OWNER'S GUIDE

AVR580

HIGH-PERFORMANCE AUDIO/VIDEO MULTICHANNEL PROCESSOR/AMPLIFIER

JBL

AVR580 AUDIO/VIDEO RECEIVER

Declaration of Conformity

CE

We, Harman Consumer International
  2, route de Tours
  72500 Château-du-Loir
  France

declare in own responsibility that the product described
in this owner's manual is in compliance with technical
standards:

EN 55013:2001

EN 55020:2002

EN 61000-3-2:2000

EN 61000-3-3:1995+A1:2001

EN 60065:2002

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

EXAMPLE – (bold type) indicates a specific remote control or front-panel button or
indicator, or rear-panel connection jack

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

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

❶ – (number in an oval) indicates a button or indicator on the remote control

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

A – (letter in a square) indicates an indicator in the front-panel information display

Ⓐ – (letter in an oval) indicates a button on the Zone II remote

read first! Important Safety Precautions!

CAUTION
RISK OF ELECTRIC SHOCK
DO NOT OPEN

CAUTION: To reduce the risk of electric shock,
do not remove cover (or back).
No user-serviceable parts inside.
Refer servicing to qualified service personnel.

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
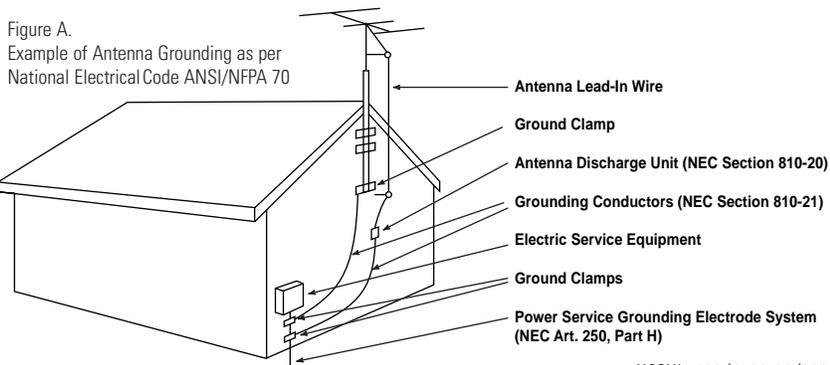a risk of electric shock to persons.

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.

1. Read these instructions.
2. Keep these instructions.
3. Heed all warnings.
4. Follow all instructions.
5. Do not use this apparatus near water.
6. Clean only with a dry cloth.
7. Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
8. Do not install near any heat sources such as radiators, heat registers, stoves or other apparatus (including amplifiers) that produce heat.
9. Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding-type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
10. Protect the power cord from being walked on or pinched, particularly at plugs, convenience receptacles and the point where they exit from the apparatus.
11. Only use attachments/accessories specified by the manufacturer.
12. Use only with the cart, stand, tripod, bracket or table specified by the manufacturer or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.

13. Unplug this apparatus during lightning storms or when unused for long periods of time.
14. Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.
15. Do not use attachments not recommended by the product manufacturer, as they may cause hazards.
16. This product should be operated only from the type of power source indicated on the marking label. If you are not sure of the type of power supply to your home, consult your product dealer or local power company. For products intended to operate from battery power, or other sources, refer to the operating instructions.
17. If an outside antenna or cable system is connected to the product, be sure the antenna or cable system is grounded so as to provide some protection against voltage surges and built-up static charges. Article 810 of the National Electrical Code, ANSI/NFPA 70, provides information with regard to proper grounding of the mast and supporting structure, grounding of the lead-in wire to an antenna discharge unit, size of grounding conductors, location of antenna-discharge unit, connection to grounding electrodes, and requirements for the grounding electrode. See Figure A.

18. An outside antenna system should not be located in the vicinity of overhead power lines or other electric light or power circuits, or where it can fall into such power lines or circuits. When installing an outside antenna system, extreme care should be taken to keep from touching such power lines or circuits, as contact with them might be fatal.
19. Do not overload wall outlets, extension cords, or integral convenience receptacles, as this can result in a risk of fire or electric shock.
20. Never push objects of any kind into this product through openings, as they may touch dangerous voltage points or short-out parts that could result in a fire or electric shock. Never spill liquid of any kind on the product.
21. Do not attempt to service this product yourself, as opening or removing covers may expose you to dangerous voltage or other hazards. Refer all servicing to qualified service personnel.
22. When replacement parts are required, be sure the service technician has used replacement parts specified by the manufacturer or that have the same characteristics as the original part. Unauthorized substitutions may result in fire, electric shock or other hazards.
23. Upon completion of any service or repairs to this product, ask the service technician to perform safety checks to determine that the product is in proper operating condition.
24. The product should be mounted to a wall or ceiling only as recommended by the manufacturer.

Figure A.
Example of Antenna Grounding as per
National Electrical Code ANSI/NFPA 70

Antenna Lead-In Wire

Ground Clamp

Antenna Discharge Unit (NEC Section 810-20)

Grounding Conductors (NEC Section 810-21)

Electric Service Equipment

Ground Clamps

Power Service Grounding Electrode System
(NEC Art. 250, Part H)

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INTRODUCTION

Thank you for choosing JBL®! With the purchase of a JBL® AVR580, 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 AVR580 is truly a multichannel receiver for the new millennium.

The AVR580 has been engineered so that it is easy to take advantage of all the power of its digital technology. 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 AVR580 is able to deliver.

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

Description and Features
The AVR580 is among the most versatile and multifeatured A/V receivers available, incorporating a wide range of listening options. In addition to Dolby* Digital and DTS® decoding for digital sources, a broad choice of Matrix surround-encoded or Stereo surround modes are available for use with sources such as CD, VCR, TV broadcasts and the AVR580's own FM/AM tuner. Along with Dolby Digital EX, Dolby Pro Logic* II, DTS Neo:6®, Dolby 3 Stereo, and Hall and Theater modes, the AVR580 offers Harman International's exclusive Logic 7® processing in both 5.1 and 7.1 versions to create a wider, more enveloping field environment and more defined fly-overs and pans. Another exclusive is VMAx®, which uses proprietary processing to create an open, spacious sound field even when only two front speakers are available. Finally, the AVR580 offers decoding of MP3 data, so that you may listen to the latest music selections directly from compatible computers or playback devices with the power and fidelity you expect from JBL.

In addition to providing a wide range of listening options, the AVR580 is easy to configure so that it provides the best results with your speakers and specific listening-room environment. On-screen menus make it simple to enter settings for speaker configurations and bass management, and the EzSet remote measures a system's sound levels and automatically calibrates them for perfectly balanced sound field presentation.

For the ultimate in flexibility, the AVR580 features connections for five video devices, all with both composite and S-Video inputs. Two additional audio inputs are available, and six digital inputs make the AVR580 capable of handling all the latest digital audio sources. For compatibility with the latest HDTV video sources and progressive scan DVD players, the AVR580 also features two-input, wide-bandwidth, low-crosstalk component video switching.

The front panel offers coaxial and optical digital inputs for direct connection to digital recorders. Two video recording outputs, preamp-out and a color-coded eight-channel input, with complete digital bass management, make the AVR580 virtually future-proof, with everything needed to accommodate tomorrow's new formats right onboard.

The AVR580's flexibility and power extend beyond your main home theater or listening room. The AVR580 includes a sophisticated multizone control system that allows you to select one source for use in the main room and a different source for audio and video distribution to a second zone. Complete volume control in the second zone is possible with a separate infrared control link. To make it easy to operate the AVR580 from a remote zone, a separate "Zone II" remote is included. Additionally, the AVR580 includes the option to assign two of its output channels to the multiroom system.

The AVR580's powerful amplifier uses traditional JBL high-current design technologies to meet the wide dynamic range of any program selection.

With state-of-the-art circuitry and time-honored circuit designs, the AVR580 is the perfect combination of the latest in digital audio technology, a quiet yet powerful analog amplifier in an elegant, easy-to-use package.

- **A wide range of digital and matrix surround modes, including Dolby® Digital, Dolby Digital EX, Dolby Pro Logic® II, DTS®, DTS-ES® Discrete and Matrix, and DTS Neo:6®**
- **Seven channels of high-current amplification with two channels assignable to either surround back or multiroom applications**
- **Logic 7® processing, available with both 7.1 and 5.1 configurations in a variety of modes, and two modes of VMAx®**
- **MP3 decoding for use with computers and digital audio players**
- **‖‖EzSet™ remote automatically sets output levels for optimum performance**
- **High-bandwidth, HDTV-compatible component video switching**
- **Front-panel analog A/V inputs**
- **Multiple digital inputs and outputs**
- **Discrete front-panel coaxial and optical digital inputs for easy connection to portable digital devices and the latest video game consoles**
- **Extensive bass management options, including three separate crossover groupings**
- **On-screen menu and display system**
- **Extensive multiroom options, including a standard Zone II remote and assignable amplifier channels for listening to a separate source in a remote zone**

SAFETY INFORMATION

Important Safety Information

Verify Line Voltage Before Use
Your AVR580 has been designed for use with 220–240-volt AC current. Connection to a line voltage other than that for which it is intended can create a safety and fire hazard and may damage the unit.

Depending on the electrical requirements in your area or the wiring in your home, the power cords included with your AVR may not be the correct ones, and you may need to contact your local JBL distributor to obtain the correct power cord.

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 center.

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.

■ Due to the weight of the AVR580 and the heat generated by the amplifiers, 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.

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

Moving the Unit
Before moving the unit, be certain to disconnect any interconnection cords with other components, and make certain that you disconnect the unit from the AC outlet.

Unpacking
The carton and shipping materials used to protect your new receiver during shipment were specially designed to cushion it from shock and vibration. We suggest that you save the carton and packing materials for use in shipping if you move, or should the unit ever need repair.

To minimize the size of the carton in storage, you may wish to flatten it. This is done by carefully slitting the tape seams on the bottom and collapsing the carton. Other cardboard inserts may be stored in the same manner. Packing materials that cannot be collapsed should be saved along with the carton in a plastic bag.

If you do not wish to save the packaging materials, please note that the carton and other sections of the shipping protection are recyclable. Please respect the environment and discard those materials at a local recycling center.

At this time you should remove the protective plastic film from the front-panel lens. Leaving the film in place will affect the performance of your remote control.
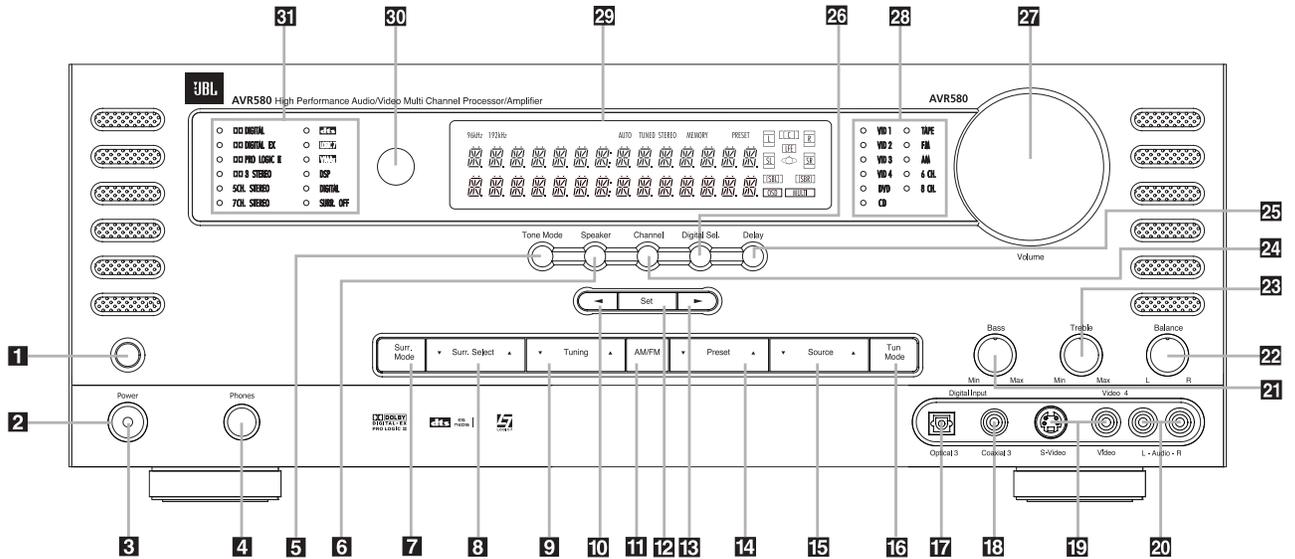
1 Main Power Switch
2 System Power Control
3 Power Indicator
4 Headphone Jack
5 Tone Mode
6 Speaker Selector
7 Surround Mode Group Selector
8 Surround Mode Selector
9 Tuning Selector
10 ◄ Button
11 Tuner Band Selector

12 Set Button
13 ► Button
14 Preset Station Selector
15 Input Source Selector
16 Tuner Mode Selector
17 Optical 3 Digital Input
18 Coaxial 3 Digital Input
19 Video 4 Video Input Jacks
20 Video 4 Audio Input Jacks
21 Bass Control
22 Balance Control

23 Treble Control
24 Channel Adjust Selector
25 Delay Adjust Selector
26 Digital Input Selector
27 Volume Control
28 Input Indicators
29 Main Information Display
30 Remote Sensor Window
31 Surround Mode Indicators

1 Main Power Switch: Press this button to apply power to the AVR580. When the switch is pressed in, the unit is placed in a Standby mode, as indicated by the red **Power Indicator 3** in the center of the **System Power Control 2**. This button MUST be pressed in to operate the unit. To turn the unit off and prevent the use of the remote control, this switch should be pressed until it pops out from the front panel so that the word "OFF" may be read at the top of the switch.

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

2 System Power Control: When the **Main Power Switch 1** is "ON," press this button to turn on the AVR580; press it again to turn the unit off. Note that the **Power Indicator 3** in the center of the switch will turn orange when the unit is on.

3 Power Indicator: This LED will be lit in red when the unit is in the Standby mode to signal that the unit is ready to be turned on. When the unit is in operation, the indicator will turn orange.

4 Headphone Jack: This jack may be used to listen to the AVR580's output through a pair of headphones. Be certain that the headphones have a standard 6.4mm (1/4") stereo phone plug. The main room speakers will automatically be turned off when the headphone jack is in use.

5 Tone Mode: This button controls the tone control settings, enabling adjustment of the bass and treble boost/cut and balance or the removal of the tone controls from the signal path. The first press of the button displays a TONE IN message in the **Main Information Display 29**. If you wish to set the tone controls to "flat," without any treble, bass or balance alteration, press the ◄ or ► **Selector Buttons 10 13** so that TONE OUT appears in the **Lower Display Line B**.

6 Speaker Selector: Press this button to begin the process of configuring the AVR580 for the type of speakers it is being used with. For information on configuring the speaker settings, see page 24.

7 Surround Mode Group Selector: Press this button to select the top-level group of surround modes. Each press of the button will select a major mode grouping in the following order:

➤Dolby Modes ➔ DTS Digital Modes ➔VMAx Modes
➔ DSP Modes ➔ Stereo Modes ➔ Logic 7 Modes ⌐

Once the button is pressed so that the name of the desired surround mode group appears in the on-screen display and in the **Lower Display Line B**, press the **Surround Mode Selector 8** to cycle through the individual modes available. For example, press this button to select Dolby modes, and then press the **Surround Mode Selector 8** to choose from the various mode options.

8 Surround Mode Selector: Press this button to select from among the available surround mode options for the major mode group selected. The specific modes will vary based on the number of speakers available, the major mode group and whether the input source is digital or analog. For example, press the **Surround Mode Group Selector 7** to select a major mode grouping such as Dolby or

Logic 7, and then press this button to see the specific mode choices that are available. For more information on mode selection, see page 31.

9 Tuning Selector: Press the left side of the button to tune lower-frequency stations and the right side of the button to tune higher-frequency stations. When a station with a strong signal is reached, the **TUNED Indicator** I will be lit in the **Main Information Display** 29.

10 ◀ Button: When making system configuration changes using the front-panel controls, press this button to scroll left through the available choices for the option being adjusted.

11 Tuner Band Selector: Pressing this button will automatically switch the AVR580 to the Tuner mode. Pressing it again will switch between the AM and FM frequency bands. (See page 35 for more information on the tuner.)

12 Set Button: When making system configuration changes using the front-panel controls, press this button to enter a setting into the unit's memory.

13 ▶ Button: When making system configuration changes using the front-panel controls, press this button to scroll right through the available choices for the option being adjusted.

14 Preset Station Selector: Press this button to scroll up or down through the list of stations that have been entered into the preset memory. (See page 35 for more information on tuner programming.)

15 Input Source Selector: Press this button to change the input source.

16 Tuner Mode Selector: Press this button to select Auto or Manual tuning. When the button is pressed so that the **AUTO Indicator** J lights, the tuner will search for the next station with an acceptable signal when the **Tuning Selector** 9 21 E is pressed. When the button is pressed so that the **AUTO Indicator** J is not lit, each press of the **Tuning Selector** 9 21 E will increase the frequency. (See page 35 for more information on using the tuner.) This button may also be used to switch between Stereo and Mono modes for FM radio reception. When weak reception is encountered, press the button until the **STEREO Indicator** H goes out to switch to Mono

reception. Press and hold again to switch back to Stereo mode. (See page 35 for more information on using the tuner.)

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

18 Coaxial 3 Digital Input: Connect the coaxial digital input of a digital audio product such as a portable audio player or video game to this jack.

19 Video 4 Video Input Jacks: These jacks may be used to connect the video play/out jacks of a video game or portable video product such as a camcorder, video game or digital still camera to your system.

20 Video 4 Audio Input Jacks: These audio/video jacks may be used for connection to the audio play/out jacks of a video game or portable audio/video product such as a camcorder or portable audio player.

21 Bass Control: Use this control to boost or reduce the low-frequency output of the left/right front channels by as much as ±10dB. Set this control as you find suitable to adjust to your specific taste or room acoustics.

22 Balance Control: Use this control to change the relative volume for the front left/right channels.

NOTE: When multichannel surround modes are in use, this control should be at the midpoint, or "12 o'clock," position for proper operation.

23 Treble Control: Use this control to boost or reduce the high-frequency output of the left/right front channels by as much as ±10dB. Set this control as you find suitable to adjust to your specific taste or room acoustics.

24 Channel Adjust Selector: Press the button to begin the process of adjusting the channel level outputs using the source currently playing through your AVR. For complete information on adjusting the channel output level, see page 36.

25 Delay Adjust Selector: Press this button to begin the process of adjusting the delay settings for Dolby surround modes. See page 26 for more information on delay adjustments.

26 Digital Input Selector: Press this button to begin the process of selecting a digital source for use with the currently selected input. Once the button has been pressed, use the ◀ or ▶ **Buttons** 10 13 to choose the desired input and then press the **Set Button** 12 to enter the setting into the unit's memory. See page 31 for more information on digital audio.

27 Volume Control: Turn this knob clockwise to increase the volume, counterclockwise to decrease the volume. If the AVR580 is muted, adjusting the volume will automatically release the unit from the silenced condition.

28 Input Indicators: The current input source for the AVR580 will light in orange.

29 Main Information Display: This display delivers messages and status indications to help you operate the receiver. (See page 8 for a complete explanation of the Information Display.)

30 Remote Sensor Window: The sensor behind this window receives infrared signals from the remote control. Aim the remote at this area and do not block or cover it unless an external remote sensor is installed.

31 Surround Mode Indicators: The surround mode and digital bitstream in use will light in orange. Note that depending on the specific combination of input sources and surround mode selected, more than one indicator may light. (See page 34 for more information.)

FRONT-PANEL INFORMATION DISPLAY
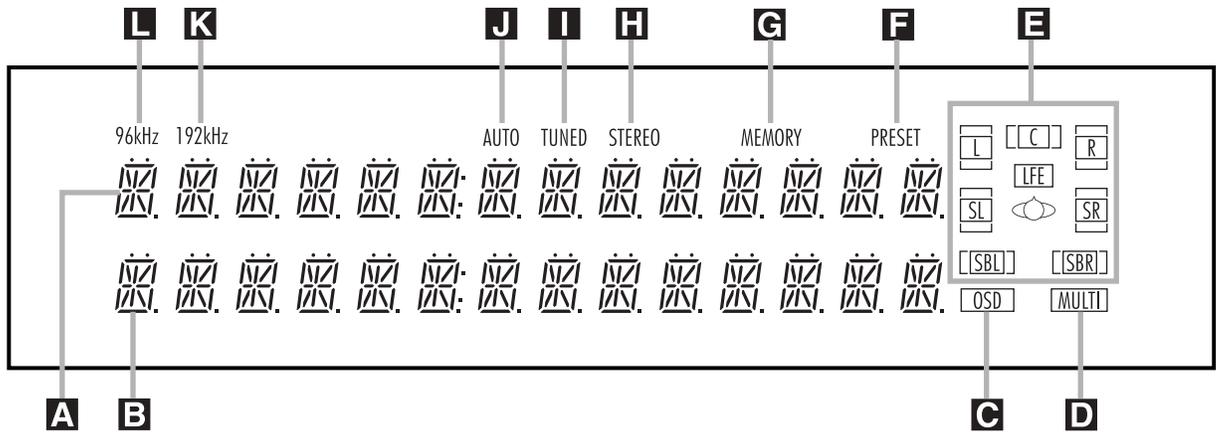
A Upper Display Line
B Lower Display Line
C OSD Indicator
D Multiroom Indicator

E Speaker/Channel Input Indicators
F PRESET Indicator
G MEMORY Indicator
H STEREO Indicator

I TUNED Indicator
J AUTO Indicator
K 192kHz Indicator
L 96kHz Indicator

A Upper Display Line: Depending on the unit's status, a variety of messages will appear here. In normal operation, the current audio and video input source information will appear on this line.

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

C OSD Indicator: When the OSD system is in use, this indicator lights to remind you that the other indicators in this display do not function when the On-Screen Display is being used.

D Multiroom Indicator: This indicator lights when the multiroom system is active. It will remain lit when the multiroom system is in use even though the main room system is in the Standby mode and all other indicators are dark. (See page 39 for more information on the Multiroom system.)

