack.

② Remote IR Out: 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.

③ Subwoofer Pre-Out: 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.

④ Pre-Outs: If external power amplifiers are used for any channels, connect them to these jacks.

⑤ DVD Inputs: Connect the analog audio outputs and composite video output of a DVD or LV player to these jacks.

⑥ CD Inputs: Connect these jacks to the output of a compact disc player or CD changer.

⑦ Tape Monitor Out: Connect these jacks to the RECORD/INPUT jacks of an audio recorder.

⑧ Tape Monitor In: Connect these jacks to the PLAY/OUT jacks of an audio recorder.

Rear Panel Connections

❾ Phono Inputs: Connect the outputs of your turntable or tone arm to these jacks. Note that only Moving Magnet (MM) type cartridges may be used.

❿ Phono Ground: Connect the ground wire from a turntable to this terminal to reduce system hum.

⓫ TV Monitor Video Output: Connect this jack to the standard (composite) video input of a TV monitor or video projector to view the output of any standard video source selected by the receiver's video switcher.

⓬ Speaker Terminals: Connect these terminals to the appropriate terminals on your speakers.

⓭ Switched AC Outlets: These outlets 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**.

NOTE: The power consumption of the device plugged into each of these outlets should not exceed 100 watts.

⓮ Power Cable: Connect the AC plug to a non-switched AC wall output

⓯ Video 2 Inputs: Connect these jacks to the audio and video outputs of a TV Tuner, Cable TV converter box, satellite receiver or any other audio/video source.

⓰ Video 1 Inputs: Connect these jacks to the audio and video PLAY/OUT jacks of a VCR.

⓱ Video Outputs 1: Connect these jacks to the audio and video RECORD/IN jacks of a VCR.

⓲ 6-Channel Direct Inputs: If an external digital audio decoder is used for 5.1 (Dolby Digital, DTS, etc.) audio, connect the outputs of that decoder to these terminals.

⓳ 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.

⓴ FM Antenna: Connect an indoor or external FM antenna to this terminal.
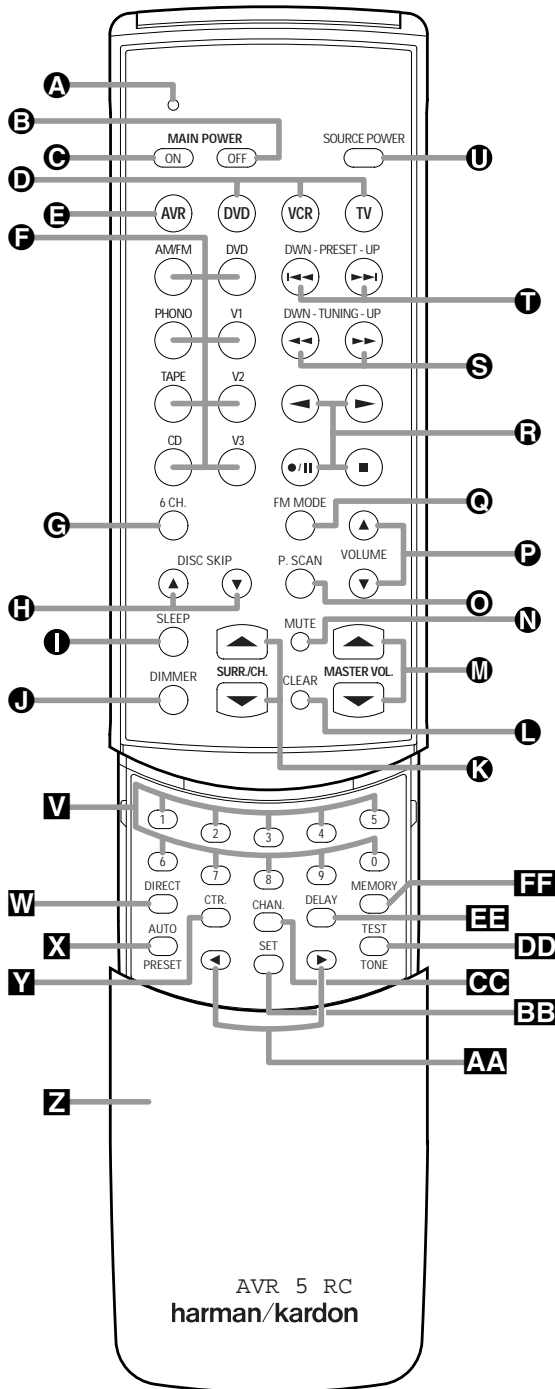
A LED Indicator
B Main Power Off
C Main Power On
D Device Control Selectors
E AVR Selector
F Source Selectors
G 6-Channel Direct
H Disc Skip
I Sleep Button
J Dimmer
K Surround/Channel Selectors
L Clear Button
M Master Volume
N Mute
O P•Scan
P Volume
Q FM Mode
R Transport Controls
S Tuning Up/Down
T Preset Up/Down
U Source Power
V Numeric Keys
W Direct
X Auto Preset
Y Center
Z Secondary Control Cover
AA ◄/► Buttons
BB Set Button
CC Channel Button
DD Test Tone
EE Delay
FF Memory

MAIN POWER
ON   OFF
SOURCE POWER

AVR   DVD   VCR   TV

AM/FM   DVD   DWN - PRESET - UP
PHONO   V1   DWN - TUNING - UP
TAPE   V2
CD   V3
6 CH.   FM MODE
DISC SKIP   P. SCAN   VOLUME
SLEEP   MUTE
DIMMER   SURR./CH.   CLEAR   MASTER VOL.

1 2 3 4 5
6 7 8 9 0
DIRECT   CTR.   CHAN.   DELAY   MEMORY
AUTO   TEST
PRESET   SET   TONE

AVR 5 RC
harman/kardon

IMPORTANT NOTE: The AVR5's remote may be programmed to control up to three additional devices, including the AVR5. Before using the remote, it is important to remember to press the **Device Control Selector** button **D E** that corresponds to the unit you wish to operate. The remote is capable of operating a wide variety of products using the control codes that are part of the remote. Before using the remote with other products, follow the instructions on pages 23–26 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 Device Control Selectors. The descriptions shown here primarily detail the functions of the remote when it is used to operate the AVR5. (See page 24 for information about alternate functions for the remote's buttons.)

A LED Indicator: This indicator will flash whenever a button is pressed to confirm that a remote command is being transmitted. It will also flash while the remote is being programmed to assist in entering or reading remote codes. Note that this is NOT a standard remote button, and has no function when pressed.

B Main Power Off: When the AVR5 is turned on, press this button to place it in the Standby mode. Note that in this condition, the unit is still connect to AC Power.

C Main Power On: When the AVR5 is in the Standby mode, as indicated by the **Power Indicator 3** glowing green, press this button to turn the AVR5 on.

D Device Control Selectors: Press one of these buttons to use the remote to control the functions of another audio/video device. Note that the button will briefly turn red after it has been pressed to confirm your selection. (See pages 23–25 for information on programming the AVR5's remote to operate these devices.)

E AVR Selector: Press this button to use the remote control for operation of the AVR5. Note that the button will briefly turn red after it has been pressed to confirm your selection.

F Source Selectors: Press these buttons to select an input source for the AVR5. The AM/FM button is also used to switch between frequency bands when the tuner is in use.

NOTE: Pressing one of these buttons selects the source only. In order to control the actual source machine using the remote you must press the **Device Control Selector** button **E** for the desired product.

G 6-Channel Direct: Press this button to use the output of an optional, external digital decoder as the AVR5's input source.

H Disc Skip: These buttons do not have any functions when controlling the AVR5, but they operate the Disc Skip functions of compatible Harman Kardon compact disc changers. The Disc Skip Up button will also function as the Open/Close button for certain DVD and LD equipment when the remote is properly programmed to control them.

I Sleep Button: Press this button to place the unit in the Sleep mode. After the time shown in the display, the AVR5 will automatically go into the Standby mode. Each press of the button changes the time until turn-off in the following order:

90 min → 80 min → 70 min → 60 min → 50 min
40 min → 30 min → 20 min → 10 min → OFF
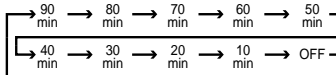
J Dimmer: Press this button once to reduce the brightness of the front panel display to half the normal intensity. Press it again to turn the front panel display completely off. When the display is completely off, press the button to return to normal brightness.

K Surround/Channel Selectors: Press these buttons to check or change the current Surround mode. When either one of these two buttons is first pressed, the **Information Display 30** will show the current Surround mode. Press either button again to change the current Surround mode by scrolling the list of available modes as they appear in the **Information Display 30**. When the remote is being used to control a VCR or TV set, these buttons are used to change channels. These buttons are also used when the remote is being programmed to "find" the correct codes via the Search mode. (See page 23 for more information on programming the remote.)

L Clear Button: This button is used to clear preset memory information for the AVR5's tuner. (See pages 21–22 for more information on tuner presets.)

M Master Volume: Press these buttons to raise or lower the AVR5's volume. These buttons are also used to obtain the IR code numbers for a device that has been programmed into the remote. (See page 23 for more information on programming the remote.)

