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1 INTRODUCTION

Thank you for choosing HUMAX! With the purchase of a HUMAX AVE-750 you are about to begin many years of listening enjoyment. Designed to provide all the excitement and detail of movie soundtracks and every nuance of musical selections, the AVE-750 is truly a multi-channel receiver for the new millennium.

The AVE-750 has been engineered so that it is easy to take advantage of all the power of its digital technology. On-screen menus, a fully programmable remote control, fully color-coded connection jacks and terminals make installation fast and simple. However, to obtain the maximum enjoyment from your new receiver, we urge you to read this manual. A few minutes spent learning the functions of the various controls will enable you to take advantage of all the power the AVE-750 is able to deliver.

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

Description and Features

The AVE-750 is one of the first fully featured A/V receivers to use PWM digital amplifier technology in a high-performance audio/video receiver. A fully digital path from source input to the output stage eliminates the need for digital-to-analog conversion before amplification. This reduces the possibility of signal degradation or the introduction of distortion. Digital technology also enables HUMAX to provide seven amplifier channels, while reducing the size and weight of the chassis to a slimmer profile.

The AVE-750 is among the most versatile and multifeatured A/V receivers available, incorporating a wide range of listening options. In addition to Dolby* Digital, Dolby Digital EX and DTS® decoding for digital sources, a broad choice of surround modes is available for use with PCM digital and analog sources such as CD, VCR, TV broadcasts and the AVE-750's own AM/FM tuner.

The AVE-750 offers a wide range of sound mode; Dolby Pro Logic* II, DTS Neo: 6®, Dolby 3 Stereo, Hall and many others. Finally, the AVE-750 is among the few A/V receivers that offer MP3 decoding, so that you may listen to the latest music selections directly from compatible computers or playback devices.

In addition to providing a wide range of listening options, the AVE-750 is easy to configure so that it provides the best results with your speakers and specific listening-room environment.

For the ultimate in flexibility, the AVE-750 features connections for four video devices, all with both composite and S-Video inputs. Two additional audio inputs are available, and a total of six digital inputs make the AVE-750 capable of handling all the latest digital audio sources. For compatibility with the latest HDTV video sources and progressive scan DVD players, the AVE-750 also features high-bandwidth, low-crosstalk component video switching.

Coax and optical digital outputs are available for direct connection to digital recorders, and both the front panel analog audio/video and coaxial digital jacks may be switched to outputs for use with portable recorders. A video recording output, preamp-out jacks, and a color-coded eight-channel input make the AVE-750 virtually future-proof.

- Digital amplifiers provide seven channels of high-performance sound in a compact cabinet without the need for noisy cooling fans
- Dolby* Digital EX 6.1 and Dolby Pro Logic* II decoding, and a wide range of DTS® modes, including DTS-ES® 6.1 Discrete & Matrix and Neo:6,® using a 24-bit Cirrus® DSP engine
- MP3 decoding for use with many computers and digital audio players
- High-bandwidth, HDTV-compatible component video switching
- Front panel digital inputs and coax digital output capability for easy connection to portable digital devices and the latest video game consoles
- Multiple digital inputs and outputs
- Front panel analog A/V and coax digital jacks switchable to outputs for easy connection to portable digital devices or video game consoles
- On-screen menu and display system

CAUTION

RISK OF ELECTRIC SHOCK
DO NOT OPEN

CAUTION: To prevent electric shock, do not use this (polarized) plug with an extension cord, receptacle or other outlet unless the blades can be fully inserted to prevent blade exposure.

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.

2 SAFETY INFORMATION

Important Safety Information

Verify Line Voltage Before Use

Your AVE-750 has been designed for use with 230-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 by an authorized service center with a cord meeting factory specifications.

Handle the AC Power Cord Gently

When disconnecting the power cord from an AC outlet, always pull the plug; never pull the cord. If you do not intend to use the unit for any considerable length of time, disconnect the plug from the AC outlet.

Do Not Open the Cabinet

There are no user-serviceable components inside this product. Opening the cabinet may present a shock hazard, and any modification to the product will void your guarantee. If water or any metal object such as a paper clip, wire or a staple accidentally falls inside the unit, disconnect it from the AC power source immediately, and consult an authorized service station.

Installation Location

- To ensure proper operation and to avoid the potential for safety hazards, place the unit on a firm and level surface. When placing the unit on a shelf, be certain that the shelf and any mounting hardware can support the weight of the product.
- 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 in 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.
- There is the remote possibility that the rubber padding on the bottom of the unit's feet may leave marks on certain wood or veneer materials. Use caution when placing the unit on soft woods or other materials that may be damaged by heat or heavy objects.
- The appartus shall not be exposed to dripping or splashing and no object filled with liquids, such as vases, shall be placed on the apparatus.

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

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.

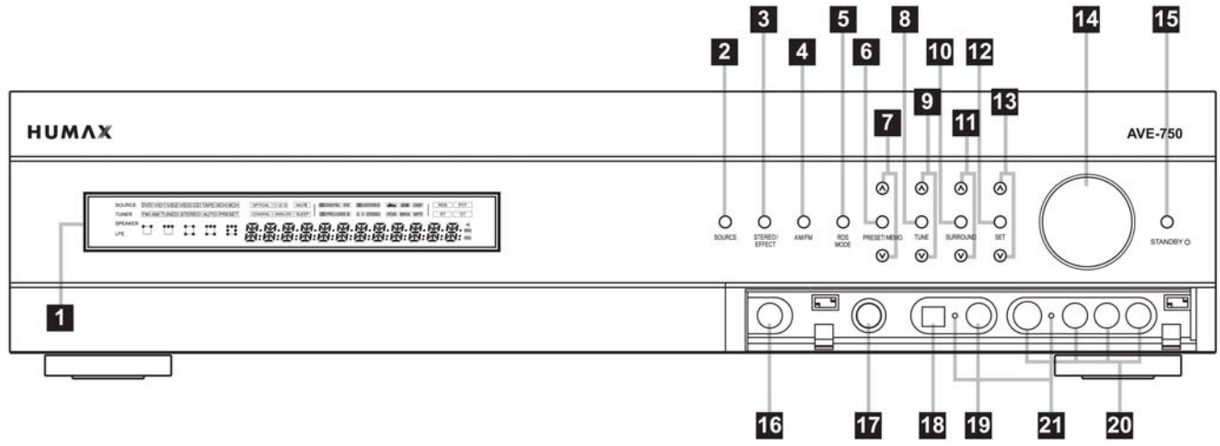
Unpacking

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.

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.

At this time you should also remove the protective plastic film from the front panel lens. Leaving the film in place may affect the performance of your remote control.

3 FRONT PANEL CONTROLS



1 Main Information Display
2 Input Source Selector
3 Stereo/Effect Selector
4 AM/FM Selector
5 RDS Mode Selector
6 Preset Station Memory Button
7 Preset Station Selector
8 Tuning Mode Selector
9 Tuning Selector
10 Surround Mode Selector
11 Surround Select Button
12 Set Button
13 ▲ / ▼ Button
14 Volume Control
15 STANDBY Button
16 Main Power Switch
17 Headphone Jack
18 Digital Optical 3 Input
19 Digital Coax 3 Jack
20 Video 3 Input/Output Jacks
21 Input/Output Status Indicators

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

2 Input Source Selector: Press this button to change the input through the list of input sources.

3 Stereo/Effect Selector: Press this button to toggle between the stereo sound and the various surround effect. If surround is off, it doesn't work.

4 AM/FM Selector: Pressing this button will automatically switch the AVE-750 to the Tuner mode. Pressing it again will switch between the AM and FM frequency bands.

5 RDS Mode Selector: Press this button to select RDS mode.

6 Preset Station Memory Button: Press this button to enter the current tuner frequency into the preset station list.

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

8 Tuning Mode Selector: This button is used to switch back and forth between the auto and manual tuning modes. In auto mode, you may use the **Tuning Selector 9** to scan through stations with an acceptable signal. In manual mode, you may use the **Tuning Selector 9** to step through one frequency increment at a time.

This button is also used to switch between stereo and mono modes for FM radio reception. When weak reception is encountered, press the button so that **STEREO** Indicator disappears in the **Main Information Display 1** to switch to the mono mode. Press it again to switch back to stereo mode.

3 FRONT PANEL CONTROLS

9 Tuning Selector: Press the down side of the button to tune lower-frequency stations and the upper side of the button to tune higher-frequency stations.

In manual tuning mode, tap the button lightly and the tuner will step up one frequency increment per button press. When the button is held for a few seconds, the unit will quickly advance through the frequency band. Release it and the tuner will stop. In auto tuning mode, each press of the button will search for the next station with an acceptable signal. Press and hold the button to skip through the acceptable stations. When the button is released, the tuner will not stop until it reaches a station with an acceptable signal.

To switch back and forth between the auto and manual tuning modes, press the **Tuning Mode Selector 8** .

10 Surround Mode Selector: Press this button to choose a surround processing format category by scrolling through the list of available formats as indicated in the **Surround Mode Indicators H** of **Main Information Display 1** . These format categories are: Dolby surround modes, DTS Surround Modes. DSP modes and Stereo modes. Once you have selected a format category, use the **Surround Select Button 11** to choose a specific mode within the overall category.

11 Surround Selector Button: After choosing a surround processing format category by using the **Surround Mode Selector 10** , press this button to scroll through the list of available modes for that format category.

12 Set Button: Press this button to access the configuration menus for Test Tone, Speakers Channel Trim, Digital Input Select or Delay. After pressing the button, use the ▲ / ▼ **Buttons 13** to select the desired menu.

13 ▲ / ▼ Buttons Use this button to scroll through the System Configuration modes indicated on the front panel: i.e., Test Tone, Speaker, Channel, Digital Select and Delay. Press the **Set Button 12** to select a configuration mode, and use this button to scroll through the available adjustments for each System Configuration mode.

14 Volume Control: Turn this knob clockwise to increase the volume, counterclockwise to decrease the volume. If the AVE-750 is muted, adjusting the volume control will automatically release the unit from the silenced condition.

15 STANDBY Button: When the **Main Power Switch 16** is “ON,” press this button to turn on the AVE-750; press it again to turn the unit off.

NOTE: The **Main Power Switch 16** must be turned on before this button will operate.

16 Main Power Switch: Press this button in to apply power to the AVE-750. When the switch is pressed in, the unit is placed in a Standby mode. 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.

NOTE: This switch is normally left in the “ON” position.

17 Headphone Jack: This jack may be used to listen to the AVE-750’s output through a pair of headphones. Be certain that the headphones have a standard 1/4" stereo phone plug. The speakers will automatically be turned off when the headphone jack is in use.

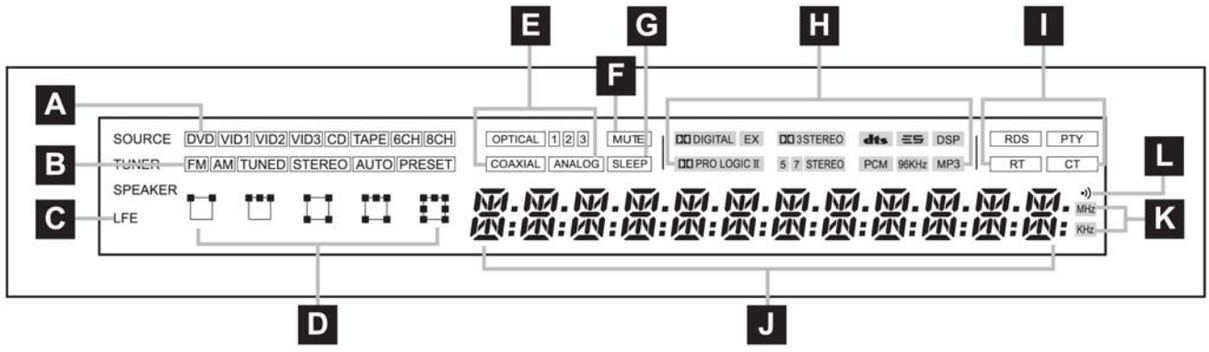
18 Digital Optical 3 Input: Connect the optical digital audio output of an audio or video product to this jack.

19 Digital Coax 3 Jack: This jack is normally used for connection to the output of portable audio devices, video game consoles or other products that have a coax digital audio jack. It may also be configured as an output jack, to feed a digital signal to a CD-R, MiniDisc or other digital recording device.

20 Video 3 Input/Output Jacks: These audio/video jacks may be used for temporary connection to video games or portable audio/video products such as camcorders and portable audio players. These jacks may also be configured as an output to feed an analog audio/video signal to a VCR, camcorder, tape deck or other recording device.

21 Input/Output Status Indicators: These LED indicators will normally light green to show that the front panel **Digital Coax 3 Jack 19** or **Video 3 Input/Output Jacks 20** are operating as inputs. When either of these jacks has been configured for use as an output, the indicator will turn red to show that the jack may be used for recording.

4 FRONT PANEL INFORMATION DISPLAY



A Input Indicators

B AM/FM Tuner Status Indicators

C Subwoofer Indicator

D Speaker/Channel Input Indicators

E Audio Input Indicators

F Mute Indicator

G Sleep Indicator

H Surround Mode/Bitstream Indicators

I RDS Mode Indicators

J Display Line

K Tuner frequency Indicators

L Remote Control Detect Indicator

A Input Indicators: Indicate an input that is currently the input source for the AVE-750.

B AM/FM Tuner Status Indicators: Show the various information related with tuner.

C Subwoofer Indicator: Indicates that subwoofer (LFE; low frequency effect) channel is active now.

D Speaker/Channel Input Indicators: These indicators are multipurpose, indicating either the speaker type selected for each channel or the number of channels available from the input source.

E Audio Input Indicators: Indicate whether the current audio source comes from a digital input(optical/coaxial) or an analog input.

F Mute Indicator: Indicates that volume mute is active now.

G Sleep Indicator: This indicator illuminates when the sleep function is in use. The number that appears in the **Display Line J** is the number of minutes remaining before the AVE-750 will return to the Standby mode.

H Surround Mode/Bitstream Indicators: Indicate the surround mode that is currently in use and/or the type of digital data signal in use.

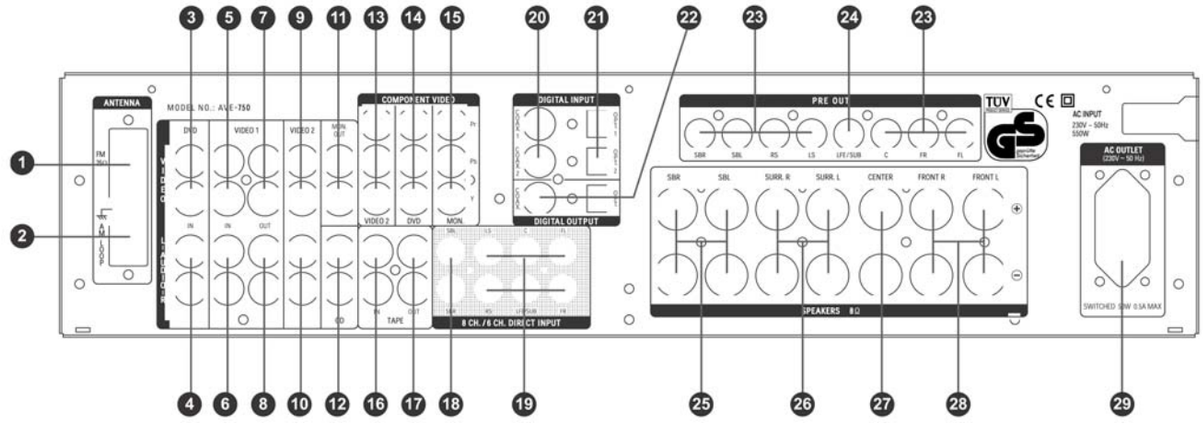
I RDS Mode Indicators: Indicate the current RDS mode selected.

J Display Line: Depending on the receiver's status, a variety of messages will appear here. In normal operation, the current surround mode name will appear on this line.

K Tuner frequency Indicators: Indicates the unit of tuner frequency.

L Remote Control Detect Indicator: Blinks when the remote control signal is detected by AVE-750.

5 REAR PANEL CONNECTIONS



❶ FM Antenna
❷ AM Antenna
❸ DVD Video Inputs
❹ DVD Audio Inputs
❺ Video1 Video Inputs
❻ Video1 Audio Inputs
❼ Video1 Video Outputs
❽ Video1 Audio Outputs
❾ Video2 Video Inputs
❿ Video2 Audio Inputs
⓫ Video Monitor Outputs
⓬ CD Inputs
⓭ Video2 Component Video Inputs
⓮ DVD Component Video Inputs
⓯ Video Monitor Component Video Outputs
⓰ Tape Inputs
⓱ Tape Outputs
⓲ 8-Channel Direct Inputs
⓳ 6-Channel Direct Inputs
⓴ Coaxial Digital Audio Inputs
㉑ Optical Digital Audio Inputs
㉒ Digital Audio Outputs
㉓ Preamp Outputs
㉔ LFE/Subwoofer Output
㉕ Surround Back Speaker Outputs
㉖ Surround Speaker Outputs
㉗ Center Speaker Outputs
㉘ Front Speaker Outputs
㉙ AC Accessory Output

To assist you in making the correct connections for multichannel input, output and speaker connections, all connection jacks and terminals have been colorcoded in conformance with the CEA standards as follows:

- Front Left: White
- Front Right: Red
- Center: Green
- Surround Left: Blue
- Surround Right: Gray
- Surround Back Left: Brown
- Surround Back Right: Tan
- Subwoofer: Purple
- Digital Audio: Orange
- Composite Video: Yellow
- Component Video “Y”: Green
- Component Video “Pr”: Red
- Component Video “Pb”: Blue

❶ **FM Antenna:** Connect the supplied indoor (or an optional external) FM antenna to this terminal.

❷ **AM Antenna:** Connect the AM loop antenna supplied with the receiver to these terminals. Connect the black antenna wire marked GND to the top terminal screw on the AVE-750 with the grounding symbol.

❸ **DVD Video Inputs:** Connect these jacks to the composite or S-Video output jacks on a DVD or other video source.

❹ **DVD Audio Inputs:** Connect these jacks to the analog audio jacks on a DVD or other video source.

❺ **Video 1 Video Inputs:** Connect these jacks to the **PLAY/OUT** composite or S-Video jacks on a VCR or other video source.

❻ **Video 1 Audio Inputs:** Connect these jacks to the **PLAY/OUT** audio jacks on a VCR or other video source.

❼ **Video 1 Video Outputs:** Connect these jacks to the **RECORD/INPUT** composite or S-Video jack on a VCR.

5 REAR PANEL CONNECTIONS

❽ **Video 1 Audio Outputs:** Connect these jacks to the **RECORD/INPUT** audio jacks on a VCR.

❾ **Video 2 Video Inputs:** Connect these jacks to the **PLAY/OUT** composite or S-Video jacks on a TV or other video source.

❿ **Video 2 Audio Inputs:** Connect these jacks to the **PLAY/OUT** audio jacks on a TV or other video source.

⓫ **Video Monitor Outputs:** Connect this jack to the composite or S-Video input of a TV monitor or video projector to view the on-screen menus and the output of a composite or S-Video source selected by the AVE-750.

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

⓭ **Video 2 Component Video Inputs:** Connect the Y/Pb/Pr component video outputs of an HDTV set-top convertor, satellite receiver or other video source device with component video outputs to these jacks.

⓮ **DVD Component Video Inputs:** Connect the Y/Pb/Pr component video outputs of a DVD player to these jacks.

⓯ **Video Monitor Component Video Outputs:** Connect these outputs to the component video inputs of a video projector or monitor. When a source connected to one of the two **Component Video Inputs** ⓭ ⓮ is selected the signal will be sent to these jacks.

⓰ **Tape Inputs:** Connect these jacks to the **PLAY/OUT** jacks of an audio recorder.

⓱ **Tape Outputs:** Connect these jacks to the **RECORD/INPUT** jacks of an audio recorder.

⓲ **8-Channel Direct Inputs:** When an optional playback device such as a DVD-Audio or SACD player with 6.1 or 7.1 audio capability is in use, first connect the Front, Center and Surround Channel outputs to the **6-Channel Direct Input Jacks** ⓳ , then connect the Surround Back channel outputs of the player to these input jacks.

⓳ **6-Channel Direct Inputs:** When an optional playback device such as a DVD-Audio or SACD player with 5.1 audio capability is in use, connect the player's output jacks here.

⓴ **Coaxial Digital Audio Inputs:** Connect the coax digital audio output from a DVD player, HDTV receiver, cable box or satellite receiver, the S/P-DIF output of a compatible computer sound card playing MP3 files or streams, an LD player or a CD player to these jacks. The signal may be a Dolby Digital, DTS or compatible MP3 signal, or standard PCM digital source. Do not connect the RF digital output of an LD player directly to these jacks.

㉑ **Optical Digital Audio Inputs:** Connect the optical digital audio output from a DVD player, HDTV receiver, cable box or satellite receiver, the S/P-DIF output of a compatible computer sound card playing MP3 files or streams, an LD player or a CD player to these jacks. The signal may be a Dolby Digital signal, DTS signal, compatible MP3 signal or standard PCM digital source.

㉒ **Digital Audio Outputs:** Connect these jacks to the matching digital input connector on a digital recorder such as a CD-R or MiniDisc recorder.