E Speaker/Channel Input Indicators: These indicators are multipurpose, indicating either the speaker type selected for each channel or the incoming data-signal configuration. The left, center, right, side surround and surround back speaker indicators are composed of two boxes, while

the subwoofer is a single box. The center box lights when a "Small" speaker is selected, and the outer boxes light when "Large" speakers are selected. When none of the boxes are lit for the center, surround or subwoofer channels, no speaker has been selected for one of those positions. (See page 24 for more information on speaker setup.) The letters inside each of the center boxes display the active input channels. For standard analog inputs, only the L and R will light, indicating a stereo input. When a digital source is playing, the indicators will light to display the channels being received at the digital input. When the letters flash, the digital input has been interrupted. (See page 32 for more information on the channel indicators.)

F PRESET Indicator: This indicator lights when the tuner is in use to show that the present number for the current station being listened to appears in the Upper Display Line. (See page 35 for more information on tuner presets.)

G MEMORY Indicator: This indicator flashes when entering presets and other information into the tuner's memory.

H STEREO Indicator: This indicator lights when an FM station is being tuned in stereo.

I TUNED Indicator: This indicator lights when a station is being received with sufficient signal strength to provide acceptable listening quality.

J AUTO Indicator: This indicator lights when the tuner's Auto mode is in use.

K 192kHz Indicator: This indicator lights when the digital audio input source has a 192kHz bit rate.

L 96kHz Indicator: This indicator lights when the digital audio input source has a 96kHz bit rate.

REAR-PANEL CONNECTIONS
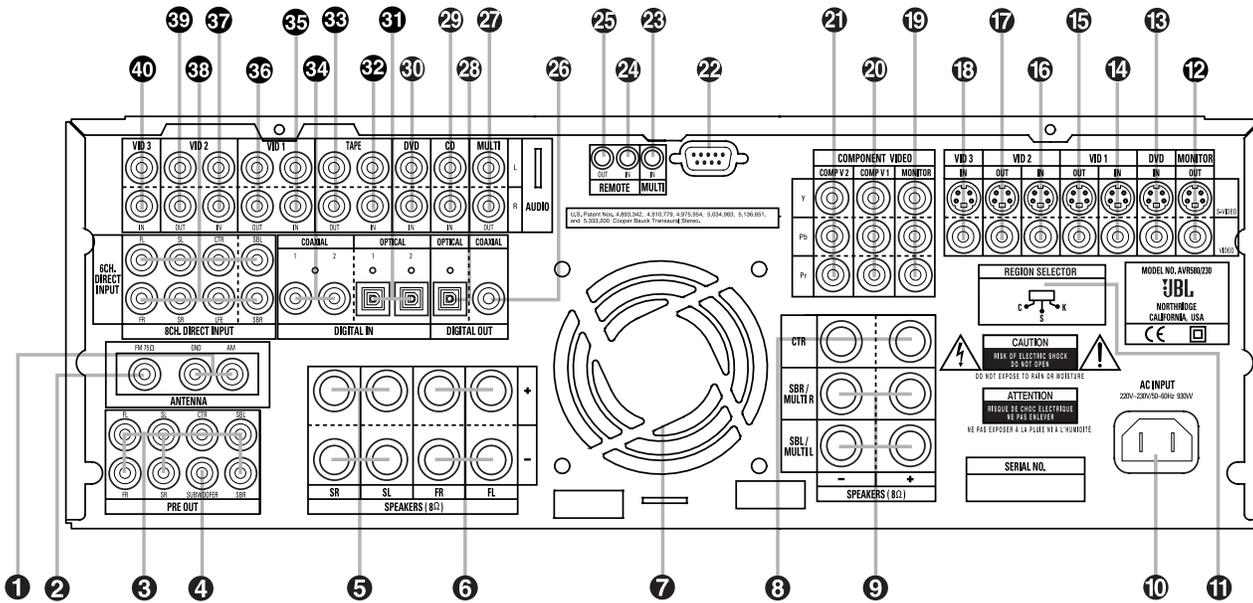
1 AM Antenna
2 FM Antenna
3 Preamp Outputs
4 Subwoofer Output
5 Surround Speaker Outputs
6 Front Speaker Outputs
7 Fan Vents
8 Center Speaker Outputs
9 Surround Back/Multiroom Speaker Outputs
10 AC Power Cord Jack
11 Region Selector
12 Video Monitor Outputs
13 DVD Video Inputs

14 Video 1 Video Inputs
15 Video 1 Video Outputs
16 Video 2 Video Inputs
17 Video 2 Video Outputs
18 Video 3 Video Inputs
19 Component Video Monitor Outputs
20 Component Video 1 Inputs
21 Component Video 2 Inputs
22 RS-232 Port
23 Multiroom IR Input
24 Remote IR Input
25 Remote IR Output
26 Coaxial Digital Audio Output
27 Multiroom Audio Outputs

28 Optical Digital Audio Output
29 CD Audio Inputs
30 DVD Audio Inputs
31 Optical Digital Audio Inputs
32 Tape Inputs
33 Tape Outputs
34 Coaxial Digital Audio Inputs
35 Video 1 Audio Inputs
36 Video 1 Audio Outputs
37 Video 2 Audio Inputs
38 8-Channel Direct Inputs
39 Video 2 Audio Outputs
40 Video 3 Audio Inputs

NOTE: To assist in making the correct connections for multichannel input, output and speaker connections, all connection jacks and terminals are color-coded in conformance with the latest CEA standards as follows:

Front Left:	White
Front Right:	Red
Center:	Green
Surround Left:	Blue
Surround Right:	Gray
Surround Back Left:	Brown
Surround Back Right:	Tan

Subwoofer:	Purple
Digital Audio:	Orange
Composite Video:	Yellow
Component Video "Y":	Green
Component Video "Pr":	Red
Component Video "Pb":	Blue

1 **AM Antenna:** Connect the AM loop antenna supplied with the receiver to these terminals. If an external AM antenna is used, make connections to the **AM** and **GND** terminals in accordance with the instructions supplied with the antenna.

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

3 **Preamp Outputs:** Connect these jacks to an optional, external power amplifier for applications where higher power is desired.

4 **Subwoofer Output:** Connect this jack to the line-level input of a powered subwoofer. If an external subwoofer amplifier is used, connect this jack to the subwoofer amplifier input.

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

nal should be connected to the red (+) terminal on the Surround Right speaker with the older color-coding. Connect the black (–) terminal on the AVR580 to the matching black negative (–) terminals for each surround speaker. (See page 17 for more information on speaker polarity.)

6 **Front Speaker Outputs:** Connect these outputs to the matching + or – terminals on your left and right speakers. When making speaker connections always make certain to maintain correct polarity by connecting the color-coded (white for front left and red for front right)

(+) terminals on the AVR580 to the red (+) terminals on the speakers and the black (–) terminals on the AVR580 to the black (–) terminals on the speakers. See page 17 for more information on speaker polarity.

❼ Fan Vents: These ventilation holes are the output of the AVR580's airflow system. To ensure proper operation of the unit and to avoid possible damage to delicate surfaces, make certain that these holes are not blocked and that there is at least three inches of open space between the vent holes and any wooden or fabric surface. It is normal for the fan to remain off at most normal volume levels. An automatic termperature sensor turns the fan on only when it is needed.

❽ Center Speaker Outputs: Connect these outputs to the matching + and – terminals on your center channel speaker. In conformance with the new CEA color-code specification, the green terminal is the positive, or "+," terminal that should be connected to the red (+) terminal on speakers with the older color-coding. Connect the black (–) terminal on the AVR to the black (–) terminal on your speaker. (See page 17 for more information on speaker polarity.)

❾ Surround Back/Multiroom Speaker Outputs: These speaker terminals are normally used to power the surround back left/surround back right speakers in a 7.1 channel system. However, they may also be used to power the speakers in a second zone, which will receive the output selected for a multiroom system. To change the output fed to these terminals from the default of the Surround Back speakers to the Multiroom Output, you must change a setting in the Advanced Menu of the OSD system. See page 37 for more information on configuring this speaker output. In normal surround system use, the brown and black terminals are the surround back left channel positive (+) and negative (–) connections and the tan and black terminals are the surround back right positive (+) and negative (–) terminals. For multiroom use, connect the brown and black SBL terminals to the red and black connections on the left remote zone speaker and connect the tan and black SBR terminals to the red and black terminals on the right remote zone speaker.

❿ AC Power Cord Jack: Connect the AC power cord to this jack when the installation is complete. To ensure safe operation, use only the power cord supplied with the unit. If a replacement is required it must be of the same type and capacity.

Depending on the electrical requirements in your area or the wiring in your home, the power cords included with your AVR may not be the correct ones, and you may need to contact your local JBL distributor to obtain the correct power cord.

⓫ Region Selector: Select the position corresponding to the country in which the AVR will be used (C, S or K) so that the video standard and the FM tuner's frequency increments will be correct. See page 35 for more information on setting the **Region Selector ⓫.**

IMPORTANT NOTE: Any adjustments made to the **Region Selector ⓫** will not take effect unless the unit is first fully turned off by pressing the **Main Power Switch ❶** until it pops out and the word "OFF" appears on the top of the button.

⓬ Video Monitor Outputs: Connect these jacks to the composite or S-Video input of a TV monitor or video projector to view the on-screen menus and the output of any standard video source selected by the receiver's video switcher.

⓭ DVD Video Inputs: Connect the composite or S-Video outputs of a DVD player or other video source to these jacks.

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

⓯ Video 1 Video Outputs: Connect the composite or S-Video REC/IN jacks of a VCR or other video recording device such as a DVD recorder or PVR to these jacks.

⓰ Video 2 Video Inputs: Connect the composite or S-Video PLAY/OUT jacks of a VCR or other video source to these jacks.

⓱ Video 2 Video Outputs: Connect the composite or S-Video REC/IN jacks of a VCR or other video recording device such as a DVD recorder or PVR to these jacks.

⓲ Video 3 Video Inputs: Connect the composite or S-Video PLAY/OUT jacks of a VCR or other video source to these jacks.

⓳ Component Video Monitor Outputs: Connect these outputs to the component video inputs of a video projector or monitor. When a source connected to one of the **Component Video Inputs ⓴㉑** is selected, the signal will be sent to these jacks.

⓴ Component Video 1 Inputs: Connect the Y/Pr/Pb component video outputs of a DVD player, HDTV set-top converter, satellite receiver or other video source device with component video outputs to these jacks.

㉑ Component Video 2 Inputs: Connect the Y/Pr/Pb component video outputs of an HDTV set-top converter, satellite receiver or other video source device with component video outputs to these jacks.

㉒ RS-232 Port: This jack is used to enable the AVR580 to be controlled by an external computer or programmable remote system that uses RS-232 commands. Due to the complexity of RS-232 connections, we recommend that they be made by a trained and qualified custom installer. See page 18 for more information on the RS-232 control port.

㉓ Multiroom IR Input: Connect the output of an IR sensor in a remote room to this jack to operate the AVR580's multiroom control system.

㉔ Remote IR Input: If the AVR580's front-panel IR sensor is blocked due to cabinet doors or other obstructions, an external IR sensor may be used. Connect the output of the sensor to this jack.

㉕ Remote IR Output: This connection permits the IR sensor in the receiver to serve other remote controlled devices. Connect this jack to the "IR IN" jack on JBL (or other compatible) equipment.

㉖ Coaxial Digital Audio Output: Connect this jack to the coaxial digital input of a CD-R/RW, MiniDisc or other digital recorder.

㉗ Multiroom Audio Outputs: Connect these jacks to the optional external audio power amplifier and video distribution system that delivers the source selected for multizone distribution.

㉘ Optical Digital Audio Output: Connect this jack to the optical digital input connector on a CD-R/RW, MiniDisc or other digital recorder.

㉙ **CD Audio Inputs:** Connect these jacks to the analog audio output of a compact disc player or CD changer.

㉚ **DVD Audio Inputs:** Connect the left/right analog outputs of a DVD player or other audio source to these jacks.

㉛ **Optical Digital Audio Inputs:** Connect the optical digital output from a DVD player, HDTV receiver, the S/P-DIF output of a compatible computer sound card playing MP3 files or streams, LD player or CD player to these jacks. The signal may be a Dolby Digital signal, a DTS signal or a standard PCM digital source.

㉜ **Tape Inputs:** Connect these jacks to the **PLAY/OUT** jacks of an audio recorder.

㉝ **Tape Outputs:** Connect these jacks to the **RECORD/INPUT** jacks of an audio recorder.

㉞ **Coaxial Digital Audio Inputs:** Connect the coax digital output from a DVD player, HDTV receiver, the S/P-DIF output of a compatible computer sound card playing MP3 files or streams, LD player or CD player to these jacks. The signal may be a Dolby Digital signal, DTS signal or a standard PCM digital source. Do not connect the RF digital output of an LD player to these jacks.

㉟ **Video 1 Audio Inputs:** Connect the left/right PLAY/OUT audio output jacks on a VCR or other video source to these jacks.

㊱ **Video 1 Audio Outputs:** Connect the left/right REC/IN audio input jacks on a VCR or other video source to these jacks.

㊲ **Video 2 Audio Inputs:** Connect the left/right PLAY/OUT audio output jacks on a VCR or other video source to these jacks.

㊳ **8-Channel Direct Inputs:** These jacks are used for connection to source devices such as DVD-Audio or SACD players with discrete analog outputs. Depending on the source device in use, all eight jacks may be used, though in many cases only connections to the front left/right, center, surround left/right and LFE (subwoofer input) jacks will be used for standard 5.1 audio signals.

㊴ **Video 2 Audio Outputs:** Connect the left/right REC/IN audio input jacks on a VCR or other video source to these jacks.

㊵ **Video 3 Audio Inputs:** Connect the left/right PLAY/OUT audio output jacks on a VCR, PVR, cable set-top, satellite receiver, HDTV receiver or other video source to these jacks.

MAIN REMOTE CONTROL FUNCTIONS

❶ Power Off Button
❷ IR Transmitter Window
❸ Program/SPL Indicator
❹ Power On Button
❺ Input Selectors
❻ AVR Selector
❼ AM/FM Tuner Select
❽ 6-Channel/8-Channel Direct Input
❾ Test Button
❿ Sleep Button
⓫ Surround Mode Selector
⓬ Night Mode
⓭ Channel Select Button
⓮ ▲/▼ Buttons
⓯ ◄ Button
⓰ Set Button
⓱ Digital Select
⓲ Numeric Keys
⓳ Tuner Mode
⓴ Direct Button
㉑ Tuning Up/Down
㉒ OSD Button
㉓ Dolby Mode Selector
㉔ DTS Digital Mode Selector
㉕ Logic 7 Mode Select Button
㉖ Skip Down Button
㉗ Transport Controls
㉘ Skip Up Button
㉙ Stereo Mode Select Button
㉚ DTS Neo:6 Mode Select
㉛ Macro Buttons
㉜ Disc Skip Button
㉝ Preset Up/Down
㉞ Clear Button
㉟ Memory Button
㊱ Delay/Prev. Ch.
㊲ ► Button
㊳ Speaker Select
㊴ Multiroom
㊵ Volume Up/Down
㊶ SPL Selector
㊷ Learn Button
㊸ Mute
㊹ EzSet Sensor Microphone

NOTE: The function names shown here are each button's feature when used with the AVR580. Most buttons have additional functions when used with other devices. See pages 46–47 for a list of these functions.

JBL
AVR580

IMPORTANT NOTE: The AVR580's remote may be programmed to control up to eight devices, including the AVR580. Before using the remote, it is important to remember to press the **Input Selector Button ❺** that corresponds to the unit you wish to operate. In addition, the AVR580's remote is shipped from the factory to operate the AVR580 and JBL DVD players. The remote is also capable of operating a wide variety of other products using the control codes that are part of the remote. Before using the remote with other products, follow the instructions on pages 40–41 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 AVR580. (See page 42 for information about alternate functions for the remote's buttons.)

❶ Power Off Button: Press this button to place the AVR580 or a selected device in the Standby mode. Note that this will turn off the main room functions, but if the Multiroom system is activated, it will continue to function.

❷ IR Transmitter Window: Point this window towards the AVR580 when pressing buttons on the remote to make certain that infrared commands are properly received.

❸ Program/SPL Indicator: This three-color indicator is used to guide you through the process of programming the remote or learning commands from a remote into the AVR580's remote code memory and it is also used as a level indicator when using the remote's EzSet capabilities. (See page 27 for more information on setting output levels, and see page 41 for information on programming the remote.)

❹ Power On Button: Press this to turn on the power to a device selected by pressing one of the **Input Selectors ❺**.

❺ Input Selectors: Pressing one of these buttons will perform three actions at the same time. First, if the AVR580 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 AVR580. 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 ❻** again to operate the AVR580's functions with the remote.

❻ AVR Selector: Pressing this button will switch the remote so that it will operate the AVR580's functions. If the AVR580 is in the Standby mode, it will also turn the AVR580 on.

❼ AM/FM Tuner Select: Press this button to select the AVR580's tuner as the listening choice. Pressing this button when the tuner is already in use will select between the AM and FM bands.

❽ 6-Channel/8-Channel Direct Input: Press this button to select the device connected to the **8-Channel Direct Inputs ❸❽** . (See page 30 for more information.)

❾ Test Button: Press this button to begin the sequence used to calibrate the AVR580's output levels. (See page 27 for more information on calibrating the AVR580.)

❿ Sleep Button: Press this button to place the unit in the Sleep mode. After the time shown in the display, the AVR580 will automatically go into the Standby mode. Each press of the button changes the time until turn-off in the following order:

$$90\text{ min} \rightarrow 80\text{ min} \rightarrow 70\text{ min} \rightarrow 60\text{ min} \rightarrow 50\text{ min}$$
$$40\text{ min} \rightarrow 30\text{ min} \rightarrow 20\text{ min} \rightarrow 10\text{ min} \rightarrow OFF$$
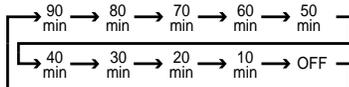
This button is also used to change channels on your TV when the TV is selected.

When the AVR580 remote is being programmed with the codes to operate another device, this button is also used in the "Auto Search" process. (See page 41 for more information on programming the remote.)

⓫ Surround Mode Selector: Press this button to cycle through the DSP, VMAx and Stereo surround modes such as Hall, Theater, VMAx Near and Far, and Surround Off. This button is also used to tune channels when the TV is selected using the device **Input Selector ❺**. When the AVR580 remote is being programmed with the codes of another device, this button is also used in the "Auto Search" process. (See page 41 for more information on programming the remote.)

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

⓭ Channel Select Button: This button is used to start the process of setting the AVR580's output levels to an external source. Once this button is pressed, use the **▲/▼ Buttons ⓮** to select the channel being adjusted, then press the **Set Button ⓰**, followed by the **▲/▼ Buttons ⓮** again, to change the level setting. (See page 36 for more information.)

⓮ ▲/▼ Buttons: These multipurpose buttons are used to change or scroll through items in the on-screen menus, make configuration settings such as digital inputs or delay timing, or to select surround modes. When changing a setting, first press the button for the function or setting to be changed (e.g., press the **Surround Mode Selector ⓫** to select a sound field mode or the **Digital Select Button ⓱** to change a digital input) and then press one of these buttons to scroll through the list of options or to increase or decrease a setting. The sections in this manual describing the individual features and functions contain specific information on using these buttons for each application.

⓯ ◄ Button: This button is used to change the menu selection or setting during some of the setup procedures for the AVR580.

⓰ Set Button: This button is used to enter settings into the AVR580's memory. It is also used in the setup procedures for delay time, speaker configuration and channel output level adjustment.

⓱ Digital Select: Press this button to assign one of the digital inputs ❸❶ ❸❹ ⓱⓲ to a source. (See page 31 for more information on using digital inputs.)

⓲ Numeric Keys: These buttons serve as a 10-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.

⓳ Tuner Mode: Press this button when the tuner is in use to select between automatic tuning and manual tuning.

When the button is pressed so that the **AUTO Indicator** goes out, pressing the **Tuning Buttons ㉑9E** will move the frequency up or down in single-step increments. When the FM band is in use, pressing this button when a station's signal is weak will change to monaural reception. (See page 35 for more information.)

⓴ Direct Button: Press this button when the tuner is in use to start the sequence for direct entry of a station's frequency. After pressing the button, simply press the proper **Numeric Keys ⑱** to select a station. (See page 35 for more information on the tuner.)

㉑ Tuning Up/Down: When the tuner is in use, these buttons will tune up or down through the selected frequency band. If the **Tuner Mode Button ⑲⑯** has been pressed so that the **AUTO Indicator** is illuminated, pressing and holding either of the buttons for three seconds will cause the tuner to seek the next station with acceptable signal strength for quality reception. When the **AUTO Indicator** is NOT illuminated, pressing these buttons will tune stations in single-step increments. (See page 35 for more information.)

㉒ OSD Button: Press this button to activate the On-Screen Display (OSD) system used to set up or adjust the AVR580's parameters.

㉓ Dolby Mode Selector: This button is used to select from among the available Dolby Surround processing 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. (See page 34 for the available Dolby surround mode options.)

㉔ DTS Digital Mode Selector: When a DTS-encoded digital source is selected, each press of this button will scroll through the available DTS modes. The specific choice of modes will vary according to whether or not the source material contains DTS-ES 6.1 Discrete encoding. When a DTS source is not in use, this button has no function. (See page 34 for the available DTS Digital options.)

㉕ Logic 7 Mode Select Button: Press this button to select from among the available Logic 7 surround modes. (See page 34 for the available Logic 7 options.)

㉖ Skip Down Button: This button does not have a direct function with the AVR580, but when used with a compatibly programmed CD or DVD player, it will change to the previous track or chapter on the current disc.

㉗ Transport Controls: These buttons do not have any functions for the AVR580, but they may be programmed for the forward/reverse play operation of a wide variety of CD or DVD players, and audio or video cassette recorders. (See page 44 for more information.)

㉘ Skip Up Button: This button does not have a direct function with the AVR580, but when used with a compatibly programmed CD or DVD player, it will change to the next track or chapter on the current disc.

㉙ Stereo Mode Select Button: Press this button to select a stereo listening mode. The first press of the button places the AVR 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.