N Mute: Press this button to momentarily silence the AVR5. When the AVR5 remote is being programmed to operate another device, this button is pressed with the **Device Control Selector** button **D** to begin the programming process. (See page 23 for more information on programming the remote.)

O P•Scan: Press this button to automatically scan through the list of stations that are programmed into the AVR5's tuner memory. When the button is pressed, each preset station will play for five seconds before the next station is selected. Press the button again when the desired station is heard to stop the preset scan.

P Volume: When the remote has been properly programmed for a compatible device, these buttons may be used to raise or lower the volume of a TV. Note that they DO NOT change the volume of the AVR5. That is done with the **Master Volume** button **M**.

Q FM Mode: Press this button when the tuner is in use in the FM band to switch to monaural reception if the station is weak and noisy. When the **MONO** indicator is on, FM reception will be monaural regardless of the strength of the tuned FM station. (See page 21 for more information.)

R Transport Controls: These buttons are used to control Play, Play Forward, Play Reverse, Stop, Pause and Record functions on compatible Harman Kardon compact disc players/ changers and cassette tape decks. When the remote has been programmed to control an external device, such as a VCR, DVD or LD, these buttons may be used to control the standard Forward, Reverse, Stop and Pause functions, as well. (See page 23 for information on programming the remote.)

S Tuning Up/Down: When the tuner is in use, these buttons will tune up or down through the selected frequency band. A brief (1/2 second) press of the button will manually tune to the next frequency increment, while pressing and holding the button for a longer period will automatically tune to the next station with a signal strong enough for acceptable reception. These buttons will also control Fast Forward and Fast Reverse (or Rewind) for compatible Harman Kardon compact disc players/ changers and cassette tape decks, as well as controlling these functions on a DVD or VCR, if the remote has been properly programmed.

T Preset Up/Down: When the tuner is in use, these buttons scroll through the stations that have been programmed into the AVR5's memory. These buttons also control the track Skip Up and Down on compatible Harman Kardon compact disc players/ changers as well as controlling the

similar functions on a DVD if the remote has been properly programmed.

U Source Power: When the remote has been properly programmed to control another product, and the **Device Control Selector D** for that device has been pressed, press this button to turn the product on or off.

V Numeric Keys: These buttons serve as a ten-button numeric keypad to enter tuner preset positions. They are also to be used to select channel numbers when **TV** or **VCR** has been selected on the remote, or to select track numbers on a DVD player, depending on how the remote has been programmed.

W Direct : Press this button to select a radio station by entering its frequency using the **Numeric Keys V**. (See page 21 for more information.)

X Auto Preset: When the tuner and FM band have been selected, this button may be used to automatically program the tuner presets for all active stations. To start the auto preset scan, press and hold the button. Note that the **MEMO** and **PRESET** indicators will flash. After a few seconds, the tuner will start to "look" for active stations, as shown by increasing frequency numbers in the Information Display. Release the button and note that the tuner will briefly stop at each active station and add a preset number to the memory. If the FM tuner found less the 30 FM stations with acceptable signal strength, the Auto Preset tuning will scan two more cycles or until the remaining vacant preset memory spaces have been filled with those found in the first scan. The scan will stop when all 30 preset memory spaces have been filled or when three scans through the band have been completed.

Y Center: Use this button to configure the AVR5 for the type of center channel speaker being used. (See page 15 for more information.)

Z Secondary Control Cover: This sliding cover normally is in the "up" position so that it hides the secondary controls. To access these

controls, place your thumb on the small recessed area at the top center of the control, and gently press the cover down and towards you.

AA ◄/► Buttons: These buttons are used to change settings during the level output adjustments with either the test tone or an external audio source. (See page 16 for information on output level adjustment with the test tone, or page 22 for level trim adjustment with an external source.)

BB Set Button: This button has two functions. If this button is pressed while in normal operation, the **Information Display 30** will show the Surround mode for three seconds. This button is also used to enter an output level setting when using the **Test Tone** and **Selector** buttons **21 29**. (See pages 15–17 for more information on setting output levels.)

CC Channel Button: Use this button to adjust the AVR5's output levels using an external audio source, rather than the internal test signal generator. Each press of the button will select a channel for adjustment. To trim the output level, use the ◄/► buttons **AA**. (See page 22 for more information.)

DD Test Tone: Press this button to start the procedure for adjusting the AVR5's output levels. (See page 16 for more information.)

EE Delay: Press this button to change the AVR5's delay settings. To change the settings, first make certain that the Pro Logic mode has been selected. Then, each press of the button will change the delay setting in the following order:

→ 15 ms → 20 ms → 30 ms →
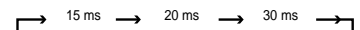
(See page 17 for more information on delay settings.)

FF Memory: Press this button to open a memory position that stores a preset location for the AVR5's tuner. (See page 21 for more information on tuner presets.)

System Installation

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. These steps need to be done only when the receiver is first installed, or when a change is made to the input source equipment.

Audio Equipment Connections

We recommend that you use high-quality interconnect cables when making connections to source equipment and recorders to preserve the quality 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 ❻.

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 high that the signal is distorted.

2. Connect the Play/Out jacks of a cassette deck, MD or other audio recorder to the **Tape Monitor In** jacks ❽. Connect the Record/In jacks on the recorder to the **Tape Monitor Out** jacks ❼ on the AVR5.

3. Assemble the AM Loop Antenna supplied with the unit as shown below. Connect it to the **AM** and **GND** screw terminals ⑲.
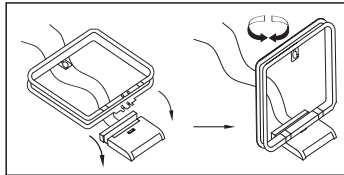
4. Connect an FM antenna to the **FM (75 ohm)** connection ⑳. The FM antenna may be an external roof antenna, an inside powered or wire lead antenna or a connection from a cable TV system. Note that if the antenna or connection uses 300-ohm twin-lead cable, you must use the 300-ohm-to-75-ohm adapter supplied with the unit to make the connection.

5. Connect the front, center and surround speaker outputs ⑫ 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 this 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 a gauge of 14 or smaller. Remember that in specifying cable, the lower the number, the thicker the cable.

Cable with a gauge of 16 may be used for short runs of less than ten feet. We do not recommend that you use cables with an AWG equivalent of 18 or higher 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 NEC and/or 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 the receiver and the speaker. Similarly, the "positive" or "red" wire should be connected to the like terminal on the AVR5 and speaker.

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 AVR5.

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.

6. Connections to a subwoofer are made via a line level audio connection from the **Subwoofer Output ❸** to the line level input of a subwoofer with a built-in amplifier. If a passive subwoofer is used, the connection first goes to a power amplifier, which will be connected to one or more subwoofer speakers.

Video Equipment Connections

Video equipment is connected in a fashion similar to audio components. Again, the use of high-quality interconnect cables is recommended to preserve signal quality.

1. Connect a VCR's audio and video Play/Out jacks to the **Video 1 In** jacks ⓰ on the rear panel. The audio and Record/Out jacks on the VCR should be connected to the **Video 1 Out** jacks ⓱ on the AVR5.

2. Connect the audio and video outputs of a satellite receiver, cable TV converter or television set or any other video source to the **Video 2 In** jacks ⓯.

3. Connect the audio and video outputs of a DVD or laser disc player to the **DVD** jacks ❺.

4. Connect the **TV Monitor Out** ⓫ jacks on the receiver to the video input of your television monitor or video projector.

System and Power Connections

The AVR5 is designed for flexible use with external control components and power amplifiers. These connections are easy to make during an initial installation, or at a later date should you choose to upgrade your system.

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, an optional remote sensor may be used. Connect the output of the remote sensor to the **Remote Cont. In** jack ❶.

If other components are also prevented from receiving remote commands, only one sensor is needed. They may use this unit's sensor or a remote eye by running a connection from the **Remote Cont. Out** jack ❷ to the Remote In jack on Harman Kardon or other compatible equipment.

External Audio Power Amplifier Connections

If desired, optional external power audio power amplifiers may be used with the AVR5. Connections to these amplifiers are made by using audio interconnect cables connected to both the **Preamp Outputs ❹** on the rear panel and the audio input jacks of the external amplifiers.

External Audio Decoder Connection

To provide for the ultimate flexibility, the AVR5 may be used in conjunction with optional, external decoders for Dolby Digital, DTS or other sources of 5.1 audio signals. If an external decoder is used, connect the output jacks of the decoder to the **6-Channel Direct** inputs ⓭, 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.

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 high-current draw equipment such as power amplifiers. The total power draw may not exceed 100W to each outlet.

These **Switched AC Outlets** ⓭ will receive power only when the unit is on. This is recommended for devices that have no power switch, or a mechanical power switch that may be left in the "ON" position.

NOTE: Devices with electronic power switches may only go into a Standby mode when plugged in here.

Finally, when all connections are complete, plug the power cord into a non-switched 120-volt AC wall outlet. You're almost ready to enjoy the AVR5!