㉓ **Preamp Outputs:** These jacks may be connected to an external power amplifier.

㉔ **LFE/Subwoofer Output:** Connect this jack to the line-level input of a powered subwoofer. This output is filtered, and should be connected to your subwoofer's LFE or other input that bypasses the subwoofer's internal crossover. Consult the owner's manual for your subwoofer for further information. If an external subwoofer amplifier is used, connect this jack to the subwoofer amplifier input.

㉕ **Surround Back Speaker Outputs:** These speaker terminals may be used with 7.1-channel systems.

Connect these outputs to the matching (+) and (–) terminals on your surround back channel speakers. In conformance with the CEA color-code specification, the brown terminal is the positive (+) terminal that should be connected to the red (+) terminal on the Surround Back Left speaker with older color-coding, while the tan terminal should be connected to the red (+) terminal on the Surround Back Right speaker with older color-coding. Connect the black (–) terminal on the receiver to the matching black negative (–) terminals for each surround back speaker.

㉖ **Surround Speaker Outputs:** Connect these outputs to the matching (+) and (–) terminals on your surround channel speakers. In conformance with the new CEA color-code specification, the blue terminal is the positive (+) terminal that should be connected to the red (+) terminal on the Surround Left speaker with older color-coding, while the gray terminal should be connected to the red (+) terminal on the Surround Right speaker with the older color-coding. Connect the black (–) terminal on the receiver to the matching black negative (–) terminals for each surround speaker.

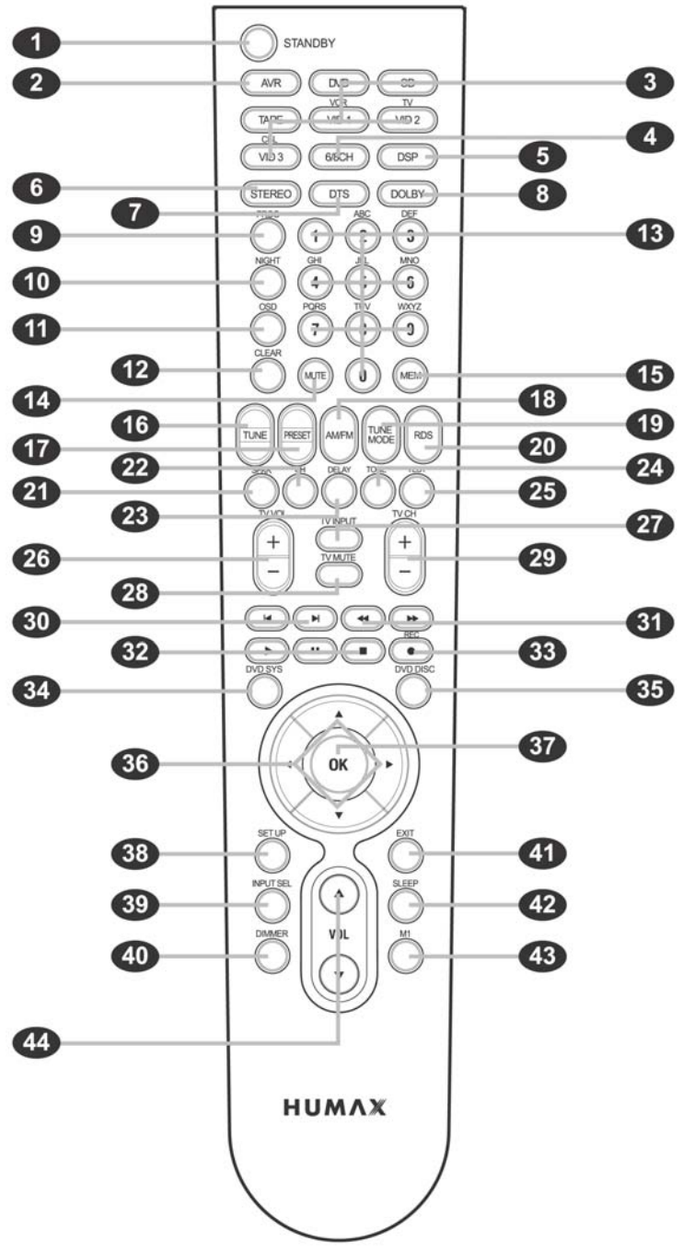
㉗ **Center Speaker Outputs:** Connect these terminals to the matching (+) and (–) terminals on your center channel speaker. In conformance with the new CEA color-code specification, the green terminal is the positive (+) terminal that should be connected to the red (+) terminal on speakers with the older color-coding. Connect the black (–) terminal on the receiver to the black negative (–) terminal on your speaker.

㉘ **Front Speaker Outputs:** Connect these outputs to the matching (+) or (–) terminals on your left and right speakers. The white terminal is the positive (+) terminal that should be connected to the red (+) terminal on the Front Left speaker with older color-coding, while the red terminal should be connected to the red (+) terminal on the Front Right speaker with the older color-coding. Connect the black (–) terminal on the receiver to the matching black negative (–) terminals for each front speaker.

㉙ **AC Accessory Output:** This outlet provides power for low-current devices such as a VCR, cable box, CD or DVD player. However, it should not be used with high-current devices such as amplifiers. The total power consumption of all devices connected to the accessory outlet should not exceed 50 watts. This outlet is switched, which means that power is supplied only when the AVE is turned on. Since the power is removed when the AVE is turned off, this outlet should not be used for devices such as VCRs where a constant power source is required for a clock or timer.

6 MAIN REMOTE CONTROL FUNCTIONS

1. STANDBY Button
2. AVR Selector
3. Input Selector
4. 6/8-Channel Input Select
5. DSP Surround Mode Selector
6. Stereo Mode Selector
7. DTS Surround Mode Selector
8. Dolby Surround Mode Select Button
9. Program Button
10. Night Mode Button
11. OSD Button
12. Clear Button
13. Numeric Keys
14. Mute Button
15. Memory Button
16. Tuning Up/Down Button
17. Preset Up/Down Button
18. AM/FM Button
19. Tuning Mode
20. RDS Button
21. Speaker Select Button
22. Channel Select Button
23. Delay Select Button
24. Tone Control Button
25. Test Button
26. TV Volume Up/Down Button
27. TV Input Selector
28. TV Mute
29. TV Channel Up/Down Selector
30. Track Skip Buttons
31. Transport Fast Play/Scan Buttons
32. Main Transport Controls
33. REC Button
34. DVD System Menu Button
35. DVD Disc Menu Button
36. Navigation Button
37. OK Button
38. Setup Button
39. Audio Input Select Button
40. Dimmer Button
41. EXIT Button
42. Sleep Button
43. Macro Button
44. Volume Up/Down Button



6 MAIN REMOTE CONTROL FUNCTIONS

IMPORTANT NOTE: The AVE-750's remote may be programmed to control up to seven devices, including the AVE-750. Before using the remote, it is important to remember to press the **Input Selector Button** ❸ that corresponds to the unit you wish to operate. In addition, the AVE-750's remote is shipped from the factory to operate the AVE-750 and most HUMAX DVD players and recorders. The remote is also capable of operating a wide variety of other products using the control codes that are part of the remote. Before using the remote with other products, follow the instructions on page 32 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 AVE-750.

❶ **STANDBY Button:** When the **Main Power Switch** 16 is "ON," press this button to turn on the AVE-750; press it again to turn the unit off.

NOTE: The **Main Power Switch** 16 must be turned on before this button will operate.

❷ **AVR Selector:** Pressing this button will switch the remote so that it will operate the AVE-750's functions. If the AVE-750 is in the standby mode, it will also turn the AVE-750 on.

❸ **Input Selectors:** Pressing one of these buttons will perform three actions at the same time. First, if the AVE-750 is not turned on, this will power up the unit. Next, it will select the source shown on the button as the input to the AVE-750. Finally, it will change the remote control so that it controls the device selected. After pressing one of these buttons you must press the **AVR Selector Button** ❷ again or wait for seven seconds to operate the AVE-750's functions with the remote.

❹ **6-Channel/8-Channel Input Select:** Press this button to select the device connected to the **6-Channel Direct Inputs** ⓳ or the **8-Channel Direct Inputs** ⓲ .

❺ **DSP Surround Mode Selector:** Press this button to select from among the available DSP surround modes.

❻ **Stereo Mode Selector:** Press this button to select a stereo listening mode. The first press of the button places the AVE-750 in a true, two-channel, left/right Stereo mode with no surround processing. The next press selects either five-channel Stereo or seven-channel Stereo, depending on the speaker configuration.

❼ **DTS Surround Mode Selector** Press this button to select from among the available DTS surround modes.

❽ **Dolby Surround Mode Selector:** This button is used to select from the available Dolby Surround modes. Each press of this button will select one of the Dolby Pro Logic II modes or Dolby 3 Stereo. When a Dolby Digital-encoded source is in use, the Dolby Digital mode may also be selected.

❾ **Program Button:** This button has no function when the AVE is being controlled, but when programmed for use with a VCR, TV, cable box, satellite receiver or other similar product it can be used.

❿ **Night Mode:** Press this button to activate the Night mode. This mode is available in specially encoded Dolby Digital sources, and it preserves dialogue (center channel) intelligibility at low volume levels.

⓫ **OSD Button:** Press this button to activate the On-Screen Display (OSD) system used to set up or adjust the AVE-750's parameters.

⓬ **Clear Button:** This button has no function when the AVE is being controlled, but when programmed for use with a VCR, TV, cable box, satellite receiver or other similar product it can be used.

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

⓮ **Mute:** Press this button to momentarily silence the AVE-750.

⓯ **Memory Button:** Press this button to enter a radio station into the AVE-750's preset memory. Once **MEMORY** flashes in the **Display Line** J , you have five seconds to enter a preset memory location using the **Numeric Keys** ⓭ .

⓰ **Tuning Up/Down:** When the tuner is in use, this button will tune up or down through the selected frequency band. If the **Tuning Mode Button** ⓳ 8 has been pressed so that **AUTO** indicator appears in the **Main Information Display** 1 , pressing either button will cause the tuner to seek the next station with acceptable signal strength for quality reception. When **AUTO** indicator disappears in the **Main Information Display** 1 , pressing this button will tune stations in single-step increments.

⓱ **Preset Up/Down Button:** When the tuner is in use, press this button to scroll through the stations programmed into the AVE-750's memory.

⓲ **AM/FM Tuner Select:** Press this button to select the AVE-750's tuner as the listening choice. Pressing this button when the tuner is already in use will select between the AM and FM bands.

⓳ **Tuning Mode:** Press this button when the tuner is in use to select between automatic tuning and manual tuning. When the button is pressed so that **AUTO** indicator disappears in the **Main Information Display** 1 , pressing the **Tuning Selector** 9 ⓰ will move the frequency up or down in single-step increments. When the FM band is in use, pressing this button for manual tuning when a station's signal is weak will change to monaural reception.

⓴ **RDS Button:** Press this button to select RDS mode. RDS (works only on the FM band) is a broadcasting service which allows station to send additional information along with the regular program signal.

㉑ **Speaker Select:** Press this button to begin the process of configuring the AVE-750's bass management system. Then press the ▲ / ▼ **Navigation Button** ㊱ to select the channel you wish to set up. Press the **OK Button** ㊲ and then select another channel to configure. When all adjustments have been completed, press the **OK Button** ㊲ twice to exit the settings and return to normal operation.

㉒ **Channel Select Button:** This button is used to start the process of setting the AVE-750's output levels to an external source. Once this button is pressed, press the ▲ / ▼ **Navigation Button** ㊱ to select the channel being adjusted, then press the **OK Button** ㊲ , followed by the ▲ / ▼ **Navigation Button** ㊱ again, to change the level setting.

6 MAIN REMOTE CONTROL FUNCTIONS

㉓ **Delay Select:** Press this button to begin the process for setting the delay times used by the AVE-750 when processing surround sound. After pressing this button, the delay times are entered by pressing the **OK Button** ㊲ and then the ▲ / ▼ **Navigation Button** ㊱ to change the setting. Press the **OK Button** ㊲ again to complete the process.

㉔ **Tone Control Button:** This button controls whether or not the Bass and Treble controls are active, and, if so, the degree to which they are used. The first press of this button tells the current status of the tone controls: If **TONE OUT** is displayed in the **Display Line** J , the tone controls are not in the signal path, and the AVE's output is "flat." If **TONE IN** is displayed, the controls are active. To switch the tone controls in or out, press the ▲ / ▼ **Navigation Button** ㊱ so that the desired setting appears. To change the actual bass or treble settings, first make certain that **TONE IN** has been activated, and then press the button again so that either **BASS MODE** or **TREBLE MODE** appears. Within five seconds, press the ▲ / ▼ **Navigation Button** ㊱ to enter the desired setting.

㉕ **Test Button:** Press this button to begin the sequence used to calibrate the AVE-750's output levels.

㉖ **TV Volume Up/Down Buttons:** This Button has no function when the AVE is being controlled, but when programmed for use with a VCR, TV, cable box, satellite receiver or other similar product it will raise or lower the volume.

㉗ **TV Input:** This button has no function when the AVE is being controlled, but when programmed for use with a VCR, TV, cable box, satellite receiver or other similar product it will switch from TV to other device and vice versa.

㉘ **TV Mute:** This button has no function when the AVE is being controlled, but when programmed for use with a VCR, TV, cable box, satellite receiver or other similar product it will silence the device

㉙ **TV Channel Up/Down Selector:** This button has no function when the AVE is being controlled, but when programmed for use with a VCR, TV, cable box, satellite receiver or other similar product it will change the channel up or down.

㉚ **Track Skip Buttons:** This button does not have a direct function with the AVE-750, but when used with a compatibly programmed CD or DVD changer it will change the track or chapter currently being played.

㉛ **Transport Fast-Play/Scan Buttons:** These buttons have no direct function on the AVE-750, but they are used when the remote is programmed for a compatible DVD, CD or tape player. Pressing these buttons will transmit a fast-play forward, fast-play reverse, or fast-forward or -reverse scan command, according to the capabilities of the player being controlled.

㉜ **Main Transport Controls:** These buttons have no direct function on the AVE-750, but they are used when the remote is programmed for a compatible DVD, CD or tape player. Pressing these buttons will transmit a stop or pause command, according to the capabilities of the player being controlled.

㉝ **REC Button:** This button has no direct function on the AVE-750, but it is used when the remote is programmed for a compatible DVD, CD or tape player. Pressing this button will transmit a record command, according to the capabilities of the player being controlled.

㉞ **DVD System Menu Button:** This button has no direct function on the AVE-750, but it is used when the remote is programmed for a compatible DVD player. Pressing this button will display a DVD System Menu on the screen.

㉟ **DVD Disc Menu Button:** This button has no direct function on the AVE-750, but it is used when the remote is programmed for a compatible DVD player. Pressing this button will display a DVD Disc Menu on the screen.

㊱ **Navigation Button:** The button is used to navigate through the on-screen configuration menus, to scroll through the option list and to select. To use the button, simply press it left, right, up or down in the direction indicated by the ▲▼◀▶ icons printed on the button. Depending on the menu being used, pressing the button will either change the video highlight that indicates a specific choice or it will change the option shown in the on-screen or front panel display. The sections in this manual describing the unit's individual features and configuration options contain specific information on how the navigation controls are used.

㊲ **OK Button:** This button is used to enter settings into the AVE-750's memory. It is also used in the setup procedures for delay time, speaker configuration and channel output level adjustment.

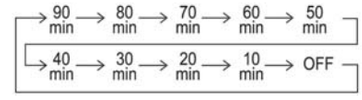
㊳ **Setup Button:** This button has no direct function on the AVE-750, but it is used when the remote is programmed for a compatible DVD, CD or tape player. Pressing this button will begin a setup process.

㊴ **Audio Input Select Button:** Press this button to assign one of the digital inputs to a source. (**OPTICAL 1** -> **OPTICAL 2** -> **OPTICAL 3** -> **COAXIAL 1** -> **COAXIAL 2** -> **COAXIAL 3** -> **ANALOG**)

㊵ **Dimmer Button:** This button is used to change the brightness level of the **Main Information Display** 1 . The first press will dim the display to one-half brightness, the next press will turn it off.

㊶ **EXIT Button:** This button has no direct function on the AVE-750, but it is used when the remote is programmed for a compatible DVD player. Pressing this button will exit from a menu.

㊷ **Sleep Button:** Press this button to place the unit in the Sleep mode. After the time shown in the display, the AVE-750 will automatically go into the Standby mode. Each press of the button changes the time until turn-off in the following order:



㊸ **Macro Button:** This button has no direct function on the AVE-750, but it can be used when the remote is programmed for other devices.

㊹ **Volume Up/Down Buttons:** To raise the volume, press the ▲ icon on the button and to lower the volume, press the ▼ icon.

7 INSTALLATION AND CONNECTIONS

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.

IMPORTANT NOTE: For your personal safety and to avoid possible damage to your equipment and speakers, it is always a good practice to turn off and unplug the AVE-750 and ALL source equipment from the AC output before making any audio or video system connections.

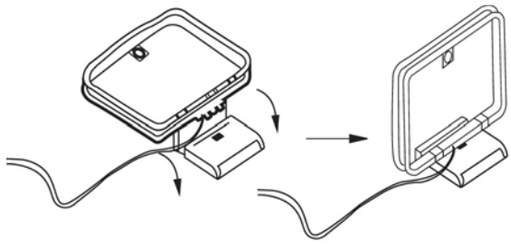
Audio Equipment Connections

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

1. Connect the analog output of a CD player to the **CD Inputs** ⑫ .

NOTE: If your CD player has both fixed and variable audio outputs, it is best to use the fixed output unless you find that the input to the receiver is so low that the sound is noisy, or so high that the signal is distorted.

2. Connect the analog Play/Out jacks of a cassette deck, MD, CD-R or other audio recorder to the **Tape Inputs** ⑯ . Connect the analog Record/In jacks on the recorder to the **Tape Outputs** ⑰ on the AVE-750.
3. Connect the output of any digital sources such as a CD or DVD changer or player, video game, a digital satellite receiver, HDTV tuner or digital cable set-top box or the output of a compatible computer sound card to the **Optical** or **Coaxial Digital Inputs** ⑳ ㉑ ⑱ ⑲ .
4. Connect the coaxial or optical **Digital Audio Outputs** ㉒ on the rear panel of the AVE-750 to the matching digital input connections on a CD-R or MiniDisc recorder.
5. Assemble the AM Loop Antenna supplied with the unit so that the tabs at the bottom of the antenna loop snap into the holes in the base. Connect the wires from the **AM** antenna to the **Antenna Terminals** ❷ . Make certain to connect the wire marked GND to the top terminal screw.



6. Connect the supplied FM antenna to the **FM Antenna (75-ohm) Connection** ❶ . The FM antenna may be an external roof antenna, an inside powered or wire-lead antenna or a connection from a cable TV system. If the antenna or connection uses 300-ohm twin-lead cable, you must use an optional 300-ohm-to-75-ohm adapter.
7. Connect the front, center, surround and surround back speakers outputs ㉕ ㉖ ㉗ ㉘ to the respective speakers.

To ensure that all the audio signals are carried to your speakers without loss of clarity or resolution, we suggest that you use high-quality speaker cable. Many brands of cable are available and the choice of cable may be influenced by the distance between your speakers and the receiver, the type of speakers you use, personal preferences and other factors. Your dealer or installer is a valuable resource to consult in selecting the proper cable.

Regardless of the brand of cable selected, we recommend that you use a cable constructed of fine, multistrand copper with an area greater than 2 mm^2 .

Cable with an area of 1.5 mm^2 may be used for short runs of less than 4 m. We do not recommend that you use cables with an area less than 1 mm^2 due to the power loss and degradation in performance that will occur.

Cables that are run inside walls should have the appropriate markings to indicate listing with any appropriate testing agency standards. Questions about running cables inside walls should be referred to your installer or a licensed electrician who is familiar with the applicable local building codes in your area.

When connecting wires to the speakers, be certain to observe proper polarity. Note that the positive (+) terminal of each speaker connection now carries a specific color code as noted on page 7. However, most speakers will still use a red terminal for the postive (+) connection. Connect the “negative” or “black” wire to the same terminal on both the receiver and the speaker.

NOTE: While most speaker manufacturers adhere to an industry convention of using black terminals for negative and red ones for positive, some manufacturers may vary from this configuration. To ensure proper phase and optimal performance, consult the identification plate on your speaker or the speaker’s manual to verify polarity. If you do not know the polarity of your speaker, ask your dealer for advice before proceeding, or consult the speaker’s manufacturer.

We also recommend that the length of cable used to connect speaker pairs be identical. For example, use the same length of cable to connect the front left and front right, surround left and surround right, and surround back left and surround back right speakers, even if the speakers are at different distances from the AVE-750.

8. Connections to a subwoofer are normally made via a line-level audio connection from the **LFE/Subwoofer Output** ㉔ to the LFE or line-level input of a subwoofer with a built-in amplifier. When a passive subwoofer is used, the connection first goes to a power amplifier, which will be connected to one or more subwoofer speakers. If you are using a powered subwoofer that does not have line-level input connections, follow the instructions furnished with the speaker for connection information.
9. If an external multichannel audio source with 5.1 outputs such as an external digital processor/ decoder, DVD-Audio or SACD player is used, connect the outputs of that device to the **6-Channel Direct Inputs** ⑲ .
10. If an external multichannel audio source with 7.1 outputs such as an external digital processor/ decoder, DVD-Audio or SACD player is used, first connect the outputs of that device to the **6-Channel Direct Inputs** ⑲ , and then connect the Surround Back Left and Surround Back Right output channels of the source device to the **8-Channel Direct Inputs** ⑱ .