㉚ DTS Neo:6 Mode Select: Press this button to select a DTS Neo:6 mode. These modes take a two-channel stereo- or matrix surround-encoded source and create a full five-, six- or seven-channel sound field. (See page 34 for the available DTS Neo:6 options.)

㉛ Macro Buttons: Press these buttons to store or recall a "Macro", which is a preprogrammed sequence of commands stored in the remote. (See page 42 for more information on storing and recalling macros.)

㉜ Disc Skip Buttons: This button has no direct function for the AVR580 but is most often used to change to the next disc in a CD or DVD player when the remote is programmed for that type of device. (See page 43 for more information on using the remote with products other than the AVR580.)

㉝ Preset Up/Down: When the tuner is in use, press these buttons to scroll through the stations programmed into the AVR580's memory. When some source devices, such as CD players, VCRs and cassette decks, are selected using the device **Input Selectors ❺**, these buttons may function as Chapter Step or Track Advance.

㉞ Clear Button: Press this button to clear incorrect entries when using the remote to directly enter a radio station's frequency.

㉟ Memory Button: Press this button to enter a radio station into the AVR580's preset memory. Once the **MEMORY Indicator G** flashes, you have five seconds to enter a preset memory location using the **Numeric Keys ⑱**. (See page 35 for more information.)

㊱ Delay/Prev Ch.: Press this button to begin the process for setting the delay times used by the AVR580 when processing surround sound. After pressing this button, the delay times are entered by pressing the **Set Button ⑯** and then using the ▲/▼ **Buttons ⑭** to change the setting. Press the **Set Button ⑯** again to complete the process. (See page 26 for more information.)

㊲ ▶ Button: Press this button to change a setting or selection when configuring many of the AVR580's settings.

㊳ Speaker Select: Press this button to begin the process of configuring the AVR580's bass management system for use with the type of speakers used in your system. Once the button has been pressed, use the ▲/▼ **Buttons ⑭** to select the channel you wish to set up. Press the **Set Button ⑯** and then select another channel to configure. When all adjustments have been completed, press the **Set Button ⑯** twice to exit the settings and return to normal operation. (See page 24 for more information.)

㊴ Multiroom: Press this button to activate the multiroom system or to begin the process of changing the input or volume level for the second zone. (See page 39 for more information on the Multiroom system.)

㊵ Volume Up/Down: Press these buttons to raise or lower the system volume.

㊶ SPL Selector: This button activates the AVR580's EzSet function to quickly and accurately calibrate the AVR580's output levels. Press and hold the button for three seconds and then release it. Press the "**5**" or "**7**" **Numeric Key ⑱** to indicate whether you are using a 5.1-channel or a 6.1/7.1-channel speaker system with the AVR580. The test tone will begin circulating, and the **Program/SPL Indicator ❸** will change colors. During

this sequence, EzSet will automatically adjust the output levels for all channels until they are equal, as shown by the **Program/SPL Indicator ❸** lighting green for each channel. Press this button again when the adjustment is complete to turn off the test tone. (See page 27 for more information on EzSet.)

㊷ Learn Button: Press this button to begin the process of "learning" the codes from another product's remote into the AVR580's remote. (See page 41 for more information on using the remote's learning function.)

㊸ Mute: Press this button to momentarily silence the AVR580 or TV set being controlled, depending on which device has been selected. When the AVR580 remote is being programmed to operate another device, this button is pressed with the **Input Selector Button ❺** to begin the programming process. (See page 41 for more information on programming the remote.)

㊹ EzSet Sensor Microphone: The sensor microphone for the EzSet microphone is behind these slots. When using the remote to calibrate speaker output levels using EzSet, be sure that you do not hold the remote in a way that covers these slots. (See page 27 for more information on using EzSet.)
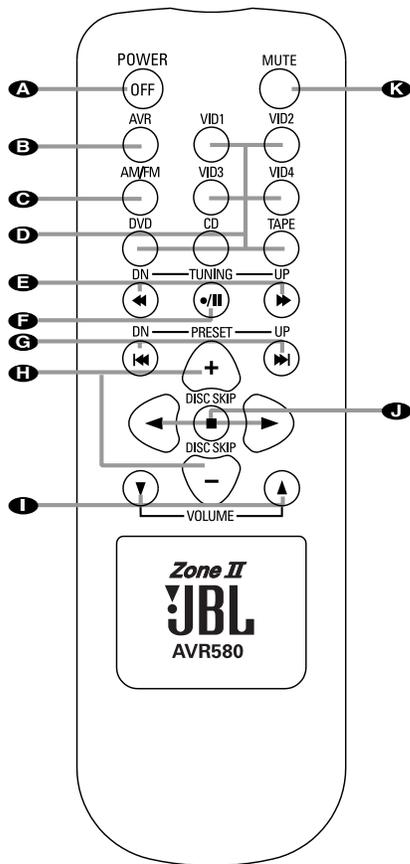
A Power Off: When used in the room where the AVR580 is located, press this button to place the unit in Standby. When it is used in a remote room with a sensor that is connected to the **Multiroom IR Input ㉘** jack, this button turns the Multiroom system on and off.

B AVR Selector: Press this button to turn on the AVR580. The input in use when the unit was last on will be selected.

C AM/FM Tuner Select: Press this button to select the Tuner as the input to the Multiroom system. Press it again to change between the AM and FM bands.

D Input Selectors: When the AVR580 is off, press one of these buttons to select a specific input and turn the unit on. When the unit is already in use, pressing one of these buttons will change the input.

E Tuning Up/Down – Fast Play: When this remote is used in the same room as the AVR580, these buttons may be used to change the frequency of the tuner. These buttons may also control the Fast Play or Fast Reverse functions of compatible CD, DVD or cassette decks in the same room, or from a remote room when an IR link is connected to the AVR580.

F Record/Pause: Press this button to activate the Record or Pause function on compatible CD, DVD or cassette deck products.

G Preset Up/Down – Track Skip: When the AVR580's tuner is selected as the input source, these buttons will move up or down through the list of stations that have been stored in the preset memory. When a CD or DVD changer or player is selected, these buttons activate the Forward or Reverse Track or Chapter Skip functions.

H Disc Skip: Press these buttons to change discs on compatible JBL DVD players.

I Volume Up/Down: When used in the room where the AVR580 is located, press this button to raise or lower the volume in that room. When used in a remote room with a sensor that is connected to the **Multiroom IR Input ㉘** jack, this button will raise or lower the volume in the remote room.

J Play Forward/Reverse/Stop: Press these buttons to control compatible CD, DVD or cassette players.

● Mute: When used in the room where the AVR580 is located, press this button to temporarily silence the unit. When it is used in a remote room with a sensor that is connected to the **Multiroom IR Input ㉘** jack, this button will temporarily silence the feed to the remote room only. Press the button again to return to the previous volume level.

A Power Off
B AVR Selector
C AM/FM Tuner Select
D Input Selectors
E Tuning Up/Down – Fast Play
F Record/Pause
G Preset Up/Down – Track Skip
H Disc Skip
I Volume Up/Down
J Play Forward/Reverse/Stop
● Mute

NOTE: The Zone II remote may be used in either the same room where the AVR580 is located, or it may be used in a separate room with an optional infrared sensor that is connected to the AVR580's **Multiroom IR Input ㉘** jack. When it is used in the same room as the AVR580, it will control the functions of the AVR580 or any compatible JBL products in that room. When it is used in a separate room via a sensor connected to the **Multiroom IR Input ㉘** jack, the buttons for Power, Input Source, Volume and Mute will control the source and volume for the second zone, as connected to the **Multiroom Audio Output ㉗** jacks. (See page 39 for complete information on using the Multiroom system.)

System Installation

After unpacking the unit, locating it in a place with adequate ventilation 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 AVR and ALL source equipment from the AC outlet 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 Audio Inputs** ㉙.

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

2. Connect the analog Play/Out jacks of a cassette deck, MD, CD-R or other audio recorder to the **Tape Input Jacks** ㉜. Connect the analog Record/In jacks on the recorder to the **Tape Output Jacks** ㉝ on the AVR580.

3. Connect the output of any digital sources such as a CD or DVD changer or player, advanced video game, a digital satellite receiver, HDTV tuner or digital cable set-top box or the output of a compatible computer sound card to the **Optical** and **Coaxial Digital Audio Inputs** ㉛ ㉞ 🔟🔟.

4. Connect the coaxial or optical **Digital Audio Outputs** ㉖㉘ on the rear panel of the AVR580 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 it to the **AM** and **GND Screw Terminals** ❶.
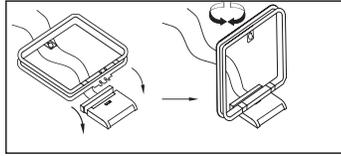
6. Connect the supplied FM antenna to the **FM** (75-ohm) **Connection** ❷. The FM antenna may be an external roof antenna, an inside powered or wire-lead antenna or a connection from a cable TV system. If the antenna or connection uses 300-ohm twin-lead cable, you must use the 300-ohm-to-75-ohm adapter supplied with the unit to make the connection.

7. Connect the **Front, Center, Surround and Surround Back Speaker Outputs** ❺❻❽❾ 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 multistrand copper with a gauge of 14 or smaller. Remember that in specifying cable, the lower the number, the thicker the cable.

Cable with a gauge of 16 may be used for short runs of less than 3 meters (10 feet). We do not recommend that you use cables with an AWG equivalent of 18 or higher, due to the power loss and degradation in performance that will occur.

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

When connecting wires to the speakers, be certain to observe proper polarity. Note that the positive (+) terminal of each speaker connection now carries a specific color code, as noted on page 9. However, most speakers still use a red terminal for the positive (+) connection. Connect the "negative" or "black" wire to the same terminal on both the receiver and the speaker.

NOTE: While most speaker manufacturers adhere to an industry convention of using black terminals for negative and red ones for positive, some 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 piece of cable to connect the front-left and front-right or surround-left and surround-right speakers, even if the speakers are a different distance from the AVR580.

8. Connections to a subwoofer are normally made via a line-level audio connection from the **Subwoofer Output** ❹ to the line-level input of a subwoofer with a built-in amplifier. When a passive subwoofer is used, the connection first goes to a power amplifier, which will be connected to one or more subwoofer speakers. If you are using a powered subwoofer that does not have line-level input connections, follow the instructions furnished with the speaker for connection information.

9. If an external 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 **8-Channel Direct Inputs** ㊳.

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.

1. Connect a VCR's or other video source's audio and video Play/Out jacks to the **Video 1 Audio** and **Video Input Jacks** ⑭㉟ on the rear panel. The Audio and Video Record/In jacks on the VCR should be connected to the **Video 1 Audio** and **Video Output Jacks** ⑮㊱ on the AVR580.

2. Connect the analog audio and video outputs of a satellite receiver, cable TV converter or any other video source to the **Video 2 Audio** and **Video Input Jacks** ⑯㊲.

3. Connect the analog audio and video outputs of a DVD or laser disc player to the **DVD Audio** and **Video Inputs** ⑬㉚.

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** ㉛ ㉞ ⑰⑱.

5. If you are using your television as a signal source, then connect its analog audio outputs to the **Video 3 Audio Input Jacks** ㊵. NEVER connect the TV's video outputs to the **Video 3 Video Input Jacks** ⑱ or to any other inputs on the AVR580. If you are not using your television as a signal source (e.g., if you are separately connecting a cable TV box to the **Video 2 Audio** and **Video Input Jacks** ⑯ ㊲), then do not connect any of the TV's outputs to any inputs on the AVR580. In that case you should only connect the AVR's **Video Monitor Outputs** ❶ to the TV as indicated in paragraph 6 below. However, you may still find it convenient to program the VID3/TV input selector on the remote control for your TV as described on page 41. If you prefer, you may connect another type of video source, such as a second VCR, to the AVR580's **Video 3 Audio** and **Video Input Jacks** ⑱㊵. You may then reassign that device type to the VID3/TV input selector on the remote as described on page 45, and you will not be able to control your TV using the AVR remote.

6. Connect the **Video Monitor Output** ❶ jacks on the receiver to the composite or S-Video input of your television monitor or video projector.

7. If your DVD player and monitor both have component video connections, connect the component outputs of the DVD player to the **Component Video 1 Inputs** ⑳. Even when component video connections are used, the audio connections should still be made to either the analog **DVD Audio Inputs** ㉚ or any of the **Optical** or **Coaxial Digital Input Jacks** ㉛ ㉞. Note, however, that the **Coaxial 1 Digital Audio Input** ㉛ is assigned to the DVD source by default. For more information on reassigning the digital inputs to various sources, see pages 22 and 32. The **Component Video 1 Inputs** ⑳ are assigned to the DVD source and may not be reassigned.

8. If another device with component video outputs is available, connect it to the **Component Video 2 Inputs** ㉑. The audio connections for this device should be made to either the **Video 2 Audio Inputs** ㊲ or any of the **Optical** or **Coaxial Digital Input Jacks** ㉛ ㉞. The **Component Video 2 Inputs** ㉑ are assigned to the Video 2 source and may not be reassigned. If you are using a cable television, satellite receiver, HDTV or other video set-top box that has component video outputs, it is recommended that you designate it as the Video 2 source when programming the remote control.

9. If the component video inputs are used, connect the **Component Video Monitor Outputs** ⑲ to the component video inputs of your TV, projector or display device.

10. If you have a camcorder, video game or other audio/video device that is connected to the AVR on a temporary rather than permanent basis, connect the audio, video and digital audio outputs of that device to the **Front-Panel Inputs** ⑰⑱⑲⑳. A device connected here is selected as the Video 4 input, and the digital inputs must be assigned to the Video 4 input. (See page 22 for more information on input configuration.)

Video Connection Notes:
• When the component video jacks are used, the on-screen menus are not visible and you must switch to the standard composite or S-Video input on your TV to view them.

• The AVR580 will accept either standard composite, S-Video or Y/Pr/Pb component video signals. However, it will not convert composite or S signals to component video.

• Component and composite video signals may only be viewed in their native formats. Thus both connections must be made from the AVR580 to the TV if both composite video and S-Video sources are used, and the appropriate input on the TV must be selected.

However, only one video connection should be made between the source (e.g., VCR) and the AVR580.

• Only the video cables (the yellow composite video; the S-Video or the green, red and blue component video cables) need to be connected to the TV or video display. The volume on the TV should be reduced to minimum.

System and Power Connections

The AVR580 is designed for flexible use with multiroom systems, external control components and power amplifiers.

Main Room Remote Control Extension
If the receiver is placed behind a solid or smoked glass cabinet door, the obstruction may prevent the remote sensor from receiving commands. In this event, an optional remote sensor may be used. Connect the output of the remote sensor to the **Remote IR Input** ㉔ jack.

If other components are also prevented from receiving remote commands, only one sensor is needed. Simply use this unit's sensor or a remote eye by running a connection from the **Remote IR Output** ㉕ jack to the Remote IR Input jack on compatible equipment.

Multiroom IR Link
The remote room IR receiver should be connected to the AVR580 via standard coaxial cable. Plug the IR connection cable into the **Multiroom IR Input** ㉓ jack on the AVR580's rear panel.

If other compatible source equipment is part of the main room installation, the **Remote IR Output** ㉕ jack on the rear panel should be connected to the IR IN jack on source equipment. This will enable the remote room location to control source equipment functions.

NOTE: All remotely controlled components must be linked together in a "daisy chain." Connect the **IR OUT** jack of one unit to the **IR IN** of the next to establish this chain.

Multiroom Connections

The AVR580 is equipped with multizone capabilities that allow it to send a separate audio source to the remote zone from the one selected for use in the main room.

Depending on your system's requirement, three options are available for audio connection:

Option 1: Use high-quality, shielded audio interconnect cable from the AVR580's location to the remote room. In the remote room, connect the interconnect cable to a stereo power amplifier. The amplifier will be connected to the room's speakers. At the AVR580, plug the audio interconnect cables into the **Multiroom Audio Output ㉗** jacks on the AVR580's rear panel.

Option 2: Connect the **Multiroom Audio Output ㉗** jacks on the AVR580 to the inputs of an optional stereo power amplifier. Run high-quality speaker wire from the amplifier to the speakers in the remote room.

Option 3: Taking advantage of the AVR580's built-in seven-channel amplifier, it is possible to use two of the amplifier channels to power speakers in the remote room. When using this option, you will not be able to use the full 7.1-channel capabilities of the AVR580 in the main listening room, but you will be able to add another listening room without additional external power amplifiers. To use the internal amplifiers to power a remote zone, connect the speakers for the remote room location to the **Surround Back/Multiroom Speaker Outputs ⑨**. Before using the remote room, you will need to configure the amplifiers for surround operation by changing a setting in the Advanced Select menu, following the instructions shown on page 37.

NOTE: For all options, you may connect an optional IR sensor in the remote room to the AVR580 via an appropriate cable. Connect the sensor's cable to the **Multiroom IR Input ㉓** on the AVR580 and use the Zone II remote to control the room volume. Alternatively, you may install an optional volume control

between the output of the amplifiers and the speakers.

RS-232 Connections

The AVR580 includes an RS-232 serial port connection that may be used to control the unit via compatible optional, external keypads or control systems. The physical connection to the AVR580 from the control device is a standard D-9 connection, but to ensure compatible and proper operation, specific software commands and pin wiring schemes are required. Due to the complexity of RS-232 connections, we recommend that they be made only by trained installers familiar with their use. To obtain additional information on the use of the AVR580 with RS-232 control, please contact your local JBL distributor.

The AVR580 features a removable power cord that allows wires to be run to a complex installation so that the unit itself need not be installed until it is ready for connection. When all connections described above have been made, connect the AC power cord to the **AC Power Cord Jack ⑩**.

The AVR580 draws significantly more current than other household devices, such as computers, that use removable power cords. For that reason, it is important that only the cord supplied with the unit, or obtained from your local JBL distributor for use in your area (or a direct replacement of identical capacity) be used.

Once the power cord is connected, you are almost ready to enjoy the AVR580's incredible power and fidelity!

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

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 60cm (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 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).

When the AVR580 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
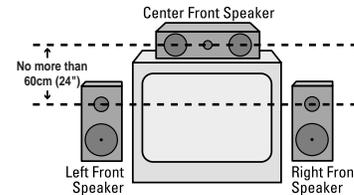
A) Front-Channel Speaker Installation With Direct-View TV Sets or Rear-Screen Projectors
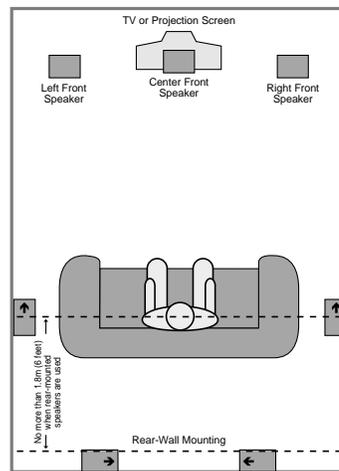
B) Rear speaker mounting is an alternate location for 5.1 systems. It is required for 7.1 operation.
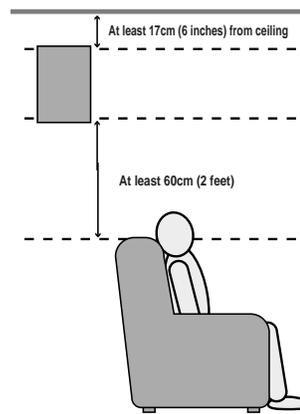
speakers should be located so that the bottom of the cabinet is at least 60cm (2 feet) higher than the listeners' ears when the listeners are seated in the desired area.

Rear surround speakers are required when a full 7.1-channel system is installed, and they may also be used in 5.1-channel systems as an alternative mounting position 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 60cm (2 feet) higher than the listeners' ears. The speakers should be no more than 1.8 meters (6 feet) behind the rear of the seating area.

If dipole-type speakers are used on either the side or rear walls of the room, please note that if there are arrows on the speakers they should face the front of the room for the side speakers, or toward the center of the wall for the rear speakers.

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 17cm (6") 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 AVR580'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 AVR580 to begin these final adjustments.

1. Make certain that the AC power cord is firmly inserted into the **AC Power Cord Jack** ❿ and plug the cord into an unswitched AC outlet. To maintain the unit's safety rating, DO NOT replace the power cord that was supplied with this product or provided by your local JBL distributor for use in your area with one that has a lower current capacity.

2. Press the **Main Power Switch** ❶ in until it latches and the word "OFF" on the top of the switch disappears inside the front panel. Note that the **Power Indicator** ❸ will turn red, indicating that the unit is in the Standby mode.

3. Remove the protective plastic film from the front-panel lens. If left in place, the film will affect the performance of your remote control.

4. Install the three supplied AAA batteries in the remote as shown. Be certain to follow the (+) and (–) polarity indicators that are on the top of the battery compartment.
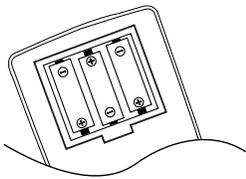
5. Turn the AVR580 on either by pressing the **System Power Control** ❷ on the front panel, or via the remote by pressing the **Power On Button** ❹, the **AVR Selector** ❻ or any of the **Input Selectors** ❺ ❼ on the remote. The **Power Indicator** ❸ will turn orange to confirm that the unit is on, and the **Main Information Display** ㉙ will also light.

Using the On-Screen Display
When making the following adjustments, you may find it easier to use the AVR580'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 that you have made a connection from the **Video Monitor Out Jack** ❶ on the rear panel to the composite or

S-Video input of your TV or projector. In order to view the AVR580's displays, the correct video source must be selected on the video display. 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 AVR580 warranty and may not be covered by the projector/TV set's warranty.

The AVR580 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** ㉒. When this button is pressed, the MASTER MENU (Figure 1) will appear, and adjustments are made from the individual menus.


```
     ** MASTER MENU **

 ▶  INPUT SETUP
    SURROUND SELECT
    SPEAKER SETUP
    DELAY ADJUST
    CHANNEL ADJUST
    MULTI-ROOM
    ADVANCED
```
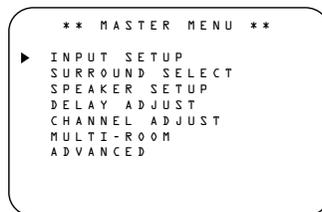
Figure 1

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 **Digital Select Button** ⓱ and then press the ▲/▼ **Buttons** ⓮ to scroll through the list of options as they appear in the on-screen display or the **Lower Display Line** Ⓑ.