System Configuration

When all audio, video and system connections have been made, there are a few configuration adjustments to be made. A few minutes spent to correctly configure and calibrate the unit will greatly add to your listening experience.

Speaker Selection and Placement

The placement of speakers in a multi-channel-home-theater system can have a noticeable impact on the quality of sound reproduced.

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 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.

Speaker Placement

Depending on the type of center channel speaker in use and your viewing device, place the center speaker 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 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 24" off center from the tweeter in the center channel speaker.

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 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 pans across the front of the room sound smooth, and that sounds from all speakers appear to arrive at the listening position at the same time without delay from the center speaker as opposed to the left and right speakers.

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 into the room. The speakers should be located so that the bottom of the cabinet is at least two feet higher than the listeners' ears when seated in the desired area.

If side wall mounting is not practical, the speakers may be placed on a rear wall, behind the listening position. Again, they should be located so that the bottom of the cabinet is at least two feet higher than the listeners' ears. The speakers should be no more than six feet behind the rear of the seating area.

Subwoofers produce non-directional sound, so they may be placed almost anywhere in a room. Subwoofer placement is highly influenced by room size and shape, and the type of subwoofer used. Follow the instructions of the subwoofer's manufacturer, or experiment with the best location for a subwoofer in your listening room.
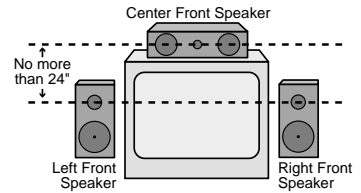
A) Front Channel Speaker Installation with Direct-View TV Sets or Rear-Screen Projectors
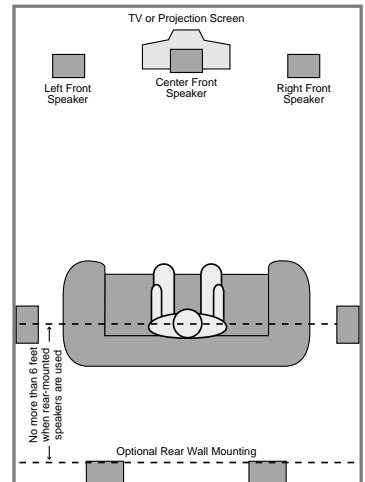
B) The distance between the left and right speakers should be equal to the distance from the seating position to the viewing screen. You may also experiment with placing the left and right speakers slightly forward of the center speaker.
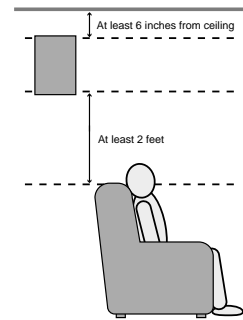
System Setup

Once the speakers have been placed in the room and connected, the final step in the setup process is to enter the settings that configure the AVR5 for the type of speakers used in your system, the calibration of the output levels and the delay times used by the surround sound processor. Before proceeding further, this is a good time to review the installation section of the manual to make certain that all connections are properly made.

You are now ready to power up the AVR5 to begin these final adjustments.

1. Plug the **Power Cable** ⓴ to an unswitched AC outlet.

2. Press the **Main Power Switch** ❶ in so that it latches in with the "OFF" wording on the top of the switch inside the front panel. Note that the **Power Indicator** ❸ will briefly turn red, then amber, indicating that the unit is in the Standby mode.

3. Install the two supplied AAA batteries in the remote as shown. Be certain to observe the (+) and (–) polarity indicators shown in the bottom of the battery compartment.
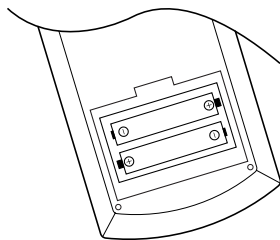
4. Turn the AVR5 on either by pressing the **System Power Control** ❷ on the front panel, or via the remote by pressing the **Main Power On** button Ⓒ. The **Power Indicator** ❸ will briefly turn red and then green to confirm that the unit is on, and the **Information Display** ㉚ will also light up.

Center Speaker Configuration

An initial adjustment tells the AVR5 which type of center speakers are in use. This is important as it adjusts the settings that determine if they receive low-frequency (bass) information. For these settings use the LARGE setting if the speakers for a particular position are traditional full-range loudspeakers that are capable of reproducing sounds below 100Hz. Use the SMALL setting for smaller, frequency-limited satellite or center speakers that do not reproduce sounds below 100Hz. Note that when "small" speakers are used, a subwoofer is required to reproduce low-frequency sounds. Remember that the "large" and "small" descriptions do not refer to the actual physical size of the speakers, but their ability to reproduce low-frequency sounds. If you are in doubt as to which category describes your speakers, consult the specifications in the speakers' owner's manual, or ask your dealer.

With the AVR5 turned on, follow these steps to configure the speakers:

1. Put the AVR5 in the Dolby Pro Logic mode by pressing the **Dolby Pro Logic Selector** ⓲ on the front panel or by pressing the **Surround Mode Selector** Ⓚ on the remote, until PRO LOGIC appears in the **Information Display** ㉚ and the PRO LOGIC indicator lights.

2. Press the **Center** button ㉘ on the front panel or the **Center** button Ⓨ on the remote.

3. Press the **Center** button ㉘ on the front panel or the **Center** button Ⓨ on the remote until the desired center channel speaker type appears in the **Information Display** ㉚, using the definitions for "Large" and "Small" that appear above. If no center channel speaker is installed, press the button until the display reads NONE as shown in the Information Display.

NOTE: The AVR5's subwoofer output is always active, regardless of the center channel configuration setting.

Output Level Adjustment

Output level adjustment is a key part of the configuration process for any surround sound product. It is particularly important for a digital-ready receiver such as the AVR5, as correct outputs will ensure that you hear sound tracks in their proper place with the proper intensity.

IMPORTANT NOTE: Many listeners are often confused about the operation of the surround channels. While some assume that sound should always be coming from each speaker, most of the time there will be little or no sound in the surround channels. This is because they are only used when a movie director or sound mixer specifically places sound there to create ambiance, an effect or to continue action from the front of the room to the rear. When the output levels are properly set it is normal for rear/ surround speakers to operate only occasionally. Artificially increasing the volume to the rear speakers may destroy the illusion of an enveloping sound field that duplicates the way you hear sound in a movie theater or concert hall.

Before beginning the adjustment process make certain that all speaker connections have been properly made. The system volume should be set to the level that you will use during a typical listening session. Finally, make certain that the **Balance Control 9** is set to the center "12 o'clock" position.

To adjust and calibrate the output levels, follow these steps. For accurate calibration, it is a good idea to make these adjustments from the location in your room that is your favorite listening position:

1. Put the AVR5 in the Dolby Pro Logic mode by pressing the **Dolby Pro Logic Selector 18** on the front panel or by pressing the **Surround Mode Selector K** on the remote until PRO LOGIC appears in the **Information Display 30** and the PRO LOGIC indicator lights.

2. Press the **Test Tone** button **DD 21** on the remote or front panel. The word TEST will appear in the **Information Display 30**, and the letters FL will flash once each second.

3. At this point, the test noise will begin to circulate among all the speakers in a clockwise rotation.

   NOTE: This is a good time to verify that the speakers have been properly connected. As the test noise circulates, listen to make certain that the sound comes from the speaker position shown in the Main Information Display. If the sound from a speaker location does NOT match the position indicated in the display, turn the AVR5 off and check the speaker wiring to make certain that each speaker is connected to the correct output terminal.

4. After checking for proper speaker placement and connection, continue to let the test noise circulate so that you may judge the output level of each speaker position to the others. As you listen to the relative output levels, use the front left speaker as a reference, and make a note of which of the other speakers are louder or softer than the front left.

NOTE: The subwoofer output level is not adjustable using the test tone. To change the subwoofer level, follow the steps for Output Level Trim Adjustment on page 22.

5. To change the output level, let the test noise circulate until the channel requiring adjustment appears in the Information Display, and then press the ◄/► buttons **AA** to stop the circulation and raise or lower the output. For example, using the front right speaker as a reference, to adjust the center speaker level, press the ◄/► buttons **29 AA** when TEST CTR appears in the display.

6. During level adjustment, the flashing speaker position indication will be replaced with a positive or negative number to indicate the output offset from the reference level. Use the ◄/► buttons **29 AA** until the level is equal to the reference, then press the **Set** button **25 BB** to enter the setting into the AVR5's memory. Note that output level adjustments must be made within three seconds or the test noise will begin to circulate.

7. When the output is set to the proper level, wait until the test tone begins to circulate again, and use the steps outlined above to make any needed adjustments. Remember to press the **Set** button 25 BB after making any level adjustments so that the setting is entered into memory.

8. When all adjustments are completed, press the **Test Tone** button DD 21 again to return to normal operation.

Delay Settings
One aspect of the surround modes is the delay of audio signals between the front speakers and the rear speakers. Each surround mode is factory preset with a specific delay time, but it is possible to individually adjust the delay timing to custom tailor the sound to your individual taste and the acoustic conditions in your listening room or home theater.