7 INSTALLATION AND CONNECTIONS

Video Equipment Connections

Video equipment is connected in the same manner as audio components. Again, the use of high-quality interconnect cables is recommended to preserve signal quality.

Note that the AVE-750 will not convert signals from composite to S-Video, or vice versa. S-Video inputs may only be viewed when the AVE-750 is connected to a TV set or video display with S-Video capability. If you use both standard composite video and S-Video sources in your system, it is important that you connect both an S-Video cable and a standard composite video cable (a coax cable with an RCA plug on both ends) between the AVE-750 and your TV or projector. Consult the instructions for your TV set or projector for more information on connecting both types of signals.

1. Connect a VCR's or other video source's audio and video Play/Out jacks to the **Video 1 In Jacks** 5 6 on the rear panel. The Audio and Video Record/In jacks on the VCR should be connected to the **Video 1 Out Jacks** 7 8 on the AVE-750.
2. Connect the analog audio and video outputs of a television set or any other video source to the **Video 2 Input Jacks** 9 10 .
3. Connect the analog audio and video outputs of a DVD or laser disc player to the **DVD Jacks** 3 4 . When a digital audio connection is used for your DVD player, the default connection is the **Coaxial 1 Digital Audio Input Jack** 20 . However, the connection may also be made to any of the **Optical** 21 18 or **Coaxial** 20 19 digital audio inputs, provided that the digital input source selection is changed as shown on pages 16 and 26. If your DVD or DVD-Audio player includes an onboard surround decoder and 6- or 8-channel line-level audio outputs, you may connect these audio outputs to the 6- and 8-Channel Direct Inputs as appropriate. When you wish to hear this decoded audio, select the DVD input first in order to select the video signal from the DVD player, then select the **6- and 8-Channel Direct Inputs** 18 19 source for the audio.
4. Connect the digital audio outputs of a DVD player, satellite receiver, cable box or HDTV converter to the appropriate **Optical** or **Coaxial Digital Inputs** 18 19 20 21 .
5. Connect the **Video Monitor Output Jacks** 11 on the receiver to the composite or S-Video input of your television monitor or video projector.
6. If your DVD player and monitor both have component video connections, connect the component outputs of the DVD player to the **DVD Component Video Inputs** 14 . Even when component video connections are used, the audio connections should still be made to either the analog **DVD Audio Inputs** 4 or any of the **Optical** or **Coaxial Digital Input Jacks** 21 20 18 19 .
7. If another component video device is available, connect it to the **Video 2 Component Video Input Jacks** 13 . The audio connections for this device should be made to either the **Video 2 Audio Input Jacks** 10 or any of the **Optical** or **Coaxial Digital Input Jacks** 21 20 18 19 .
8. If the component video inputs are used, connect the **Video Monitor Component Video Outputs** 15 to the component video inputs of your TV, projector or display device.
9. If you have a camcorder, video game or other audio/video device that is connected to the receiver on a temporary rather than permanent basis, connect the audio, video and digital audio outputs of that device to the **Video 3 Input/Output Jacks** 20 . A device connected here is selected as the Video 3 input, and the digital inputs must be assigned to the Video 3 input. (See pages 16 and 26 for more information on input configuration.)

VIDEO CONNECTION NOTES:

- When the component video jacks are used, the onscreen menus are not visible and you must switch to the standard composite or S-Video input on your TV to view them.
- The AVE-750 will accept either standard composite, S-Video or Y/Pb/Pr component video signals. However, it will not convert composite or S signals to component video.
- Component or composite video signals may only be viewed in their native formats.

System and Power Connections

The AVE-750 is designed for flexible use with external control components and power amplifiers.

AC Power Connections

This unit is equipped with an **AC Accessory Outlet** 29 . It may be used to power accessory devices, but it should not be used with high-current draw equipment such as power amplifiers. The total power draw for the outlet may not exceed 50 watts.

The outlet is switched, which means that power is supplied only when the AVE is turned on. Since the power is removed when the AVE is turned off, this outlet should not be used for devices such as VCR's where a constant power source is required for a clock or timer, or for products that do not have a mechanical power switch and thus turn off when AC power is removed.

You're almost ready to enjoy the AVE-750!

8 SYSTEM CONFIGURATION

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

Speaker Selection and Placement

The placement of speakers in a multichannel 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 left front, center and right front 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.

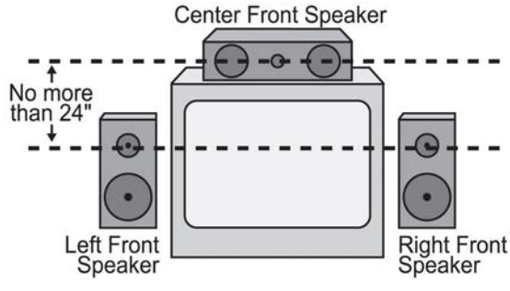
Speaker Placement

Depending on the type of center channel speaker in use and your viewing device, place the center speaker either directly above or below your TV, or in the center behind a perforated front projection screen.

Once the center channel speaker is installed, position the front left and front right 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" above or below the tweeter in the center channel speaker.

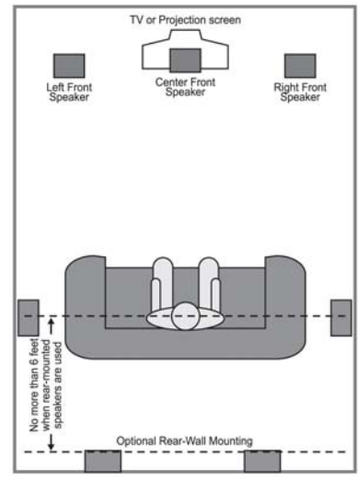
Depending on the specifics of your room acoustics and the type of speakers in use, you may find that imaging is improved by moving the left front and right front speakers slightly forward of the center channel speaker. If possible, adjust all front loudspeakers so that they are aimed at ear height when you are seated in the listening position.

Using these guidelines, you'll find that it takes some experimentation to find the correct location for the front speakers in your particular installation. Don't be afraid to move things around until the system sounds correct. Optimize your speakers so that audio transitions across the front of the room sound smooth, and that sounds from all speakers appear to arrive at the listening position at the same time (without delay from the center speaker compared to the left and right speakers).

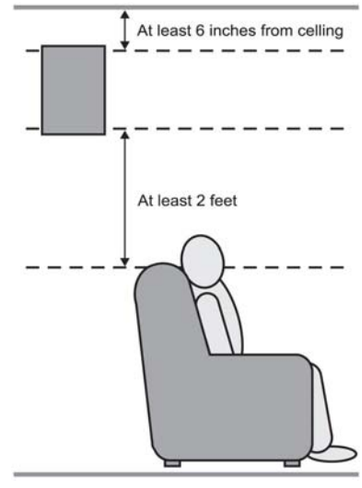


A) Front channel speaker installation with direct-view TV sets or rear-screen projectors.

When the AVE-750 is used in 5.1-channel operation, the preferred location for surround speakers is on the side walls of the room, at or slightly behind the listening position. In a 7.1-channel system, both side surround and back surround speakers are required. 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 the listeners are seated in the desired area.



B) Rear speaker mounting is an alternate location for 5.1 systems. It is required for 7.1 operation.



Rear surround speakers are required when a full 7.1- channel system is installed, and they may also be used as an alternative mounting position in a 5.1-channel system when it is not practical to place the main surround speakers on the sides of the room. Speakers may be placed on a rear wall, behind the listening position. As with the side speakers, rear surrounds 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.

8 SYSTEM CONFIGURATION

Subwoofers produce nondirectional sound, so they may be placed almost anywhere in a room. Actual placement should be based on room size and shape and the type of subwoofer used. One method of finding the optimal location for a subwoofer is to begin by placing it in the front of the room, about six inches from a wall, or near the front corner of the room. Another method is to temporarily place the subwoofer at your normal listening position, and then walk around the room until you find a spot where the subwoofer sounds best. Place the subwoofer in that spot. You should also follow the instructions of the subwoofer's manufacturer, or you may wish to experiment with the best location for a subwoofer in your listening room.

System Setup

Once the speakers have been placed in the room and connected, the remaining steps in the setup process are to program the AVE-750's bass management system for the type of speakers used in your system, calibrate the output levels, and set the delay times used by the surround sound processor.

You are now ready to power up the AVE-750 to begin these final adjustments.

1. Plug the AC Power Cord into an unswitched AC outlet.
2. Open the door on the lower right corner of the front panel to reveal the **Main Power Switch** 16 and the other front panel jacks by gently pulling the door down from the side of the unit. Press the **Main Power Switch** 16 in until it latches.
3. Remove the protective plastic film from the front panel lens. If left in place, the film may affect the performance of your remote control.
4. Install the two supplied AA batteries in the remote as shown. Be certain to follow the (+) and (–) polarity indicators that are printed inside the battery compartment. Use the alkaline batteries for longer use of the remote.

5. Turn the AVE-750 on either by pressing the **STANDBY Button** 15 on the front panel, or via the remote by pressing the **STANDBY Button** 1, the **AVR Selector** 2 or any of the **Input Selectors** 3 on the remote. The **Main Information Display** 1 will light.

Using the On-Screen Display

When making the following adjustments, you may find it easier to use the AVE-750's on-screen display system. These easy-to-read displays give you a clear picture of the current status of the unit and make it easy to see which speaker, delay, input or digital selection you are making.

To view the on-screen menus, make certain you have made a connection from the **Video Monitor Outputs** 11 on the rear panel to the composite or S-Video input of your TV or projector. In order to view the AVE-750's displays, the correct video source must be selected on the video display. Note that the on-screen menus are not available when a component video display is in use.

IMPORTANT NOTE: When viewing the on-screen menus using a CRT-based projector, plasma display or any direct-view CRT monitor or television, it is important that they not be left on the screen for an extended period of time. The constant display of a static image such as these menus or video game images may cause the image to be permanently "burned into" the projection tubes, plasma screen or CRT. This type of damage is not covered by the AVE-750 warranty and may not be covered by the projector/TV set's warranty.

The AVE-750 has two on-screen display modes, "Semi-OSD" and "Full-OSD." When making configuration adjustments, it is recommended that the Full-OSD mode be used. This will place an option listing on the screen, making it easier to view the available options.

Making Configuration Adjustments

The full-OSD system is available by pressing the **OSD Button** 11 . When this button is pressed, the **MAIN MENU** (Figure 1) will appear, and adjustments are made from the individual menus.

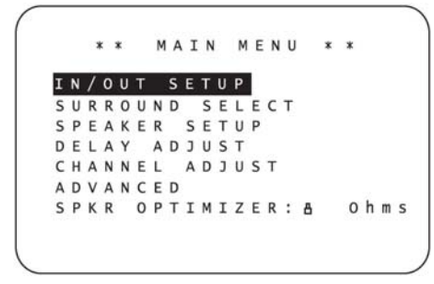


Figure 1

The semi-OSD system is also available, allowing you to make adjustments directly, by pressing the appropriate buttons on the front panel or remote control for the specific parameter to be adjusted. For example, to change the digital input for any of the sources, press the **Audio Input Select Button** 39 on the remote, or use the front panel buttons following the instructions shown on page 17. To use the full-OSD menu system, press the **OSD Button** 11 . When the menu is on the screen, press the ▲ / ▼ **Navigation Buttons** 36 until the item you wish to adjust is highlighted in a white box and then press the **OK Button** 37 to adjust that item. The menus will remain on the screen for 20 seconds, and then they will "time-out" and disappear from the screen. The time-out may be increased to as much as 50 seconds by going to the **ADVANCED** menu, and changing the item titled **FULL OSD TIME OUT**.

When the full-OSD system is in use, the menu selections are not shown in the **Main Information Display** 1 . When the full-OSD menu system is used, **OSD ON** will appear in the **Display Line** J . When the semi-OSD system is used in conjunction with the discrete configuration buttons, the on-screen display will show the current menu selection. That selection will also be shown in the **Display Line** J .

8 SYSTEM CONFIGURATION

Speaker Optimizer

The Speaker Optimization function is critical to ensure optimal performance of the AVE. This setting tells the digital amplifier section which settings to use to best match its operation to your specific speakers. Note that this adjustment is electronic, not electrical, and unlike the “8-ohm/4-ohm” switches on older analog amplifiers, you do not need to turn the AVE off to change the setting. However, we do suggest that you do not have any program material playing through the AVE when the setting is changed.

Before making this adjustment you will need to find the impedance specification for your speakers. This information is often found on a label attached to the speaker, and it is usually shown in the owner’s manual that came with your speakers. If you cannot find the information for your speakers, consult the manufacturer’s Web site or customer service department.

In cases where the speakers in a system have different impedance ratings, such as 8 ohms for the front left/right and center speakers and 6 ohms for the surround speakers, use the setting for the front speakers, as they are used most often for all types of program material.

If you cannot determine the speaker’s impedance, there is no harm in using the factory default setting of 8 ohms, as most home speakers are in that range.

Since the factory default is 8 ohms, you may skip this section if that is the setting appropriate to your system. If you do want to change the setting, follow these steps.

Press the **OSD Button** 11 so that the **MAIN MENU** (Figure 1) appears on your display. Press the ▼ **Navigation Button** 36 so that **SPKR OPTIMIZER** is highlighted and then press the ◄ / ► **Navigation Buttons** 36 until the desired setting appears.

When the correct impedance figure is on the screen, press the ▼ **Navigation Button** 36 so that **IN/OUT SETUP** is highlighted and proceed to the following section to configure the remaining settings for your AVE.

Setting the System Configuration Memory

The AVE-750 features an advanced memory system that enables you to establish different configurations for the speaker configuration, digital input, surround mode, delay times, crossover frequency and output levels for each input source. This flexibility enables you to customtailor the way in which you listen to each source and have the AVE-750 memorize those settings. This means, for example, that you may use different output levels or trims for different sources, or set different speaker configurations with the resultant changes to the bass management system. Once these settings are made, they will automatically be recalled whenever you select that input.

The factory default settings for the AVE-750 have all inputs except for DVD configured for an analog audio input except for the DVD input, where the **Coaxial 1 Digital Audio Input** 20 is the default. The default speaker settings are “SMALL” for all speaker positions, and for the subwoofer to be on. The default setting for the surround modes is 5CH stereo, although Dolby Digital or DTS will automatically be selected as appropriate when a source with digital encoding is in use.

Before using the unit, you will probably want to change the settings for most inputs so that they are properly configured to reflect the use of digital or analog inputs, the type of speakers installed and the surround mode specifics of your home theater system. Remember that since the AVE-750 memorizes the settings for each input individually, you will need to make these adjustments for each input used. However, once they are made, further adjustment is only required when system components are changed.

To make this process as quick and as easy as possible, we suggest that you use the full-OSD system with the on-screen menus, and step through each input. Once you have completed the settings for the first input, many settings may be duplicated for the remaining inputs. It is also a good idea to set the configuration data in the order these items are listed in the **MAIN MENU** as some settings require a specific entry in a prior menu item. Remember that once the settings are made for one input, they must be made for all other input sources in your system.

Input Setup

The first step in configuring the AVE-750 is to configure each input. When using the full-OSD system to make the setup adjustments, press the **OSD Button** 11 once so that the **MAIN MENU** (Figure 1) appears. The **IN/OUT SETUP** line will be highlighted. Press the **OK Button** 37 to enter the menu and the **IN/OUT SETUP** menu (Figure 2) will appear on the screen. Press the ◄ / ► **Navigation Buttons** 36 until the desired input name appears. If the input will use the standard left/right analog inputs, no further adjustment is needed.

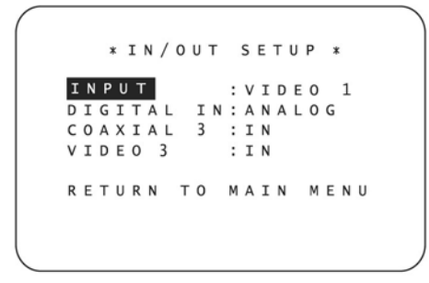


Figure 2

If you wish to associate one of the digital inputs with the selected input source, press the ▼ **Navigation Button** 36 while the **IN/OUT SETUP** menu (Figure 2) is on the screen, and the **DIGITAL IN** line will be highlighted in reverse text. Press the ◄ / ► **Navigation Buttons** 36 until the name of the desired digital input appears. To return to the analog input, press the buttons until the word **ANALOG** appears. When the correct input source appears, press the ▼ **Navigation Button** 36 once so that **RETURN TO MAIN MENU** is highlighted, and press the **OK Button** 37 .

To change the digital input at any time using the remote control and the semi-OSD system, press the **Audio Input Select Button** 39 . Make your input selection using the **Audio Input Select Button** 39 until the desired digital or analog input is shown in the **Display Line** J and in the video display connected to the AVE-750. Press the **OK Button** 37 to enter the new digital input assignment.

8 SYSTEM CONFIGURATION

To change the digital input from the front panel, press the **Set Button** 12 and then press the ▲ / ▼ Buttons 13 until **DIG SEL MODE** appears in the **Display Line** J . Within five seconds, press the **Set Button** 12 again, and then press the ▲ / ▼ Buttons 13 again to cycle through the list of available inputs. When the desired digital input (or the analog input) name appears in the **Display Line** J and in the on-screen display, **Set Button** 12 to enter your choice into the unit's memory. The AVE-750 will return to normal operation and displays within five seconds.

NOTE: When a source such as an HDTV receiver or a digital cable set-top box is used, you may wish to connect both the coaxial digital output and the standard, analog output of the source to the AVE's VID 2 input since the program sources and channels received by these devices often switch between analog and digital audio.

An exclusive HUMAX feature is the ability to switch the front panel coaxial digital audio and analog audio/video jacks from their normal use as inputs to output connections so that portable recording devices may easily be connected. On the AVE-750, the **Digital Coax 3 Jack** 19 is normally an input, but it may be switched to a digital output for use with CD-R/RW decks, MD recorders or other A/V recorders. To change the jack to an output, press the ▲ / ▼ **Navigation Buttons** 36 while the **IN/OUT SETUP** menu is on the screen until **COAXIAL 3** is highlighted. Then press the ◄ / ► **Navigation Buttons** 36 so that the word **OUT** appears. The **Input/Output Status Indicator** 21 will turn red, indicating that the jack is now a record output.

NOTE: A signal will be sent to this jack only when the input selected for use by the AVE-750 is digital. Digital signals will be passed through regardless of their format, and which digital input (optical or coax) they are fed from. However, analog signals are not converted to digital, and the signal's format (e.g., PCM, Dolby Digital or DTS) may not be changed.

Selection of the front panel jacks as an output will remain effective as long as the AVE-750 is on. Once the unit is turned off, the jacks will revert to their normal use as an input when the unit is turned on again.

The front panel analog **Video 3 Input/Output Jacks** 20 are normally set as an input for use with camcorders, video games and other portable audio/video products, but they may be switched to an output for connection to portable audio/video recorders. To temporarily switch them to outputs, you must first be at the **IN/OUT SETUP** menu. Press the ▼ **Navigation Button** 36 until the **VIDEO 3** line is highlighted. Press the ► **Navigation Button** 36 so that the word **OUT** appears. Note that the **Input/Output Status Indicator** 21 between the S- and composite video jacks will turn red, indicating that the analog Video 3 jacks are now record outputs.

Surround Setup

Once the basic input setup has been completed, the next step is to select the surround mode you wish to use with an input. Since surround modes are a matter of personal taste, feel free to select any mode you wish – you may change it later. However, to make it easier to establish the initial parameters for the AVE-750, it is best to select Dolby Pro Logic II for most analog inputs and Dolby Digital for inputs connected to digital sources. In the case of inputs such as a CD Player, Tape Deck or Tuner, you may wish to set the mode to Stereo ("Surround Off") as they are not typically used with surround-encoded material.

It is easiest to complete the surround setup using the full-OSD on-screen menus. From the **MAIN MENU** (Figure 1), press the ▲ / ▼ **Navigation Buttons** 36 until **SURROUND SELECT** is highlighted. Press the **OK Button** 37 so that the **SURROUND SELECT** menu (Figure 3) is on the screen.

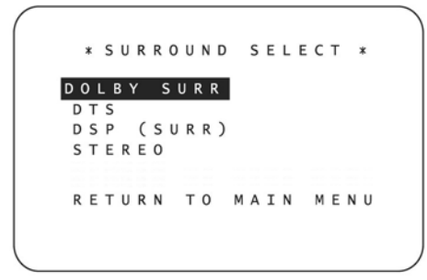


Figure 3

Each of the lines on the menu (Figure 3) contains a category menu surround mode and within those menus you may choose one of the sub-modes. The list of submodes in some categories will vary according to whether 5.1 or 6.1/7.1 operation is chosen. Also, some of the modes available in the AVE-750 will not appear unless a digital source is selected and playing the correct bitstream.