To use the full-OSD menu system, press the **OSD Button** ㉒. When the menu is

on the screen, press the ▲/▼ **Buttons** ⓮ until the on-screen ▶ cursor is next to the item you wish to adjust, and then press the **Set Button** ⓰ 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** ㉙ Ⓐ Ⓑ. When the full-OSD menu system is used, OSD ON will appear in the **Upper Display Line** Ⓐ and the **OSD Indicator** Ⓒ will light to remind you that a video display must be used. When the semi-OSD system is used in conjunction with the discrete configuration buttons, the on-screen display will show a single line of text with the current menu selection. That selection will also be shown in the **Upper Display Line** Ⓐ or the **Lower Display Line** Ⓑ, depending on which parameter is being adjusted.

Setting the System Configuration Memory
The AVR580 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 customize the way in which you listen to each source and have the AVR580 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 AVR580 have all inputs configured for an analog audio input except for the DVD input, where the **Coaxial Digital Audio Input 1** ㉞ is the default. The default speaker settings are for "Small" speakers at all positions, and the subwoofer on. However, once the DSP processing system is used the first time for any input, the speaker settings will automatically default to "Small" at all positions with the subwoofer set to "LFE." The default setting for the surround modes is Logic 7

Music for two-channel signals and Dolby Pro Logic II-Movie for Dolby Digital 2.0 signals, although Dolby Digital 5.1 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 AVR580 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 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 MASTER 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 AVR580 is to configure each input. Once an input is selected, all settings for the Digital Input, Speaker Configuration, Surround Mode and Delay Timing will "attach" themselves to that input and be stored in a nonvolatile memory. This means that once made, the selection of an input will automatically recall those settings. For that reason, the procedures described below must be repeated for each input source so that you have the opportunity to customize each source to your specific listening requirements. However, once made, they need not be changed again unless you need to alter a setting.

When using the full-OSD system to make the setup adjustments, press the **OSD Button 22** once so that the MASTER MENU (Figure 1) appears. The ▶ cursor will be next to the INPUT SETUP line. Press the **Set Button 16** to enter

the menu and the INPUT SETUP menu (Figure 2) will appear on the screen. Press the ◀/▶ **Buttons 15 37** until the desired input name appears in the highlighted video, as well as being indicated in the front-panel **Input Indicators 28** by the desired input name lighting in orange. If the input will use the standard left/right analog inputs, no further adjustment is needed.

```
      * INPUT SETUP *
▶  INPUT :VIDEO 1
     DIGITAL IN :OPTICAL1

     BACK TO MASTER MENU
```
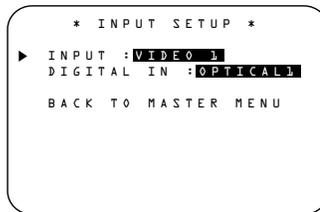
Figure 2

If you wish to associate one of the digital inputs with the selected input source, press the ▼ **Button 14** on the remote while the INPUT SETUP menu (Figure 2) is on the screen, and the on-screen cursor will drop down to the DIGITAL IN line. Press the ◀/▶ **Buttons 15 37** 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 ▼ **Button 14** once so that the ▶ cursor appears next to BACK TO MASTER MENU, and press the **Set Button 16**.

To change the digital input at any time using the discrete function buttons and the semi-OSD system, press the **Digital Select Button 17** on the remote. Within five seconds, make your input selection using the ▲/▼ **Buttons 14** until the desired digital or analog input is shown in the **Upper Display Line A** and in the on-screen display. Press the **Set Button 16** to enter the new digital input assignment.

When all needed adjustments have been made, press the ▼ **Button 14** until the ▶ cursor is next to BACK TO MASTER MENU to continue with the system configuration.

Surround Setup

The next step is to set the surround mode you wish to use with the input that was previously selected in the INPUT SETUP menu. 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 AVR580, it is best to select Dolby Pro Logic II or Logic 7 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 multichannel program material, and it is unlikely that surround-encoded material will be used. Alternatively, the Logic 7 Music mode is a good choice for stereo-only source material. See page 34 for more information on available surround modes. During normal use, when a two-channel signal is detected, the AVR580 will by default select the Logic 7 Music mode. When a Dolby Digital 2.0 signal is detected, the AVR580 will default to the Dolby Pro Logic II-Movie mode.

When selecting surround modes for digital program material, the AVR580 will always examine the data stream and automatically select Dolby Digital or DTS as applicable.

It is easiest to complete the surround setup using the full-OSD on-screen menus. From the MASTER MENU (Figure 1), press the ▲/▼ **Buttons 14** until the ▶ cursor is next to the SURROUND SELECT line. Press the **Set Button 16** until the SURROUND SELECT menu (Figure 3) is on the screen.

```
   ** SURROUND SELECT **
▶  DOLBY
   DTS
   LOGIC 7
   DSP(SURR)
   VMAx
   STEREO
   BACK TO MASTER MENU
```
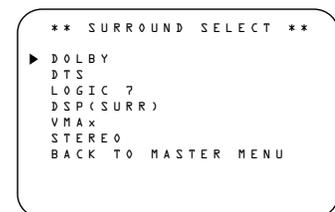
Figure 3

Each of the option lines on this menu (Figure 3) selects the surround mode category, and within each of those categories there will be a choice of the specific mode options. The choice of modes will vary according to the speaker configuration in your system. When the SURR BACK line of the SPEAKER SETUP menu (Figure 5) is set to NONE the AVR580 will be configured for 5.1-channel operation, and only the modes appropriate to a five-speaker sys-

tem will appear. When the SURR BACK line of the SPEAKER SETUP menu (Figure 5) is set to SMALL or LARGE the AVR580 will be configured for 6.1/7.1-channel operation, and additional modes such as Dolby Digital EX and DTS-ES will appear, as they are only available when seven main speakers are present. In addition, some of the modes available in the AVR580 will not appear unless a digital source is selected and is playing the correct bitstream.

To select the mode that will be used as the initial default for an input, first press the ▲/▼ **Buttons** ⓭ until the on-screen cursor is next to the desired mode's master category name, such as DOLBY, DTS, DSP (SURR) or VMAx. Next, press the **Set Button** ⓰ to view the sub-menu. Press the ◀/▶ **Buttons** ⓯ ㉞ to scroll through the available choices, and then press the ▼ **Button** ⓭ so that the cursor is next to BACK TO MASTER MENU to continue the setup process.

The following few paragraphs detail the instructions needed for modes with multiple choices.

On the DOLBY menu (Figure 4), choices include Dolby Digital, Dolby Pro Logic II-Music, Dolby Pro Logic II-Movie, Dolby Pro Logic II-Emulation and Dolby 3 Stereo. The Dolby Digital EX mode is only available when the system is set for 6.1/7.1 operation by configuring the Surround Back speakers to "Small" or "Large" as described on page 25. When a disc is playing that contains a special "flag" signal in the digital audio data stream, the EX mode will be selected automatically. It may also be selected using this menu or through the front panel or remote controls as shown on page 31. A complete explanation of these modes is found on page 34.

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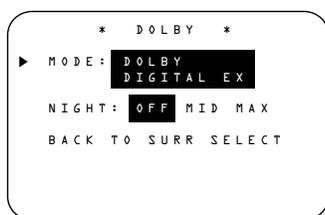
The Night mode is a feature of Dolby Digital that uses special processing to preserve the dynamic range and full intelligibility of a movie soundtrack while reducing the peak level. This prevents abruptly loud transitions from disturbing others, without reducing the sonic impact of a digital source.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

To adjust the Night mode setting, make certain that the ▶ cursor is on the NIGHT line of the DOLBY menu. Next, press ◀/▶ **Buttons** ⓯ ㉞ to choose between the following settings, as they appear in the on-screen display:

OFF: When OFF is highlighted, the Night mode will not function.

MID: When MID is highlighted, a mild compression will be applied.

MAX: When MAX is highlighted, a more severe compression algorithm will be applied.

We recommend that you select the MID setting as a starting point and change to the MAX setting later, if desired.

The Night mode may also be adjusted directly any time a Dolby Digital source is playing by pressing the **Night Mode Button** ⓬. When the button is pressed, D-RANGE will appear in the lower third of the video screen and in the **Main Information Display** ㉙. Press the ▲/▼ **Button** ⓭ within three seconds to select the desired setting.

When all settings for the surround setup have been made, press the ▲/▼ **Buttons** ⓭ so that the ▶ cursor is next to BACK TO MASTER MENU, and press the **Set Button** ⓰ to return to the MASTER MENU.

On the DTS menu, the choices made with the ◀/▶ **Buttons** ⓯ ㉞ on the remote are determined by a combination of the type of program material in use and whether the 5.1- or 6.1/7.1-channel configuration is in use.

When a DTS source is playing, the choice of modes for 7.1 systems will vary according to the type of program source (DTS 5.1, DTS-ES Matrix or DTS-ES Discrete). Press the ◀/▶ **Buttons** ⓯ ㉞ to scroll through the choices that are available for your system and the program in use. The DTS Neo:6 Music mode is available with analog stereo

sources and the DTS Neo:6 Cinema mode is available with analog matrix surround-encoded sources to deliver an enhanced 5.1-channel sound field.

When the 5.1 configuration is in use, the AVR will automatically select the 5.1 version of DTS processing when a DTS data stream is selected. When the 6.1/7.1 mode is selected, 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 34 for a complete explanation of the DTS modes.

On the LOGIC 7 menu, the choices made with the ◀/▶ **Buttons** ⓯ ㉞ on the remote are determined by whether the 5.1- or 6.1/7.1-channel configuration is in use. In either case, the selection of a Logic 7 mode enables the AVR580's processor to create fully enveloping, multichannel surround sound from either two-channel stereo- or matrix-encoded programming such as VHS cassettes, laser discs or television broadcasts produced with Dolby surround.

In the 5.1 configuration, you may select the Logic 7/5.1 Music, Cinema or Enhance mode. They work best with two-channel music, surround-encoded programs or standard two-channel programming of any type, respectively. For 6.1/7.1 configurations, the Music and Cinema modes may be selected. The Logic 7 modes are not available when either Dolby Digital or DTS digital soundtracks are in use. See page 34 for a complete explanation of the Logic 7 modes.

On the DSP (SURR) menu, the choices made with the ◀/▶ **Buttons** ⓯ ㉞ on the remote select from one of the DSP surround modes that are 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, VMAx Near and VMAx Far. The Hall and Theater modes are designed for multichannel installations, while the two VMAx modes are optimized for use in delivering a full surround field when only the front left and front right speakers are installed. See page 34 for a complete explanation of the DSP surround modes.

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On the STEREO menu, the choices made with the ◄/► **Buttons ⓯ ㊲** on the remote may either turn the surround processing off for a traditional two-channel stereo presentation, or select 5 STEREO or 7 STEREO depending on whether the 5.1 or 6.1/7.1 output is in use. The latter modes feed a two-channel presentation to all speakers, regardless of the number of speakers in use. See page 34 for a complete explanation of the 5 Stereo and 7 Stereo modes.

After the selections are made on the Dolby, DTS, Logic 7, DSP (Surround) or Stereo menus, press the ▲/▼ **Buttons ⓮** so that the cursor moves to the BACK TO MASTER MENU line and press the **Set Button ⓰.**

Speaker Setup

This menu tells the AVR580 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 AVR580's Triple Crossover feature, which 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 models are in use at the various speaker positions, this feature allows you to customize the bass management and redirection circuits with a precision not previously possible.

The factory default settings are "small" for the front left and right, center, and surround left and right speakers, with a subwoofer automatically enabled. If your system includes a 5.1 speaker system with smaller satellites for all channels and a subwoofer, then you do not need to configure your speakers and you may skip the rest of this section at this time.

It is easiest to enter the proper settings for 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 ㉒** to bring up the MASTER MENU (Figure 1), and then press the ▼ **Button ⓮** until the cursor is on the SPEAKER SETUP line. At this point, press the **Set Button ⓰** to bring up the SPEAKER SETUP menu (Figure 5).

```
    * SPEAKER SETUP *
►MODE          :SIZE X-OVER
 LEFT/RIGHT    :LARGE
 CENTER        :SMALL
 SURROUND      :SMALL
 SURR BACK     :SMALL
 SUBWOOFER     :SUB(LFE)
 BASS MGR      :GLOBAL
 BACK TO MASTER MENU
```
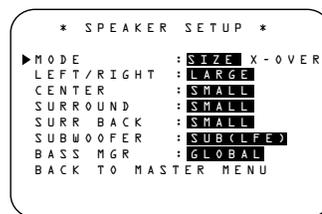
Figure 5

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 cursor is pointing toward the LEFT/RIGHT line, 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 ◄/► **Buttons ⓯ ㊲** so that either LARGE or SMALL appears, matching the appropriate description from the definitions shown above.

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 INDEPENDENT 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 ▼ **Button ⓮** on the remote to move the cursor to CENTER.

Press the ◄/► **Buttons ⓯ ㊲** on the remote to select the option that best describes your system, based on the speaker definitions shown below.

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

NOTE: If you choose Logic 7 as the surround mode for the particular input source for which you are configuring your speakers, the AVR580 will not make the "large" option available for the center speaker. This is due to the requirements of Logic 7 processing, and does not indicate a problem with your receiver.

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 only front left and right speakers are used, with no center or surround speakers, VMAx is a good alternative mode.

When you have completed your selection for the center channel, press the ▼ **Button ⓮** on the remote to move the cursor to **SURROUND**.

Press the ◀/▶ **Buttons ⓯ ㊲** on the remote to select the option that best describes the surround speakers in your system based on the speaker definitions shown on this page.

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. For optimal performance when no surround speakers are in use, the Dolby 3 Stereo mode should be used.

When you have completed your selections for the main surround channels, press the ▼ **Button ⓮** on the remote to move the cursor to **SURR BACK**. This line serves two functions in that it not only configures the setting for the surround back channels when they are present; it also tells the AVR580's processing system to configure the unit for either 5.1 or 6.1/7.1 operation.

Press the ◀/▶ **Buttons ⓯ ㊲** on the remote to select the option that best describes the speakers in use at the left and right back surround positions based on the definitions on this page:

When **NONE** is selected, the system will adjust so that only 5.1-channel surround processing/decoding modes are available and the surround back amplifier

channels will not be used. When this is the case for your system, you may wish to take advantage of the availability of this amplifier channel pair for use in powering a second set of speakers that have their source selected by the AVR580's multiroom control system. See page 37 for more information.

When **SMALL** is selected, the system will adjust so that the full complement of 6.1/7.1 surround processing/decoding modes are available, and low-frequency information below the crossover point will be sent 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 surround back channel.

When **LARGE** is selected, the system will adjust so that the full complement of 6.1/7.1 surround processing/decoding modes are 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 ▼ **Button ⓮** on the remote to move the cursor to **SUBWOOFER**.

Press the ◀/▶ **Buttons ⓯ ㊲** on the remote 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**, which is the "on" position.

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

• If no subwoofer is connected to the AVR580, press the ◀/▶ **Buttons ⓯ ㊲** on the remote so that **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 to the AVR580, 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 the AVR580 is being

used with a digital source that contains a dedicated Low-Frequency Effects, or LFE, soundtrack. This allows you to use both your main and subwoofer speakers to take advantage of the special bass created for certain movies. Press ◀/▶ **Buttons ⓯ ㊲** on the remote so that **SUB (LFE)** appears in the on-screen menu.

• If a subwoofer is connected and you wish to use it 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 ◀/▶ **Buttons ⓯ ㊲** on the remote so that **SUB LFE+L/R** appears in the on-screen menu. 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 below the frequency selected, as described below.

When all initial speaker "size" settings have been made, you now have the option to take advantage of the AVR580'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 midrange 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 and surrounds, by looking at the specifications page of the speakers' 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 figure 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, then no adjustments are needed and you may skip this section. However, should you wish to change one of the settings, please proceed by pressing the ▲

Button ⓴ so that the cursor moves back up to the top of the list of setting options. Press the ▲/▼ **Buttons ⓴** so that X-OVER is highlighted and the menu data will change to the screen shown in Figure 6.

```
    *  SPEAKER  SETUP  *
MODE        :SIZE X-OVER
LEFT/RIGHT:-----
CENTER      :100Hz
SURROUND    :100Hz
SURR BACK :-----
SUBWOOFER :100Hz
BASS MGR   :GLOBAL
BACK TO MASTER MENU
```
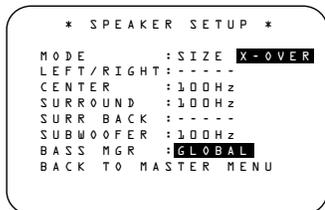
Figure 6

To change the setting for any of the three speaker groups, press the ▲/▼ **Buttons ⓴** until the cursor is next to the line where you wish to make a change and then press the ◄/► **Buttons ⓯ ㉟** 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 LFE+L/R has been selected as the subwoofer option, the front channel sound information below the setting shown will be sent to BOTH the front channel speakers and the subwoofer. Note, also, that when the LARGE-LFE+L/R setting has been selected, the crossover point defaults to 100Hz for both the front speakers and the subwoofer, and may not be adjusted. This ensures that there is no "hole" in the sound field due to different crossover points at the front and subwoofer speakers.

When all crossover settings have been made, or in those cases where none are needed, change the MODE setting to SIZE, and press the ▼ **Button ⓴** so that the cursor is next to the BASS MGR line to make the final setting on this menu.

This setting allows you to use the same speaker size 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, may prefer different bass management settings when listening to music through a CD player as opposed to a movie from a DVD player, VCR or cable/satellite set-top.

If you wish to customize the bass management to each input, make certain that the MODE is set to SIZE, and that the cursor is on the BASS MGR line and press the ◄/► **Buttons ⓯ ㉟** so that INDEPENDENT appears in highlighted video. When this setting is entered 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 INPUT 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 settings.

NOTE: The Independent feature allows you to select a different speaker size configuration (Large, Small or None, as appropriate) for each input source. However, the individual crossover point setting may only be set once, and the selection made during the initial setup will be used for all inputs, regardless of any changes made to the "Large" or "Small" settings for the speaker groups attached to any input. The reason for this is that while you may prefer different settings for the bass redirection (that is, which signals go to the subwoofer or the speaker group), the actual crossover point remains the same since the actual loudspeakers themselves remain the same regardless of any other setting.

When all speaker selections have been made, press the ▼ **Button ⓴** and then the **Set Button ⓰** to return to the MASTER MENU.

Delay Settings

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 acoustics in your listening room or home theater.

The AVR580's advanced software enables you to quickly and easily set delay times without the need to calculate them using a complex formula. Instead, all you need to do is measure the approximate distance between your listening position and each of the speakers in your system. When you enter those distances into the AVR's memory as shown below, the AVR's microprocessor does the rest of the work, calculating the proper delay time. The measurements need not be accurate to the inch, as the system is designed to accommodate a typical listening area rather than require the precise measurement to one "sweet spot" position.

Due to the differences in the way each surround mode operates, some modes allow for a greater range of delay times than others. To avoid problems, we recommend that delay times be adjusted using the Dolby Digital mode. If a different mode is selected at a later time, the AVR580 will automatically restrict the delay settings to those required by the surround mode in use.

Delay times are only adjustable for the Dolby modes, so you will notice that the DELAY ADJUST menu may not be accessed when any other mode, such as a DTS or Logic 7 option, has been selected. In addition, when a non-Dolby Digital mode such as Dolby 3 Stereo or Dolby Pro Logic II is selected, adjustments may be made to the Surround speakers only.

To set the delay time for a specific input, the DELAY ADJUST menu (Figure 7) should be visible on your on-screen display. If the system is not already at that point, press the **OSD Button ㉒** to bring up the MASTER MENU, press the ▼ **Button ⓴** three times or until the on-screen ► cursor is pointing at the DELAY ADJUST line. Press the **Set Button ⓰** to call up the menu.

```
    *  DELAY  ADJUST  *
►  CENTER    :10ft
   SURROUND :10ft
   SURR BACK:10ft
   UNIT:FEET METER

   BACK TO MASTER MENU
```
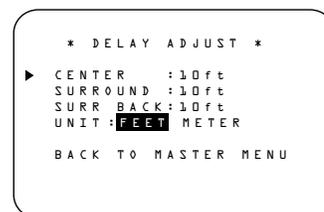
Figure 7

Once the DELAY ADJUST menu is on your screen, note that the default setting to enter the distances from the speakers to the listening position is in feet. If your measurements are in feet, proceed to the next step; if your measurements are made in meters, press the ▼ **Button ⑭** until the on-screen ▶ cursor is at the UNIT line on the menu. Then, press the ◀/▶ **Buttons ⑮ �37** so that METER is highlighted. When the change in measurement units is made, press the ▲/▼ **Buttons ⑭** to return the ▶ cursor to the CENTER position.

With the on-screen ▶ cursor pointing to CENTER, press the ◀/▶ **Buttons ⑮ �37** until the distance from the center speaker to the preferred listening position is entered. Next, press the ▼ **Button ⑭** to move the cursor to the SURROUND line and use the ◀/▶ **Buttons ⑮ �37** again to enter the distance from the listening position to the surround speakers. Finally, if the system is configured for 7.1 operation by entering LARGE or SMALL on the SURR BACK line of the SPEAKER SETUP menu, press the ▼ **Button ⑭** again and use the ◀/▶ **Buttons ⑮ �37** to enter the distance from the listening position to the back surround speakers. Remember that this last adjustment will only be needed when you have surround back speakers installed and Dolby Digital chosen as the surround mode.

When the speaker-to-listening-position distance has been entered for all active speaker positions, press the ▲/▼ **Buttons ⑭** until the on-screen cursor is next to BACK TO MASTER MENU and press the **Set Button ⑯**.

The delay settings may be changed at any time directly from the remote control by pressing the **Delay Button ㊱**. CENTER DELAY will appear in the **Lower Display Line B**, but you may press the ▲/▼ **Buttons ⑭** to select any of the speaker groups.

Press the **Set Button ⑯** when the desired speaker group appears, and then press the ▲/▼ **Buttons ⑭** again to enter the distance from the speaker to the listening position. Press the **Set Button ⑯** again to enter the data. You may then press the ▲/▼ **Buttons ⑭** to select another speaker group to repeat the procedure as needed, or wait five seconds for the system to return to normal operation.