The factory setting is appropriate for most rooms, but some installations create an uncommon distance between the front and surround speakers that may cause the arrival of front channel sounds to become disconnected from surround channel sounds.

To resynchronize the front and surround channels, follow these steps:

1. Measure the distance from the listening/viewing position to the front speakers.

2. Measure the distance from the listening/viewing position to the surround speakers.

3. Subtract the distance to the surround speakers from the distance to the front speakers.

   a. When setting the delay time for the Dolby Digital surround mode, the optimal delay time is the resulting figure. For example, if the front speakers are ten feet away and the surround speakers are five feet away, the optimal delay time is figured as $10-5=5$. Thus, in this example, the delay should be set at five milliseconds.

   b. When setting the delay time for the Pro Logic mode, take the result of the subtraction and add 15 to obtain the optimal delay time. For example, if the front speakers are ten feet away and the surround speakers are five feet away, the optimal delay time is figured as $10-5+15=20$. Thus, in this example, the delay should be set at twenty milliseconds.

To set the delay times, follow these steps:

1. Put the AVR5 in the Dolby Pro Logic mode by pressing the **Dolby Pro Logic Selector** 18 on the front panel, or by pressing the **Surround Mode Selector** K on the remote, until PRO LOGIC appears in the **Information Display** 30 and the PRO LOGIC indicator lights.

2. Press the **Delay** button EE 26 on the remote or front panel. The word DELAY 20 will appear in the **Information Display** 30.

3. Adjust the delay time by pressing the **Delay** button EE 26 on the remote or front panel until the delay time figure closest to the number calculated using the formula entered above appears in the display.

4. Once the desired setting appears, do not press the button again; the unit will return to normal operation in five seconds.

Congratulations! You have now completed the setup, adjustment and calibration of the AVR5. You are now ready to enjoy the finest in music and home-theater listening.

Basic Operation

Once you have completed the setup and configuration of your new receiver, it is simple to operate and enjoy. The following instructions will provide the steps needed to enjoy the AVR5:

• When using the AVR5 for the first time, it is necessary to press the **Main Power** button ❶ on the front panel to turn the unit on. This places the unit in a standby mode, as indicated by the amber color of the **Power Indicator** ❸. Once the unit is in standby, you may begin a listening session by pressing the **System Power Control** ❷ on the front panel or the **Main Power On** button ⓒ on the remote. Note that the **Power Indicator** ❸ will turn red, then green. This will turn the unit on and return it to the input source that was last used. The unit may also be turned on from standby by pressing any of the **Input Selector** buttons on the front panel ⓫ ⓭.

To turn the unit off at the end of a listening session simply press the **System Power Control** ❷ on the front panel or the **Main Power Off** button ⓑ on the remote. Power to any equipment plugged into the rear panel **Switched AC Outlet** ⓭ will be shut off and the **Power Indicator** ❸ will turn amber.

When the remote is used to turn the unit "off" it is actually placing the system in a standby mode, as indicated by the amber color of the **Power Indicator** ❸.

When you will be away from home for an extended period of time it is always a good idea to completely turn the unit off using the front panel **Main Power Switch** ❶.

• To dim the brightness of the front panel display, press the **Dimmer** button ⓙ on the remote. The first press will dim the lights to half normal. A second press will turn the display completely off. Press the **Dimmer** button ⓙ again to restore the display to normal brightness.

Source Selection

• To select a source at any time, press any of the **Source Selector** buttons on the remote ⓕ or front panel ⓫ ⓭.

• The front panel **Video 3 Inputs** ⓾ may be used to connect a device such as a video game or camcorder to your home entertainment system on a temporary basis.

• When an audio source is selected the last video input used remains routed to the **Video Outputs 1** ⓱ and **TV Monitor Output** ⓫. This permits simultaneous viewing and listening to different sources.

• During a listening session you may wish to adjust the **Bass** ❼ and **Treble** ❽ controls to suit your listening tastes.

• Adjust the volume to a comfortable level using the front panel **Volume Control** ㉔ or remote **Master Volume Up/Down** ⓜ buttons.

• To temporarily silence all speaker outputs press the **Mute** button ⓝ ㉓. This will cut the output to all speakers, but it will not effect any recording or dubbing that may be in progress. When the system is muted the MUTE indicator will light in the **Information Display** ㉚. Press the **Mute** button ⓝ ㉓ again to return to normal operation.

• For private listening, plug the 1/4" stereo phone plug from a pair of stereo headphones into the front panel **Headphone** jack ❹.

• To turn the speakers off for private listening, press the **Speakers Off** button ❻.

• When a Video Input source is selected the video signal for that input will be routed to the **TV Monitor Video Output** jack ⓫ and will be viewable on a TV monitor connected to the AVR5. Make certain that your TV is set to the proper input to view the signal.

• To program the AVR5 for automatic turn off, press the **Sleep** button ❶ on the remote. Each press of the button will increase the time before shut down in the following sequence:

$$90\text{ min} \rightarrow 80\text{ min} \rightarrow 70\text{ min} \rightarrow 60\text{ min} \rightarrow 50\text{ min}$$
$$\rightarrow 40\text{ min} \rightarrow 30\text{ min} \rightarrow 20\text{ min} \rightarrow 10\text{ min} \rightarrow OFF$$
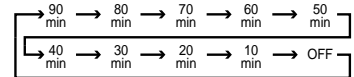
The sleep time will be displayed in the Information Display and it will count down until the time has elapsed.

When the programmed time has elapsed the unit will automatically turn off. Note that the front panel display will dim to one half brightness when the Sleep function is programmed. To cancel the Sleep function, press the **Sleep** button ❶ until the Sleep indicator numbers disappear and the Information Display shows the current source. Pressing any control button while the Sleep control is activated will momentarily return the Information Display to full brightness for increased legibility without interrupting the Sleep function.

Operation

Surround Mode Selection

The AVR5 offers a choice of surround modes. To select a surround mode press the **Surround Mode** button 🔟🔟🔟 🅺 on the front panel or remote. The choice of which surround mode to use is influenced by the type of program material being played and the specifics of your listening room setup.

True surround sound processing enables four separate audio signals to be transmitted within the left and right channels of a DVD, videocassette, radio or TV broadcast. Through a process known as matrix encoding a separate center channel signal for dialogue and a surround channel for effects are encoded into the stereo signal. When you see the Dolby Surround, Dolby Stereo, DTS Stereo or other similar logos on a movie or broadcast this indicates that the program has surround information.

When the program you are listening to has encoded surround information, as shown by one of the logos or brand names described above, select the Pro Logic mode using the **Pro Logic** button 🔟 on the front panel or the **Surround Selector** 🅺 on the remote.

If you are listening to a conventional two-channel stereo program or recording you may wish to experiment by using the **Hall 1**, **Hall 2** or **Theater** modes. Although these programs do not have any intentional surround encoding information, they do contain natural ambiance information that the AVR5 can process to create rear channel information. Depending on the specific program the Pro Logic mode may often provide a pleasing sound presentation from stereo programs.

Surround Mode Chart

MODE	FEATURES	DELAY TIME RANGE
DOLBY PRO LOGIC	Dolby Pro Logic is the standard mode for analog surround sound decoding. It uses information encoded in a two-channel stereo recording to produce four distinct channels: Left, Center, Right and Surround. Use this mode for accurate reproduction of programs bearing the Dolby Surround, DTS Stereo, UltraStereo†† or other "Surround" logos. Surround encoded programs include videocassette, DVD and LD movies, TV and cable programs, radio programs and audio CDs. Dolby Pro Logic processing may also be used to provide a pleasing surround effect with some stereophonic source material that does not carry surround encoding.	15 ms – 30 ms Initial Setting = 20 ms
DOLBY 3 STEREO	Dolby 3 Stereo uses the information contained in a surround encoded or two-channel stereo program to create center channel information. In addition, the information that is normally sent to the rear channel surround speakers is carefully mixed in with the front left and right channels for increased realism. Use this mode when you have a center channel speaker, but no surround speakers.	No Surround Channels
THEATER	Theater Surround processing uses matrix surround decoding to simulate a standard movie or stage theater.	Fixed Delay
HALL 1 and HALL 2	These modes are designed for use with stereo recordings. They provide a sound-field effect that simulates the complex combination of direct and reflected sounds that create the rich reverberant atmosphere of a medium-sized concert hall (Hall 1) or a larger concert hall (Hall 2).	Fixed Delay
STEREO	This mode turns off all surround processing and presents the pure left and right channel presentation of two channel stereo programs.	No Surround Channels

For true two-channel stereo operation, press the **Surround Off** button **22** or use the **Surround/Channel Selector** **K** on the remote until STEREO appears briefly in the **Information Display 30** to use only the front left and right speakers.

Note that the surround modes available will vary according to speaker selection. When NONE is selected, only Hall and Phantom modes may be used, as Pro Logic requires a center channel speaker.

• The AVR5 is equipped with a memory system that permits a different surround mode to be used with each of the input sources. You may select the mode that is most appropriate to each source, such as Pro Logic for a VCR or DVD player connected to a Video input, Hall for the CD input and Surround Off for the Tuner. When you select an input again for a subsequent listening session the system will automatically change to your preferred surround mode for that input.