The selection of 5.1 or 6.1/7.1 configuration is determined by the setting for Surround Back Speakers in the Speaker Setup menu. The factory setting is for "None," which will mean that only 5.1 modes will be available. To utilize the 6.1/7.1 surround modes, change the setting for the Surround Back Speakers to either Large or Small, as shown in the instructions on page 19. This will automatically activate all 6.1/7.1 surround mode options.

To select the mode that will be used as the initial default for an input, first press the ▲ / ▼ **Navigation Buttons** 36 until the on-screen cursor is next to the desired mode's master category name. Next, press the **OK Button** 37 to view the sub-menu. Press the ◄ / ► **Navigation Buttons** 36 to scroll through the available choices, and then press the ▼ **Navigation Button** 36 so that the cursor is next to **RETURN TO MAIN MENU** to continue the setup process.

On the **DOLBY SURR** menu (Figure 4), the choices include Dolby Digital, Dolby Pro Logic II Music, Dolby Pro Logic II Movie, Dolby Pro Logic and Dolby 3 Stereo. When a 6.1/7.1 speaker configuration is used, Dolby Digital EX replaces the Dolby Digital mode. For a complete explanation of these modes, see page 25. Note that when a Dolby Digital mode is selected there are additional settings available for the Night mode.

Note also that some of the available surround mode combinations include both Dolby Digital and the various options for Dolby Pro Logic II. These are used with DVD or other Dolby Digital sources such as digital cable or some high-definition television programs where Dolby Digital is used to carry the soundtrack, but the soundtrack itself is only two-channel stereo. Check the Dolby Digital icon information on the back of a DVD or the program listings for your cable, satellite or HDTV station to see whether the programming is Dolby Digital 5.1 or 2.0. When the AVE-750 detects a Dolby Digital 2.0 signal, it will automatically default to the Dolby Pro Logic surround mode.

8 SYSTEM CONFIGURATION

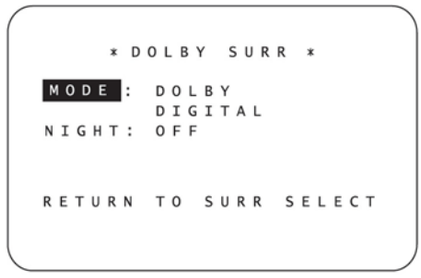


Figure 4

The Night mode is a feature of Dolby Digital that uses special processing to preserve the dynamic range and full intelligibility of a movie sound track while reducing the peak level. This prevents abruptly loud transitions from disturbing others, without reducing the sonic impact of a digital source. The Night mode is only available when specially encoded Dolby Digital signals are played.

To adjust the Night mode setting for an input from the menu, make certain that the **NIGHT** line of the **DOLBY SURR** menu (Figure 4) is highlighted. Next, press the ◄ / ► **Navigation Buttons** 36 to choose between the following settings, as they appear in the on-screen display:

OFF: When **OFF** appears, the Night mode will not function.

MID: When **MID** appears, a mild compression will be applied.

MAX: When **MAX** appears, a more severe compression algorithm will be applied.

We recommend the **MID** setting as a starting point and the **MAX** setting as an alternative. The Night mode may be adjusted directly any time that a Dolby Digital source is playing by pressing the **Night Mode Button** 10 . When the button is pressed, the phrase **D-RANGE** will appear in the lower third of the video screen and in the **Display Line** J . Press the ▲ / ▼ **Navigation Buttons** 36 within three seconds to select the desired setting.

On the **DTS** menu, the choices made are determined by a combination of the type of DTS program material in use and whether the 5.1 or 6.1/7.1 speaker output configuration is in use. When either of the speaker configurations is in use, you may select either the Neo:6 Music or Neo:6 Cinema mode to deliver an enhanced 5.1- or 6.1-channel sound field.

When a 5.1 speaker configuration is in use, the AVE will automatically select the 5.1 version of DTS processing when a DTS data stream is selected. When a 6.1/7.1 speaker configuration is in use, the DTS-ES Discrete mode will automatically be activated when a DTS source with the ES Discrete “flag” is in use. When a non-ES DTS disc is in use, you may select the DTS-ES Matrix mode through this menu to create a full eight-speaker surround mode. See page 25 for a complete explanation of the DTS modes.

On the **DSP** menu, the choices are the DSP surround modes designed for use with two-channel stereo programs to create a variety of sound field presentations. The choices available are Hall 1, Hall 2 ,Theater, Stadium, Classic, Panorama, Movie or Music. See page 25 for a complete explanation of the DSP surround modes.

On the **STEREO** menu, the choices will either turn the surround processing off for a traditional two-channel stereo presentation, or select 5 CH STEREO or 7 CH STEREO depending on whether a 5.1 or 6.1/7.1 configuration is in use. The latter modes feed a two channel presentation to all speakers, regardless of the number of speakers in use. See page 25 for a complete explanation of the 5 CH STEREO and 7 CH STEREO modes.

After the selections are made on the Dolby, DTS, DSP or Stereo menus, press the ▲ / ▼ **Navigation Buttons** 36 so that the cursor moves to the **RETURN TO SURR SELECT** line and press the **OK Button** 37 . In the **SURROUND SELECT** menu use the ▲ / ▼ **Navigation Buttons** 36 to highlight the **RETURN TO MAIN MENU** option, and press the **OK Button** 37 to return to the **MAIN MENU**.

Speaker Setup

This menu tells the AVE-750 which type of speakers are in use. This is important as it adjusts the settings that decide whether your system will use the “5-channel” or “6-channel/7-channel” modes, as well as determining which speakers receive low-frequency (bass) information.

For each of these settings, use the **LARGE** setting if the speakers for a particular position are traditional full-range loudspeakers. Use the **SMALL** setting for smaller, frequency-limited satellite speakers that do not reproduce sounds below 200Hz. 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 to 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.

This menu screen also allows you to enter the settings for the AVE-750’s Triple Crossover feature that allows a different crossover point to be used for the front left/right, center and surround speakers. In systems where full-range or tower speakers are used for the front soundstage or where different brands or models are in use at the various speaker positions, this feature allows you to customize the bass management circuits with a precision not previously possible. It is easiest to enter the proper settings for the speaker setup through the **SPEAKER SETUP** menu (Figure 5). If that menu is not already on your screen from the prior adjustments, press the **OSD Button** 11 to bring up the **MAIN MENU** (Figure 1), and then press the ▼ **Navigation Button** 36 until the cursor is on the **SPEAKER SETUP** line. At this point, press the **OK Button** 37 to bring up the **SPEAKER SETUP** menu (Figure 5).

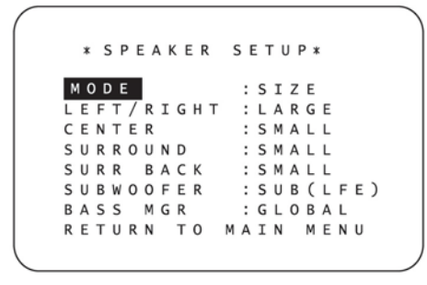


Figure 5

8 SYSTEM CONFIGURATION

The first line of the **SPEAKER SETUP** menu (Figure 5) allows you to switch the menu to change either the underlying speaker size setting or the exact crossover point used for that speaker group. For the first pass through the menu, leave the setting at its default option of **SIZE**, and then proceed as outlined below. Once the speaker choices have been set you may wish to return to this line to change the option so that the crossover settings may be adjusted.

Begin the speaker setup process by making certain that the **LEFT/RIGHT** line is highlighted in reverse video, which sets the configuration for the front left and right speakers. If you wish to make a change to the front speakers' configuration, press the ◄ / ► **Navigation Buttons** 36 so that either **LARGE** or **SMALL** appears, matching the appropriate description from the definitions on page 19.

When **SMALL** is selected, low-frequency sounds will be sent only to the subwoofer output. If you choose this option and there is no subwoofer connected, you will not hear any low-frequency sounds from the front channels.

When **LARGE** is selected, a full-range output will be sent to the front left and front right outputs. Depending on the choice made in the **SUBWOOFER** line in this menu, bass information may also be directed to the front left/right speakers, a subwoofer or both.

NOTE: When the front speakers are set to the **LARGE** option and the surround mode is set to "Surround Off," or pure two-channel stereo, when an analog signal source is present it will be routed directly from the input to the volume control without being digitized or processed. If you have full-range front speakers and wish to remove all digital processing from the circuit path, select this configuration. If you wish to set this option for use with only one input, such as a CD player that uses an external DAC or an optional, external phono preamp, you may also wish to choose the **INDIVIDUAL** setting on the **BASS MGR** line at the bottom of this menu so that only those inputs where the analog bypass is desired will be routed in this fashion, while other analog inputs such as a VCR or cable box will be digitized for surround processing.

When you have completed your selection for the front channel, press the ▼ **Navigation Button** 36 to move the highlighted video to **CENTER**.

Press the ◄ / ► **Navigation Buttons** 36 to select the option that best describes your system, based on the definitions shown on page 18.

When **SMALL** is selected, low-frequency surround channel sounds will be sent to the subwoofer output only. If you choose this option and there is no subwoofer connected, you will not hear any low-frequency sounds from the surround channel.

When **LARGE** is selected, a full-range output will be sent to the center speaker output, and no center channel signal will be sent to the subwoofer output.

When **NONE** is selected, no signals will be sent to the center channel output. The receiver will operate in a "phantom" center channel mode and center channel information will be sent to the left and right front channel outputs.

When you have completed your selection for the center channel, press the ▼ **Navigation Button** 36 to move the highlighted video to **SURROUND**. Press the ◄ / ► **Navigation Buttons** 36 to select the option that best describes the surround speakers in your system based on the definitions shown on page 18.

When **SMALL** is selected, low-frequency surround channel sounds will be sent to the subwoofer output only. If you choose this option and there is no subwoofer connected, you will not hear any low-frequency sounds from the surround channel.

When **LARGE** is selected, a full-range output will be sent to the surround channel outputs, and no surround channel signals will be sent to the subwoofer output.

When **NONE** is selected, surround sound information will be split between the front left and front right outputs.

When you have completed your selections for the main surround channels, press the ▼ **Navigation Button** 36 to move the highlighted video to **SURR BACK**. This line enters the setting for the surround back channels when they are present, and it also tells the AVE-750's processing system to configure the unit for either 5.1 or 6.1/7.1 operation.

Press the ◄ / ► **Navigation Buttons** 36 to select the option that best describes the speakers in use at the left and right back surround positions based on the definitions on page 18.

When **NONE** is selected, the system will adjust so that only 5.1-channel surround modes are available and the surround back amplifier channels will not be used.

When **SMALL** is selected the system will adjust so that the full complement of 6.1/7.1 surround modes is available, and low-frequency information below the crossover point will be sent to the subwoofer output. If you choose this option with no subwoofer connected, you will not hear low-frequency sounds from the surround back channel.

When **LARGE** is selected the system will adjust so that the full complement of 6.1/7.1 surround modes is available, and a full-range signal will be sent to the surround back channels, with no low-frequency information sent to the subwoofer output.

When you have completed your selection for the back surround channels, press the ▼ **Navigation Button** 36 on the remote to move the highlighted video to **SUBWOOFER**.

Press the ◄ / ► **Navigation Buttons** 36 to select the option that best describes your system. The choices available for the subwoofer position will depend on the settings for the other speakers, particularly the front left/right positions .

If the front left/right speakers are set to **SMALL**, the subwoofer will automatically be set to **SUB**.

If the front left/right speakers are set to **LARGE**, three options are available:

- If no subwoofer is connected, press the ◄ / ► **Navigation Buttons** 36 so that **SUB NONE** appears in the on-screen menu. When this option is selected, all bass information will be routed to the front left/right "main" speakers.
- If a subwoofer is connected, you have the option to have the front left/right "main" speakers reproduce bass frequencies at all times, and have the subwoofer operate only when a digital source with a dedicated Low-Frequency Effects, or LFE, soundtrack is in use. This allows you to use both your main and subwoofer speakers to take advantage of the bass created for certain movies. Press the ◄ / ► **Navigation Buttons** 36 so that **SUB (LFE)** appears in the on-screen menu for this option.

8 SYSTEM CONFIGURATION

- To use a subwoofer for bass reproduction in conjunction with the main front left/right speakers, regardless of the type of program source or Surround mode you are listening to, press the ◄ / ► **Navigation Buttons** 36 so that **L/R+LFE** appears.

When this option is selected, a full-range signal will be sent to the front left/right "main" speakers, and the subwoofer will receive the bass frequencies under frequency selected, as described below. When all initial speaker "size" settings have been made, you may then take advantage of the AVE-750's Triple Crossover system, which allows individual crossover settings to be made for each speaker grouping. The low frequency crossover point is set by the design of your speakers. Depending on the design and driver complement of your speakers, it is defined as the frequency which is either the lowest possible frequency the speaker is capable of reproducing, or the frequency at which sound is sent to the speaker's internal low-frequency driver, as opposed to the mid-range driver. Before making any changes to the settings for the crossover point we suggest that you find the crossover point for the speakers in each of the three groupings, front left/right, center front and surrounds by looking at the specifications page of the speaker's owner's manual, by getting that information from the manufacturer's Web site, or by contacting your dealer or the manufacturer's customer service department. You will need this data to accurately configure the next group of settings.

The factory default setting for all speaker positions is 100Hz. If that setting is acceptable for all channels, no adjustments are needed and you may skip this section. To change one of the settings, press the ▲ **Navigation Button** 36 so that the cursor moves back up to the top of the list of setting options. Press the ◄ / ► **Navigation Buttons** 36 so that **X-OVER** is highlighted and the menu will change to the screen shown in Figure 6.

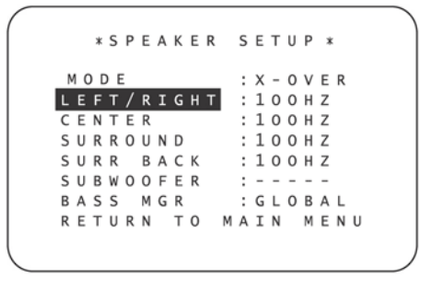


Figure 6

To change the setting for any of the three speaker groups, press the ▲ / ▼ **Navigation Buttons** 36 until the cursor is next to the line where you wish to make a change and then press the ◄ / ► **Navigation Buttons** 36 until the desired setting appears. The available choices at which point low-frequency information will be sent to the subwoofer, rather than to the main speaker channel, are 40Hz, 60Hz, 80Hz, 100Hz, 120Hz and 200Hz. Pick the choice that is identical to the information for the speakers, or if an exact match is not possible, pick the closest choice that is above the speaker's low frequency limit or crossover point to avoid the creation of a low-frequency "hole" where your system will have no bass information.

In cases where **LARGE** has been selected as the front channel speaker option and **L/R+LFE** has been selected as a the subwoofer option, the front channel sound information below the setting shown will be sent to both the front channel speakers and the subwoofer.

The subwoofer's crossover point will automatically adjust to meet the setting for each speaker grouping so that no bass information will be lost.

When all crossover settings have been made, or in those cases where none are needed, press the ▼ **Navigation Button** 36 so that the **BASS MGR** line is highlighted.

This setting allows you to use the same speaker configuration and crossover settings for all inputs, or to have different settings for each input. In most cases the factory default setting of **GLOBAL** will be appropriate, as most listeners do not need to have individualized speaker settings. However, some listeners, particularly those with full-range front speakers that are used for both movies and music may prefer that different crossover points be used when listening to music through a CD player as opposed to a movie from a DVD player, VCR or cable/satellite set top box.

If you wish to customize the crossovers to each input, make certain that the **BASS MGR** line is highlighted and press the ◄ / ► **Navigation Buttons** 36 so that **INDIVIDUAL** appears. When this setting is stored by exiting the menu, the configuration settings just entered will apply to the current input only, and you will need to go back to the **IN/OUT SETUP** menu to select another input, and then return to this menu page again to change the settings for the next input. Repeat the procedure for any input where you wish to have a different set of speaker configuration and crossover settings.

When all speaker selections have been made, press the ▼ **Navigation Button** 36 and then the **OK Button** 37 to return to the **MAIN MENU**.

Delay Settings

If Dolby Digital, Dolby Pro Logic or DTS is selected as the surround mode for an input, you may need to adjust the delay time setting. The delay time is not adjustable for any other modes.

Due to the different distances between the listening position for the front-channel speakers and the surround speakers, the amount of time it takes for sound to reach your ears from the front versus surround speakers differs. You may compensate for this difference through the use of the delay settings to adjust the timing for the speaker placement and 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 set the delay time for a specific input, the **DELAY ADJUST** menu (Figure 7) should be visible in your on-screen display. If the system is not already at that point, press the **OSD Button** 11 to bring up the **MAIN MENU**, press the ▼ **Navigation Button** 36 until the **DELAY ADJUST** line is highlighted. Press the **OK Button** 37 to call up the menu.

8 SYSTEM CONFIGURATION

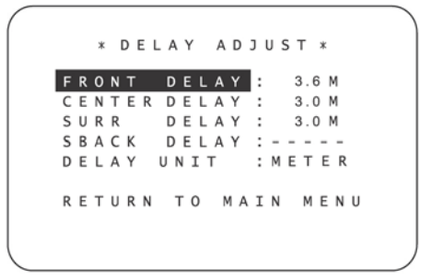


Figure 7

When the **DELAY ADJUST** menu appears, note that the default setting uses the distance from the speakers to the prime listening position in meter as the means by which the delay settings are calculated. We suggest that you use those distances, and proceed to the next step. However, you may also enter the distances in feet. To use that alternative method, first press the ▼ **Navigation Buttons** 36 until the **DELAY UNIT** line is highlighted in reverse video. Press the ◄ / ► **Navigation Buttons** 36 to select the desired entry mode of **FEET** or **METERS**. After the choice of data entry method has been made, press the ▲ **Navigation Button** 36 until the **FRONT DELAY** line highlighed.

With the **FRONT DELAY** line highlighted in reverse video, press the ◄ / ► **Navigation Buttons** 36 until the distance from the front left/right speakers to the prime listening position is entered in either feet or meters, depending on which unit of measurement has been selected.

Once the Front Delay has been set, press the ▼ **Navigation Button** 36 once so that **CENTER DELAY** is highlighted in reverse video. Press the ◄ / ► **Navigation Buttons** 36 until the distance from the center speaker to the prime listening position is entered in either feet or meters, depending on which unit of measurement has been selected.

NOTE: The Center Delay setting may only be made if the Dolby Digital or Dolby Digital EX mode has been selected, and the center channel speaker has been configured for either Small or Large. If you cannot adjust the center channel delay, check to make certain that these settings have been established in the Surround Select and Speaker Setup menus.

When the speaker-to-listening position distance or a specific delay time setting has been entered for the front and center speakers, press the ▼ **Navigation Button** 36 to highlight either the Surround (SURR) or Surround Back (SBACK) speakers and make any adjustments needed to enter the correct distance from those speakers to the listening position. Press the **OK Button** 37 when the desired speaker pair is highlighted, and make the adjustments as shown above.

You may also change the delay time settings at any time from either the remote control or the front panel. To change the delay time settings from the remote control, press the **Delay Select Button** 23 . **FNT DELAY** will appear in the bottom line of the on-screen display as well as in the **Display Line** J . Next, press the ▲ / ▼ **Navigation Buttons** 36 to select the desired speaker delay adjustment and then press the **OK Button** 37 . Press the ▲ / ▼ **Navigation Buttons** 36 to enter the speaker-to-listening position distance for the speaker position being adjusted. When the desired setting appears, press the **OK Button** 37 to enter the setting. To adjust a second delay parameter, repeat the procedure outlined above. When all desired settings have been made, simply wait five seconds and the unit will return to normal operation.

To change the speaker configurations from the front panel, press the **Set Button** 12 and then press the ▲ / ▼ **Navigation Buttons** 13 until **DELAY MODE** appears in the **Display Line** J and on-screen display. Within five seconds, press the **Set Button** 12 ; **FNT DELAY** will now appear in the displays. If an adjustment is required, press the **Set Button** 12 again, and then press the ▲ / ▼ **Navigation Buttons** 13 again to enter the speaker-to-listening position distance. When the desired speaker configuration has been selected, press the **Set Button** 12 to enter the setting and then repeat this procedure to select another speaker group if required. When all settings are complete, the AVE-750 will return to normal operation and displays within five seconds.

OPERATIONAL NOTE: When making adjustments to the delay time using the front panel or remote control for data entry, the unit of measurement will be the same as the last settings made using the OSD menu system. To change the unit of measurement used for the front panel or remote control adjustments, you must first make a change at the **DELAY UNIT** line of the **DELAY ADJUST** menu.

Output Level Adjustment

Output level adjustment is a key part of the configuration of any surround-sound product. It is particularly important for an A/V receiver such as the AVE-750, as correct outputs ensure that you hear sound tracks with the proper directionality and intensity.

IMPORTANT NOTE: 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 ambience, a special 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 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 output level 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, or to the recommended –15dB setting.

Manual Output Level Adjustment

Output levels may also be adjusted manually. Manual output level adjustment is most easily done through the **CHANNEL ADJUST** menu. If you are already at the **MAIN MENU**, press the ▼ **Navigation Button** 36 until the **CHANNEL ADJUST** line is highlighted. If you are not at the **MAIN MENU**, press the **OSD Button** 11 to bring up the **MAIN MENU** (Figure 1), and then press the ▼ **Navigation Button** 36 until the **CHANNEL ADJUST** line is highlighted in reverse video. Press the **OK Button** 37 to bring the **CHANNEL ADJUST** menu (Figure 8) to the screen.