Output Level Adjustment

Output level adjustment is a key part of the configuration of any surround sound product. It is particularly important for a digital receiver such as the AVR580, as correct outputs ensure that you hear soundtracks 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 or 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. While the AVR580 allows you to set output levels manually, we recommend that the EzSet system be used when the AVR is first installed, to establish the initial level settings.

Using EzSet

JBL's EzSet remote makes it possible to quickly and accurately set the AVR580's output levels without the use of a sound pressure meter, although manual adjustment is also available. However, for the easiest setup, follow these steps while seated in the listening position that will be used most often:

1. Make certain that all speaker positions have been properly configured for their "large" or "small" settings (as outlined above) and turn off the OSD system if it is in use.

2. Adjust the volume so that it is at –10dB, as shown in the on-screen display or **Main Information Display ㉙**.

3. Hold the remote in front of you at arm's length, being sure not to cover the **EzSet Sensor Microphone ㊹** at the top of the remote.

4. Press and hold the **SPL Selector Button ㊵** for three seconds. Release it when the **Program/SPL Indicator ③** stops flashing and remains lit. Within five seconds, press the **5 Button ⑱** on the remote if your system is configured for 5.1 operation with standard speakers or the **7 Button ⑱** on the remote if your system is configured for 6.1/7.1 operation with a full speaker complement including both rear surround speakers. Once the correct channel configuration button has been pressed, the test noise will be heard from the front left speaker.

5. At this point, EzSet will take over, adjusting the output level of each channel so that when the process is complete, all levels will be equal and at the set reference point. This process may take a few minutes, depending on the extent of adjustment required.

6. During the adjustment, you will see the location of the channel position being adjusted appear in the on-screen display (if connected) and in the **Main Information Display ㉙**, alternating with a readout of the output setting, relative to the reference level, and in the **Speaker/Channel Input Indicators E** where the letters for the channel being adjusted will flash to indicate the channel from which the test tone should be heard. As the adjustment proceeds, a few things will happen simultaneously:

   • The channel position being adjusted will flash in the **Speaker/Channel Input Indicators E**. If the test noise is heard from a channel other than the one shown in the indicator, there is an error in the speaker connections. If this is the case, press the **Test Button ⑨** TWICE to stop the adjustment. Then, turn the unit off and verify that all speakers are connected to the proper **Outputs ⑥⑦⑨⑩**.

- As the individual channels are set, the channel name and the adjustment offset will appear in the on-screen display (if connected) and the **Main Information Display** ㉙. While the level is changing, the **Program/SPL Indicator** ❸ will change colors to reflect the output level in relation to the reference. A red indication shows that the level is too high, while an amber indication shows that the level is too low. When the indicator is green, the level is correct, and the test noise will move to the next channel.

- While adjustments are being made, the red LED under the **AVR Selector** ❻ will flash. This is normal, and indicates that EzSet is operating.

7. After the test noise has circulated once through each channel, it will send the tone to each channel once again, to verify the settings.

8. After two complete circulations of the tone, the levels are set. The **Program/SPL Indicator** ❸ will remain green at each channel. Upon completion of the second circulation, the **Program/SPL Indicator** ❸ will flash green twice and then go out. The tone will stop and the AVR580 will return to normal operation.

If you find that the output levels chosen by EzSet are either uncomfortably low or high, you may repeat the procedure. Return to Step 2 and adjust the master volume either slightly higher or lower to accommodate your particular room layout and your tastes. You may repeat this procedure as many times as necessary to achieve a desired result. In order to prevent possible damage to your hearing or your equipment, we emphasize that you should avoid setting the master volume above 0dB.

If the levels of the surround back speakers in your 6.1- or 7.1-channel system seem very high in comparison to the other channels, it may be due to your pointing the remote away from these speakers during the level-setting process, as the microphone sensor is located on the front of the remote (opposite the position of the surround back speakers situated behind you). This may be corrected by using the manual output level adjust-

ment process described below. While checking the level of each speaker, point the remote toward the ceiling and check the level as indicated by the **SPL Indicator** ❸. Point the remote toward the AVR in order to transmit the commands to raise or lower the level for a particular channel. Point the remote toward the ceiling again to check whether the **SPL Indicator** ❸ reflects a correct level, or further adjustment is necessary.

NOTE: The subwoofer output is not adjusted when the test tone is in use. To adjust the subwoofer output, you must use an external source, following the instructions on page 36.

Manual Output Level Adjustment
Output levels may also be adjusted manually, either to set them to a specific level with an SPL meter, or to make fine-tuning adjustments to the levels obtained using the EzSet remote.

```
    *  CHANNEL  ADJUST  *

▶   FL  :0dB      SBR :0dB
    CEN :0dB      SBL :0dB
    FR  :0dB      SL  :0dB
    SR  :0dB      SUB :0dB
    CHANNEL RESET :OFF ON
    TEST TONE     :OFF ON

    BACK TO MASTER MENU
```
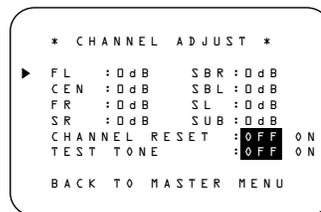
Figure 8

Manual output level adjustment is most easily done through the CHANNEL ADJUST menu (Figure 8). If you are already at the MASTER MENU, press the ▼ **Button** ⑭ until the on-screen ▶ cursor is next to the CHANNEL ADJUST line. If you are not at the MASTER MENU, press the **OSD Button** ㉒ to bring up the MASTER MENU (Figure 1), and then press the ▼ **Button** ⑭ until the on-screen ▶ cursor is next to the CHANNEL ADJUST line. Press the **Set Button** ⑯ to bring the CHANNEL ADJUST menu (Figure 8) to the screen.

When the CHANNEL ADJUST menu appears, press the ▼ **Button** ⑭ until the on-screen ▶ cursor is next to the TEST TONE line. Press the ◄/► **Buttons** ⑮ ㊲ so that ON is highlighted and the AVR's internal test tone will begin to circulate from speaker to speaker in a clockwise direction into all speakers. The test noise will play for two seconds in each speaker before circulating, and a blinking on-screen cursor will

appear next to the name of each speaker location when the sound is at that speaker.

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 in the **Main Information Display** ㉙. If the sound from a speaker location does NOT match the position indicated in the display, turn the AVR580 off using the **Main Power Switch** ❶ 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 ◄/► **Buttons** ⑮ ㊲ on the remote to bring all speakers to the same volume level. When one of the ◄/► **Buttons** ⑮ ㊲ 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 ◄/► **Buttons** ⑮ ㊲ 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 75dB, C-Weighting Slow.

You may also adjust the output levels manually while using the level indication feature of the EzSet remote. To activate the sensor and indicator, simply press and release the **SPL Selector Button** ㊶ on the remote while the test tone is circulating. The **Program/SPL Indicator** ❸ will change color to indicate the level. Adjust the level using the ◄/► **Buttons** ⑮ ㊲ until the LED lights green for all channels. When it is red, the level is too high; when it is amber, the level is too low. Press the **SPL Selector Button** ㊶ when you are finished to turn the sensor and indicator off.

NOTE: The subwoofer level is not adjustable when the normal test tone is in use. The subwoofer output level may be adjusted when the channel levels are

being trimmed to a program source rather than the test tone, as shown on page 36.

When all channels have an equal volume level, the adjustment is complete. To exit this menu, press the ▲/▼ **Buttons** ⓮ until the on-screen ▶ cursor is next to the BACK TO MASTER MENU line, and then press the **Set Button** ⓰ to return to the MASTER 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** ❾. 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 **Lower Display Line** Ⓑ. While the test noise is circulating, the proper channel position will also be indicated in the **Speaker/ Channel Input Indicators** Ⓔ by a blinking letter within the correct channel.

To adjust the output level, press the ▲/▼ **Buttons** ⓮ 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** ❾ again to complete the process.

NOTE: Output level adjustment is not available for the VMAx or Surround Off modes.

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 INPUT SETUP line on the MASTER MENU (Figure 1) 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 first input.

When all settings and adjustments have been made, press the **OSD Button** ㉒ to return to normal operation of the AVR.

Once the settings outlined on the previous pages have been made, the AVR580 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 37–38 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 AVR580, you are about to experience the finest in music and home theater listening. Enjoy!

OPERATION

Basic Operation

Once you have completed the initial setup and configuration of the AVR580, it is simple to operate and enjoy. The following instructions will help you maximize the enjoyment of your new receiver:

Turning the AVR580 On or Off

• When using the AVR580 for the first time, you must press the **Main Power Switch 1** on the front panel to turn the unit on. This places the unit in a Standby mode, as indicated by the red color of the **Power Indicator 3** . Once the unit is in Standby, you may begin a listening session by pressing the **System Power Control 2** on the front panel, or the **Power On Button 4** or **AVR Selector 6** on the remote. The **Power Indicator 3** will turn orange. 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 5 7   C D** on the remote or the **Input Source Selector Button 15** on the front panel.

NOTE: After pressing one of the **Input Selector Buttons 5 7** to turn the unit on, press the **AVR Selector 6** to set the remote control to the AVR580 functions.

To turn the unit off at the end of a listening session, simply press the **System Power Control 2** on the front panel or the **Power Off Button 1 A** on the remote. The **Power Indicator 3** will turn red.

When the remote is used to turn the unit "off" it is actually placing the system in a Standby mode, as indicated by the red color of the **Power Indicator 3** .

• To program the AVR580 for automatic turn-off, press the **Sleep Button 10** on the remote. Each press of the button will decrease the time before shut-down in the following sequence:

```
  → 90    → 80    → 70    → 60    → 50
     min      min      min      min      min
  → 40    → 30    → 20    → 10    → OFF
     min      min      min      min
```
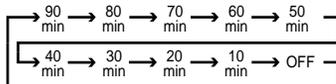
The sleep time will be displayed in the **Lower Display Line B** and it will count down until the time has elapsed.

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 10** until the information display returns to normal brightness; the Sleep indicator numbers will disappear and the words SLEEP OFF will appear in the **Lower Display Line B** .

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 1** .

NOTE: All preset memories are lost if the unit is left turned off by using the **Main Power Switch 1** for more than two weeks.

Source Selection

• To select a source, press any of the **Input Selector Buttons 5 7 C D** on the remote.

• The input source may also be changed by pressing the front-panel **Input Source Selector Button 15**. Each press of the button will move the input selection through the list of available inputs.

• As the input is changed, the AVR580 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 4 Inputs 19 20**, **Optical 3 Digital Input 17** or the **Coaxial 3 Digital Input 18** 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 **Main Information Display 29** and the selected input's name will light in orange in the front-panel **Input Indicators 28**.

• When an audio source is selected, the last video input used remains routed to the **Video 1/Video 2 Outputs 15 17** and **Video Monitor Outputs 1**. This permits simultaneous viewing and listening to different sources.

• When a composite or S-Video source is selected, the video signal for that input will be routed to the **Video Monitor Output 1** and may be viewed on a TV monitor connected to the AVR580.

6-Channel/8-Channel Direct Input

• There are two input choices available for use with sources such as a DVD-Audio or SACD player that are connected to the **8-Channel Direct Inputs 38**. Select the appropriate input according to the way your system and source equipment is configured:

■ 6 CH DIRECT should be used when the SBR and SBL inputs are NOT in use. It is assumed that the input source device has its own internal bass management system. This input passes the input from the source directly through to the volume control without any analog to digital conversion and it mutes the unused input jacks to prevent unwanted noise from interfering with system performance.

■ 8 CH DIRECT should be used when an input is connected to all eight **8-Channel Direct Inputs 38**. It is assumed that the input source device has its own internal bass management system. This input passes the input from the source directly through to the volume control without any analog-to-digital conversion and it mutes the unused input jacks to prevent unwanted noise from interfering with system performance.

Volume Control

• Adjust the volume to a comfortable level using the front-panel **Volume Control 27** or remote **Volume Up/Down Buttons 40 I** .

• To temporarily silence all speaker outputs, press the **Mute Button 43 K** . 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, the word MUTE will flash in the **Main Information Display 29**. Press the **Mute Buttons 43 K** again to return to normal operation.

• You may adjust the bass and treble tone controls at any point during a listening session by simply turning the

Bass Control ㉑ or **Treble Control** ㉓ until the desired setting is achieved. You may also totally remove the tone controls from the circuit so that the output is "flat" at any time by pressing the **Tone Mode Button** ➎ and then pressing the ◄/► **Buttons** ➓⓭ so that TONE OFF appears in the on-screen display and the **Lower Display Line** Ⓑ.

• For private listening, plug the 1/4" stereo phone plug from a pair of stereo headphones into the front-panel **Headphone Jack** ➍. When the headphone's plug is connected, the word HEADPHONE will scroll once across the **Lower Display Line** Ⓑ 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 AVR580 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, DTS Stereo or UltraStereo,♦ may be played in either the Dolby Digital, Dolby Pro Logic II-Movie, DTS Neo:6 Cinema, or Logic 7 Cinema 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, Logic 7 Cinema 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 made-for-television programs, sports broadcasts, radio dramas and music CDs are also recorded in surround sound. 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, Logic 7 Enhance, DTS Neo:6, VMAx, Hall or Theater modes often deliver enveloping surround presentations through the use of the natural information present in all stereo recordings.

Surround modes may be changed at any time by using either the front panel or remote control. To select a new surround mode from the front panel, first press the **Surround Mode Group Selector Button** ➐ until the desired major surround mode group such as Dolby, DTS or Logic 7 is selected. Next, press the **Surround Mode Selector Button** ➑ to choose the specific individual surround mode.

To select a surround mode using the remote, press the button for the major surround mode group that includes the mode you wish to choose from: **Dolby** ㉓, **DTS Surround** ㉔, **DTS Neo:6** ㉚, **Logic 7** ㉕, **Stereo** ㉙ or **DSP Surround** ⓫. The first press of the button will show the current mode from that group if it is already in use, or the first available mode if you are currently using another mode. To cycle through the available modes in that group, press the button again until the desired mode appears in the **Lower Display Line** Ⓑ and the on-screen display.

As the surround modes change, the current mode will light in orange in the **Surround Mode Indicators** ㉛ list on the front panel.

The Dolby Digital, Dolby Digital EX 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 AVR580 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 Digital Audio Playback section below.

When the 6-channel/8-channel direct inputs are in use there is no surround processing, as these inputs take the analog output signals from an optional, external DVD-Audio or SACD player, or another source device and carry them straight through to the volume control without any further digital processing.

When your AVR580 has been configured for 6.1/7.1 operation with both left and right surround back speakers installed, selecting a 6.1-channel surround mode, such as Dolby Digital EX or DTS-ES 6.1 Matrix, will result in both surround back speakers playing the same information for the surround back channel. The surround back left and right speakers will only play discrete information when a 7-channel mode is selected, such as Logic 7/7.1 Cinema or Music, or 7-Channel Stereo, or if the 8-Channel Direct Input source is in use and is providing discrete information for the surround back channels.

To listen to a program in traditional two-channel stereo, using the front left and front right speakers only (plus the sub-woofer, if installed and configured), press the **Stereo Button** ㉙ until SURR OFF appears in the **Main Information Display** ㉙, or press the **Surround Mode Group Selector** ➐ until the Stereo modes appear in the on-screen display and **Lower Display Line** Ⓑ. Next, press the **Surround Mode Select Button** ➑ until SURROUND OFF appears in the on-screen display and **Lower Display Line** Ⓑ.

Digital Audio Playback

Digital audio is a major advancement over older 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 significant improvements to 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.

An optional, external RF demodulator is required to use the AVR580 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 17 18 31 34** of the AVR580. No demodulator is required for use with DVD players or DTS-encoded laser discs.

DTS

DTS is another digital audio system that is capable of delivering 5.1 or 6.1 discrete or matrix sound field reproduction. Although both DTS and Dolby Digital are digital, 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 select DVD and LD discs, as well as on special audio-only DTS discs. You may use any LD or CD player equipped with a digital output to play DTS-encoded discs with the AVR580. All that is required is to connect the player's output to either an **Optical** or **Coaxial Input** on the rear panel **31 34** or front panel **17 18**.

In order to listen to DVDs encoded with DTS soundtracks, 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 AVR580, 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.

NOTE: Some DVD players have a default setting that does not pass through the DTS signal. Before playing DVDs with a DTS soundtrack, make certain that the settings in your DVD player have been properly adjusted so that DTS audio is passed through. Consult the owner's manual for your DVD player for more information on making these settings.

Selecting a Digital Source

To utilize either digital mode, you must have properly connected a digital source to the AVR580. Connect the digital outputs from DVD players, HDTV receivers, satellite systems or CD players to the **Optical** or **Coaxial Inputs 17 18 31 34**. In order to provide a backup signal and a source for analog stereo recording, the analog outputs provided on digital source equipment should also be connected to their appropriate inputs on the AVR580 rear panel (e.g., connect the analog stereo audio output from a DVD to the **DVD Audio Inputs 30** on the rear panel when you connect the source's digital outputs).

If you have not already configured an input for a digital source using the on-screen menus as shown on page 22, first select the input using the remote or front-panel controls as outlined in this manual. Next, select the digital source by pressing the **Digital Select Button 17 26** and then using the ▲/▼ **Buttons 14** on the remote or the ◄/► **Selector Buttons 10 13** on the front panel to choose any of the OPTICAL or COAXIAL inputs, as they appear in the **Upper Display Line A** or on-screen display. When the digital source is playing, the AVR580 will automatically detect which type of digital data stream is being decoded and display that information in the **Upper Display Line A**.

Digital Bitstream Indicators

When a digital source is playing, the AVR580 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 and 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 AVR580 uses display indicators to let you know what type of signal is present. This will help you to understand the choice of modes.

To help you see which type of digital source is playing, the **Surround Mode Indicators 31** in combination with the **Information Display 29** also serve as bitstream indications to show which type of bitstream is present, as well as the surround mode in use, if applicable.

⫿⫿ Digital: When the Dolby Digital or Dolby Digital EX logo is lit, 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 and VMAx modes are available.

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

MP3: When MP3 appears on the **Lower Display Line B** 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. There are many different forms of MP3 encoding available and the format is used at a number of different bit rates. The AVR580 may not be compatible with all forms of MP3, particularly when the data file is encoded at 128kb/s or above.

Speaker/Channel Indicators

In addition to the bitstream indicators, the AVR580 features a set of unique channel-input indicators that tell you how many channels of digital information are being received and/or whether the digital signal is interrupted. (See Figure 9.)
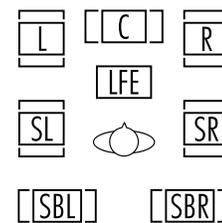
Figure 9

These indicators are the L/C/R/LFE/SL/SR/SBL/SBR letters that are inside the center boxes of the **Speaker/Channel Input Indicators E** in the front-panel **Main Information Display 29**. When a standard analog signal is in use, only the "L" and "R" indicators will light, as analog signals have only left and right channels.

Digital signals, however, may have two, five, six or seven channels, depending on

the program material, the method of transmission and the way in which it was encoded. When a digital signal is playing, the letters in these indicators will light in response to the specific signal being received. It is important to note that although Dolby Digital, for example, is referred to as a "5.1" system, not all Dolby Digital DVDs or programs are encoded for 5.1. Thus, it is sometimes normal for a DVD with a Dolby Digital soundtrack to trigger only the "L" and "R" indicators.

NOTE: Many DVD discs are recorded with both "5.1" and "2.0" versions of the same soundtrack. When playing a DVD, always be certain to check the type of material on the disc. Most discs show this information in the form of a listing or icon on the back of the disc jacket. When a disc does offer multiple soundtrack choices, you may have to make some adjustments to your DVD player (usually with the "Audio Select" button or in a menu screen on the disc) to send a full 5.1 feed to the AVR580. It is also possible for the type of signal feed to change during the course of a DVD playback. In some cases, the previews of special material will only be recorded in 2.0 audio, while the main feature is available in 5.1 audio. The AVR580 will automatically sense changes to the bitstream and channel count and reflect them in these indicators.

The letters used by the **Speaker/ Channel Input Indicators E** also flash to indicate when a bitstream has been interrupted. This will happen when a digital input source is selected before the playback starts, or when a digital source such as a DVD is paused. The flashing indicators remind you that the playback has stopped due to the absence of a digital signal and not through any fault of the AVR580. This is normal, and the digital playback will resume once the playback is started again.

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 minimum 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 12** on the remote. Next, press the **▲/▼ Buttons 14** to select either the middle range or full-compression versions of the Night mode. To turn the Night mode off, press the **▲/▼ Buttons 14** until the message in the lower third of the video display and in the **Lower Display Line B** 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 menu. See page 23 for information on using the menus to set this option.

IMPORTANT NOTES ON DIGITAL PLAYBACK:

• When the digital playback source is stopped, or in a pause, fast forward or chapter search mode, the digital audio data will momentarily stop, and the channel position letters inside the **Speaker/ Channel Input Indicators E** will flash. This is normal and does not indicate a problem with either the AVR580 or the source machine. The AVR580 will return to digital playback as soon as the data is available and when the machine is in a standard play mode.

• Although the AVR580 will decode virtually all current DVD movies, CDs and HDTV sources, it is possible that some future digital sources may not be compatible with the AVR580.

• Not all digitally encoded programs contain full 5.1- or 6.1-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 AVR580 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 or Logic 7.

• When a Dolby Digital or DTS source is playing, it is not possible to make an analog recording using the **Tape Outputs 33** and **Video 1** or **Video 2 Audio Outputs 36 39** . However, the

digital signals will be passed through to the **Digital Audio Outputs 26 28**.

PCM Audio Playback

PCM (Pulse Code Modulation) is the non-compressed digital audio system used for compact discs and laser discs. The digital circuits in the AVR580 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 31 34** or the front-panel **Digital Inputs 17 18**.

To listen to a PCM digital source, first select the input for the desired source (e.g., CD). Next press the **Digital Select Button 26 17** and then use the **▲/▼ Buttons 14** on the remote, or the **◄/► Selector Buttons 10 13** on the front panel, until the desired choice appears in the **Main Information Display 29**.