• To check the current surround mode at any time, press either **Surround/ Channel Selector K**.

NOTE: Once a program has been encoded with surround information, it retains the surround matrix as long as the program is broadcast in stereo. Thus, movies with surround sound will carry surround information when they are broadcast via conventional TV stations, cable, pay TV and satellite transmission. In addition, a growing number of made-for-television programs, sports broadcasts, radio dramas and music CDs are also recorded in surround sound. You may obtain a list of these programs and discs from the Dolby Laboratories web site at www.dolby.com

When a program is not listed as carrying intentional surround information, you may find that Pro Logic or Dolby 3-Stereo modes often deliver enveloping surround presentations through the use of the natural information present in all stereo recordings. However, for stereo, but non-surround programs, we suggest that you try the Hall 1, Hall 2 or Theater modes.

6-Channel Direct Operation

The AVR5 is a digital-ready receiver, which means that it is equipped for use with optional, external digital audio decoders. This enables the AVR5 to serve you well into the future, through connecting to a decoder for formats such as Dolby Digital or DTS.

You may also use these inputs for direct connection to DVD players or digital television sets that have built-in decoding for Dolby Digital. When one of these products is used, no external adapter or decoder is needed.

For 6-channel direct operation, connect the outputs of the decoder or other devices with decoded digital outputs to the **6-Channel Direct Inputs 18** on the rear panel.

To listen to the 6-channel source, press the **6-Channel Direct Selector 12 G** on the front panel or remote.

NOTE: Since the 6-channel input is a discrete source, the Surround mode selectors do not function when a 6-channel direct input is used. In addition, the record outputs may not be used when a 6-channel source is playing.

External Amplifier Connection

The AVR5 may be connected to optional, external amplifiers for applications when higher power output is desired. These outputs may also be used to send the same source being listened to through the AVR5's built-in amplifier to a second location.

To connect an external amplifier, simply connect the **Preamp Outputs 4** on the rear panel to the inputs of an optional, external power amplifier.

No special adjustments are required when an external power amplifier is in use. All volume and output adjustments are made using the standard controls.

Tuner Operation

The AVR5's tuner is capable of tuning AM, FM and FM Stereo broadcast stations. Stations may be tuned manually, or they may be stored as favorite station presets and recalled from a 30-position memory.

Station Selection
1. Press the **AM/FM** button **13 F** to select the tuner as an input.

2. Press the **AM/FM** button **13 F** again to switch between AM and FM so that the desired frequency band is selected.

3. To select stations press, and briefly hold, the **Tuning** button **14 S** and the tuner will search for the next highest or lowest frequency station that has an acceptable signal. To tune to the next station, press the button again. Tap the **Tuning** button **14 S** to advance one frequency increment at a time, or press and hold it to locate a specific station. When the TUNED indicator illuminates, the station is properly tuned and should be heard with clarity.

4. Stations may also be tuned directly by pressing the **Direct** button ⓦ, and then pressing the **Numeric Keys** Ⓥ that correspond to the station's frequency. The desired station will automatically be tuned.

NOTE: When the FM reception of a station is weak, audio quality will be increased by switching to Mono mode by pressing the **FM Mode** button ⓱ ⓞ until the STEREO indicator goes out.

Preset Tuning
Up to 30 stations may be stored in the AVR5's memory for easy recall using the front panel controls or the remote.

To enter a station to the memory, first tune the station using the steps outlined above. Then:

1. Press the **Memory** button FF on the remote. Note that MEMO and PRESET indicators will illuminate and flash in the Information Display.

2. Within five seconds, press the **Numeric Keys** Ⓥ corresponding to the location where you wish to store this station's frequency.

3. Repeat the process after tuning any additional stations to be preset.

Auto Preset
• Preset stations may also be programmed automatically for the FM band. To automatically enter each station that may be tuned with acceptable quality into the AVR5's preset memories, first select the FM band. Next, press and briefly hold the **Auto Preset** button Ⓧ until the MEMO and PRESET indicators begin to flash, and

the station frequency indication begins to increase. Release the button and note that the tuner will search the entire FM band, and stop briefly at each station that has acceptable signal strength. The AVR5 will automatically assign a preset number to each station, and then search for the next station. The automatic scan process will stop when all 30 preset memory locations have been filled or the entire FM band has been scanned three times.

NOTE: Using the automatic tuning mode in areas with more than 30 FM stations will completely fill the preset memories, and over-write any previously memorized presets for either AM or FM stations.

TIP: The automatic scan process may enter stations that you do not wish to retain in the memory, or it may enter a station on more than one frequency if the signal is too strong. These unwanted stations may be removed from the memory using the Preset Clear function outlined below.

Recalling Preset Stations
• To manually select a station previously entered in the preset memory, press the **Numeric Keys** Ⓥ that correspond to the desired station's memory location.

• To manually tune through the list of stored preset stations one by one, press the **Preset** buttons ⑯ ➊ on the front panel or remote.

• To automatically scan through the stations entered in the preset memory, press the **Preset Scan** button ⑮ ⓞ on the front panel or remote. The tuner will run through the list of preset stations, stopping for five seconds at each one. Press the button again to stop the scan at your desired station.

Clearing Preset Stations
Unwanted preset stations may be erased from the unit's memory to make it easier to tune only those stations you want.

To remove a preset station from the AVR5's tuner memory, first tune to the station using the **Preset Scan** button ⑮ ⓞ on the front panel or remote, or by entering the preset number directly, using the **Numeric Keys** Ⓥ.

When the preset station to be removed has been tuned, first press the **Memory** button FF. The MEMO and PRESET indicators in the Information Display will flash, and the actual preset number will disappear from the display. Next, press the **Clear** button ➋ within five seconds.

The preset station will be removed from the memory, and the action will be confirmed by the brief appearance of the word CLEAR and the preset number location in the Information Display. That memory location will now be empty, and you may program a different station to that location, or leave it empty.

Tape Recording

In normal operation, the audio or video source selected for listening through the AVR5 is sent to the record outputs. This means that any program you are watching or listening to may be recorded simply by placing machines connected to the outputs for **Tape Monitor** ➐ or **Video One** ⑰ in the record mode.

When a tape recorder with separate record and playback heads is used, you may monitor the output of the recording by selecting the **T•Mon** 🎦 or **Tape** 🄵. Note that a red LED will illuminate in the front panel above the **T•Mon** 🎦 to remind you that you are listening to the record playback instead of the actual input source being recorded.

NOTE: It is not possible to record the output of 6-channel direct inputs.

IMPORTANT NOTE: Please make certain that you are aware of the copyright restrictions on any material you copy. Unauthorized duplication of copyrighted materials is prohibited by Federal law.

Output Level Trim Adjustment

Normal output level adjustment for the AVR5 is established using the Test Tone, as outlined on page 16. In some cases, however, it may be desirable to adjust the output levels using program material such as a test disc, or a selection you are familiar with. Additionally, the output level for the subwoofer may only be adjusted using this procedure.

To adjust the output levels using program material, first select the Pro Logic mode using the **Pro Logic Selector** 🔢 on the front panel or the **Surround/Channel** buttons 🅚 on the remote. Next set the reference volume for the front left/right channels using the **Volume Control** 🔢 🄼. If you wish to vary the difference between the left and right channels, use the **Balance Control** ��.

Once the reference level has been set, press the **Channel Select** button 🔢 **CC** and note that F L T 0 will appear in the **Information Display** 🔢. To change the level, first press the **Set** button 🔢 **BB** within five seconds, and then use the **Selector** buttons 🔢 or the ◄/► buttons **AA** to raise or lower the level. DO NOT use the volume control, as this will alter the reference setting.

Once the change has been made, press the **Set** button 🔢 **BB** and then press the **Channel Select** button 🔢 **CC** to select the next output channel location that you wish to adjust. To adjust the subwoofer level, press the **Channel Select** button 🔢 **CC** until 5UBW appears in the **Information Display** 🔢.

Repeat the procedure as needed until all channels requiring adjustment have been set. When all adjustments have been made, the AVR5 will return to normal operation when no adjustments are made for five seconds.

Memory Backup

This product is equipped with a memory backup system that preserves tuner presets and system configuration information if the unit is accidentally unplugged or subject to a power outage.

Processor Reset

In the rare case where the unit's operation or the displays seem abnormal, the cause may involve the erratic operation of the system's memory or microprocessor.

To correct this problem, first unplug the unit from the AC wall outlet and wait at least three minutes. After the pause, reconnect the AC power cord and check the unit's operation. If the system still malfunctions, a system reset may clear the problem.

If the system still does not respond, it may be necessary to perform a complete reset. To reset the system, first turn the AVR5 off by pressing the **Main Power Switch** 🄱 and then releasing it so that it extends out beyond the front panel and the word "OFF" is visible in red lettering at the top of the switch.

Next, press and hold the **T•Mon** and **CD Input Selector** buttons 🎦 on the front panel ONLY. While holding these buttons in, press the **Main Power Switch** 🄱 in until it latches so that the button is flush with the front panel.