8 SYSTEM CONFIGURATION

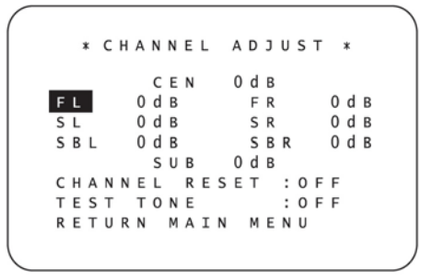


Figure 8

When the menu appears, press the ▲ / ▼ **Navigation Buttons** 36 until **TEST TONE** is highlighted in reverse video. Press the ▶ **Navigation Button** 36 so that **ON** appears; a test noise will begin to circulate in a clockwise direction around the room. The test noise will play for two seconds in each speaker before circulating, and the name of each speaker location will be highlighted in reverse video when it is active.

NOTE: Remember 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. If the sound from a speaker location does not match the position indicated in the display, turn the AVE-750 off using the **Main Power Switch** 16 and check the speaker wiring or connections to external power amplifiers to make certain that each speaker is connected to the correct output terminal.

After checking for speaker placement, let the test noise circulate again, and listen to see which channels sound louder than the others. Using the front left speaker as a reference, press the ◀ / ▶ **Navigation Buttons** 36 on the remote to bring all speakers to the same volume level. When one of the ◀ / ▶ **Navigation Buttons** 36 is pushed, the test noise circulation will pause on the channel being adjusted to give you time to make the adjustment. When you release the button, the circulation will resume after five seconds.

Continue to adjust the individual channels until the volume level sounds the same from each speaker. Adjustments should be made with the ◀ / ▶ **Navigation Buttons** 36 on the remote only, not the main volume controls. If you are using a sound-pressure level (SPL) meter for precise level adjustment, set the volume so that the meter reads 72dB, C-Weighting Slow.

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 29.

When all channels have an equal volume level, the adjustment is complete. To exit this menu, press the ▲ / ▼ **Navigation Buttons** 36 until the on-screen cursor is next to the **RETURN TO MAIN MENU** line, and then press the **OK Button** 37 to return to the **MAIN MENU**.

The output levels may also be adjusted at any time using the remote control and semi-OSD system. To adjust the output levels in this fashion, press the **Test Button** 25 . As soon as the button is pressed, the test tone will begin to circulate as indicated earlier. The correct channel from which the test noise should be heard will be shown in the lower third of the video screen and in the **Main Information Display** 1 . To adjust the output level, press the ▲ / ▼ **Navigation Buttons** 36 until the desired level is shown in the display or on screen. Once the buttons are released, the test noise will begin to circulate again in five seconds.

When all channels have the same output level, press the **Test Button** 25 again to complete the process.

NOTE: Output level adjustment is not available for Surround Off mode.

Additional Input Adjustments

After one input has been adjusted for Surround mode, digital input (if any), speaker type and output levels, go back to the **IN/OUT SETUP** line in the **MAIN MENU** and enter the settings for each input that you will use. In most cases, only the digital input and surround mode will be different from one input to the next, while the speaker type, crossover frequency, Night mode and output level settings will usually be the same and may be quickly entered by entering the same data used for the original input.

Once the settings outlined on the previous pages have been made, the AVE-750 is ready for operation. While there are some additional settings to be made, these are best done after you have had an opportunity to listen to a variety of sources and different kinds of program material. These advanced settings are described on pages 30 and 31 of this manual. In addition, any of the settings made in the initial configuration of the unit may be changed at any time. As you add new or different sources or speakers, or if you wish to change a setting to better reflect your listening taste, simply follow the instructions for changing the settings for that parameter as shown in this section.

Having completed the setup and configuration process for your AVE-750, you are about to experience the finest in music and home theater listening. Enjoy!

9 OPERATION

Basic Operation

Once you have completed the initial setup and configuration of the AVE-750, it is simple to operate and enjoy. The following instructions will help you maximize the enjoyment of your new receiver:

Turning the AVE-750 On or Off

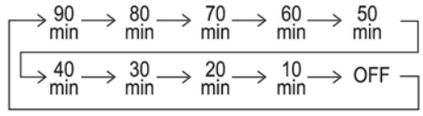
- When using the AVE-750 for the first time, you must press the **Main Power Switch** 16 located behind the Drop-Down Door on the front panel to turn the unit on. This places the unit in a Standby mode. Once the unit is in Standby, you may begin a listening session by pressing the **STANDBY Button** 15 on the front panel or the **AVR Selector** 2 . 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 remote 3 18 4 .

NOTE: After pressing one of the **Input Selector Buttons** 3 4 18 to turn the unit on, press the **AVR Selector** 2 to set the remote control to the AVE-750 functions.

To turn the unit off at the end of a listening session, simply press the **STANDBY Button** 15 on the front panel or the **STANDBY Button** 1 on the remote. Power will be shut off to any equipment plugged into the rear panel switched AC Outlet.

When the remote is used to turn the unit “off” it is actually placing the system in a Standby mode.

- To program the AVE-750 for automatic turn-off, press the **Sleep Button** 42 on the remote. Each press of the button will decrease the time before shut-down in the following sequence:



The sleep time will be displayed in the **Display Line** J and it will count down until the time has elapsed. When the programmed sleep time has elapsed, the unit will automatically turn off. The front panel display will dim to one-half brightness when the Sleep function is programmed. To cancel the Sleep function, press and hold the **Sleep Button** 42 until the information display returns to normal brightness, the Sleep indicator numbers disappear and the words **SLEEP OFF** appear in the **Display Line** J .

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 with the front panel **Main Power Switch** 16 .

NOTE: All preset memories are lost if the unit is left turned off by using the **Main Power Switch** 16 for more than two weeks.

Remote Control Operation

Complete information on programming the remote for operation with other devices and configuring its options are found on page 32. The following items provide some additional details on using the remote with the AVE-750:

- The name of the command code transmitted when a button is pressed printed on the button key or just to the top of the button on the remote itself.
- In order to send a command to the AVE, the **AVR Selector** 2 must be pressed. To send a command to another device, first press the **Input Selector** 3 for that device.
- The remote will automatically return to the controls for the AVE within seven seconds after the button for another device is pressed.
- The factory default setting for the remote is to have the **Volume Up/Down** 44 and **Mute** 14 buttons operate the AVE, regardless of which device (such as the DVD or another video source) is in use.
- The factory setting for the remote is to have the **Transport Fast Play/Scan Buttons** 31 , **Main Transport Controls** 32 and **Track Skip Buttons** 30 operate the DVD player, regardless of which device (including the AVE) is in use. This simplifies operation, as in normal use you will use the AVE controls, and this means that you do not have to press the DVD button to control a player. You may change the setting which allows the buttons for Volume, Transport Control or Channel Up/Down to be assigned into another device by following the instructions on page 32.
- Some of the buttons on the remote do not have a function on certain devices. For example, the **Channel Up/Down Buttons** 29 do not operate in the normal AVE mode unless they have been assigned for this purpose using the process as explained on page 32.

Source Selection

- To select a source, press any of the Source Selector Buttons on the remote 3 18 4 .
- The input source may also be changed by pressing the front panel **Input Source Selector** 2 . Each press of the button will move the input selection through the list of available inputs.
- As the input is changed, the AVE-750 will automatically switch to the digital input (if selected), surround mode, speaker configuration, output levels, crossover frequency and night mode status that were entered during the configuration process for that source.
- The front panel **Video 3 Input/Output Jacks** 20 may be used to connect a device such as a video game or camcorder to your home entertainment system on a temporary basis.
- As the input source is changed, the new input name will appear momentarily as an on-screen display in the lower third of the video display. The input name will also appear in the **Display Line** J and the selected input’s name in the front panel **Input Indicators** A .
- When an audio source is selected, the last video input used remains routed to the **Video 1 Outputs** 7 and **Video Monitor Outputs** 11 . This permits simultaneous viewing and listening to different sources.
- When a Video source is selected, the video signal for that input will be routed to the **Video Monitor Output Jacks** 11 and will be viewable on a TV monitor connected to the AVE-750.

9 OPERATION

Volume Control

- Adjust the volume to a comfortable level using the front panel **Volume Control** 14 or remote **Volume Up/Down Buttons** 44 .
- To temporarily silence all speaker outputs, press the **Mute Button** 14 . This will interrupt the output to all speakers and the headphone jack, but it will not affect any recording or dubbing that may be in progress. When the system is muted, **MUTE** indicator will flash in the **Main Information Display** 1 . Press the **Mute Button** 14 again to return to normal operation.
- The AVE-750 may be set so that the tone controls are either activated or "flat", which de-activates them. To change the tone mode setting, press the **Tone Control Button** 24 and the current tone control status will be displayed in the on-screen display and **Display Line** J . **TONE OUT** indicates that the controls are not in the circuit path, while **TONE IN** tells you that they are active. To switch modes, press the ▲ / ▼ **Navigation Buttons** 36 within five seconds of pressing the **Tone Control Button** 24 . Each button press will switch the mode.
- To change the actual tone mode settings, press the **Tone Control Button** 24 . If **TONE OUT** appears, press the ▲ / ▼ **Navigation Buttons** 36 to activate the tone controls. With **TONE IN** in the displays, press the **Tone Control Button** 24 again within five seconds and **TREBLE MODE** will appear in the displays. Press the ▲ / ▼ **Navigation Buttons** 36 until the desired amount of treble boost appears. To adjust the bass boost, press the **Tone Control Button** 24 so that **BASS MODE** appears and once again press the ▲ / ▼ **Navigation Buttons** 36 to enter the desired amount of bass boost. When all adjustments are complete, wait five seconds and the tone control settings will time out and the unit will return to normal operation.

NOTE: Both the Treble and Bass controls are boosts, which means that you will see only positive numerical indications when making tone control adjustments.

- For private listening, plug the 1/4" stereo phone plug from a pair of stereo headphones into the front panel **Headphone Jack** 17 . When the headphone's plug is connected, the word **HEADPHONE** will appear in the **Main Information Display** 1 and all speakers will be silenced. When the headphone plug is removed, the audio feed to the speakers will be restored.

Surround Mode Selection

One of the most important features of the AVE-750 is its ability to reproduce a full multichannel surround sound field from digital sources, analog matrix surround-encoded programs and standard stereo programs.

Selection of a surround mode is based on personal taste, as well as the type of program source material being used. For example, motion pictures or TV programs bearing the logo of one of the major surround-encoding processes, such as Dolby Surround or DTS Stereo, may be played in the Dolby Digital, Surround EX™ ,Dolby Pro Logic II – Movie, or DTS Neo:6 surround modes, depending on the source material.

NOTE: Once a program has been encoded with matrix surround information, it retains the surround information as long as the program is broadcast in stereo. Thus, movies with surround sound may be decoded via any of the analog surround modes such as Dolby Pro Logic II – Movie, or DTS Neo:6 Cinema, when they are broadcast via conventional TV stations, cable, pay-TV and satellite transmission. In addition, a growing number of programs are produced with Dolby Surround encoding. You may view a list of these programs at the Dolby Laboratories Web site at www.dolby.com.

Even when a program is not listed as carrying intentional surround information, you may find that the Dolby Pro Logic II, DTS Neo:6, Hall or Theater modes may deliver enveloping surround presentations through the use of the natural information present in all stereo recordings. However, for stereo, but not surround programs, we suggest that you experiment with the other modes.

Surround modes may be selected using either the front panel controls or the remote. To select a surround mode from the front panel, first press the **Surround Mode Selector** 10 . This will cycle through the available surround mode groupings.

Once the desired surround mode group name appears, press the **Surround Select Button** 11 to cycle through the choices that are available within that mode group. The choices will vary based on the speaker configuration and input source. Some modes may be used only when seven speaker channels are available (e.g.,Dolby Digital EX and DTS-ES 6.1), while others (Dolby Digital and DTS) are only available when five speaker channels are configured.

To select a surround mode using the remote control, first determine which overall surround group the mode is in. The groupings are the same as when changing modes using the front panel controls. For example, to select Dolby Pro Logic II – Music you will need to press the **Dolby Surround Mode Select Button** 8 . Using the button that matches the surround group, press the **Dolby Surround Mode Select Button** 8 , **DTS Digital Mode Select Button** 7 , **DSP Surround Mode Selector** 5 or **Stereo Mode Select Button** 6 . Depending on the current speaker configuration (5.1 or 6.1/7.1), each subsequent press of the button will display the modes available in that grouping. When the desired mode name appears in the on-screen display and **Display Line** J , simply wait five seconds for the setting to be entered into memory. When the on-screen display times out, the unit has returned to normal operation, and an current mode indicator of **Surround Mode/Bitstream Indicators** H will also light up.

The Dolby Digital and DTS 5.1, DTS-ES Matrix and DTS-ES Discrete modes may only be selected when a digital input is in use. In addition, when a digital source is present, the AVE-750 will automatically select and switch to the correct mode, regardless of the mode that has been previously selected. For more information on selecting digital sources, see the following section.

To listen to a program in traditional two-channel stereo, using the front left and front right speakers only (plus the subwoofer, if installed and configured), press the **Stereo Mode Select Button** 6 until **SURR OFF** appears in the **Display Line** J .

9 OPERATION

Surround Mode Chart

MODE	FEATURES
Dolby Digital	Available only with digital input sources encoded with Dolby Digital data. It provides up to five separate main audio channels and a special dedicated Low-Frequency Effects channel.
Dolby Digital EX	Available when the AVE-750 is configured for 6.1/7.1-channel operation, Dolby Digital EX is the latest version of Dolby Digital. When used with movies or other programs that have special encoding, Dolby Digital EX reproduces specially encoded soundtracks so that a full 6.1/7.1 sound field is available. When the AVE is set for 6.1/7.1 operation and a Dolby Digital signal is present, the EX mode is automatically selected. Even if specific EX encoding is not available to provide the additional channel, the special algorithms will derive a 6.1/7.1 output.
DTS 5.1	When the speaker configuration is set for 5.1-channel operation, the DTS 5.1 mode is available when DVD, audio-only music or laser discs encoded with DTS data are played. DTS 5.1 provides up to five separate main audio channels and a special dedicated low-frequency channel.
DTS-ES 6.1 Matrix DTS-ES 6.1 Discrete	When the speaker configuration is set for 6.1/7.1 operation, playback of a DTS-encoded program source will automatically trigger the selection of one of the two DTS-ES modes. Newer discs with special DTS-ES discrete encoding will be decoded to provide six discrete, full-bandwidth channels plus a separate low-frequency channel. All other DTS discs will be decoded using the DTS-ES Matrix mode, which creates a 6.1-channel sound field from the original 5.1-channel soundtrack.
Dolby Pro Logic II Movie Music Pro Logic	Dolby Pro Logic II is the latest version of Dolby Laboratory's benchmark surround technology that decodes full-range, discrete left, center right, right surround and left surround channels from either matrix surround encoded programs and conventional stereo sources when an analog input is in use. The Dolby Pro Logic II Movie mode is optimized for movie soundtracks, while the Pro Logic II Music mode should be used with musical selections. The Pro Logic mode re-creates original Pro Logic processing for those who prefer that presentation.
DTS Neo:6 Cinema DTS Neo:6 Music	These two modes are available when any analog source is playing to create a six-channel surround presentation from conventional Matrix-encoded and traditional Stereo sources. Select the Cinema version of Neo:6 when a program with any type of analog Matrix surround encoding is present. Select the Music version of Neo:6 for optimal processing when a nonencoded, two-channel stereo program is being played.
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 front-right channels for increased realism. Use this mode when you have a center-channel speaker but no surround speakers.
Theater	The Theater mode creates a sound field that resembles the acoustic feeling of a standard live performance theater.
Hall 1, Hall 2	The two Hall modes create sound fields that resemble a small (Hall 1) or medium-sized (Hall 2) concert hall.
Stadium	The Stadium mode creates a sound field that resembles the acoustic feeling of a stadium
Classic Panorama Movie Music	EQ functions.
5-Channel Stereo 7-Channel Stereo	These modes take advantage of multiple speakers to place a stereo signal at both the front and back of a room. Depending on whether the AVE has been configured for either 5.1 or 6.1/7.1 operation, one of these modes, but not both, is available at any time. Ideal for playing music in situations such as a party, it places the same sound at the front-left and surround-left, and front-right and surround-right speakers.The center channel is fed a summed mono mix of the in-phase material of the left and right channels.
Surround Off (Stereo)	This mode turns off all surround processing and presents the pure left- and right-channel presentation of two-channel stereo programs.

9 OPERATION

Digital Audio Playback

Digital audio is a major advancement over analog surround processing systems such as Dolby Pro Logic. It delivers five discrete channels: left front, center, right front, left surround and right surround. Each channel reproduces full frequency range (20Hz to 20kHz) and offers dramatically improved dynamic range and signal-to-noise ratios. In addition, digital systems have the capability to deliver an additional channel that is specifically devoted to low-frequency information. This is the ".1" channel referred to when you see these systems described as "5.1," "6.1" or "7.1". The bass channel is separate from the other channels, but since it is intentionally bandwidth-limited, sound designers have given it that unique designation.

Dolby Digital

Dolby Digital is a standard part of DVD, and is available on specially encoded LD discs and satellite broadcasts and it is a part of the high-definition television (HDTV) system. Dolby Digital bitstreams may be encoded in a variety of channel configurations, ranging from traditional two-channel stereo to the latest Dolby Digital Surround EX technology. Once the AVE-750's processor recognizes the Dolby Digital bitstream, a variety of surround modes may be applied, as indicated in the previous section.

An optional, external RF demodulator is required to use the AVE-750 to listen to the Dolby Digital soundtracks available on laser discs. Connect the RF output of the LD player to the demodulator and then connect the digital output of the demodulator to the **Optical** or **Coaxial Inputs** 20 21 18 19 of the AVE-750. No demodulator is required for use with DVD players or DTS-encoded laser discs.

DTS

The DTS digital audio system also delivers 5.1 or 6.1 discrete or matrix sound field reproduction. Both DTS and Dolby Digital are digital, but they use different methods of encoding the signals, and thus they require different decoding circuits to convert the digital signals back to analog.

DTS-encoded soundtracks are available on DVD and LD discs, as well as on special audio-only DTS discs and video games. You may use any DVD, LD or CD player equipped with a digital output to play DTS-encoded discs with the AVE-750. All that is required is to connect the player's output to either the **Optical** or **Coaxial Input** on the rear panel 20 21 or front panel 18 19 .

In order to listen to DVDs encoded with DTS sound tracks, the DVD player must be compatible with the DTS signal as indicated by a DTS logo on the player's front panel. Early DVD players may not be able to play DTS-encoded DVDs. This does not indicate a problem with the AVE-750, as some players cannot pass the DTS signal through to the digital outputs. If you are in doubt as to the capability of your DVD player to handle DTS discs, consult the player's owner's manual.

PCM

PCM, which is the acronym for Pulse Code Modulation, is the type of digital bitstream used by standard CD audio discs. When a CD or DVD player is connected to the AVE-750 and a CD is playing, the **PCM Bitstream Indicator** H will light. You will also see this indication if you are playing an LD disc with the standard digital soundtrack.

MP3

MP3 is the popularly used description for the digital audio format that is technically known as "MPEG-1/ Layer 3" audio. When a properly formatted MP3 signal from a compatible computer or sound card, or from an external digital format translator, is connected to the AVE-750, the **MP3 Bitstream Indicator** H will light.

Selecting a Digital Source

To utilize a digital mode, you must have properly connected a digital source to the AVE-750. Connect the digital outputs from DVD players, HDTV receivers, satellite systems or CD players to the **Optical** or **Coaxial Inputs** 20 21 18 19 , and configure the input source for use with a digital input as shown on page 16. In order to provide a backup signal and a source for analog recording, the analog outputs on digital source equipment should also be connected to their appropriate inputs on the AVE-750 rear panel (e.g., connect the analog stereo audio output from a DVD to the **DVD Audio Inputs** 4 on the rear panel).

When a digital source is playing, the AVE-750 will automatically detect whether it is a multichannel Dolby Digital, DTS or MP3 source, or a conventional PCM signal, which is the standard output from CD players. A **Bitstream Indicator** H will light to confirm that the digital signal is Dolby Digital, DTS, PCM or MP3.

Digital Status Indicators

When a digital source is playing, the AVE-750 senses the type of bitstream data that is present. Using this information, the correct surround mode will automatically be selected. For example, DTS bitstreams will cause the unit to switch to DTS decoding, and Dolby Digital bitstreams will enable Dolby Digital decoding.

When the unit senses PCM data from CDs or LDs, it will allow the appropriate surround sources to be selected manually.

Since the range of available surround modes is dependent on the type of digital data that is present, the AVE-750 uses a variety of indicators to let you know what type of signal is present. This will help you to understand the choice of modes.

When a digital source is playing, a **Bitstream Indicator** H will light to show which type of signal is playing:

DOLBY Digital: When the DOLBY Digital indicator lights, a Dolby Digital bitstream is being received. Depending on the settings on the source player and specific surround information and number of channels on the disc, a number of surround modes are possible. For discs with full 5.1 audio, only the Dolby Digital mode is available.