During PCM playback, you may select any Surround mode except Dolby Digital or DTS.

MP3 Audio Playback

The AVR580 is one of the few receivers equipped for onboard decoding for the MP3 audio format used by computers and portable audio devices. By offering MP3 decoding, the AVR580 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 AVR580'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 AVR580'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 31 34** or the front-panel **Digital Inputs 17 18**. When the digital signal is available, the **Lower Display Line B** will indicate that an MP3 bitstream is present, and the audio will begin playing.

NOTES:
• The AVR580 is only capable of playing signals in the MP3 (MPEG 1/Layer 3) format. It is not compatible with other computer audio codecs.

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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 receiver 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 sound tracks so that a full 6.1/7.1 sound field is available. When the receiver 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 Emulation	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 Dolby Pro Logic II Music mode should be used with musical selections. The Dolby Pro Logic II Emulation mode re-creates original Dolby Pro Logic processing for those who prefer that presentation.
Logic 7 Cinema Logic 7 Music Logic 7 Enhance	Logic 7 is an advanced mode that extracts the maximum surround information from either surround-encoded programs or conventional stereo material. Depending on the number of speakers in use and the selection made in the SURROUND SELECT menu, the "5.1" versions of Logic 7 modes are available when the 5.1 option is chosen, while the "7.1" versions of Logic 7 produce a full sound field presentation, including back surround speakers when the "6.1/7.1" option is chosen. The Logic 7 C (or Cinema) mode should be used with any source that contains Dolby Surround or similar matrix encoding. Logic 7 C delivers increased center-channel intelligibility, and more accurate placement of sounds with fades and pans that are much smoother and more realistic than with other decoding techniques. The Logic 7 M or Music mode should be used with analog or PCM stereo sources. Logic 7 M enhances the listening experience by presenting a wider front soundstage and greater rear ambience. Both Logic 7 modes also direct low-frequency information to the subwoofer (if installed and configured) to deliver maximum bass impact. The Logic 7 E (or Enhance) mode, available only when the 5.1 option is chosen, is an extension of the Logic 7 mode that is primarily used with musical programs. Logic 7 adds additional bass enhancement that circulates low frequencies in the 40Hz to 120Hz range to the front and surround speakers to deliver a less localized soundstage that appears broader and wider than when the subwoofer is the sole source of bass energy.
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) and medium-sized (Hall 2) concert hall.
VMAx Near VMAx Far	When only the two front-channel loudspeakers are used, JBL's patented VMAx mode delivers a three-dimensional sound space with the illusion of "phantom speakers" at the center and surround positions. The VMAx N, or "Near Field," mode should be selected when your listening position is less than five feet from the speakers. The VMAx F, or "Far Field," mode should be selected when your listening position is greater than five feet from the speakers. The VMAx modes are also available using the **Headphones Output** ◢. When head phones are being used, the Far Field mode will appear to push the sound field away from your ears, reducing the "inside the head" sensation often experienced when using headphones.
5-Channel Stereo 7-Channel Stereo	This mode takes advantage of multiple speakers to place a stereo signal at both the front and back of a room. Depending on whether the AVR 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 signal 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.

- The digital audio input signal may be either optical or coaxial, but the signal must be in the PCM 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.

- Due to the wide variation in MP3 formats and encoding speeds, it is possible that the AVR580 may not be compatible with all MP3 input signals. Some may produce unacceptable results and some may not be decoded. This is not a fault of either the computer or the AVR580, but rather a by-product of the unpredictable nature of MP3 playback.

Tuner Operation

The AVR580'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.

Region Selection
The AVR's FM tuner must be set for compatibility with the television format and radio broadcasts in your area. Using the **Region Selector** ⓫ located on the rear panel of the receiver, select the position corresponding to the country in which you are using the receiver: C, S or K.

Refer to the chart below to determine the proper setting. For other countries, consult with your dealer or distributor to determine the correct setting.

Country	Region Selector Switch
China	C
Hong Kong†	C
Indonesia†	S
Korea (South)	K
Malaysia†	S
Singapore†	S
Thailand†	S

† Depending on the electrical requirements in your area or the wiring in your home, the power cords included with your AVR may not be the correct ones, and you may need to contact your local JBL distributor to obtain the correct power cord.

IMPORTANT NOTE: Any adjustments made to the **Region Selector** ⓫ will not take effect unless the unit is first fully turned off by pressing the **Main Power**

Switch ❶ until it pops out and the word "OFF" appears on the top of the button.

Station Selection
1. Press the **AM/FM Tuner Select Button** ❼ Ⓒ on the remote to select the tuner as an input. The tuner may be selected from the front panel by pressing either the **Input Source Selector** ⓯ until the tuner is active or the **Tuner Band Selector** ⓫ at any time.

2. Press the **AM/FM Tuner Select Button** ❼ Ⓒ or **Tuner Band Selector** ⓫ again to switch between AM and FM so that the desired frequency band is selected.

3. Press the **Tuner Mode Button** ⓰ ⓳ to select manual or automatic tuning.

When the **AUTO Indicator** Ⓙ is lit in the **Main Information Display** ㉙ the tuner will only stop at those stations that have a strong enough signal to be received with acceptable quality.

When the **AUTO Indicator** Ⓙ is not lit, the tuner is in a manual mode and will stop at each frequency increment in the selected band.

4. To select stations, press the **Tuning Selector Button** ❾ ㉑ Ⓔ. When the **AUTO Indicator** Ⓙ is lit, press the button to cause the tuner to search for the next highest- or lowest-frequency station that has an acceptable signal. Hold the **Tuning Selector Button** ❾ ㉑ Ⓔ to scan through the stations with acceptable signals. Press the **Tuner Mode Button** ⓰ ⓳ to switch to the manual tuning mode, in which each press of the **Tuning Selector Button** ❾ ㉑ Ⓔ advances one frequency increment; press and hold the selector button to scan through all frequency increments.

When tuning FM stations in the Auto mode, the tuner will only select stereo stations. To tune to the next station, switch to the manual tuning mode and press the button again. If the **STEREO Indicator** Ⓗ is not lit, tap the **Tuning Selector Button** ❾ ㉑ Ⓔ to advance one frequency increment at a time, or press and hold it to locate a specific station. When the **TUNED Indicator** Ⓘ lights, the station is properly tuned and should be heard with clarity.

5. Stations may also be tuned directly by pressing the **Direct Button** ⓴, and then pressing the **Numeric Keys** ⓲ that correspond to the station's frequency. The desired station will automatically be tuned. If you press an incorrect button while entering a direct frequency, press the **Clear Button** ㉞ to start over.

NOTE: When the FM reception of a station is weak, audio quality will be increased by switching to Mono mode by pressing the **Tuner Mode Button** ⓰⓳ until the **STEREO Indicator** Ⓗ goes out.

Preset Tuning
Using the remote, up to 30 stations may be stored in the AVR580'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** ㉟ on the remote. The **MEMORY Indicator** Ⓖ will light and flash in the **Main Information Display** ㉙.

2. Within five seconds, press the **Numeric Keys** ⓲ corresponding to the location where you wish to store this station's frequency. Once entered, the preset number will appear in the **Main Information DIsplay** ㉙.

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** ⓲ 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 Buttons** ⓮ ㉝ Ⓖ on the front panel or remote.

Tape Recording

In normal operation, the audio or video source selected for listening through the AVR580 is sent to the record outputs. This means that any program you are watching or listening to may be recorded

simply by placing machines connected to the outputs for **Tape Outputs** ㉝ or **Video 1/Video 2 Audio** and **Video Outputs** ⑮⑰㊱㊴ in the Record mode.

When a digital audio recorder is connected to the **Digital Audio Outputs** ㉖㉘, 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 any copyright restrictions on any material you copy. Unauthorized duplication of copyrighted materials is prohibited by law.

Output Level Trim Adjustment

Normal output level adjustment for the AVR580 is established using the test tone, as outlined on pages 27 – 29. 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** ㉗㊵ ❶.

If you are using a disc with test signals or an external signal generator as the source from which to trim the output levels, you may use the EzSet feature of the remote to guide you to the correct SPL level. To use the remote for this purpose, press and quickly release the **SPL Selector Button** ㊶ to activate the sensor. While the test tone is circulating, the **Program/SPL Indicator** ❸ will change color to indicate the level. Adjust the level using the ▲/▼ **Buttons** ⑭ until the LED lights green for all channels. When it is red the level is too high; when

it is amber the level is too low. Press the **SPL Selector Button** ㊶ to turn the sensor and indicator off.

Once the reference level has been set, press the **Channel Select Button** ⑬ and FRONT L LEVEL will appear in the **Lower Display Line** Ⓑ. To change the level, first press the **Set Button** ⑯, and then use the ▲/▼ **Buttons** ⑭ to raise or lower the level. DO NOT use the volume control, as this will alter the reference setting.

Once the change has been made, press the **Set Button** ⑯ and then press the ▲/▼ **Buttons** ⑭ to select the next output channel location that you wish to adjust. To adjust the subwoofer level, press the ▲/▼ **Buttons** ⑭ until WOOFER LEVEL appears in the **Main Information Display** ㉙ or on-screen display.

Repeat the procedure as needed until all channels requiring adjustment have been set. When all adjustments have been made and no further adjustments are made for five seconds, the AVR580 will return to normal operation.

The channel output for any input may also be adjusted using the full-OSD on-screen menu system. First, set the volume to a comfortable listening level using the **Volume Control** ㉗㊵ ❶. Then, press the **OSD Button** ㉒ to bring up the MASTER MENU (Figure 1). Press the ▼ **Button** ⑭ until the on-screen ▶ cursor is next to the CHANNEL ADJUST line. Press the **Set Button** ⑯ to activate the CHANNEL ADJUST menu.

Once the menu appears on your video screen, first use the ▲/▼ **Buttons** ⑭ to move the on-screen ▶ cursor so that it is next to the TEST TONE line. Press the ◀/▶ **Buttons** ⑮ ㊲ so that OFF is highlighted. This will turn off the test tone and allow you to use your external test disc or other source material as the reference. Then, use the ▲/▼ **Buttons** ⑭ to select the channels to be adjusted. At each channel position, use the ◀/▶ **Buttons** ⑮ ㊲ to change the output level. Remember, the goal is to have the output level at each channel be 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 ▲/▼ **Buttons** ⑭ so that the on-screen cursor is next to the CHANNEL RESET line and press the ◀/▶ **Buttons** ⑮ ㊲ so that the word ON is highlighted. After the levels are reset, resume the procedure outlined above to reset the levels to the desired settings. When all adjustments are done, press the ▲/▼ **Buttons** ⑭ to move the on-screen ▶ cursor so that it is next to BACK TO MASTER MENU and then press the **Set Button** ⑯ 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** ㉒ 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 follow the instructions in the steps shown earlier.

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.

ADVANCED FEATURES

The AVR580 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.

Surround Amplifier Channel Assignment
The AVR580 is equipped with seven full-power amplifier channels to allow for complete 7.1-channel operation without the need for additional external amplifiers. However, in some installations you may wish to use the traditional 5.1-channel configuration for the main listening room, which allows the surround back left/right amplifier channels to be used to power speakers placed in a remote zone location.

If you wish to use the Surround Back channel amplifiers to power the remote zone, you must change a setting in the ADVANCED SELECT menu. To make that change, first call up the menu system by pressing the **OSD Button** ㉒ to bring the MASTER MENU (Figure 1) to the screen. Next, press the ▼ **Button** ⑭ until the ▶ cursor is next to the ADVANCED line. Press the **Set Button** ⑯ to enter the ADVANCED SELECT menu (Figure 10).
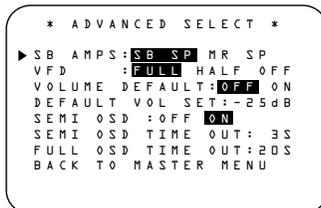
Figure 10

To change the setting so that the Surround Back amplifiers are fed by the source selected through the Multiroom system, press the ◀/▶ **Buttons** ⑮ �37 so that MR SP is highlighted in reverse video and press the **Set Button** ⑯.

Remember that once this setting is made you will not be able to take advantage of any of the 6.1/7.1-channel decoding or processing modes, and that the speakers used for the remote zone must be connected to the **Surround Back/Multiroom Speaker Outputs** ⑨. The volume for these speakers is set by the multiroom system, as explained on page 39 of this manual.

Once this setting is made, you may press the ▼ **Button** ⑭ to make any of the other adjustments available on this menu. If no other adjustments are needed, press the **OSD Button** ㉒ to exit the menu system.

Display Brightness
The AVR580's **Main Information Display** ㉙ 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 SELECT menu. To start the adjustment, press the **OSD Button** ㉒ to bring the MASTER MENU to the screen. Press the ▼ **Button** ⑭, until the on-screen ▶ cursor is next to the ADVANCED line. Press the **Set Button** ⑯ to enter the ADVANCED SELECT menu (Figure 10).

To change the brightness setting, at the ADVANCED SELECT, menu, make certain that the on-screen ▶ cursor is next to the VFD line, and press the ▶ **Button** �37 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** ㉙ will go dark. However, the **Input Indicators** ㉘ and the **Surround Mode Indicators** ㉛, as well as the **Power Indicator** ③, will always remain lit to remind you that the unit is turned on.

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 ▲/▼ **Buttons** ⑭ until the on-screen ▶ cursor is next to the desired setting or the BACK TO MASTER MENU line and press the **Set Button** ⑯. If you have no other adjustments to make, press the **OSD Button** ㉒ to exit the menu system.

Turn-On Volume Level
As is the case with most audio/video receivers, when the AVR580 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 AVR580 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 SELECT menu. To start the adjustment, press the **OSD Button** ㉒ to bring the MASTER MENU (Figure 1) to the screen. Press the ▼ **Button** ⑭, until the on-screen ▶ cursor is next to the ADVANCED line. Press the **Set Button** ⑯ to enter the ADVANCED SELECT menu (Figure 10).

At the ADVANCED SELECT menu make certain that the on-screen ▶ cursor is next to the VOLUME DEFAULT line by pressing the ▲/▼ **Buttons** ⑭ as needed. Next, press the ▶ **Button** �37 so that the word ON is highlighted in the video display. Next, press the ▼ **Button** ⑭ once so that the on-screen ▶ cursor is next to the DEFAULT VOL SET line. To set the desired turn-on volume, press the ◀/▶ **Buttons** ⑮ �37 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** ㉗ ㊵ ①. 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 **Lower Display Line** Ⓑ. (A typical volume level will appear as a negative number such as –25dB.) When making the adjustment, use the ◀/▶ **Buttons** ⑮ �37 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 ▲/▼ **Buttons** ⑭ until the on-screen ▶ cursor is next to the desired setting or the BACK TO MASTER MENU line and press the **Set Button**

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🔟. If you have no other adjustments to make, press the **OSD Button** ㉒ to exit the menu system.

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 AVR580.

To turn off the semi-OSD system, you will need to make an adjustment in the ADVANCED SELECT menu (Figure 10). To start the adjustment, press the **OSD Button** ㉒ to bring the MASTER MENU to the screen. Press the ▼ **Button** ⑭, until the on-screen ▶ cursor is next to the ADVANCED line. Press the **Set Button** ⑯ to enter the ADVANCED SELECT menu.

At the ADVANCED SELECT menu, make certain that the on-screen ▶ cursor is next to the SEMI OSD DEFAULT line by pressing the ▲/▼ **Buttons** ⑭ as needed. Next, press the ▶ **Button** ㊲ so that the word OFF is highlighted in the video display.

This setting is temporary and will remain active only until it is changed or until the AVR580 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 SELECT menu as outlined earlier, and press the ▲/▼ **Buttons** ⑭ as needed, until the on-screen ▶ cursor is next to the SEMI OSD TIME OUT line. Next, press the ◀/▶ **Buttons** ⑮ ㊲ 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 ▲/▼ **Buttons** ⑭ until the on-screen ▶ cursor is next to the desired setting or the BACK TO MASTER MENU line and press the **Set Button** ⑯. If you have no other adjustments to make, press the **OSD Button** ㉒ 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 AVR580, 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 SELECT menu (Figure 10). To start the adjustment, press the **OSD Button** ㉒ to bring the MASTER MENU to the screen. Press the ▼ **Button** ⑭, until the on-screen ▶ cursor is next to the ADVANCED line. Press the **Set Button** ⑯ to enter the ADVANCED menu (Figure 10).

At the ADVANCED SELECT menu (Figure 10), make certain that the on-screen ▶ cursor is next to the FULL OSD TIME OUT line by pressing the ▲/▼ **Buttons** ⑭ as needed. Next, press the ◀/▶ **Buttons** ⑮ ㊲ 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 ▲/▼ **Buttons** ⑭ until the on-screen ▶ cursor is next to the desired setting or the RETURN TO MASTER MENU line and press the **Set Button** ⑯. If you have no other adjustments to make, press the **OSD Button** ㉒ to exit the menu system.

The AVR580 is fully equipped to operate as the control center for a complete multiroom system that is capable of sending one source to a second zone in the house while a separate source is listened to in the main room. In addition to providing for control over the selection of the remote source and its volume, the AVR580 offers a comprehensive range of options for powering the speakers in the second zone.

■ Using the line-level **Multiroom Audio Outputs** ㉗, the selected source may be fed to optional, external power amplifiers that may be matched to the specifics of the installation.

■ When the main room system is configured for 5.1 operation, the Surround Back Left/Right amplifier channels may be used to power the remote zone so that no additional amplifiers are required.

In addition, the AVR580 includes a remote IR sensor input so that remote control commands from the Zone II remote included with the unit may be transmitted to the unit, while standard IR input/output jacks allow the remote zone's commands to be sent to compatible IR-controlled source devices.

Installation

Although simple remote room systems may be installed by the average do-it-yourself hobbyist, the complexity of your multizone/multiroom system involves running wires inside of walls where the services of a specially trained installer may be required. Regardless of who does the work, please remember that local building codes may govern in-wall electrical work, including proper specification of any wiring used and the way in which it is connected. You are responsible for making certain that all multiroom installation work is done properly and in compliance with all applicable codes and regulations.

For standard installations, follow the instructions shown on page 17 for the connection of speaker wire and IR remote wiring to the AVR580.

For installations where the Surround Back Left/Right amplifier channels are used to power the remote zone, make certain that the system is configured for that type of operation, as shown on page 36.

RS-232 Control

The AVR580 is rare among A/V receivers in that it provides the capability for full remote control from compatible computers or specialized remote control systems. RS-232 programming requires specialized programming knowledge and for that reason we recommend that it only be done by qualified installers. For more information on using the RS-232 port for remote control, please contact your local JBL distributor.

Multiroom Setup

Once the audio and IR link connections have been made, the AVR580 needs to be configured for multiroom operation. Press the **OSD Button** ㉒ to bring the MASTER MENU (Figure 1) to the screen. Press the ▼ **Button** ⑭, until the on-screen ▶ cursor is next to the MULTI-ROOM line. Press the **Set Button** ⑯ to enter the MULTI-ROOM SETUP menu (Figure 11).

```
   * MULTI-ROOM SETUP *

▶  MULTI-ROOM:OFF  ON
   MULTI IN   :FM PRESET01
   MULTI VOL :–25dB

   BACK TO MASTER MENU
```

Figure 11

When the MULTI-ROOM SETUP menu appears, the on-screen ▶ cursor will be at the MULTI-ROOM line. Since this line is used to turn the system on and off, don't make an adjustment here unless you wish to turn the system on at this time. To turn the system on, press the ▶ **Button** �37 so that ON is highlighted. If you do not wish to turn the system on at this time, or to proceed to the next step, press the ▼ **Button** ⑭ once so that the ▶ on-screen cursor is next to the MULTI IN line.

At the MULTI IN line, press the ◀/▶ **Buttons** ⑮ �37 until the desired input to the multiroom system appears in the highlighted video. When the selection has been made, press the ▼ **Button** ⑭ once so that the ▶ on-screen cursor is next to the MULTI VOL line.

At the MULTI VOL line, press the ◀/▶ **Buttons** ⑮ �37 until the desired volume level for the multiroom system is

entered. DO NOT use the regular volume control knobs for this setting. When all settings for the multiroom setup have been made, press the ▲/▼ **Buttons** ⑭ until the on-screen ▶ cursor is next to the BACK TO MASTER MENU line. If you have no other adjustments to make, press the **OSD Button** ㉒ to exit the menu system.

Multiroom Operation

When operating the AVR580 from a remote room location where an IR sensor link has been connected to the AVR580's rear-panel **Multiroom IR Input** ㉓, you may use either the main remote control or the Zone II remote. To turn on the multiroom feed, press any of the **Input Selector** buttons on the Zone II remote **C** **D** or the main remote ⑤ ⑦. Press the **AVR Selector** ⑥ **B** to turn the unit on to the last source, or any of the other Selector buttons to turn on to a specific source.

As long as an IR feed to the AVR580 has been established from the remote room, using any of the buttons on either remote will control the remote location volume ㊵ **1**, change the tuner frequency ㉑ **E**, change the tuner preset �33 **G** or mute the output ㊸ ●.

If the **Remote IR Output Jack** ㉕ on the AVR580 is connected to an IR Input jack on compatible audio components such as CD, DVD or cassette players, the transport functions of those machines may also be controlled using the **Transport Controls** ㉗ **F** **H** **J** on either remote control.

To turn the system off from the remote room, press the **Power Off Button** ❶ **A**. Remember that the AVR580 may be turned on or off from the remote room, regardless of the system's operation or status in the main room.

NOTE: When the tuner is selected as the source for the remote zone, any change to the frequency or preset will also change the station being listened to in the main room, if the tuner is in use there. Similarly, if someone in the main room changes the station, the change will also impact the remote room.

To activate the feed to the remote room, while you are in the main listening room where the AVR580 is located, press the

Multiroom Button ㊴ on the remote. Next, press the **Set Button** ⑯. Press the ▲/▼ **Buttons** ⑭ to turn the multiroom feed on or off. When the multiroom system is on, the **Multiroom Indicator** D will light in the **Main Information Display** ㉙, and the **Lower Display Line** B or OSD will display MULTI ON. Press the **Set Button** ⑯ to enter the setting.