The Information Display will briefly show the word RESET, and then return to normal operation.

Note that when the system is reset in this fashion, all tuner presets and other configuration information such as center channel speaker type and output levels will be lost and must be re-entered.

If the system is still operating incorrectly, there may have been an electronic discharge or severe AC line interference that has corrupted the memory or microprocessor.

If these steps do not solve the problem, consult an authorized Harman Kardon service depot.

The AVR5 is equipped with a powerful remote control that will control not only the receiver's functions, but many popular brands of video equipment, including TV sets, VCRs and DVD players. Once the AVR5's remote is programmed with the codes for the products you own, it is possible to eliminate most other remotes and replace them with the convenience of a single, universal remote control.

Programming the Remote

Direct Code Entry
This method is the easiest way to program your remote to work with different products.

1. Use the tables in the following pages to determine the three-digit code or codes that match both the product type (e.g., VCR, TV), but also the specific brand name. If there is more than one number for a brand, make note of the different choices.

2. Turn on the component you wish to program into the AVR5 remote.

3. Press and hold both the **Device Control Selector** Ⓓ for the type of product to be entered (e.g., VCR, TV) and the **Mute** button Ⓝ at the same time. Hold both buttons until the **LED Indicator** Ⓐ lights to a red color. Note that the next step must take place while the red light is on, and it must begin within 20 seconds after the light illuminates.

4. Point the AVR5's remote towards the unit to be programmed, and enter the first three-digit code number using the

Numeric buttons Ⓥ. If the unit turns off, the correct code has been entered. Press the **Device Control Selector** Ⓓ again, and note that the red light will flash twice to confirm the entry before going dark.

5. If the device to be programmed in does NOT turn off, continue to enter the three-digit code numbers until the equipment turns off. At this point, the correct code has been entered. Press the **Device Control Selector** Ⓓ again, and note that the red light will flash twice to confirm the entry before going dark.

6. Try all of the functions on the remote to make certain that the product operates. Keep in mind that many manufacturers use a number of different combinations of codes, and it is a good idea to make certain that not only the Power control works, but the volume, channel and transport controls, as appropriate. If all functions do not work properly, you may need to use a different remote code.

7. If a code cannot be entered to turn the unit off, if the code for your product does not appear in the tables in this manual, or if all functions do not operate properly, try programming the remote with the Auto Search Method.

Auto Search Method
If the unit you wish to include in the AVR5's remote is not listed in the code tables in this manual, or if the code does not seem to operate properly, you may wish to program the correct code using the Auto Search method as shown below.

1. Turn on the component that you wish to program into the AVR5 remote.

2. Press the **Device Control Selector** Ⓓ for the type of product to be entered (e.g., VCR, TV) and the **Mute** button Ⓝ at the same time. Hold both buttons until the **LED Indicator's** Ⓐ red light stays lit. Note that the next step must take place while the red light is on, and it must begin within 20 seconds after the light illuminates.

3. Point the AVR5 remote towards the unit to be programmed, and press and hold one of the **Surround/Channel** buttons. This will send out a series of codes from the remote's built-in data base, with each flash of the **LED Indicator's** Ⓐ red light indicating that a code has been sent. When the device to be programmed turns off, IMMEDIATELY release the **Surround/Channel** button.

4. Press the **Device Control Selector** Ⓓ again, and note that the **LED Indicator's** Ⓐ red light will flash twice to confirm the entry before going dark.

5. Try all of the functions on the remote to make certain that the product operates. Keep in mind that many manufacturers use a number of different combinations of codes, and it is a good idea to make certain that not only the Power control works, but the Volume, Channel and Transport controls, as appropriate. If all functions do not work properly, you may need to Auto-Search for a different code, or enter a code via the Direct Code Entry method.

Code Readout

When the code has been entered using the Auto Search method, it is always a good idea to find out the exact code so that it may be easily reentered if necessary. You may also read the codes to verify which device has been programmed to a specific Control Selector button.

1. Press and hold both the **Device Control Selector** Ⓓ for the type of product to be entered (e.g., VCR, TV) and the **Mute** button Ⓝ at the same time. Hold both buttons until the **LED Indicator's** Ⓐ red light stays lit. Note that the next step must take place while the red light is on, and it must begin within 20 seconds after the light illuminates.

2. Press the **Master Volume Up** or **Down** button Ⓜ. The **LED Indicator's** Ⓐ red light will blink in a sequence that corresponds to the three-digit code, with a one-second pause between each digit. Count the number of blinks between each pause to determine the digit of the code. One blink is the number 1, two blinks is the number 2, and so forth. Ten blinks are used to indicate a "0".

Example: One blink, followed by a one-second pause, followed by six blinks, followed by a one-second pause, followed by ten blinks indicates that the code has been set to 160.

For future reference enter the Setup Codes for the equipment in your system here:

TV _____ VCR _____
DVD _____

Programmed Device Functions

Once the AVR5's remote has been programmed for the codes of other devices, press the appropriate **Device Control Selector** Ⓓ to change the remote from control over the AVR5 to the additional product. When you press any of the **Device Control Selectors**, the **LED Indicator** Ⓐ will briefly flash in red to indicate that you have changed the device being controlled.

When operating a device other than the AVR5, the controls may not correspond exactly to the function printed on the remote or button. Some commands, such as the volume control, are the same as with the AVR5. Other buttons will change their function so that they correspond to a secondary label on the remote. For example, the Surround Mode selector buttons also function as the Channel Up and Channel Down buttons when operating most TV sets or VCRs. The Channel Up/Down indication is printed directly on the remote. The same is true for standard VCR and DVD functions, which follow the standard function icons printed on top of the buttons.

For some products, however, the function of a particular button does not follow the command printed on the remote. In order to see which function a button controls, consult the Function List tables printed in this manual. To use those tables, first check the type of device being controlled (e.g., TV, VCR). Next, look at the remote control diagram pictured on the following page. Note that each button has a number on it.

AVR 5 RC

harman/kardon
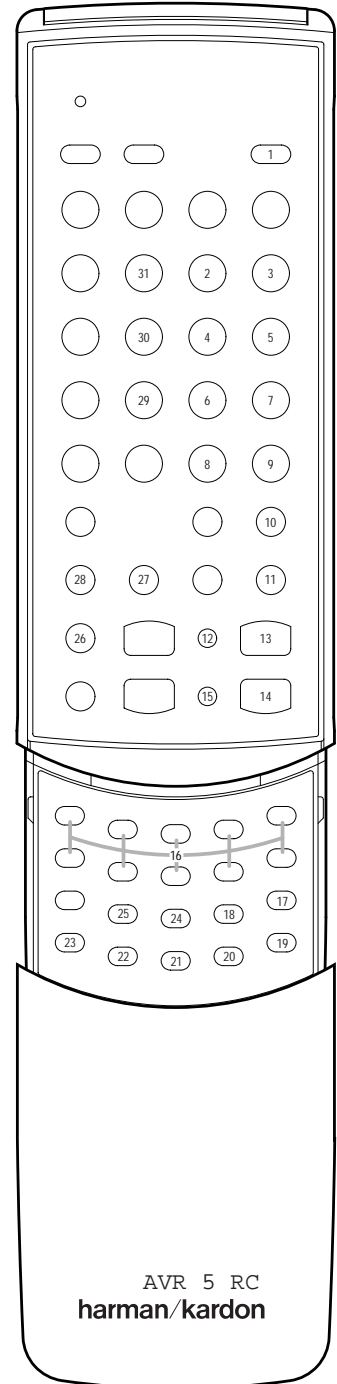
To find out what function a particular button has for a specific device, find the button number on the Function List and then look in the column for the device you are controlling. For example, button number 19 is the Test Tone button for the AVR5, but it is the "Display" button for many TV sets. Button number 2 is the Preset Tune Down button for the AVR5, and it is the "Reverse Skip" button for DVD or LD players but has no function for VCRs or TV sets.

NOTE: Only those buttons shown on the diagram and table have functions with products other than the AVR5. In addition, some products may differ from the functions shown in the table, and other buttons may not function with some products.

Notes on Using the AVR5 Remote With Other Devices.
• Manufacturers may use different code sets for the same product category. For that reason, it is important that you check to see if the code set you have entered operates as many controls as possible. If it appears that only a few functions operate, check to see if another code set will work with more buttons.

• When a button is pressed on the AVR5 remote, the **LED Indicator** Ⓐ will flash briefly. If it flashes for some, but not all buttons for a particular product, it does NOT indicate a problem with the remote, but rather that no function is programmed for the button being pushed.