DTS: When the DTS indicator lights, a DTS bitstream is being received. When the unit senses this type of data, only the applicable DTS mode may be used.

PCM: When the PCM indicator lights, a standard Pulse Code Modulation signal is being received. This type of digital audio is used by compact disc and laser disc recordings. When a PCM bitstream is present, all modes except Dolby Digital and DTS are available.

MP3: When the MP3 indicator lights, a compatible MPEG 1/Layer 3 digital signal is being received. This is the popular audio format used by many computer programs for recording compressed audio files. When an MP3 bitstream is present, the sound will automatically be played in the Stereo (Surround Off) mode. The surround modes are not available during MP3 playback.

9 OPERATION

Night Mode

A special feature of Dolby Digital is the Night mode, which enables specially encoded Dolby Digital input sources to be played back with full digital intelligibility while reducing the peak level by 1/4 to 1/3. This prevents abruptly loud transitions from disturbing others, without reducing the impact of the digital source. The Night mode is available only when Dolby Digital signals with special data are being played.

The Night mode may be engaged when a Dolby Digital DVD is playing by pressing the **Night Mode Button** 10 on the remote. Next, press the ▲ / ▼ **Navigation Buttons** 36 to select either the middle range or full compression versions of the Night mode. To turn the Night mode off, press the ▲ / ▼ **Navigation Buttons** 36 until the message in the lower third of the video display and the **Main Information Display** 1 reads **D-RANGE OFF**.

The Night mode may also be selected to always be on at either level of compression using the options in the **DOLBY SURR** menu. See page 17 for information on using the menus to set this option.

IMPORTANT NOTES ON DIGITAL PLAYBACK:

- While almost all DVD discs contain a Dolby Digital soundtrack, the type of soundtrack (e.g., a full 5.1 presentation or only a stereo 2.0 soundtrack) available may differ from disc to disc. While many discs instruct the player to default to the 5.1 output when available, many players do not. Also, while many discs now contain DTS soundtracks, in addition to the Dolby Digital presentation, your player may not automatically output the DTS signal. Please check the default settings in your DVD player so that it defaults to the 5.1 output or DTS, when available, depending on your listening preferences. Although the AVE-750 is capable of decoding Dolby Digital 5.1, Surround EX, DTS and DTS-ES data streams, you may not be able to access them unless your DVD player is properly configured. Consult the owner's manual for your DVD player for more information on the proper menu settings and disc-play commands so that the player sends the correct digital information to the AVE-750.
- When the digital playback source is stopped, or in a pause, fast forward or chapter search mode, the digital audio data will momentarily stop. This is normal and does not indicate a problem with either the AVE-750 or the source machine. The AVE-750 will return to digital playback as soon as the data is available and when the machine is in a standard play mode.
- Although the AVE-750 will decode virtually all DVD movies, CDs and HDTV sources, it is possible that some future digital sources may not be compatible with the AVE-750.
- Note that not all digitally encoded programs contain full 5.1-channel audio. Consult the program guide that accompanies the DVD or laser disc to determine which type of audio has been recorded on the disc. The AVE-750 will automatically sense the type of digital surround encoding used and adjust to accommodate it.
- When a digital source is playing, you may not be able to select some of the analog surround modes such as Dolby Pro Logic II, Dolby 3 Stereo, Hall, Theater, Stadium, Classic, Panorama, Movie or Music.
- When a Dolby Digital or DTS source is playing, it is not possible to make an analog recording using the **Tape** 17 and **Video 1 Audio Output** 8 . However, the digital signals will be passed through to the **Digital Audio Outputs** 22 .

PCM Audio Playback

PCM (Pulse Code Modulation) is the noncompressed digital audio system used for compact discs and laser discs. The digital circuits in the AVE-750 are capable of high-quality digital-to-analog decoding, and they may be connected directly to the digital audio output of your CD or LD player.

Connections may be made to either the rear panel **Optical or Coaxial Inputs** 21 20 or the front panel **Digital Inputs** 18 19 .

When a PCM source is playing, the **PCM Indicator** H will light. During PCM playback, you may select any Surround mode except Dolby Digital or DTS.

MP3 Audio Playback

The AVE-750 is among the few A/V receivers to provide onboard decoding for the MP3 audio format used by computers and portable audio devices. By offering MP3 decoding, the AVE-750 is able to deliver precise conversion of the digital signals to an analog output, along with the benefits of listening to the MP3 audio through the AVE-750's high-current amplifier and the speakers from your surround system, rather than the smaller speakers and low-powered amplifiers typically used with computers.

To take advantage of the AVE-750's MP3 capabilities, simply connect the PCM output of a computer's sound card or the PCM output of a portable digital audio device to either the rear-panel **Digital Inputs** 21 20 or the front panel **Digital Inputs** 18 19 . When the digital signal is available, the **MP3 Bitstream Indicator** H will light, and the audio will begin playing.

NOTES:

- The AVE-750 is only capable of playing signals in the MP3 (MPEG 1/Layer 3) format. It is not compatible with other computer audio codecs.
- The digital audio input signal may be either optical or coaxial, but the signal must be in the S/P-DIF format. Direct connection of USB or serial data outputs is not possible, even though the signals are in the MP3 format. If you have any questions about the data output format from your computer or a sound card, check with the device's owner's manual or contact the manufacturer's technical support area.
- If your computer or sound card's digital output is not capable of direct connection to the AVE, you may use an optional, external transcoder to convert the USB output of a computer to a format compatible with the AVE.

Tuner Operation

The AVE-750'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 Tuner Select Button** 18 on the remote to select the tuner as an input. The tuner may be selected from the front panel by either pressing the **Input Source Selector** 2 until the tuner is active or by pressing the **AM/FM Tuner Selector** 4 at any time.

9 OPERATION

2. Press the **AM/FM Tuner Select Button** 18 or **AM/FM Selector** 4 again to switch between AM and FM so that the desired frequency band is selected.
3. Press the **Tuning Mode Selector** 8 19 to select manual or automatic tuning.
4. To select stations, press the **Tuning Selector** 9 16 . When the Auto Tuning mode is in use, press and release the button and the tuner will search for the next highest- or lowest-frequency station that has an acceptable signal. When tuning FM stations in the Auto mode, the tuner will only select stereo stations. To tune to the next station, press the button again.
5. When the **Tuning Mode Selector** 8 19 is pressed so that Manual Tuning is selected, each press of the **Tuning Selector** 9 16 will change the frequency one increment up or down. As the frequency is changed in the manual mode, the **TUNED** indicator will appear in **Main Information Display** 1 when a station with acceptable signal strength for listening is selected.

NOTE: When the FM reception of a station is weak, audio quality will be increased by switching to Mono mode by pressing the **Tuning Mode Button** 8 19 until **AUTO** indicator will disappear in **Main Information Display** 1 .

Preset Tuning

Using the remote, up to 30 stations may be stored in the AVE-750's memory for easy recall using the front panel controls or the remote. To enter a station into the memory, first tune the station using the steps outlined above. Then:

1. Press the **Memory Button** 15 on the remote. **MEMORY** will flash in the **Display Line** J .
2. Within five seconds, press the **Numeric Keys** 13 corresponding to the location where you wish to store this station's frequency. Once entered, the preset number will appear to the left of the station's frequency in the **Display Line** J .
3. Repeat the process after tuning any additional stations to be preset.

Recalling Preset Stations

- To manually select a station previously entered in the preset memory, press the **Numeric Keys** 13 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 Stations Selector** 7 on the front panel or **Preset Up/Down Button** 17 on remote.

RDS Operation

RDS (Radio Data System) transmits station call signs or network information, station program type, text messages about the station or specifics of a musical selection and correct time.

RDS Tuning

When an FM station is tuned in and it contains RDS data, the AVE-750 will automatically display the station's call sign, with some private stations also other informations changing all 2 to 5 seconds, and the RDS indicator will light in the information Display as well as indicators for the RDS services program PTY if transmitted by the station. As soon as a radiotext message is received completely the radiotext indicator RT will turn on too.

RDS Display Option

When an RDS station is tuned, press RDS button on the remote or RDS mode on the front panel to cycle through the RDS displays in the following order:

- The Station name (or other Program information with some private stations).
- The Station's frequency.
- The Program Type (PTY)
- A "text" message (RT) containing special information from the broadcast station. Note that this message will scroll across the display to permit messages longer than the eight positions in the display. Depending on signal quality it may take up to 30 seconds for the text message to appear, in the meantime the word TEXT will flash in the display when RT is selected.
- The current time of the day (CT) as transmitted by the station. It may take up to two minutes for the time to appear, in the meantime the word TIME will flash in the display when CT is selected. Note that the accuracy of the time message is set by the radio station, not the AVE-750.
- Some RDS stations may not choose to include some of these additional features. If the data required for the selected mode is not being transmitted, the Information Display will show a NOPTY, NO TEXT or NO TIME message after the individual time out.
- In any FM mode the RDS function requires a strong enough signal for proper operation. If you receive a partial message or see any RDS indicator going on and off, try slowly adjusting the antenna to improve the signal strength or tune to another, stronger, RDS station.

Recording

In normal operation, the audio or video source selected for listening through the AVE-750 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 **Tape Outputs** 17 or **Video 1 Outputs** 7 8 in the record mode.

When a digital audio recorder is connected to the **Digital Audio Outputs** 22 , you are able to record the digital signal using a CD-R, MiniDisc or other digital recording system.

NOTES:

- The digital outputs are active only when a digital signal is present, and they do not convert an analog input to a digital signal, or change the format of the digital signal. In addition, the digital recorder must be compatible with the output signal. For example, the PCM digital input from a CD player may be recorded on a CD-R or MiniDisc, but Dolby Digital or DTS signals may not.
- Please make certain that you are aware of possible copyright restrictions on any material you copy. Unauthorized duplication of copyrighted materials is prohibited by law.

9 OPERATION

Front Panel Connections

In addition to rear-panel outputs, the AVE-750 offers a configurable front panel output jack feature. You may switch the front panel **Digital Coax Jack** 19 or the **Video 3 Input/Output Jacks** 20 from an input to an output by following these steps:

1. Press the **OSD Button** 11 to view the **MAIN MENU** (Figure 1).
2. Press the **OK Button** 37 to enter the **IN/OUT SETUP** menu (Figure 2).
3. Press the ▼ **Navigation Button** 36 so that **VIDEO 3** or **COAXIAL 3** is highlighted in reverse video, depending on which input you wish to change to an output. Either input or both may be changed at any time.
4. Press either of the ◄ / ► **Navigation Buttons** 36 so that the word **OUT** appears.
5. Press the **OSD Button** 11 to exit the menus and return to normal operation.

Once the setting is made, the appropriate **Input/Output Status Indicator** 21 will turn red, indicating that the selected analog or digital jacks are now an output, instead of in the default setting as an input. Once changed to an output, the setting will remain as long as the AVE-750 is turned on, unless the setting is changed in the OSD menu system, as described above. However once the AVE-750 is turned off, the setting is cancelled. When the unit is turned on again, the front panel jacks will return to their normal default setting as an input. If you wish to use these jacks as an output at a future time, the setting must be changed again using the OSD menu system, as described above.

Output Level Trim Adjustment

Normal output level adjustment for the AVE-750 is established using the test tone, as outlined on pages 21 and 22. 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 can only be adjusted using this procedure. To adjust the output levels using program material, first set the reference volume for the front left and front right channels using the **Volume Control** 14 44. To adjust the channel output levels using an external source from the remote, press the **Channel Select Button** 22; the on-screen display and the **Display Line** J will read **FRONT L LEV**, indicating that the Front Left channel is ready for adjustment. To trim the level, press the **OK Button** 37 and then use the ▲ / ▼ **Navigation Buttons** 36 to make the adjustment. When the correct level has been reached, press the **OK Button** 37 to enter the setting and then press the ▲ / ▼ **Navigation Buttons** 36 to select the next channel to be adjusted. Repeat the procedure for any channels that need adjustment, remembering that the goal is to have all channels deliver sound at the same level.

To adjust the channel output levels using an external source from the front panel, first press the **Set Button** 12. Within five seconds press the ▲ / ▼ **Navigation Buttons** 13 until **CHANNEL MODE** appears in the on-screen display and the **Display Line** J. Within five seconds press the **Set Button** 12 again and the on-screen display and the **Display Line** J will change to **FRONT L LEV**, indicating that the Front Left channel is ready for adjustment.

To trim the level, press the **Set Button** 12 and then use ▲ / ▼ **Navigation Buttons** 13 to make the adjustment. When the correct level has been reached, press the **Set Button** 12 to enter the setting and then press the ▲ / ▼ **Navigation Buttons** 13 to select the next channel to be adjusted. Repeat the procedure for any channels that need adjustment, remembering that the goal is to have all channels deliver sound at the same level. The channel output for any input may also be adjusted using the full-OSD on-screen menu system. Press the **OSD Button** 11 to bring up the **MAIN MENU** (Figure 1). Press the ▼ **Navigation Button** 36 until the **CHANNEL ADJUST** line is highlighted in reverse video. Press the **OK Button** 37 to activate the **CHANNEL ADJUST** menu (Figure 8).

Once the menu appears on your video screen, use the ▲ / ▼ **Navigation Buttons** 36 to select the channels to be adjusted. At each channel position use the ◄ / ► **Navigation Buttons** 36 to change the output level. Remember, the goal is to have the output level at each channel sound equal when heard at the listening position. If you wish to reset all the levels to their original factory default of 0dB offset, press the ▲ / ▼ **Navigation Buttons** 36 so that the **CHANNEL RESET** line is highlighted in reverse video and press the ◄ / ► **Navigation Buttons** 36 so that the word **ON** appears. After the levels are reset, resume the procedure outlined above to adjust the levels to the desired settings. When all adjustments are done, press the ▲ / ▼ **Navigation Buttons** 36 until **RETURN TO MAIN MENU** is highlighted in reverse video and then press the **OK Button** 37 if you wish to go back to the main menu to make other adjustments. If you have no other adjustments to make, press the **OSD Button** 11 to exit the menu system.

NOTE: The output levels may be separately trimmed for each digital and analog surround mode. If you wish to have different trim levels for a specific mode, select that mode and then repeat the instructions in this section.

6/8-Channel Direct Input

The AVE-750 is equipped for future expansion through the use of optional, external adapters for formats that the AVE-750 may not be capable of processing or to allow connection to the output of high resolution optical audio playback systems such as DVD-Audio or SACD. When a device with six-channel outputs (5.1 audio) is used, connect the source device to the **6-Channel Direct Inputs** 19. When a device with eight-channel outputs (7.1) audio is used, connect the additional Surround Back Left (SBL) and Surround Back Right (SBR) outputs to the **8-Channel Direct Inputs** 18 on the AVE-750. To select these inputs, press the **6/8-Channel Input Select Button** 4 on the remote.

When the 6-Channel or 8-Channel Direct Input is in use, you may not select a surround mode, as the external decoder determines the processing in use. In addition, there is no signal at the record outputs when the 6-Channel or 8-Channel Direct Input is in use.

Memory Backup

This product is equipped with a memory backup system that preserves the system configuration information and tuner presets if the unit is accidentally unplugged or subjected to a power outage. This memory will last for approximately two weeks, after which time all information must be reentered.

10 ADVANCED FEATURES

The AVE-750 is equipped with a number of advanced features that add extra flexibility to the unit's operation. While it is not necessary to use these features to operate the unit, they provide additional options that you may wish to use.

Display Brightness

The AVE-750's **Main Information Display** 1 is set at a default brightness level that is sufficient for viewing in a normally lit room. However, in some home-theater installations, you may wish to occasionally lower the brightness of the display, or turn it off completely.

To change the display brightness setting for a specific listening session, you will need to make an adjustment in the **ADVANCED** menu. To start the adjustment, press the **OSD Button** 11 to bring the **MAIN MENU** to the screen. Press the ▼ **Navigation Button** 36 until the **ADVANCED** line is highlighted in reverse video. Press the **OK Button** 37 to enter the **ADVANCED** menu (Figure 9).

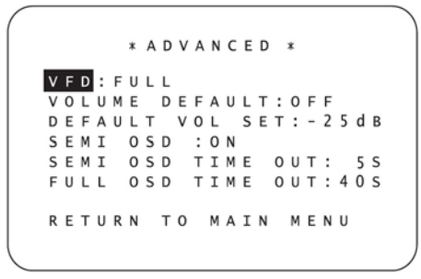


Figure 9

To change the brightness setting, at the **ADVANCED** menu, make certain that the **VFD** line is highlighted in reverse video, and press the ▶ **Navigation Button** 36 until the desired brightness level is highlighted in the video display. When **FULL** is highlighted, the display is at its normal brightness. When **HALF** is highlighted, the display is at half the normal brightness level. When **OFF** is highlighted, all of the indicators in the **Main Information Display** 1 will go dark. Once the desired brightness level is selected, it will remain in effect until it is changed again or until the unit is turned off.

If you wish to make other adjustments, press the ▲ / ▼ **Navigation Buttons** 36 until the desired setting is highlighted in reverse video, or highlight the **RETURN TO MAIN MENU** line and then press the **OK Button** 37 to select another menu for adjustment. If no further adjustments are required, press the **OSD Button** 11 to exit the menu system.

Turn-On Volume Level

As is the case with most audio/video receivers, when the AVE-750 is turned on, it will always return to the volume setting in effect when the unit was turned off. However, you may prefer to always have the AVE-750 turn on at a specific setting, regardless of what was last in use when the unit was turned off. To change the default condition so that the same volume level is always used at turn-on, you will need to make an adjustment in the **ADVANCED** menu. To start the adjustment, press the **OSD Button** 11 to bring the **MAIN MENU** (Figure 1) to the screen. Press the ▼ **Navigation Button** 36 , until the **ADVANCED** line is highlighted in reverse video. Press the **OK Button** 37 to enter the **ADVANCED** menu (Figure 9).

At the **ADVANCED** menu make certain that the **VOLUME DEFAULT** line is highlighted in reverse video by pressing the ▲ / ▼ **Navigation Buttons** 36 as needed. Next, press the ▶ **Navigation Button** 36 so that the word **ON** appears in the video display. Next, press the ▲ / ▼ **Navigation Button** 36 once so that the on-screen cursor is next to the **DEFAULT VOL SET** line. To set the desired turn-on volume, press the ◀ / ▶ **Navigation Buttons** 36 until the desired volume level is shown on the **DEFAULT VOL SET** line.

This setting may NOT be made with the regular volume controls.

NOTE: Since the setting for the turn-on volume cannot be heard while the setting is being made, you may wish to determine the setting before making the adjustment. To do this, listen to any source and adjust the volume to the desired level using the regular **Volume Controls** 14 44 . When the desired volume level to be used at turn-on is reached, make a note of the setting as it appears in the lower third of the video screen or in the **Display Line** J . (A typical volume level will appear as a negative number such as –25dB.) When making the adjustment, use the ◀ / ▶ **Navigation Buttons** 36 to enter this setting.

Unlike some of the other adjustments in this menu, the turn-on volume default will remain in effect until it is changed or turned off in this menu, even when the unit is turned off. If you wish to make other adjustments, press the ▲ / ▼ **Navigation Buttons** 36 until the desired setting is highlighted in reverse video, or highlight the **RETURN TO MAIN MENU** line and then press the **OK Button** 37 to select another menu for adjustment. If no further adjustments are required, press the **OSD Button** 11 to exit the menu system.

OSD Settings

Semi-OSD Settings

The semi-OSD system places one-line messages at the lower third of the video display screen whenever the Volume, Input Source, Surround mode or tuner frequency of any of the configuration settings are changed. The semi-OSD system is helpful in that it enables you to have feedback on any control changes or remote commands using the video display when it is difficult to view the front panel displays. However, you may occasionally prefer to turn these displays off for a particular listening session. You may also want to adjust the length of time the displays remain on the screen. Both of those options are possible with the AVE-750.

10 ADVANCED FEATURES

To turn off the semi-OSD system, you will need to make an adjustment in the **ADVANCED** menu (Figure 9). To start the adjustment, press the **OSD Button** 11 to bring the **MAIN MENU** to the screen. Press the ▼ **Navigation Button** 36 , until the **ADVANCED** line is highlighted in reverse video. Press the **OK Button** 37 to enter the **ADVANCED** menu.

At the **ADVANCED** menu, make certain that the **SEMI OSD** line is highlighted in reverse video by pressing the ▲ / ▼ **Navigation Buttons** 36 as needed. Next, press the ► **Navigation Button** 36 so that the word **OFF** appears.

This setting is temporary and will remain active only until it is changed or until the AVE-750 is turned off. Once the unit is turned off, the semi-OSD displays will remain activated, even if they were switched off for the previous listening session.

To change the length of time that the semi-OSD displays remain on the screen, go to the **ADVANCED** menu as outlined earlier, and press the ▲ / ▼ **Navigation Buttons** 36 as needed, until the **SEMI OSD TIME OUT** line is highlighted in reverse video. Next, press the ◄ / ► **Navigation Buttons** 36 until the desired time in seconds is displayed. Unlike most of the other options in this menu, this is a permanent setting change, and the time-out entry will remain in effect until it is changed, even when the unit is turned off.