When the multiroom system is turned on, the input selected using the multiroom menu will be fed to the **Multiroom Audio Outputs** ㉗ on the rear panel. The volume will be as set in the previous selection, although it may also be adjusted using an optional IR sensor and the Zone II remote in the remote location, or on the optional audio power amplifier connected to the **Multiroom Audio Outputs** ㉗.

Once the multiroom system is turned on, it will remain on even if the AVR580 is placed in the Standby mode in the main room by pressing the **Power Off Button** A or the **System Power Control** ② on the front panel. To turn off the multiroom system, even when the AVR is in Standby mode in the main listening room, press the **Multiroom Button** ㊴ and then the **Set Button** ⑯. Press the ▲/▼ **Buttons** ⑭ so that the **Multiroom Indicator** D in the **Main Information Display** ㉙ goes out, and the **Main Information Display** ㉙ or OSD will display MULTI OFF. Press the **Set Button** ⑯ to enter the setting and turn the unit off.

Even when the AVR580 is turned off in the main room, the multiroom system may be turned on at any time by pressing the **Multiroom Button** ㊴, or any of the **Selector Buttons** B C D in the remote room.

The AVR580 is equipped with a powerful remote control that will control not only the receiver's functions, but also most popular brands of audio and video equipment, including CD players, cassette decks, TV sets, cable boxes, VCRs, satellite receivers and other home theater equipment. Once the AVR580's remote is programmed with the codes for the products you own, it is possible to eliminate most other remotes and replace them with the convenience of a single, universal remote control.

Programming the Product Codes

The AVR580 remote is factory-programmed for all AVR functions, as well as those of JBL DVD players. In addition, by following one of the methods below, you may program the remote to operate a wide range of devices from other manufacturers.

Direct Code Entry

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

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

2. Turn on the unit you wish to program into the AVR580 remote.

3. Press and hold both the **Input Selector 5** for the product you wish to control (e.g., VCR, TV) and the **Mute Button 43** at the same time. When the red light under the **Input Selector 5** stays lit and the **Program/SPL Indicator 3** turns amber and begins flashing, release the buttons. It is important that you begin the next step within 20 seconds.

4. Point the AVR580's remote toward the unit to be programmed, and enter the first three-digit code using the **Numeric Keys 18**. If the unit turns off, the correct code has been entered. Press the **Input Selector 5** again, and note that the red light will flash three times before going dark to confirm the entry.

5. If the device to be programmed in does NOT turn off, continue to enter

three-digit codes until the equipment turns off. At this point, the correct code has been entered. Press the **Input Selector 5** again and note that the red light under the **Input Selector 5** will flash three times before going dark to confirm the entry.

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

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

Auto Search Method

If the unit you wish to include in the AVR580's remote is not listed in the code tables in this manual or if the code does not seem to operate properly, you may wish to program the correct code using the Auto Search method that follows:

1. Turn on the unit that you wish to include in the AVR580 remote.

2. Press the **Input Selector 5** for the type of product to be entered (e.g., VCR, TV) and the **Mute Button 43** at the same time. Hold both buttons until the red light under the **Input Selector 5** stays lit and the **Program/SPL Indicator 3** turns amber and begins flashing. The next step must take place while the red light is on, and it must begin within 20 seconds after the light appears.

3. Point the AVR580 remote toward the unit to be programmed, and press either the ▲ or ▼ **Button 14**. Each press will send out a series of codes from the remote's built-in database. When the unit being programmed turns off, release the ▲/▼ **Button 14**, as that is your indication that the correct code is in use.

4. Press the **Input Selector 5**; the red light under the Input Selector will flash three times before going dark to confirm the entry.

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

Code Readout

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

1. Press and hold both the **Input Selector 5** for the device whose code you wish to find and the **Mute Button 43** at the same time. The **Program/SPL Indicator 3** will turn amber and begin flashing, and the red light under the **Input Selector 5** will stay lit. Release the buttons and begin the next step within 20 seconds.

2. Press the **Set Button 16**. The **Program/SPL Indicator 3** will then blink green in a sequence that corresponds to the three-digit code, with a one-second pause between each digit. Count the number of blinks between pauses to determine the digit of the code. One blink is the number 1, two blinks is the number 2, and so forth. Ten blinks are used to indicate a "0."

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

For future reference, enter the setup codes for the equipment in your system here:

DVD _____ **CD**_____

VID1/VCR _____ **VID2/SAT** ____

VID2/CBL _____ **VID3/TV** _____

VID4 _____ **TAPE** _____

Learning Codes

In addition to using codes from the remote's internal code library, the AVR580's remote is able to "learn" codes from remotes that may not be in the code library. Also, you may use this function to "learn over" the codes from a preprogrammed device to add functions not included in the preprogrammed codes. To learn or transfer codes from an IR remote to the AVR580's remote, follow these steps:

1. Place the front of the original remote with the code being sent so that it is facing the **IR Transmitter Window** ❷ on the AVR580 remote "head-to-head." The remotes should be between one and three inches apart.

2. Select the button on the remote that you wish to use as the device selector for the codes about to be entered. This may be any of the **Input Selectors** ❺.

3. Press the **Input Selector** ❺ button chosen and the **Learn Button** ㊷ at the same time. Hold these buttons until the **Program/SPL Indicator** ❸ flashes amber and the light under the device selector button turns red. Release the buttons.

4. Press the button on the AVR580 remote that you wish to program. The **Program/SPL Indicator** ❸ will stop flashing.

5. Within five seconds, press and hold the button on the original remote that you wish to "teach" into the AVR580 remote. When the **Program/SPL Indicator** ❸ turns green three times, release the button. The Program Indicator will then begin to flash amber again.

    NOTE: If the **Program/SPL Indicator** ❸ turns red during Step 5, the programming was not successful. Repeat the steps to see whether the code will "take."

6. Repeat Steps 4 through 6 for each button on the source remote that you wish to transfer to the AVR580 remote.

7. Once all codes have been transferred from the original source remote to the AVR580 remote, press the **Learn Button** ㊷.

8. Repeat Steps 1 through 7 for any additional remotes you wish to "teach" into the AVR580 remote.

Erasing Learned Codes

The AVR580's remote allows you to remove or erase the code learned into a single button for a single device, to remove or erase the code set for all the codes that have been programmed into specific device buttons, or to erase all commands that have been learned to all devices.

To erase a single learned code from within a single device's settings, follow these steps:

1. Press and hold both the **Input Selector** ❺ within which the individual button to be erased has been programmed and the **Learn Button** ㊷.

2. When the LED under the **Input Selector** turns red and the **Program/SPL Indicator** ❸ flashes amber, release the buttons.

3. Press and release the **Input Selector** ❺ again for the device within which the individual button to be erased has been programmed.

4. Press the **7 Button** ⓲ four times.

5. Press and release the individual button for which the code is to be erased. The **Program/SPL Indicator** ❸ will blink green two times and then return to amber.

6. To erase other buttons within the same device, press them as described in Step 5.

7. When all buttons to be erased have been pressed, press the **Learn Button** ㊷ to complete the process.

To erase all codes within a single device, follow these steps:

1. Press and hold both the **Input Selector** ❺ for which you wish to erase the codes and the **Learn Button** ㊷.

2. When the LED under the **Input Selector** turns red and the **Program/SPL Indicator** ❸ flashes amber, release the buttons.

3. Press and release the **Input Selector** ❺ again for the device whose codes you wish to erase.

4. Press the **8 Button** ⓲ four times.

5. The **Program/SPL Indicator** ❸ will turn off and the red light under the **Input Selector** will flash on and off once to indicate that the codes have been erased.

To erase all codes that have been programmed to all devices in the remote, follow these steps:

1. Press any **Input Selector** ❺ for which you wish to erase the codes and also the **Learn Button** ㊷.

2. When the LED under the **Input Selector** turns red and the **Program/SPL Indicator** ❸ flashes amber, release the buttons.

3. Press and release the **Input Selector** ❺ again for the device whose codes you wish to erase.

4. Press the **9 Button** ⓲ four times.

5. The **Program/SPL Indicator** ❸ will turn off and the red light under the **Input Selector** will flash on and off once to indicate that the codes have been erased.

Macro Programming

Macros enable you to easily repeat frequently used combinations of commands with the press of a single button on the AVR580's remote control. Once programmed, a macro will send out up to 19 different remote codes in a predetermined sequential order, enabling you to automate the process of turning on your system, changing devices, or other common tasks. The AVR580's remote can store up to five separate macro command sequences: one that is associated with the **Power On Button** ❶ and four more that are accessed by pressing the **Macro Buttons** ㉛.

1. Press the **Mute Button** ㊸ and the **Macro Button** ㉛ to be programmed or the **Power On Button** ❶ at the same time. An **Input Selector** ❺ ❻ will light red, and the **Program/SPL Indicator** ❸ will flash amber.

2. Enter the steps for the macro sequence by pressing the button for the actual command step. Although the macro may contain up to 19 steps, each button press, including those used to change devices, counts as a step. The **Program/SPL Indicator**

❸ will flash green to confirm each button press as you enter commands.

NOTE: While entering commands for Power On/Off of any device during a macro sequence, press the **Mute Button** ❹❸. DO NOT press the actual Power button.

3. When all the steps have been entered, press the **Sleep Button** ❿ to enter the commands. The red light under the **Input Selectors** ❺❻ will blink and then turn off.

  Example: To program the Macro 1 button so that it turns on the AVR580, TV and a cable box, follow these steps:

  • Press the **Macro 1 Button** ㉛ and **Mute Button** ❹❸ at the same time and then release them.

  • Note that the **Program/SPL Indicator** ❸ will flash amber.

  • Press the **AVR Selector** ❻.

  • Press the **Mute Button** ❹❸ to store the AVR580's Power On command.

  • Press the **VID 3 Input Selector Button** ❺ to indicate the next command is for "TV Power On."

  • Press the **Mute Button** ❹❸ to store the TV Power On Command.

  • Press the **VID 2 Input Selector Button** ❺ to indicate the next command is for "Cable Power On."

  • Press the **Mute Button** ❹❸ to store the Cable Power On command.

  • Press the **Sleep/Channel Up Button** ❿ to complete the process and store the macro sequence.

  After following these steps, each time you press the **Macro 1 Button** ㉛, the remote will send the Power On/Off command.

Erasing Macro Commands

To remove the commands that have been programmed into one of the Macro buttons, follow these steps:

1. Press the **Mute Button** ❹❸ and the **Macro Button** ㉛ that contains the commands you wish to erase.

2. The **Program/SPL Indicator** ❸ will flash amber, and the LED under the **AVR Selector** ❻ will turn red.

3. Within 10 seconds, press the **Surround Mode Selector/Channel Down Button** ⓫.

4. The red LED under the **AVR Selector** ❻ will go out, and the **Program/ SPL Indicator** ❸ will turn green and flash three times before it goes out.

5. When the **Program/SPL Indicator** ❸ goes out, the Macro has been erased.
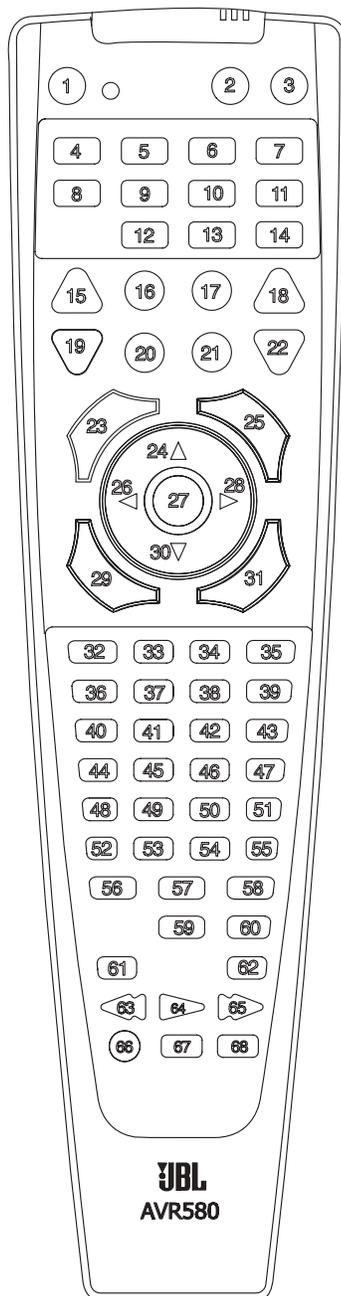
Figure 12

Programmed Device Functions

Once the AVR580's remote has been programmed for the codes of other devices, press the appropriate **Input Selector** ❺ to change the remote from controlling the AVR580 to controlling the additional product. When you press any one of the selectors, it will briefly flash in red to indicate that you have changed the device being controlled.

When operating a device other than the AVR580, the controls may not correspond exactly to the function printed on the remote or button. Some commands, such as the volume control, are the same as they are with the AVR580. Other buttons will change their function so that they correspond to a secondary label on the remote. For example, the Sleep and Surround mode selector buttons also function as the Channel Up and Channel Down buttons when operating most TV sets, VCRs or cable boxes. The Channel Up/Down indication is printed directly on the remote. For many standard CD players, cassette decks, VCRs and DVD functions, the standard function icons are printed on top of the buttons.

For some products, however, the function of a particular button does not follow the command printed on the remote. In order to see which function a button controls, consult the Function List tables on pages 46 and 47. To use those tables, first check the type of device being controlled (e.g., TV, VCR). Next, look at the remote control diagram in Figure 12. Note that each button has a number on it.

To find out what function a particular button has for a specific device, find the button number on the Function List and then look in the column for the device you are controlling. For example, button number 45 is the Direct button for the AVR580, but it is the "Favorite" button for many cable television boxes and satellite receivers. Button number 31 is the Delay button for the AVR580, but the Open/Close button for CD players.

NOTE: The numbers used to describe the button functions in Figure 12 for the purposes of describing how a button operates are a different set of numbers than those used in the rest of this manual to describe the button functions for the AVR580.

Notes on Using the AVR580 Remote With Other Devices

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

• When a button is pressed on the AVR580 remote, the red light under the **Input Selector** ❺❻ for the product being operated should flash briefly. If the Device Control Selector flashes for some but not all buttons for a particular product, it does NOT indicate a problem with the remote but rather that no function is programmed for the button being pushed.

Volume Punch-Through

The AVR580's remote may be programmed to operate the **Volume Control** ❹⓪ and **Mute** ④③ functions of either the TV or the AVR580 in conjunction with any of the devices controlled by the remote. For example, since the AVR580 will likely be used as the sound system for TV viewing, you may wish to have the AVR580's volume activated, although the remote is set to run the TV. Either the AVR580 or TV volume control may be associated with any of the remote's devices. To program the remote for Volume Punch-Through, follow these steps:

1. Press the **Input Selector** ❺ for the unit you wish to have associated with the volume control and the **Mute Button** ④③ at the same time until the red light appears under the **Input Selector** ❺; the **Program/SPL Indicator** ❸ will flash amber.

2. Press the **Volume Up Button** ❹⓪; the **Program/SPL Indicator** ❸ will stop flashing and stay amber.

3. Press either the **AVR Selector** ❻ or the **Input Selector** ❺, depending on which system's volume control you wish to have active for the punch-through mode. The **Program/SPL Indicator** ❸ will blink green three times and then go out to confirm the data entry.

Example: To have the AVR580's volume control activated even though the remote is set to control the TV, first press the **Video 3/TV Input Selector** ❺ and the **Mute Button** ④③ at the same time. Next, press the **Volume Up Button** ❹⓪, followed by the **AVR Selector** ❻.

NOTE: Should you wish to return the remote to the original configuration after entering a Volume Punch-Through, you will need to repeat the steps shown above. However, press the same Input Selector in Steps 1 and 3.

Channel Control Punch-Through

The AVR580's remote may be programmed to operate so that the channel control function for either the TV, cable or satellite receiver used in your system may be used in conjunction with one of the other devices controlled by the remote. For example, while using and controlling the VCR, you may wish to change channels on a cable box or satellite receiver without having to change the device selected by the AVR580 or the remote. To program the remote for Channel Control Punch-Through, follow these steps:

1. Press the **Input Selector Button** ❺❻ for the device you wish to have the channel control associated with and the **Mute Button** ④③ at the same time until the red light appears under the **Input Selector** ❺❻ and the **Program/SPL Indicator** ❸ flashes amber.

2. Press the **Volume Down Button** ❹⓪. The **Program/SPL Indicator** ❸ will stop flashing and stay amber.

3. Press and release the **Input Selector Button** ❺ for the device that will be used to change the channels. The **Program/SPL Indicator** ❸ will blink green three times and then go out to confirm the data entry.

Example: To control the channels using your cable box or satellite receiver while the remote is set to control the VCR, first press the **VID 1/VCR Input Selector Button** ❺ and the **Mute Button** ④③ at the same time. Next, release them and press the **Volume Down Button** ❹⓪, followed by the **VID 3/TV Input Selector Button** ❺.

NOTE: To remove the Channel Control Punch-Through and return the remote to its original configuration, repeat the steps shown in the example above. However, press the same Input Selector in Steps 1 and 3.

Transport Control Punch-Through

The AVR580's remote may be programmed to operate so that the **Transport Control Functions** ㉗ (Play, Stop, Fast Forward, Rewind, Pause and Record) for a VCR, DVD or CD will operate in conjunction with one of the other devices controlled by the remote. For example, while using and controlling the TV, you may wish to start or stop your VCR or DVD without having to change the device selected by the AVR580 or the remote. To program the remote for Transport Control Punch-Through, follow these steps:

1. Press the **Input Selector** ❺❻ for the device you wish to have the channel control associated with and the **Mute Button** ④③ at the same time until the red light appears under the **Input Selector** ❺ and the **Program/SPL Indicator** ❸ flashes amber.

2. Press the **Play Button** ㉗. The **Program/SPL Indicator** ❸ will stop flashing and stay amber.

3. Press and release the **Input Selector Button** ❺ for the device that will be used to change the channels. The **Program/SPL Indicator** ❸ will blink green three times and then go out to confirm the data entry.

Example: To control the transport of a DVD player while the remote is set to control the TV, first press the **VID 3/TV Input Selector Button** ❺ and the **Mute Button** ④③ at the same time. Next, release them and press the **Play Button** ㉗, followed by the **DVD Input Selector Button** ❺.

NOTES:
• To remove the Channel Control Punch-Through and return the remote to its original configuration, repeat the steps in the example above. However, press the same Input Selector in Steps 1 and 3.

• The remote control is programmed at the factory to include transport control for JBL DVD players while the remote is set to control the AVR.

- Before programming the remote for Volume, Channel or Transport Punch-Through, make certain that any programming needed for the specific TV, CD, DVD, cable or satellite receivers has been completed.

Reassigning Device Control Selectors

Although each **Input Selector ❺** is normally assigned to the category of product shown on the remote, it is possible to reassign one of these buttons to operate a second device of another type. For example, if you have two VCRs but no satellite receiver, you may program the "SAT" button to operate a second VCR. Before following the normal programming steps for either Three-Digit entry or Auto Search code entry, you must first reassign the button with the following steps:

1. Press the **Input Selector ❺** you wish to reassign and the **Mute Button ㊸** at the same time until the red light appears under the **Input Selector ❺** and the **Program/SPL Indicator ❸** flashes amber.

2. Press the **Input Selector ❺** for the device you wish to program into the reassigned button.

3. Enter the three-digit code for the specific model you wish the reassigned button to operate.

4. Press the same **Input Selector ❺** pressed in Step 1 once again to store the selection. The red LED under the reassigned Input Selector will flash three times and then go out.

   Example: To use the CBL/SAT button to operate a second VCR, first press the **Video 2/CBL/SAT Input Selector ❺** and the **Mute Button ㊸** at the same time until the red light glows under the **Video 2/CBL/SAT Button ❺**. Press the **VCR Button ❺**, followed by the three-digit code for the specific model you wish to control. Finally, press the **Video 2/CBL/SAT Button ❺** again.

Resetting the Remote Memory

As you add components to your home theater system, occasionally you may wish to totally reprogram the remote control without the confusion of any commands, macros or "Punch-Through" programming that you may have done. To do this, it is possible to reset the remote to the original factory defaults and command codes by following these steps. However, once the remote is reset, all commands or codes that you have entered will be erased and will need to be reentered:

1. Press any of the **Input Selector Buttons ❺** and the **"0" Button ⓲** at the same time until the **Program/SPL Indicator ❸** begins to flash amber.

2. Press the **"3" Button ⓲** three times.

3. The red LED under the **Input Selector ❺** will go out and the **Program/SPL Indicator ❸** will stop flashing and turn green.

4. The **Program/SPL Indicator ❸** will remain green until the remote is reset. Note that this may take a while, depending on how many commands are in the memory that need to be erased.