Programming the Remote

Function List

No.	AVR5	DVD	VCR	TV
1	No Function	Power On/Off	Power On/Off	Power On/Off
2	Preset Tune Down	Skip ◄◄	No Function	No Function
3	Preset Tune Up	Skip ►►	No Function	No Function
4	Tune Down	Search ◄◄	Rewind	No Function
5	Tune Up	Search ►►	Fast Forward	No Function
6	No Function	No Function	No Function	No Function
7	No Function	Play Forward	Play Forward	No Function
8	No Function	Pause	Record	No Function
9	No Function	Stop	Stop	No Function
10	No Function	Volume Up	Volume Up	Volume Up
11	No Function	Volume Down	Volume Down	Volume Down
12	Mute	AVR5 Mute	AVR5 Mute	AVR5 Mute
13	Master Volume Up	AVR5 Volume Up	AVR5 Volume Up	AVR5 Volume Up
14	Master Volume Down	AVR5 Volume Down	AVR5 Volume Down	AVR5 Volume Down
15	Clear	Clear	No Function	No Function
16	Numeric Keys	Numeric Keys	Numeric Keys	Numeric Keys
17	Memory	Enter	No Function	Enter
18	Delay	Down	No Function	Down
19	Test Tone	No Function	No Function	Display
20	►	Right	No Function	Right
21	Set	Select	No Function	Select
22	◄	Left	No Function	Left
23	Auto Preset	Menu	No Function	Menu
24	Channel	Return	No Function	Previous Channel
25	Center	Up	No Function	Up
26	Sleep	No Function	No Function	Sleep
27	Disc Skip Down	No Function	No Function	No Function
28	Disc Skip Up	Open/Close	No Function	No Function
29	Video 2 Select	AVR5 Video 2 Select	AVR5 Video 2 Select	AVR5 Video 2 Select
30	Video 1 Select	AVR5 Video 1 Select	AVR5 Video 1 Select	AVR5 Video 1 Select
31	DVD Select	AVR5 DVD Select	AVR5 DVD Select	AVR5 DVD Select

Reference for Function List

Left remote:

MAIN POWER SOURCE POWER
ON OFF

AVR DVD VCR TV

AM/FM DVD DWN - PRESET - UP

PHONO V1 DWN - TUNING - UP

TAPE V2

CD V3

6 CH. FM MODE

DISC SKIP P. SCAN VOLUME

SLEEP MUTE

DIMMER SURR./CH. CLEAR MASTER VOL.

1 2 3 4 5
6 7 8 9 0
DIRECT CTR. CHAN. DELAY MEMORY
AUTO SET TEST
PRESET TONE

AVR 5 RC
harman/kardon

Right remote (numbered functions):

1, 31, 2, 3, 30, 4, 5, 29, 6, 7, 8, 9, 10, 28, 27, 11, 26, 12, 13, 15, 14, 16, 25, 24, 18, 17, 23, 22, 21, 20, 19

AVR 5 RC
harman/kardon
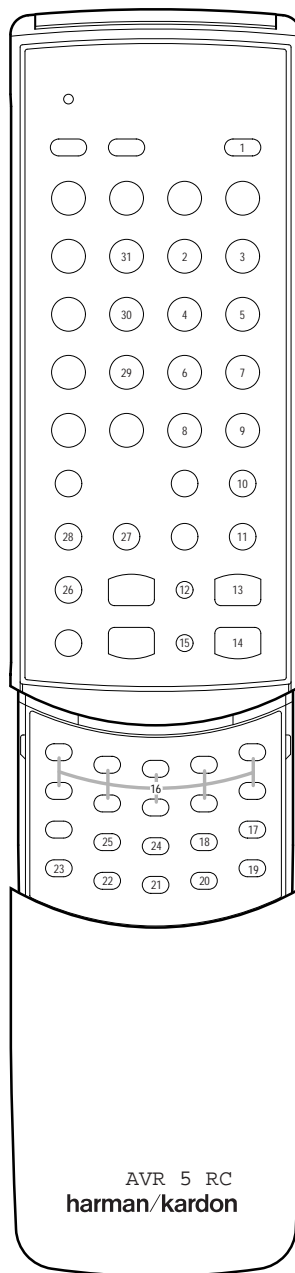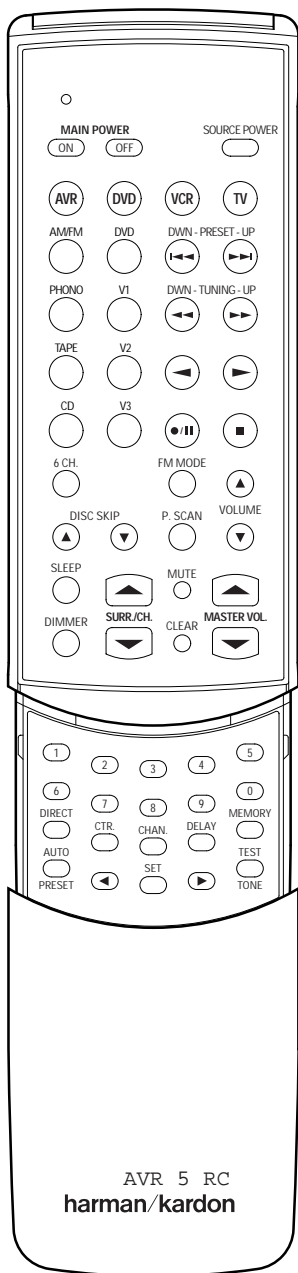
Setup Code Tables: TV

Manufacturer/Brand	*Setup Code Number*														
A MARK	096	124													
AKAI	006	145													
AMPRO	067	152													
AMSTRAD	051														
ANAM	043	053	055	073	088	092	096	099	102	105	115				
AOC	006	009	096												
BLAUPUNKT	079														
CANDLE	006	007	008	009											
CAPEHART	057														
CENTRONIC	043														
CITIZEN	006	007	008	009	043	085	087	124							
CLASSIC	043														
CONCERTO	009														
CONTEC	039	043	049	050											
CORONADO	124														
CRAIG	043	053													
CROWN	043	124													
CURTIS MATHES	006	085	100	124											
CXC	043														
DAEWOO	009	020	021	036	043	044	054	065	070	087	091	095	098	101	104	107
	109	111	112	119	124										
DAYTRON	100	124													
DYNASTY	043														
DYNATECH	061														
ELECTROHOME	071	124													
EMERSON	006	010	031	043	046	047	049	050	084	100	124	128	129	130	147
FISHER	011	056													
FUNAI	031	043													
FUTURETECH	043														
GE	006	012	013	036	055	067	068	100	114	125	130	132	149	150	
GOLDSTAR	009	086	090	096	097	100	103	106	111	120	124				
HALL MARK	100														
HITACHI	006	009	013	014	015	016	027	041	069	124	131	133	151		
INFINITY	134														
INKEL	113														
JBL	134														
J C PENNEY	006	009	012	013	028	033	085	124	132						

Setup Code Tables: TV (Continued)

Manufacturer/Brand	Setup Code Number												
JENSEN	017												
JVC	036	038	076	126									
KEC	043												
KENWOOD	006												
KLOSS	007	058											
KMC	124												
KTV	006	043	124	147									
LODGENET	066												
LOGIK	066												
LUXMAN	009												
LXI	011	019	051	074	132	134	151						
MAGNIVOX	006	008	009	058	059	060	062	063	111	124	132	134	
MARANTZ	006	071	134										
MATSUI	134												
MEMOREX	011	066	100										
METZ	079												
MGA	006	009	031	042	048	071	100						
MINERVA	079												
MITSUBISHI	006	009	028	031	040	042	093	100	108	145			
NAD	019	029											
NEC	006	011	020	023	028	040	055	114	116	118			
NIKEI	043												
ONKING	043												
ONWA	043												
OPTONICA	023	074											
PANASONIC	036	055	073	081	134								
PHILCO	006	008	009	028	043	055	058	059	062	063	111	124	134
PHILIPS	006	008	009	038	058	064	082	124	132	134			
PIONEER	006	022	027	029	030	100	144						
PORTLAND	009	124											
PROSCAN	125												
PROTON	057	100	115	124	153								
QUASAR	036	055	081										
RADIO SHACK	023	043	046	100	111	124							
RCA	006	009	027	028	055	068	125	132	146	149	150		

Setup Code Tables: TV (Continued)

Manufacturer/Brand	Setup Code Number												
REALISTIC	011	023	043	046									
RUNCO	135	136											
SAMPO	006	057	100										
SAMSUNG	049	080	085	089	097	100	111	117	120	124	132		
SANYO	011	024	025	035	039	052	056	075	151				
SCOTT	031	043	047	100	124								
SEARS	009	011	019	031	033	056	075	085	100	124	132		
SHARP	009	018	023	026	031	032	074	124	137				
SIEMENS	079												
SIGNATURE	066												
SONY	041	064	072	110	122	127							
SOUNDESIGN	008	031	043	100									
SPECTRICON	096												
SSS	009	043											
SUPRE MACY	007												
SYLVANIA	006	008	009	058	059	062	063	100	111	123	132	134	
TANDY	074												
TATUNG	055	061											
TECHNICS	077												
TECHWOOD	009												
TEKNIKA	006	007	008	009	028	031	034	043	066	071	085	087	124
TELEFUNKEN	037	045	078	143									
TELERENT	066												
TERA	138												
TMK	009	100											
TOSHIBA	011	019	033	040	050	061	085	121					
TOTEVISION	124												
UNIVERSAL	012	013											
VIDEO CONCEPTS	145												
VIDTECH	009	100											
WARDS	009	012	013	023	031	059	060	062	063	066	068	100	124	134
YAMAHA	006	009											
YORK	100												
YUPITERU	043												
ZENITH	066	067	083	087	148								
ZONDA	096												