If you wish to make other adjustments, press the ▲ / ▼ **Navigation Buttons** 36 until the desired setting is highlighted in reverse video, or highlight the **RETURN TO MAIN MENU** line and then press the **OK Button** 37 to select another menu for adjustment. If no further adjustments are required, press the **OSD Button** 11 to exit the menu system.

Full-OSD Time-Out Adjustment

The **FULL OSD** menu system is used to simplify the setup and adjustment of the AVE-750, using a series of on-screen menus. The factory default setting for these menus leaves them on the screen for 20 seconds after a period of inactivity before they disappear from the screen (Time-Out). Time-Out is a safety measure to prevent image retention of the menu text in your monitor or projector, which might happen if it were left on indefinitely. However, some viewers may prefer a slightly longer or shorter period before the Time Out display.

To change the Full-OSD Time-Out, you will need to make an adjustment in the **ADVANCED** menu (Figure 9). To start the adjustment, press the **OSD Button** 11 to bring the **MAIN MENU** to the screen. Press the ▼ **Navigation Button** 36 , until the **ADVANCED** line is highlighted in reverse video. Press the **OK Button** 37 to enter the **ADVANCED** menu (Figure 9).

At the **ADVANCED** menu (Figure 9) make certain that the **FULL OSD TIME OUT** line is highlighted in reverse video by pressing the ▲ / ▼ **Navigation Buttons** 36 as needed. Next, press the ◄ / ► **Navigation Buttons** 36 until the desired time is displayed in seconds. Unlike most of the other options in this menu, this is a permanent setting change, and the Time-Out entry will remain in effect until it is changed, even if the unit is turned off.

If you wish to make other adjustments, press the ▲ / ▼ **Navigation Buttons** 36 until the desired setting is highlighted in reverse video, or highlight the **RETURN TO MAIN MENU** line and then press the **OK Button** 37 to select another menu for adjustment. If no further adjustments are required, press the **OSD Button** 11 to exit the menu system.

11 CONFIGURING THE REMOTE

The AVE-750 remote is factory-programmed for all functions needed to operate the unit. In addition, it is also preprogrammed to operate most recent HUMAX DVD players. The codes for other brand devices may be programmed into the AVE-750 remote using its extensive library of remote codes.

Changing Devices

In the factory default settings, the AVE remote is programmed so that the commands transmitted correspond to the device selected by pressing one of the **Input Selectors** 3 . This is logical, as you want the remote to control the device you have selected. However, in some circumstances you may have configured your system so that the devices connected to the AVE do not correspond to the default device settings and the legends printed on the remote. For example, if your system has two VCRs you may connect the second VCR to the VID 1 input. There is no problem in doing that, but in normal operation the commands issued after selecting the VID 1 input are for a television, not a VCR.

The AVE remote allows you to correct that situation through the Changing Devices process. That enables you to assign the codes from one type of device to a different button. For example, in the steps below, we will explain how to program the VID 1 buttons to provide the commands to operate a VCR. Of course, you may program the remote to have any of the devices take on the code set of any other device, as your system requires.

To program the buttons normally assigned to one device for the commands of another, follow these steps:

1. Press one of the device buttons 2 3 and the **OK Button** 36 at the same time. You will see the device button's light is on. The device button includes **AVR Selector** 2 and **Input Selector** 3 .
2. Press three Numeric Keys, one at a time. If you don't know the number which is assigned to the device you wish to operate, you can do it by pressing **TV Channel Up/Down Selector** 29 .
3. Press **STANDBY Button** 1 to see if the setting you made in step2 is active. Point the remote to the machine and examine whether it is controlled. It will be turned on or off if the setting is all right.
4. Press the device button. You will see the device button blinking three times.

NOTE: To confirm the assigned number, press a device button and **OK Button** 37 at the same time, and then push the **CH Button** 22 . The device button will blink as many times as the number. For example, 10 blinks, 1 blink and 2 blinks for "012".

Resetting the Remote

Depending on the way in which the remote has been programmed, there may be a situation where you wish to totally erase all changes that have been made to the remote and return it to the factory defaults. You may do that by following the instruction shown below, but remember that once the remote is reset, ALL changes that have been made will be erased and any settings you had previously made will have to be reentered. To erase all settings and reset the remote to the original factory default settings, follow this instruction:

- Press **STANDBY Button** 1 and **CH Button** 22 at the same time, until **AVR Selector** 2 blinks three times.

12 TROUBLESHOOTING GUIDE

SYMPTOM	CAUSE	SOLUTION
Unit does not function when Main Power Switch is pushed.	• No AC Power	• Make certain AC power cord is plugged into a live outlet. • Check to see whether outlet is switch-controlled.
Display lights, but there is no sound or picture.	• Intermittent input connections • **Mute** is on • Volume control is down	• Make certain that all input and speaker connections are secure. • Press **Mute Button** 14 . • Turn up volume control.
Unit turns on, but front panel display does not light up.	• Display brightness is turned off	• Follow the instructions in the Display Brightness section on page 30 so that the display is set to **VFD FULL**.
No sound from any speaker; light around power switch is red.	• AVE-750 is in protection mode due to possible short • AVE-750 is in protection mode due to internal problems	• Check speaker wire connections for shorts at receiver and speaker ends. • Contact your local HUMAX service center.
No sound from surround or center speakers.	• Incorrect surround mode • Input is monaural • Incorrect configuration	• Select a mode other than Stereo. • There is no surround information from mono sources. • Check speaker configuration. (See pages 18–20.)
Receiver does not play correct soundtrack from DTS or Dolby Digital DVDs.	• DVD disc or player menus set incorrectly	• Check the setup menu in your DVD player or the “Audio” menu in the disc being played to make certain that the player is set for the desired output signal.
Unit does not respond to remote commands.	• Weak batteries in remote • Wrong device selected • Remote sensor is obscured	• Change remote batteries. • Press the AVR selector. • Make certain front panel sensor is visible to remote, or connect remote sensor.
Intermittent buzzing in tuner.	• Local interference	• Move unit or antenna away from computers, fluorescent lights, motors or other electrical appliances.
Speaker Channel Input indicators flash and digital audio stops.	• Digital audio feed paused	• Resume play for DVD. • Check that Digital Input is selected.

Processor Reset

In the rare case in which 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.

To totally reset the AVE-750’s processor and clear all setting and configuration data, including all tuner presets, output level settings, delay times, surround mode choices, speaker configuration and crossover data, follow these steps:

1. Turn the unit completely off by pressing the **Main Power Switch** 16 so that it is in the **OFF** position.
2. Press and hold the **Input Source Selector** 2 and the ▼ **Button** 13 , and at the same time press the **Main Power Switch** 16 in so that it is in the **ON** position.
3. When the **Display Line** J reads **RESET**, release the **Input Source Selector** 2 and the ▼ **Button** 13 .
4. After a few seconds the unit will go into a display test mode that will illuminate all segments of the **Main Information Display** 1 .
5. Press the **STANDBY Button** 15 to return the AVE to normal operation.

When the reset is complete you may return to normal operation, but remember that all system configuration settings and tuner presets will have to be reentered.

NOTE: Resetting the processor will erase any configuration settings you have made for speakers, output levels, surround modes and digital input assignments, as well as the tuner presets. After a reset, the unit will be returned to the factory presets, and all settings for these items must be reentered.

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 HUMAX service center.

13 AVE-750 TECHNICAL SPECIFICATIONS

Audio Section

Continuous Average Power (FTC)

All Channels: 50 Watts per channel @ 8 ohms, 1kHz, 0.6% THD

Power Output per EIA 490: 65 Watts x 7 @ 8 ohms

Input Sensitivity/Impedance

Linear (High-Level)	200mV/47k ohms

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

Surround System Adjacent Channel Separation

Pro Logic I, II	40dB
Dolby Digital	55dB
DTS	55dB

Frequency Response

@ 1W (+0dB, –3dB)	20Hz –22kHz

Trasient Intermodulation Distortion (TIM) None

Negative Feedback None

FM Tuner Section

Frequency Range	87.5MHz – 108MHz
Usable Sensitivity	IHF 1.3µV / 13.2dBf
Signal-to-Noise Ratio	Mono/Stereo 70dB/68dB
Distortion	Mono/Stereo 0.2%/0.3%
Stereo Separation	40dB @ 1kHz
Selectivity	±400kHz, 70dB
Image Rejection	80dB
IF Rejection	90dB

AM Tuner Section

Frequency Range	522kHz – 1611kHz
Signal-to-Noise Ratio	45dB
Usable Sensitivity	Loop 500µV
Distortion	1kHz, 50% Mod 0.8%
Selectivity	±10kHz, 30dB

Video Section

Television Format	PAL
Input Level/Impedance	1Vp-p/75 ohms
Output Level/Impedance	1Vp-p/75 ohms
Video Frequency Response (Composite and S)	10Hz – 8MHz (–3dB)
Video Frequency Response (Component)	10Hz – 30MHz (–3dB)

General

Power Requirement	AC 230 / 50Hz	
Power Consumption	6.9W standby, 550W @ rated output, all channels driven	
Dimensions	Width	430mm
	Height	110mm
	Depth	440mm
Weight	7.2kg	

Depth measurement includes knobs, buttons and terminal connections.

Height measurement includes feet and chassis.

14 TRADEMARK ACKNOWLEDGEMENTS

Trademark Acknowledgements

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NOTE: The information in this document is subject to change without notice. HUMAX does not have any responsibility for direct, indirect, accidental, necessary and other damage due to your offer or use of the information contained in this manual.

For hardware repair, please refer to support website.

Call Center

■ **Humax Middle East Call Center (Dubai, UAE)**

Tel: +971 (0)4 359 2323 (Open 9:20 - 20:00 / close on Friday)

Open: Local Time in Dubai (GMT+4)

9:00 - 20:00 (Saturday - Thursday, close on Friday)

Support Language: English/Arabic

■ **Humax Hotline (Germany)**

Germany: 01805 778 870 (€ 0,12/Min)

Other Countries: + 49 1805 778 870 (€ 0,12/Min+International Call Charge)

Open: Local Time in Germany (GMT+1)

8:00 - 20:00 (Monday - Friday)

8:00 - 18:00 (Saturday)

Support Language: Deutsch/English

http://www.humaxdigital.com

15 APPENDIX

DVD Code List

CODE	MAKER	CODE	MAKER
001	HUMAX	028	Hitachi
002	Denon	029	Yamakawa
003	Kenwood, Panasonic, Technics, Theta Digital, Yamaha	030	Fisher, Sanyo
004	Magnavox, Onkyo, Philips, Toshiba, Zenith	031	Apex, Hiteker
005	Mitsubishi	032	Princeton, Realmagic
006	GE, Microsoft, Proscan, RCA, Thomson	033	Magnavox
007	Pioneer	034	Panasonic
008	Sony	035	Kenwood
009	Kenwood	036	Wharfedale
010	Marantz, Philips	037	REC, Roadstar
011	Yamaha	038	Bush, Philco, SM Electronic
012	Thomson	039	NAD, Techwood
013	JVC	040	JMB
014	Optimus, Pioneer, RCA, Teac	041	Lecson, Wharfedale
015	Hitachi, Samsung	042	Afreey, Sampo
016	Harman/Kardon	043	Wesder
017	Emerson, LG, Universum, Zenith	044	Harman/Kardon
018	Akai	045	RCA
019	Onkyo	046	Konka
020	JVC	047	Go Video
021	Onkyo	048	Konka
022	Sharp	049	Konka
023	Panasonic, Pioneer	050	Konka
024	Sherwood	051	Kenwood
025	Aiwa	052	Apex
026	Gradiente, Oritron	053	Denon
027	Proline		

15 APPENDIX

CD Code List

CODE	MAKER	CODE	MAKER
001	DKK, IR, Miro, NAD, Optimus, Sony	031	Yamaha
002	GE, RCA	032	Kenwood
003	Aiwa	033	Audio Alchemy, BSR, Carrera, Dual, EEC, Optimus, Parasound, Vector Research
004	ADC, Kyocera, Nagaoka, STS	034	Dual, Inkel, Optimus, Sherwood
005	Kenwood	035	Sansui
006	California Audio Labs, MCS, Marantz, Panasonic, Quasar, Technics	036	Technics
007	Genexxa, Hitachi, Optimus, Pioneer, RCA, Tandy	037	Adcom, BSR, NEC
008	Kenwood, Yamaha	038	Bush, DAK, Garrard, Goodmans
009	Kenwood, Optimus, Sharp	039	DBX
010	MCS, NEC, Shure	040	Garrard, Goodmans, Optimus
011	RCA, Thomson, Universum, Wards	041	Kodak, McIntosh, Philips
012	JVC, Victor	042	California Audio Labs, Panasonic, Technics
013	Optimusm, Sanyo	043	Emerson, Genexxa, Goodmans, LXI, Magnavox, Memorex, Optimus, Pioneer, RCA, Sansui, Scott, Sears
014	Fisher	044	Fisher, Optimus, Sanyo
015	Luxman	045	Elektra, Garrard, Teac
016	Onkyo	046	GoldStar, Vector Research
017	Crown	047	Acoustic Research, Burmester, CDC, Garrard, MTC, Optimus, Parasound, Realistic, Royal, Tascam, Teac
018	Aiwa	048	Garrard, Soundesign
019	Optimus, Soundesign	049	Genexxa, Harman/Kardon, Optimus, Sherwood
020	Nakamichi	050	Audio Pro, Carver, Elektra, Inkel, Optimus, Universum
021	Adcom, Emerson, Hitachi, Memorex, RCA, Realistic, Scott	051	Yorx
022	Akai, Mitsubishi	052	Optimus, Pioneer, RCA
023	Aiwa, Arcam, Audio Research, Audio Ton, Audiolab, Audiomeca, Cairn, Carver, Cyrus, DMX Electronics, Grundig, Harman/Kardon, Krell, Linn, Magnavox, Marantz, Matsui, Meridian, Micromega, Mission, Myryad, NSM, Naim, Philips, Polk Audio, Proton, QED, Quad, SA	053	Emerson
024	Bestar, Condor, Emerson, Genexxa, Memorex, Nikko, PMG, Poppy, Realistic, Scott	054	Sony
025	Audio-Technica, Nikko, Yamaha	055	Sony
026	Harman/Kardon	056	Alba, Bush, Craig, Goodmans, Radiotone, Schneider, Teac, Watson, Zenith
027	CEC, Fisher, Nikko, Teac	057	Alto, Ariston, Cambridge, Eclipse, Gemini, Goodmans, HCM, Hiro, MTC, Nikko, Pink Triangle, Radiotone, Sansui, SuperTech, Synergy, Teac
028	Memorex, Optimus, Realistic	058	JVC
029	Carver, Dynamic Bass, Fisher, Optimus, RCA, Realistic, Sanyo	059	JVC
030	Inkel, Marantz, Memorex, Realistic, Sharp, Sherwood, Teac	060	Panasonic

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061	RCA	082	Denon
062	BSR, Condor, Schneider	083	
063	Sony	084	HHB, Pioneer
064	Sony	085	Kenwood, Marantz, Philips
065	Denver	086	Pioneer, RCA
066	Kenwood	087	NAD
067	Kenwood	088	Denon
068	Sharp	089	Denon
069	Onkyo	090	Denon
070	Yamaha	091	Disco Vision, Hitachi, Pioneer, Sega
071	Luxman	092	Mitsubishi, NAD, Optimus, Pioneer, Telefunken
072	Orion	093	Carver, Marantz, Marantz, Philips, Salora
073	Kenwood	094	GoldStar
074	Optimus, Pioneer	095	Sony
075	Sherwood	096	Carver, Harman/Kordon, Magnavox, Marantz, Marantz, Philips, Polk Audio, Theta Digital
076	JVC	097	Sony
077	Technics	098	Aiwa, Funai, Realistic
078	Pioneer	099	Panasonic, Quasar, Technics
079	Universum	100	Magnavox, Yamaha
080	Denon	101	Carver, Renaissance, Samsung
081	Denon	102	Cyrus, Philips, Radiola

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TAPE Code List

CODE	MAKER
001	Denon
002	Marantz, Sansui
003	Optimus, Pioneer, RCA, Wards
004	Aiwa, Carver, Grundig, Harman/Kardon, Magnavox, Marantz, Myryad, Philips, Polk Audio, Revox, Sansui, Thorens
005	Inkel, Kenwood
006	Inkel, Kenwood
007	Fisher, Sanyo
008	Arcam
009	Yamaha
010	Yamaha
011	Memorex, Pioneer
012	Memorex, Pioneer
013	Onkyo
014	Onkyo
015	Sony
016	Harman/Kardon
017	Revox
018	Aiwa
019	Aiwa
020	Optimus, Pioneer, RCA
021	Panasonic, Technics
022	Sony
023	JVC, Victor
024	JVC, Victor
025	JVC, Victor
026	Onkyo
027	Akai, Mitsubishi, Teac
028	Sony
029	Garrard, Teac
030	Inkel, Optimus, Phonotrend, Sherwood
031	Akai, Garrard, Mitsubishi, Optimus, Tae Kwang

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VCR Code List

CODE	MAKER
001	Adventura, Aiwa, Amstrad, Baird, CGE, Decca, Dumont, Dynatech, Emerson, Fidelity, Finlux, Fujitsu, Funai, Garrard, Goodmans, Gradiente, Grandin, Harley Davidson, Hitachi, Imperial, Intervision, Lloyd's, M Electronic, MTC, Magnavox, MTC, Magnavox, Memorex,
002	Broksonic, Emerson, Orion
003	Adelsound, Ansonic, Hinari, Hitachi, IR, Ingersol, Loewe, Logik, Matsui, Orion, Pathe Cinema, SEI, Saisho, Sanwa, Shorai, Sinudyne, Taisho
004	Emerex, Sony
005	Fuji, Sony, Zenith
006	American High, Canon, Curtis Mathes, Fuji, GE, Kodak, MEI, Magnavox, Marantz, Matsushita, Memorex, Motorola, Olympus, Panasonic, Penney, Philco, Philips, Quasar, RCA, Realistic, Sears, Sony, Sylvania, Technics, Teknika, Wards, XR-1000
007	ASA, Aiwa, Audiovox, Anam, Asuka, Calix, Citizen, Craig, Diamant, Electrohome, Electrophonic, Emerson, Firstline, GoldStar, Goodmans, Grandin, Hanseatic, ITV, Intervision, KEC, Kodak, LXI, Loewe, Marta, Memorex, Metz, Nikko, Optimus, Osaki, Palladium, Pen
008	Elbe, GoldStar, Harman/Kardon, Kenwood, M Electronic, NEC, Penney, Philco, Vector Research, Yamaha
009	Magnavox, Memorex, NAP, Pulsar, Runco, Sanky, Zenith
010	Akai, Baird, Brandt Electronic, Curtis Mathes, Dual, Ferguson, Graetz, Hitachi, IR, ITT, JVC, Jensen, Kenwood, NEC, Nokia, Nordmende, Oceanic, Palladium, Pathe Marconi, Rex, Saba, Sansui, Schaub Lorenz, Seleco, Tatung, Teac, Teleavia, Telefunken, Thomson,
011	De Graaf, Denon, Finlux, Hitachi, Hughes Network Systems, IR, Minolta, Penney, Pentax, RCA, STS, Sears, Wards
012	Emerson, Firstline, Luxor, MGA, Mitsubishi, Pathe Cinema, Salora, Scott, Sylvania, Toshiba
013	Carrefour, Daewoo, Firstline, Hischito, IR, Manesth, Samsung, Scott, Semp, Singer, Toshiba, Vector, Video Concepts
014	Craigc, Fisher, HI-Q, IR, Kimari, Kuba Electronic, Memorex, Realistic, Sanyo, Sears, Wards
015	Admiral, GE, Luxor, Memorex, Mitsubishi, Motorola, Optimus, RCA, Radialva, Realistic, Sanky, Sharp, Wards
016	Curtis Mathes, GE, Proscan, RCA, Thomson, Wards
017	JVC, Kenwood, Mitsubishi, NEC, Pioneer, Sansui, Thomson, Victor
018	Adyson, Akiba, Akura, Alba, Anitech, Basic Line, Bondstec, Bush, CCE, Cimline, Colt, Craig, Crown, Dansai, Elcatech, Elsay, Elta, Firstline, GoldHand, Goodmans, Grandin, Grundig, HCM, Harwood, Hinari, Hypson, IR, Inno Hit, Irradio, KLH, Kaisui, Korpel, Ky
019	ASA, Allstar, Aristona, Carver, Cyrus, Decca, Dumont, Finlandia, Finlux, GEC, Granada, Grundig, Harman/Kardon, Hornyphone, IR, Interfunk, Irradio, Loewev, Magnavox, Marantz, Mitsubishi, Myryad,, Neckermann, Otto Versand, Philips, Phonola, Pioneer, Polk Au
020	Baird, Bell & Howell, Dumontt, Finlandia, Finlux, Fisher, Genexxa, Graetz, Granada, IR, ITT, Luxor, Memorex, NAD, NEC, Nokia, Optimus, Realistic, Sanyo, Schaub Lorenz, Sears, Shintom, Siemens, Tandy, Thorn, Videosonic
021	Akai, IR, ITT, Kendov, Luxor, Nokia, RCA, Salora, Universum
022	Broksonic, Emerson, Orionv
023	M Electronic, Magnavox, RCA, Wards
024	Anam, Anam National, Blaupunkt, Curtis Mathes, Loewev, Matsushita, Memorex, Metz, Optimus, Panasonic, Quasar, Technics
025	Broksonic, Emerson, Orion, Scott
026	Blaupunkt, Grundig, Metz, Minerva, Siemens, Universum
027	Admiral, Alba, Broksonic, Bush, Carena, Domland, Emerson, Firstline, Flint, IR, Intervision, Kendo, Matsui, Memorex, Orion, Otake, Philco, Saisho, Sansui, Soundwave, Taisho, White Westinghouse, Zenith
028	GoldStar, Panasonic
029	Anam, Anam National, Blaupunkt, Grundig, IR, National, Olympus, Panasonic, Technics
030	Anam, Asha, Beaumakr, Craig, Cybernex, ESC, Elin, GE, Graetz, Hinari, Hitachi, IR, ITT, Inno Hit, Logik, MGA, MGN Technology, MGA, MGN Technology, MTC, Magnin, Memorex, Noblex, Nokia, Penney, Profitronic, RCA, Roadstar, SEG, Samsung, Sanyo, Shogun, TMK, T
031	Aiko, Alba, America Action, Amstrad, Anam, Audiosonic, Basic Line, Bestar, Blue Sky, Bush, CCE, Cathay, Cineral, Citizen, Condor, Crown, Daewoo, ESC, Eltav, Galaxis, Goodmans, ITV, Intervision, KEC, Lenco, Magnasonic, Nikkai, Portland, Pro Vision, Prosoni
032	Akai, Alba, Okano
033	Brandt, Ferguson, Nordmende, Saba, Telefunken, Thomson

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034	Aiwa, Broksonic, General Technic, Matsui, Medion, Memorex, Okano, Orion, Sunkai
035	AVP, Aiwa, Albav, Combitech, Hanimex, Hinari, Hisawa, Kneissel, Matsui, Orion, Saville
036	Go Video, Optimus, Samsung
037	Anam National, Loewe, Matsushita, Memorex, Metz, Optimus, Panasonic, Quasar
038	Broksonic, Emerson, Memorex, Orion, Philco, Sansui, Zenith
039	Magnavox, Philips
040	ReplayTV
041	Panasonic, ReplayTV
042	Philips, Tivo
043	Sony, Tivo
044	Daewoo, Teac
045	Curtis Mathes, GE, Proscan, RCA, Wards
046	Sony
047	Memorex, Radio Shack
048	Optimus
049	Optimus, Panasonic
050	Philips
051	Anam National, Loewe, Memorex, Metz, Optimus, Panasonic, Quasar
052	Philips
053	Memorex, Optimus, Panasonic
054	Panasonic

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TV Code List

CODE	MAKER
001	Celebrity, Electroband, JCB, Sony, Supreme
002	A-Mark, AOC, Anam, Archer, Audiovox, Broksonic, Megatron, Penney, Proton, Spectricon, Tatung, Techwood, Zonda
003	AWA, Acura, Akai, Alba, Amstrad, Anam, Anitech, Ansonic, Asora, Basic Line, Bush, Cascade, Cimline, City, Contec, Crown, Daewoo, Dayton, Desmet, Dixi, Elta, Etron, Fenner, Firstline, Friac, GBC, Geloso, General Technic, HCM, Harvard, Harwood, Hema, Hinari
004	IR, Matsui, Quelle, Saisho, Sanyo, Sony
005	Erres, IR, Mediator, Novak, Philips, Phonola, Pye, Radiola, SBR
006	Bell & Howell, Curtis Mathes, Hitachi, Logik, Majestic, Memorex, Signature, Teknika, Wards, Zenith
007	Dumont, Gibralter, Inteq, Midland, Pulsar, Runco, TNCi, Zenith
008	Noshi, Penney, RCA
009	AOC, Belcor, Brockwood, Daewoo, Daytron, Dumont, Emerson, Gibralter, Goldstar, Kenwood, MGA, MTC, Mitsubishi, NEC, Penney, Philco, Pilot, Portland, Pulsar, RCA, Radio Shack, Realistic, SSS, Samsung, Scimitsu, Scott, Shogun, Teknika, Vidtech, Wards, Yamaga
010	Magnavox, Philco, Sylvania, Wards
011	GE, Minutz, Penney, Wards
012	GE, Penney, Universal, Wards
013	AOC, Akai, Brinkmann, Candle, Carnivale, Citizen, Curtis Mathes, Envision, Gibralter, Goldstar, KTV, Kenwood, MGA, MTC, Magnavox, Manesth, NEC, Nikko, Penney, Philco, Pilot, Radio Shack, Realistic, Runco, Sampo, Samsung, Sylvania, Vector Research, Wards,
014	Alba, Bush, Carrefour, Contec, Goodmans, Hinari, Hitachi, IR, JVC, Magnavox, Matsui, Mitsubishi, NEC, Otto Versand, Questa, Rank Arena, SEG, Sanyo, Sharp, Silver, Sony, Tashiko, Tashiko, Teleton, Toshiba, Victor, Vidtech, Wega
015	Akiba, Alba, Allstar, Amstrad, Ansonic, Aristona, Audiosonic, Baur, Beon, Bestar, Bush, CCE, Carena, Cathay, Centurion, Clarivox, Cosmel, Crown, Daewoo, Dansai, Decca, Denver, Desmet, Diamant, Dixi, Dual, ECE, Elin, Erres, Euromann, Europa, Exquisit, Ferg
016	Citizen, Crown, Curtis Mathes, Daewoo, Emerson, Goldstar, KTV, Midland, Murphy, Penney, Pilot, Portland, Radio Shack, Realistic, Sampo, Samsung, Samsux, Sharp, Tandy, Teknika, Totevision
017	Adventura, Candle, Citizen, Janeil, Kloss, Supre-Macy, Viking
018	Curtis Mathes, GE, LXI, Midland, Penney, Proscan, RCA, Radio Shack, Sears
019	Curtis Mathes, GE, Midland, Panasonic, Penney, Prism, Proscan, Quasar, RCA, Technics, Techwood
020	AOC, Kaypani, Proton, Sampo
021	Gradiente, JVC, Victor
022	Carver, Crosley, Curtis Mathes, Harman/Kardon, Infinity, JBL, LXI, Magnavox, Manesth, Philco, Philips, Sears, Sylvania, Teknika, Vidikron, Wards
023	Anam National, GE, Motorala, Panasonic, Quasar, Tatung
024	Candle, Citizen, Concerto, Curtis Mathes, Goldstar, Gradiente, Hitachi, LG, Luxman, MTC, Memorex, NEC, Penney, Radio Shack, Realistic, Samsung, Sears, Supra, TMK, Techwood, Teknika, Telefunken, Wards
025	Citizen, Curtis Mathes, MTC, Penney, Samsung, Teknika, Toshiba
026	Dumont, Finlux, Grundig, IR, Minerva, Nobliko, Quelle, RBM, Toshiba
027	Baird, Decca, Finlux, Fujitsu, GEC, Goodmans, Granada, IR, Inno Hit, Leyco, Matsui, Murphy, Nikkai, Osaki, Osume, Proline, RFT, Sanyo, Tandy, Tatung, Thorn
028	Baird, Ferguson, IR, Magnafon, Nordmende
029	
030	RCA, Samsung
031	Aiko, Audiovox, Cineral, Citizen, Daewoo, NTC, Nikko, Portland, Teknika, Zenith
032	Admiral, Curtis Mathes, Fortress, GE, IR, Mitsubishi, Motorala, Optonica, RCA, Sharp, Tandy
033	JVC
034	Magnavox, Philco, Sylvania, Wards
035	IR, Telefunken
036	IR, Mitsubishi
037	Audiosonic, Brandt, Continental Edison, Ferguson, Goldstarv, IR, M Electronic, Pioneer, Saba, Telefunken, Thomson
038	
039	GE, Midland, Penney, RCA
040	Curtis Mathes, Denon, Hitachi, Megatron, Philco
041	MGA, Memorex, Mitsubishi, Teknika
042	Hitachi
043	Bell & Howell, Curtis Mathes, Daewoo, Emerson, Fisher, LXI, Memorex, Optimus, Radio Shack, Realistic, Sanyo, Sears, Toshiba
044	LXI, NAD, Penney, Sears, Semp, Toshiba
045	Fisher, Sanyo, Sears
046	Admiral, Frontech, Genexxa, Graetz, Hitachi, IR, ITT, Ingelen, Interfunk, KB Aristocrat, Kapsch, Kyoto, M Electronic, Murphy, Oceanic, Panasonic, Perdio, Pioneer, Rex, Saba, Salora, Scotland, Seleco, Sharp, Solavox, Sonolor, Stern, Tandy, Tokai, Univox, V

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047	Optonica, Quasar, Radio Shack, Realistic, Wards
048	Curtis Mathes, NAD, Optimus, Pioneer
049	CarverGradiente, NEC
050	Amstrad, Funai, Sears, Squareview, Symphonic
051	Ambassador, Amstrad, Emerson, Matsui, Orion, SEI, Saisho, Sinudyne, TMK, Triumph
052	Beaumark, Emerson, GE, Goldstar, Hallmakr, LXI, MGA, Megatron, Memorex, Mitsubishi, NAD, Nikko, Penney, Proton, Radio Shack, Realistic, Samsung, Scotch, Scott, Sears, Soundesign, TMK, Vidtech, Wards
053	Alaron, Emerson, Finlux, Fujitsu, Funai, Goodmans, Grunpy, Harley Davidson, Hinari, Magnavox, Memorex, Nesco, Orion, Scott, Sears, Soundesign, Technol Ace, Teknika, Wards
054	America Action, Anam, Audiovox, Baysonic, Bradford, CXC, Contec, Craig, Crown, Emerson, Funai, Futuretech, Grunpy, Harvard, KEC, KTV, Multitech, Onwa, Radio Shack, Realistic, SSS, Scott, Semivox, Soundesign, Starlite, Symphonic, Teknika
055	AOC, Clairtone, Contec, Electroband, Emerson, KTV, MEI, MTC, Rhapsody, Tosonic
056	Candle, Citizen, General, Magnavox, Simpson, Soundesign, Teknika, Teleton
057	Magnavox, Simpson
058	Baird, DER, Ferguson, IR, JVC, Thorn
059	
060	IR, Luxor, Prinz, Salora
061	Blaupunkt, Grundig, IR, Siemens
062	Atlantic, Autovox, Expert, Fujitsu, IR, Kapsch, Kennedy, Luma, Rex, Seleco, Stern, Teleton, Uher, Vistar, Zanussi
063	Akai, Baird, De Graaf, Finlandia, Fisherv, Matsui, Sanyo, Sonitron, Sonolor
064	Alaron, Arcam, Britannia, CS Electronics, Contec, Fidelity, Firstline, Hampton, Huanyuv, IR, Kaisui, Kamp, Kawasho, Kingsley, MTC, Magnafon, Mivar, Multitech, Murphy, Nicamagic, Nikkai, Nobliko, Pael, Pathe Cinema, Phoenix, Rhapsody, Sandra, Serino, Silva
065	Adyson, Amplivision, Arcam, AudioTon, Baird, Bazin, Binatone, Boots, CCE, Dual, Dual Tec, Elbe, Europhon, Filsai, Firstline, Fisher, GEC, Goldstar, Goodmans, Granada, Halifax, Hampton, Hema, Hitachi, Hyper, IEC, IR, Intervision, KTV, Kaisui, Lumatron, M E
066	Akai, Akiba, Akura, Alba, Asuka, BTC, Basic Line, Blue Sky, Bush, Canton, Cybertron, Dainichi, Elite, GBC, GPM, Genexxa, Hikona, Hinari, ICeS, Irradio, Isukai, Kaisui, Lifetec, Nikkai, Orline, Osaki, Oso, Radialva Roadstar, Schneider, Sentra, Standard, St
067	IR, National, Panasonic
068	Broksonic, Emerson, Orion, Scott, Sears
069	Anam, Anam National, Matsushita, Memorex, Optimus, Panasonic, Quasar, Technics, Victor
070	Akura, Anglo, AudioTon, Denko, Electa, Eurmann, Frontech, Funai, Hypson, IEC, ITV, Interbuy, Intervision, Leyco, Manesth, Nikkai, Okano, Omega, Osaki, Pa, Yokonama, Prima, Protech, Radiotone, Rex Roadstar, SEG, Saisho, Samsung, Strato, Teac, Universum, Yo
071	Citizen, Emerson, KTV
072	Akiba, BPL, Blue Star, Bush, Emerson, Emperor, GE, Grandin, HCM, Hisawa, Hypson, Kaisui, Kasui, Stenway, Teac, Tomashi, Tsoschi, Windstar, Yamishi
073	Akib, Akiba, Allorgan, BSR, Bush, Firstline, Funai, Hanimex, IR, Leyco, Matsui, Orion, SEI, Shorai, Sinudyne, Sunkai, Temco, Tensai
074	Blaupunkt, IR, Liesenkotter, Quelle, Siemens
075	Blaupunkt, Quelle, Siemens
076	Brandt, Ferguson, Saba, Telefunken
077	Bush, Matsui, Orion, Sunkai
078	Metz, Panasonic, Tandberg
079	Ansonic, Beko, Best, Bell & Howell, Bestar, Best, CGE, Clatronic, Condor, Crown, Fisher, Fraba, Friac, Galaxis, Gorenje, IR, Imperial, Okano, Palladium, Samsung, Universum
080	Alba, Amstrad, Bush, Goodmans, IEC, ITS, Irradio, JVC, Matsui, Schneider, Sunstar
081	Bell & Howell, Bush, Bestar, Daewoo, Fenner, GBC, Goodmans, Huanyu, IR, Kneissel, Lifetec, M Electronic, Nakimura, Philips, Sound & Vision
082	Amstrad, HCM, Harvard, Harwood, Kyoshu, Minoka, Osaki, Royal Lux, Teac
083	Brinkmann, CGE, Crown, Imperial, Palladium, Protech Roadstar, Soundwave, Teac
084	Audiovox, Cineral, Curtis Mathes, Daewoo, GE, Sansei
085	Akiba, Carena, Flint, Hisawa, NEC, Serino, Teac, Yamishi
086	Admiral, Broksonic, Emerson, Memorex, Orion, Philco, Sansui, White Westinghouse, Zenith
087	Curtis Mathes, Proton
088	M Electronic, Nakio, Nokia
089	Continental Edison, Gooding, Grundig, Matsui, Minerva
090	NEC, Runco
091	Baur, IR, Neckermann, Otto Versand, Quelle, Sony, Thorn
092	Toshiba
093	Baur, IR, Interfunk, Loewe, MTC, Mitsubishi, Otto Versand, Quelle, Thorn
094	A.R. Systems, Aristona, Grundig, Hanseatic, IR, Kathrein, Manesth, Myryad, Neckermann, Neufunk, Otto Versand, Philips, Samsung, TVTEXT 95
095	Hitachi
096	Grundig, Samsung

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097	Akai
098	Runco
099	Carad, Grandin, Karcher, Kneissel, Megas, Sagem, Serino
100	Audiovox, Daewoo, Emerson, White Westinghouse
101	Daewoo, Emerson, Goodmans, White Westinghouse, Zenith
102	Telefunken, Thomson
103	Konka
104	Konka
105	Konka
106	Anam National, Matsushita, Optimus, Panasonic, Quasar, Sony, Technics, Victor
107	JVC
108	Alba, Blue Sky, Bush, Firstline, Medion, Protech, SEG, Schneider, Teac
109	Pioneer, RCA
110	Fujitsu
111	Sharp
112	Sharp
113	Aiwa
114	Konka
115	Konka
116	Beko
117	Princeton
118	Dwin
119	Curtis Mathes, GE, LXI, Midland, Penney, RCA, Radio Shack, Sears
120	Ampro
121	Dwin
122	RCA
123	Curtis Mathes, GE, RCA
124	RCA
125	Magnavox
126	Toshiba
127	Curtis Mathes, GE, Penney, RCA
128	RCA, Thomson

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CABLE Code List

CODE	MAKER
001	Memorex, Panasonic, Paragon, Pulsar, Quasar, Runco, Toshiba, Zenith
002	ABC, British Telecom, Jerrold, PVP Stereo Visual Matrix, Starcom, United Cable
003	ABC, Daeryung, Galaxi, Scientific Atlanta
004	Hamlin
005	Jerrold, Tocom
006	ABC, Bell & Howell, Jerrold
007	ABC, Scientific Atlanta
008	Panasonic
009	GoldStar, Pioneer, Samsung
010	Pace
011	Videoway
012	Hamlin, Regal
013	Communications, Jerrold, Supercable
014	Scientific Atlanta
015	Regal
016	Philips
017	Philips
018	Filmnet, Mnet, Tele+1
019	Cabletime
020	France Telecom, Visiopass
021	General Instrument, Jerrold, Motorola
022	Scientific Atlanta
023	Zenith
024	Pioneer
025	Cabletime
026	General Instrument, Jerrold
027	Macab, Noos, Sagem
028	Pioneer, Scientific Atlanta
029	Alcatel, France Telecom
030	Alcatel, France Telecom
031	Americast, Bell South, Zenith
032	Sony
033	Pace
034	Visionetics
035	
036	

CODE	MAKER
037	Mr. Zap
038	Pioneer, Scientific Atlanta
039	Telestar, Zehnder
040	CityCom, Conrad, Triax
041	Columbia, Morgan's, Smart, Strong
042	Philips
043	RCA
044	Echostar
045	Astro, Blaupunkt, Fuba, Grundig, Hirschmann, IR, Kathrein, Kreiselmeyer, Metz, Siemens, Universum, Variosat, Wisi
046	Akai, Allsat, Asat, Cyrus, DNT, Elta, Kathrein, Marantz, Mega, Myryad, Philips, Radiola, Skymax, Unisat, Ventana, Zeta Technology
047	Chaparral
048	Pcae
049	Armstrongm, Astra, Bestar, Boca, Crown, Einhell, Eurosat, Eurosky, Huth, Intertronic, Intertronic, Loewe, Mediamarkt, Metronic, Morgan's, Okano, Seemann, Sumida, Sunstar, Teco, Teleka, Unisat, Zwergnase
050	Panasonic
051	Galaxis
052	Echostar
053	Pioneer
054	Proscan, RCA
055	Alba, EP Sat, Eurocrypt, Finlandia, Finlux, Goodmans, Granda, Hitachi, IR, Manhattan, Nokia, Nordmende, Pcae, Panda, Philips, Promax, Sabre, Tantec, Tatung, Televes, Thomson, Thorn, Wewa, Wisi
056	Pcae
057	Echostar
058	GE, RCA
059	Gooding, Grundig, JVC, Matsui, Minerva, Palladium, Philips, Pye, Universum
060	Astra, Condor, Conrad, Conrad, Eurosky, Helium, Intervision, La Sat, Lorenzen, Max, Quelle, Technowelt
061	Panasat
062	Kathrein
063	Intervision, Prosat, Quadral, Rover, Satline, Skymaster
064	Sony
065	Multichoice
066	Kathrein

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067	AGS, Akena, Alpha, Astacom, Athena, Axiel, BT, Colombia, Columbus, Discovery, Fenner, Houston, Okano, Oxford, Patriot, Schneider, Tonna, XSat, Xcom Multimedia
068	Dynasat, Emme Esse, Eurostar, Super Sat
069	Panasonic
070	AGS, BT, Discovery, JOK, Manata, Philips, Profile, Saba, World Sat
071	Ferguson, Thomson
072	ASLF, Alltech, Amitronica, Anglo, Ankaro, Broco, Bubu Sat, Daewoo, Echostar, Einhell, Engel, K-SAT, Lenco, Lifesat, Medion, Micro, Micro Elektronic, Microtec, Mysat, Neuhaus, Neusat, Nikko, Roadstar, Rover, SKR, SM Electronic, Sat Team, Satec, Skantin, Sk
073	Pcae
074	Magnavox, Pcae, Philips, Uniden
075	D-box, Nokia
076	Magnavox, Memorex, Philips, Uniden
077	Lorenzen, SEG, Vestel
078	Hughes Network Systems, Mitsubishi, Philips, Toshiba
079	Grundig, Maspro, Philips
080	Nokia
081	AlphaStar
082	Echostar, Expressvu, HTS, JVC
083	Toshiba
084	Prima
085	CityCom, Gardiner, Vtech, Zehnder
086	Hitachi
087	Sagem, TPS
088	ABsat
089	Amstrad, British Sky Broadcasting, Grundig, Pcae, Panasonic, Sony
090	Canal Digital, Canal Satellite, Canal+, Echostar, Gold Box, MediaSat, Philips, Pioneer, Thomson
091	RCA
092	SKY, Zenith
093	FTE, Galaxis, HUMAX
094	General Instrument, Next Level, Star Choice
095	Echostar, Emme Esse, Fracarro, InVideo, Seleco, Thomson
096	Nokia
097	Foxtel, Multichoice, Panasat, Strong
098	Gradiente, ISkyB, Indovision, Netsat, Pcae, SKY, Star, Televisa
099	Echostar
100	Sky Television
101	Orbit
102	Nokia
103	Eurostar
104	Eurostar
105	
106	Philips
107	Hirschmann
108	Echostar
109	Technisat
110	Samsung
111	Sagem
112	Nokia
113	Hughes Network Systems, Philips
114	Hughes Network Systems