Setup Code Tables: VCR

Manufacturer/Brand	Setup Code Number														
AIWA	035														
AKAI	019	042	044	102	103	117									
AMPRO	070														
ANAM	032	034	083												
AUDIO DYNAMICS	015	025	039	042											
BROKSONIC	036	038	104												
CANON	029	032	034												
CAPEHART	088														
CRAIG	007	040	110												
CURTIS MATHES	032	034													
DAEWOO	009	011	014	062	063	088	090	091	092	096	097	098			
DAYTRON	088														
DBX	015	025	039	042											
DYNATECH	035	051													
ELECTROHOME	057														
EMERSON	010	020	027	028	030	032	035	036	037	038	044	081	104	106	113
FISHER	007	012	013	014											
FUNAI	035														
GE	032	034	061	070	087	089	115	118							
GO VIDEO	107	111													
GOLDSTAR	015	016	022	081	086	094	101								
HARMAN KARDON	015	043													
HITACHI	008	035	042	061	112	121									
INSTANT REPLAY	032	034													
JCL	032	034													
J C PENNEY	015	016	018	034	040	064	081								
JENSEN	042														
JVC	015	032	034	042	046	048	053	058	105	121	123				
KENWOOD	017	039	042	046											
LLOYD	035														
LXI	016	017	035	081											
MAGIN	040														
MAGNAVOX	032	034	035	065	066										
MARANTZ	015	032	034	065	067										
MARTA	081														
MATSUI	028	031													
MEI	032	034													
MEMOREX	007	014	017	032	034	035	051	070	081	109	114				
MGA	043	044	057												
MINOLTA	016	022													
MITSUBISHI	016	022	043	044	047	049	057	059	122						
MULTITECH	026	035													
NEC	015	025	039	042	046										
NORMENDE	042														

Setup Code Tables: VCR (Continued)

Manufacturer/Brand	Setup Code Number											
OPTONICA	051	052										
PANASONIC	064	068	072	080	108	116						
PENTAX	016	022	032	034	061							
PHILCO	032	034	035	065								
PHILIPS	032	034	035	052	065	069	081					
PILOT	081											
PIONEER	016	023	046									
PORTLAND	088											
PULSAR	070											
QUARTZ	006	017										
QUASAR	034	064	073	116								
RCA	016	022	034	060	061	087	089	115	116	118		
REALISTIC	007	012	014	017	032	034	035	040	051	052	081	
RICO	056											
RUNCO	119											
SALORA	017											
SAMSUNG	033	040	082	084	085	087	089	092	093	095	099	100	103
SANSUI	024	042	046	110								
SANYO	007	011	014	017	109							
SCOTT	020	038	092	104	106							
SEARS	007	012	013	014	016	017	022	032	041	071	078	081
SHARP	032	052	120									
SHINTOM	026											
SONY	007	013	032	050	054	055	056	074	075	076	120	
SOUNDESIGN	035											
STS	016											
SYLVANIA	032	034	035	057	065							
SYMPHONIC	035											
TANDY	014	035										
ATATUNG	039	042										
TEAC	035	039	042									
TECHNICS	032	034										
TEKNIKA	021	032	034	035	081							
THOMAS	035											
TMK	010											
TOSHIBA	012	016	041	045	057	079	092	106				
TOTEVISION	040	081										
UNITECH	040											
VECTOR RESEARCH	015											
VICTOR	046											
VIDEO CONCEPTS	015	035	044									
VIDEOSONIC	040											
WARDS	007	016	020	026	032	034	035	040	051	052	106	
YAMAHA	015	035	039	042								
ZENITH	035	046	054	056	070	077	081					

Setup Code Tables: DVD

Manufacturer/Brand	Setup Code Number		
CALIFORNIA AUDIO	001		
DENON	002	019	022
GE	003	004	
GOLDSTAR	005		
JVC	006		
KENWOOD	007		
LOTTE	008	034	
MAGNAVOX	009		
MITSUBISHI	023		
NAD	010		
ONKYO	015		
OPTIMUS	011		
PANASONIC	024	025	032
PIONEER	012	020	
RCA	018		
RUNCO	027		
SAMSUNG	031		
SANYO	013		
SHARP	021	028	
SONY	014	029	
TECHNICS	026		
THOMSON	003	004	
TOSHIBA	033		
YAMAHA	016	017	030

Setup Code Tables: LD

Manufacturer/Brand	*Setup Code Number*		
CARVER	101	102	105
DENON	106	107	
DISCO VISION	108		
HITACHI	108		
MAGNAVOX	101	107	109
MARANTZ	102		
MITSUBISHI	110		
NAD	110		
NEC	111		
PANASONIC	112		
PHILIPS	102		
PIONEER	108	110	
QUASAR	112		
RCA	113		
SAMSUNG	105		
SEGA	108		
SONY	114	115	116
THETA DIGITAL	101		
YAMAHA	109		

Troubleshooting Guide

This unit is designed for trouble-free operation. Most problems users encounter are due to operating errors. So, if you have a problem, first check this list for a possible solution. If the problem persists, consult your authorized Harman Kardon Service Center.

If the problem is...	Make sure that the...
No lights illuminate when POWER button is pressed	Unit is plugged into a live outlet
	Main power switch is pressed in
No sound is heard	Unit has not been muted
	Correct input function selector button has been pressed
	Volume is turned up
Dolby Surround does not work on center and rear channels	Correct surround mode is selected
	Center and/or rear speakers are selected
	Rear and center levels are turned up
	You are using a surround encoded source
Selecting a Video source produces sound but no picture	Monitor output is connected to the video input on TV
The TV picture does not match the sound	Video sources are properly connected to receiver
	Video/Antenna Switch on TV is set to Video
No output from one or more channels	Cables are not defective: Check/replace speaker cables
No center channel output	Center channel speaker is selected
	Pro Logic mode is selected
	Center channel level is properly adjusted
	Center speaker is selected
Tuner sound has a large amount of interference, or	The antenna is properly connected
The "Stereo" display is not illuminated, or	The antenna is properly located
Tuner sound distorts and/or volume level is too low	The antenna is set in the proper direction
	The antenna is adequate to receive the desired station
Tuner is intermittent or continuously buzzing or hissing	The unit is away from fluorescent lights, TVs, motors and other electrical appliances

Technical Specifications

Audio Section

Stereo Mode

Continuous Average Power (FTC)

45 Watts per channel, 20Hz–20kHz
@ < 0.08% THD, both channels driven into 8 ohms

Five-Channel Surround Mode

35 Watts per channel, 20Hz–20kHz
@ < 0.08% THD, all five channels driven
simultaneously into 8 ohms

Input Sensitivity/Impedance

Linear (High Level)   200mV/47kohms

Signal-to-Noise Ratio (IHF-A)   92dB

Surround System Adjacent Channel Separation
Analog Decoding (Pro Logic, etc.)   40dB

Frequency Response

@ 1W (+0dB, –3dB)   8Hz–120kHz

High Instantaneous
Current Capability (HCC)   ±35 Amps

Transient Intermodulation
Distortion (TIM)   Unmeasurable

Rise Time   16 μsec

Slew Rate   40V/μsec

FM Tuner Section

Frequency Range	87.5–108MHz
Usable Sensitivity	IHF 1.3 μV/13.2dBf
Signal-to-Noise Ratio	Mono/Stereo 70/68dB
Distortion	Mono/Stereo 0.3/0.5%
Stereo Separation	40dB @ 1kHz
Selectivity	±400kHz, 65dB
Image Rejection	40dB
IF Rejection	110dB
Tuner Output Level	1kHz, ±75kHz Dev 500mV

AM Tuner Section

Frequency Range	520–1710kHz
Signal-to-Noise Ratio	43dB
Usable Sensitivity	Loop 500μV/M
Distortion	1kHz, 50% Mod 0.8%
Selectivity	±10kHz, 30dB

Video Section

Video Format	NTSC
Input Level/Impedance	1Vp-p/75 ohms
Output Level/Impedance	1Vp-p/75 ohms
Video Frequency Response	10Hz–8MHz (–3dB)

General

Power Requirement	AC 120V/60Hz
Power Consumption	72W idle, 332W maximum (2 channels driven)

Dimension (Max)

Width	17.4 inches (442mm)
Height	6.1 inches (156mm)
Depth	16.3 inches (415mm)
Weight	24.6 lbs. (11.2 kg)

Depth measurement includes knobs, buttons and terminal connections.

Height measurement includes feet and chassis.

All features and specifications are subject to change without notice.

Staple or clip original invoice here. ▼

harman/kardon AVR 5

DOLBY SURROUND
PRO·LOGIC

PHONO T●MON CD DVD VID 1 VID 2 VID 3 6 CH AM/FM

Power   Phones   Speakers
                     On   Off