5. When the **Program/SPL Indicator ❸** goes out, the remote has been reset to the factory settings.

FUNCTION LIST

No.	Button Name	AVR Function	DVD	CD/CD-R	Tape	VCR (VID1)	CBL (VID2)	SAT (VID2)	TV (VID3)
1	**Power On**	Power On	Power On	Power On	Power On	Power On	Power On	Power On	Power On
2	**Power Off**	Power Off	Power Off	Power Off	Power Off	Power Off	Power Off	Power Off	Power Off
3	**Mute**	Mute	Mute	Mute	Mute	Mute	Mute	Mute	Mute
4	**AVR**	AVR Select							
5	**DVD**	DVD Input Select	DVD Select						
6	**CD**	CD Input Select		CD Select					
7	**Tape**	Tape Input Select			Tape Select				
8	**VID 1**	Video 1 Select				VCR Select			
9	**VID 2**	Video 2 Select					CBL Select	SAT Select	
10	**VID 3**	Video 3 Select							TV Select
11	**VID 4**	Video 4 Select							
12	**AM/FM**	Tuner Select							
13	**6/8 Ch. Select**	6/8 Ch. Input Select							
14	**Learn**								
15	**Sleep**	Sleep				Channel +	Channel +	Channel +	Channel +
16	**Test**	Test Tone	TV/DVD	Input Select		TV/VCR	TV/Cable	TV/Sat	TV/VCR
17	**SPL**	EzSet/SPL							
18	**Volume Up**	Volume Up		Input Level Up		Volume Up	Volume Up	Volume Up	Volume Up
19	**Surround Select**	Surround Mode Select		CDR Select		Channel −	Channel −	Channel −	Channel −
20	**Night**	Night Mode Select	Subtitle On/Off	CDR Select					
21	**Multiroom**	Multiroom Select							
22	**Volume Down**	Volume Down		Input Level Down			Volume Down	Volume Down	Volume Down
23	**Channel/Guide**	Channel Trim	Title				Info/Guide	Info/Guide	
24	**▲**	Move/Adjust Up	Up			Up	Up	Up	Up
25	**Speaker/Menu**	Speaker Adjust	Menu	Intro Scan		Menu	Menu	Menu	Menu
26	**◄**	Move/Adjust Left	Left			Left	Left	Left	Left
27	**Set**	Set	Enter			Enter	Enter	Enter	Enter
28	**►**	Move/Adjust Right	Right			Right	Right	Right	Right
29	**Digital/Exit**	Digital Input Select	Open/Close			Exit	Exit	Exit	Exit
30	**▼**	Move/Adjust Down	Down			Down	Down	Down	Down
31	**Delay/Prev. Ch.**	Delay Adjust	Return	Open/Close			Prev Channel	Prev Channel	Prev Channel
32	**1**	1	1	1		1	1	1	1
33	**2**	2	2	2		2	2	2	2
34	**3**	3	3	3		3	3	3	3
35	**4**	4	4	4		4	4	4	4
36	**5**	5	5	5		5	5	5	5
37	**6**	6	6	6		6	6	6	6
38	**7**	7	7	7		7	7	7	7
39	**8**	8	8	8		8	8	8	8
40	**Tun-M**	Tuner Mode	Chapter	Repeat					
41	**9**	9	9	9		9	9	9	9
42	**0**	0	0	0		0	0	0	0
43	**Memory**	Memory	Audio	Time					
44	**Tune Up**	Tune Up	Next Chapter	Track Direct		Cancel			Sleep

No.	Button Name	AVR Function	DVD	CD/CD-R	Tape	VCR (VID1)	CBL (VID2)	SAT (VID2)	TV (VID3)
45	**Direct**	Direct Tuner Entry	Angle	Random Play			FAV	FAV	
46	**Clear**	Clear	Clear	Clear		Clear	Bypass	Next	Clear
47	**Preset Up**	Preset Tune Up	Slow Forward	+10			Music	Alt	
48	**Tune Down**	Tune Down	Prev Chapter	Track Increment					
49	**OSD**	OSD		Program		OSD	OSD	OSD	OSD
50	**D. Skip**		Disc Skip	Disc Skip					
51	**Preset Down**	Preset Tune Down	Slow Rev						
52	**M1**	Macro 1							
53	**M2**	Macro 2							
54	**M3**	Macro 3							
55	**M4**	Macro 4							
56	**Dolby**	Dolby Modes							
57	**DTS SURR**	DTS Digital Modes							
58	**DTS Neo:6**	DTS Neo:6 Select							
59	**Logic 7**	Logic 7 Select							
60	**Stereo**	Stereo Mode Select							
61	**Skip Down**		Skip –	Skip –		Scan –			
62	**Skip Up**		Skip +	Skip +		Scan +			
63	**Rewind**		R. Search	R. Search	Rewind	Rewind			
64	**Play**		Play	Play	Play	Play			
65	**Fast Forward**		F. Search	F. Search	Fast Fwd	Fast Fwd	Day +	Day +	
66	**Record**			Record	Record	Record			
67	**Stop**		Stop	Stop	Stop	Stop			
68	**Pause**		Pause	Pause		Pause			

SETUP CODE TABLE: TV

Manufacturer/Brand	Setup Code Number																
ADMIRAL	065	171	262	279	324												
AKAI	019	049	050	063	102	123	133	139	141	150	174	182	195	209	225	281	288
AKURA	006	049	076	096	123	195											
ALBA	044	049	050	123	134	163	179	184	195	225	228	239					
ALBIRAL	121	326	327														
ALLORGAN	050																
AIWA	331	332															
AMSTRAD	004	011	195														
ANAM	376	377															
ARC EN CIEL	029	034	074	182	186												
ARCAM	029	272															
ARISTONA	050	063	065	079	112	158	160	188	271								
ARTHUR MARTIN	075	107	127	133	136	139	148	153	262								
ASA	003	020	065	078	080	091	117	146	171	197	235	262	274	279	296	308	330
ASTRA	195																
ASUKA	006	050	076	123													
ATLANTIC	050	113	236	242	272												
ATORI	195																
AUDIOSONIC	031	076	195														
AUDIOTON	050																
AUSIND	075	090															
AUTOVOX	050	071	078	079	080	083	090	138	147	156	236	254	260	274	278	279	
BAIRD	102	209															
BANG & OLUFSEN	279																
BARCO	310	326	327														
BASIC LINE	006	031	049	123	195	207	226										
BAUR	053	107	150	244	245	246	256	312									
BEKO	063	184	240	241													
BLAUPUNKT	019	053	057	060	113	118	244	245	246	248	249	263					
BOOTS	050																
BPL	006																
BRANDT ELECTRONIQUE	029	034	074	182	186												
BRIONVEGA	065	083	167	173	181	196	279	311									
BRITANNIA	272																
BRUNS	056	065	279														
BSR	094	110	139	168	269												
BUSH	006	018	049	123	134	139	142	143	179	195	223	225	226	239	262	287	
BUSH (UK)	107	147	168														
CENTURY	044	054	065	163	189	279											
CGE	002	044	054	090	093	094	096	139	142	163	168	189	309	324			
CIHAN	111																
CLARIVOX	056	121	125														
CLATONIC	076	123															
COMTEL	111	125															
CONDOR	050	113	272														
CONTEC	018	257															
CONTINENTAL EDISON	029	034	074	182	186												
CROSLEY	044	054	065	090	093	094	104	139	279	309							
CROWN	154																

Manufacturer/Brand	Setup Code Number																			
CTC CLATRONIC	045
DAEWOO	063	140	145	161	193	195	375
DANSAI	063
DAYTRON	195	226
DECCA	111	120	200	286
DECCA (UK)	046	050	102	106	131
DEGRAAF	023	122	209	262
DIXI	063	195
DORIC	104	105
DUAL	050	095	139	156	168	243
DUAL-TEC	040	050	168	195
DUMONT	020	045	061	065	075	078	080	091	104	117	139	146	147	274	279	294	296	308	330
DYNATRON	049	063
ELBE	121	194	292	323	324
ELCIT	045	046	047	062	065	104	111	150	168
ELECTRO TECH	195
ELEKTRONSKA	273
ELMAN	045	168
ELTA	195
EMERSON	004	044	065	279	282
ERRES	063	112
ETRON	139
EUROPHON	044	045	046	050	068	120	168	273	291
EXPERT	242
FENNER	063	195
FERGUSON	001	032	050	073	074	076	080	082	102	103	121	158	204	244	245	246	251	258	261	274
	276	277	283	284	290	299	304
FIDELITY	050	158	262	272	319
FIDELITY (UK)	133	304
FILSAI	050
FINHER	314
FINLANDIA	033	122	223	262
FINLUX	003	020	045	061	075	078	080	090	091	104	117	139	146	147	163	197	235	274	279	294
	296	308	330
FIRST LINE	139
FISHER	050	056	065	069	104	117	139	143	156	189	206	275	279
FORGESTONE	158	304
FORMENTI	090	139	262	272	279
FORMENTI-PHOENIX	050	075	104	113	148	262
FORTRESS	190	279
FRONTECH	076	139	262
FUJITSU	282
FUNAI	076	094	269	282
GBC	031	104	139	143	168	195
GEC	104	120	171	262
GEC (UK)	046	050	102	107	150	162	192
GELOSO	031	047	062	104	139	168	171	195	262
GENEXXA	123	262
GOODMANS	018	063	102	139	143	155

Manufacturer/Brand	Setup Code Number																		
GORENJE	124	189																	
GRAETZ	090	104	136	139	153	159	162	171	198	262									
GRANADA	018	033	063	102	104	105	112	120	148	171	209	237	238	240	241	262	280	318	
GRANADA (UK)	046	050	090	107	139	143	162	262											
GRUNDIG	005	019	053	080	090	101	115	118	166	244	245	246	247	248	249	263	295	296	
HANSEATIC	018	049	050	063	104	107	113	143											
HANTAREX	046																		
HEMMERMANN	150																		
HIFIVOX	029	034	074	182	186	259													
HIGASHI	050																		
HINARI	004	018	042	049	066	119	123	133	139	143	195	209	262	282					
HITACHI	007	009	018	020	023	033	050	074	086	104	107	110	126	127	139	143	150	162	168	171
	176	182	185	186	192	212	218	231	259	262	264	270	288	289	299	316			
HYPER	050	168	195	254	316														
IMPERIAL	002	044	054	090	093	094	142	163	168	189	262	309	324						
INGELEN	090	104	136	139	153	159	162	171	198										
INGERSOL	195																		
INNO HIT	044	046	050	066	102	123	155	195	217										
INTERFUNK	049	063	065	074	090	104	112	139	150	153	159	182	256	262	279	318			
INTERVISION	333	334	335	336	337	339	340	341	342	343	344								
IRRADIO	031	066	075	090	123	155	195	254											
ISUKAI	123																		
ITT	090	117	134	139	150	157	162	171	193	198	209	256	262	287	298	305			
ITT-NOKIA	090	097	104	117	134	136	139	150	153	159	162	171	172	185	193	198	209	256	262	287
	298	305																	
JET POINT	320																		
JVC	018	103	123	129	143	158	170	174	182	225	287	319	370						
KAISUI	031	050	123	207															
KAMOSONIC	050																		
KAPSCH	236	242																	
KARCHER	003	020	031	050	068	107	195	207	217										
KATHREIN	124																		
KAWASHO	272																		
KENDO	044	045																	
KENNEDY	071	079	104	139	236	260	278												
KLARMAX	326	327																	
KNEISSEL	324																		
KONKA	365																		
KORTING	027	065	094	113	279														
KRIESLER	050	063	065	079	112	158	160	188											
KTV	050																		
LENOIR	050	195																	
LEYEO	076																		
LG (GOLDSTAR)	050	055	063	107	139	152	155	168	195	202	203	219	254	272	373				
LOEWE	089																		
LOEWE OPTA	035	046	049	052	063	065	120	144	213	279									
LOGIC	286	304																	
LOGIK	032	131	158	304	319														
LUMA	063	110	133	171	236	262													
LUXOR	050	090	107	122	127	133	139	150	155	159	172	185	209	262	267				

Manufacturer/Brand	Setup Code Number																			
LYCO	076																			
M ELECTRONIC	003	235	308	330																
MAAZ	326	327																		
MAGNADYNE	045	046	047	062	065	104	120	139	150	168	265	273	279							
MAGNAFON	045	046	050	068	075	090	120	235	265	272	291									
MANESTH	063																			
MARANTZ	063																			
MARELLI	279																			
MARK	063																			
MATSUI	001	004	049	050	094	100	102	107	131	134	143	150	171	179	180	195	225	229	232	262
	269	286																		
MAXIMAL	119	139																		
MAXWELL	326	327																		
McMICHAEL	192																			
MEMOREX	195																			
METZ	019	051	053	065	067	070	092	118	169	244	245	246	279							
MINERVA	019	053	080	090	118	244	245	246	248	249	295	296								
MISTRAL	158	304																		
MITSUBISHI	013	018	019	021	049	063	065	105	124	131	132	143	157	164	183	244	245	246	252	266
	281	285	286	287	369															
MIVAR	043	046	050	058	072	081	090	120	155	272	273	292								
MULTITECH	031	045	046	050	120	189	195	265												
MURPHY	104	105	117	171	254	262														
MURPHY (UK)	162																			
NAD	209																			
NAONIS	036	040	071	079	110	171														
NATIONAL	033	085	104																	
NEC	018	143	177																	
NECKERMANN	002	050	065	107	133	139	180	189	250	262	279	312								
NEDIATOR	063																			
NEI	063	125																		
NEWTECH	050																			
NICAMAGIC	272																			
NIKKAI	102	123	139																	
NIKKIA	066																			
NOBLEX	314	315																		
NOBLIKO	044	045	050	075	080	090	235	265												
NOGAMATIC	029	034	074	182	186															
NOKIA	090	104	117	134	136	139	150	153	157	159	162	171	193	198	209	256	262	287	298	305
NORDMENDE	017	029	034	038	074	083	130	150	165	174	182	186	218	259	262	288	289			
OCEANIC	104	108	109	116	139															
OCEANIC (F)	150																			
ONCEAS	050																			
OPTONICA	190																			
ORION	004	051	094	131	134	139	150	179	191	195	199	216	269	286	321	322				
OSAKA	066																			
OSAKI	066	102	123																	
OSIO	155																			
OSUME	018	257																		

Manufacturer/Brand	Setup Code Number																			
OTTO VERSAND	018	049	050	053	063	104	107	139	143	244	245	246	250	287	312	317				
P.T. ACTRON	111																			
PAEL	050	075																		
PANASONIC	099	104	137	149	151	351	352	353	354	355	356	357	358	359	360	364	371			
PATHÉ CINEMA	113	121																		
PATHÉ CINEMA (F)	050	168																		
PATHÉ MARCONI	029	034	074	182	186															
PAUSA	195																			
PERDIO	102																			
PHILCO	002	016	044	054	065	090	093	094	104	142	163	168	189	279	309	324				
PHILIPS	015	022	049	050	063	065	079	089	111	112	157	158	160	175	188	192	215	217	220	221
	250	268	271	272	279	292	297	304	305	318	328	329	361	379						
PHOENIX	050	075	104	113	148	279														
PHONOLA	022	050	063	065	079	112	158	160	188	250	271	279								
PIONEER	049	063	074	182	209	218	227	262	378											
PRANDONI-PRINCE	044	046	075	090	120	171	262													
PREMIER	142																			
PRIMA	262																			
PRINCE	044	046	075	171																
PROFEX	139																			
PROLINE	030	049	102	191	321															
PROTECH	063	076	139	265																
PYE	050	063	065	079	112	157	158	160	188	250										
QUASAR	045	046	068	075	155															
QUELLE	003	019	020	037	049	050	053	063	075	078	080	090	091	094	113	115	117	118	131	139
	146	147	150	153	155	235	244	245	246	254	256	274	295	296						
RADIOLA	050	063	065	079	112	158	160	188	250	297										
RADIOMARELLI	045	046	047	062	063	065	104	105	150	168										
RADIONETTE	003	020	117	150																
RAMK	296																			
RANDT	029																			
RANK	147																			
RBM	296																			
RBM(UK)	147																			
REDIFFUSION	059	104	105	139	150	162	171	262	266	298										
REX	036	040	063	071	079	095	110	138	171	236	242	243	260	262	278	293				
RFT	345	346	347	348	349	350														
ROADSTAR	031	195																		
ROBOTRON	056	065																		
ROTEL	257																			
ROWSONIC	050																			
RTF	056	065																		
SABA	014	017	025	029	034	038	046	065	074	077	120	133	178	182	186	218	259	262	279	288
	289																			
SACCS	121																			
SAISHO	004	050	076	084	131	132	134	179	195	233	262	285	286							
SALORA	033	075	107	127	133	136	139	148	150	153	171	172	185	198	209	256	262	267		
SREDS	045	046	068	075	090	120	155	265	291											
SAMPO	135																			
SAMSUNG	050	063	066	076	102	155	189	195	217	314	315	320	372							

Manufacturer/Brand	Setup Code Number																		
SANYO	003	018	020	041	050	056	065	102	117	131	143	189	198	201	206	209	257	275	280 286
	287	306	368																
SBR	063	112	157	158	192	268	271												
SCHAUB LORENZ	090	104	136	139	153	159	162	171	198	262									
SCHNEIDER	031	040	050	063	065	069	079	095	104	112	114	139	148	156	158	160	168	188	243 250
	262	271	283	297															
SCOTT	282																		
SEG	045	050	056																
SEI	004	051	094	139	265	269	279												
SEL SINUDYNE	250																		
SELECO	036	040	063	071	079	095	110	138	171	236	242	243	260	262	278	293	294	324	
SENTRA	139																		
SHARP	018	094	143	190	206	214	257	317	319										
SIAREM	045	046	065	104	120	139	265	279											
SICATEL	121																		
SIEMENS	003	018	019	023	053	066	113	118	206	244	245	246	247	248	249	257	262		
SIERA	050	063	065	079	112	158	160	188											
SILVER	076																		
SINGER	045	047	065	104	279	324													
SINUDYNE	004	031	045	051	063	065	094	104	134	139	150	210	216	265	269	279	321	322	
SKANTIC	262																		
SOLAVOX	066	139	262																
SONOKO	050	063	076	195															
SONY	012	018	028	065	088	131	139	143	204	208	211	279	286	312	313	325	366	367	374
SOUND WAVE	049	113	163																
STANDARD	050																		
STERN	036	040	063	071	079	095	110	138	171	236	242	243	260	262	278	293			
SUNKAI	269	322																	
TANDBERG	065	078	169	182	259														
TANDY	050	096	102	123	190	262													
TASHIKO	018	050	143	192	201														
TATUNG	050	102	106	111	120	131	200	253	286										
TCL	363																		
TEC	040	050	168	243															
TEKNIKA	282																		
TELEAVIA	029	034	074	182	186														
TELEFUNKEN	032	037	064	074	082	178	182	186	187	218	290								
TELETECH	195																		
TELETON	236																		
TELEVIDEON	050	075	104	113	148														
TENSAI	050	063	117	123															
TETUNG	046																		
TEXET	050																		
THOMSON	008	010	017	029	034	074	134	147	174	182	186	218	230	234	259	264	288	289	
THORN	053	103	117	158	222	276	304												
THORN-FERGUSON	032	073	074	076	080	082	103	121	158	178	258	261	274	276	277	283	284	290	304 308
	312	313	319	330															
TMK	143																		
TOSHIBA	001	018	128	141	143	147	205	287	296	324	362								
TRANS CONTINENS	044	046	075	171	262														

Manufacturer/Brand	Setup Code Number												
TRISTAR	304	319											
TRIUMPH	004	046	147	235	294								
UHER	069	080	090	113	147	148	236	242	262				
ULTRAVOX	044	045	047	050	065	104	133	139	279				
UMA	260												
UNIVERSUM	003	020	076	155	202	235	244	245	246	308	312	330	
UNIVOX	121												
UTAX	050												
VEGAVOX	163												
VESTEL	125	319											
VEXA	063	195											
VICTOR	174												
VOLTEC	074												
VORTEC	063												
VOXSON	065	090	171	262	279								
WALTHAM	262												
WATSON	113	244	245	246									
WATT RADIO	045	050	068	104	121	139	150	265	272	291			
WELTBLICK	063												
WESTINGHOUSE	063	094	272										
WESTON	168												
WHITE	045												
WHITE WESTINGHOUSE	050	113											
WINTERNITZ	316												
YOKO	050	195											
ZANUSSI	036	040	063	071	079	095	110	138	171	236	260	262	278 293
ZOPPAS	036	040	071	079	110	171	262						

SETUP CODE TABLE: VCR

Manufacturer/Brand	Setup Code Number
AGASHI	155
AIOSTAY	148
AIWA	039 044 055 073 112 116 121 148 152
AKAI	028 035 044 053 070 090 092 103 124 133 149 150 155
AKURA	029 112
ALBA	029 061 073 114 119 120 121 136 144
ALBIRAL	155
AMSTRAD	039 107 119 148
ANGLO	148
ANITECH	030 155
APHEL SOUND	148
ARC EN CIEL	044 045 090
ARISTONA	049 091 109
ASA	054 055 148
ASBERG	155
ASTRA	148
ASTRO SOUND	155
ATLANTIC	155
AWA	150 155
AWATRON	148
BAIRD	044 103 144
BANG & OLUFSEN	044 155
BASIC LINE	029 061 073
BAUR	054 134 155 156 157 158
BLAUPUNKT	086 091 098 107 109 129 137 140 147
BRANDT ELECTRONIQUE	044 045 090
BRAUN	147
BRIONVEGA	139 160
BUSH	028 029 061 073 119 120 121 136 144
BUSH(UK)	134
C.EDISON	160
CANON	147
CAPEHART	061
CASIO	148
CGE	039 044 090 133 148 155
CIHAN CLARIVOX	155
CONDOR	155
CONTINENTAL EDISON	044 045 090
CORVUS	148
CRAIG	008 042
CROSLEY	160
CROWN	009 061 144
CROWN/ONWA	148
CURTIS MATHES	060 062
DAEWOO	009 061 063 064 068 069 144 155 174 178 179
DANSAI	055
DAWA	155
DAYTRON	061
DECCA	039 044 048 148 155
DECCA (UK)	054
DEGRAAF	015 018 039 049 054 148

Manufacturer/Brand	Setup Code Number
DESMET	155
DIXI	078
DOMOH	155
DORIC	160
DUAL	044 090 128 148 155
DUMONT	015 039 054 148 155
DYNATECH	039 148
ELBE	036 148
ELIN	042 149 155
ELTA	148
EMERSON	011 032 039 060 062 073 127 148 155
ESSELTE	148
EUROMAN	155
FENNER	155
FERGUSON	003 005 044 083 085 090 094 100 104 108 122 130 131 135 138
FIDELITY	039 148 162
FINLADIA	015 054
FINLUX	015 018 019 039 044 049 053 054 103 107 143 146 147 148 149 159
FIRST LINE	053 148 155
FISHER	008 015 019 032 034 160
FORMENTI	155 159
FORMENTI-PHOENIX	054
FRONTECH	061
FUJITSU	148
FUNAI	039 148
GRANADA(UK)	107
GBC	093 155 159
GBC(UK)	054 084
GE	060 062
GEC	160
GELOSO	093 159
GENERAL	148
GOLDMEDAL	148
GOODMANS	029 039 042 050 054 055 061 073 144 148 155
GRAETZ	044 045 084 090 106
GRAETZ(ITT)	160
GRANADA	001 015 019 049 109 147 149 155 160 162
GRANADA(UK)	018 054 134 140
GRANDIN	160
GRONIC	155
GRUNDIG	054 086 091 097 098 099 109 140 143
HANSEATIC	054 134 155 160
HARMAN KARDON	036
HIFIVOX	044 045 090
HINARI	011 029 072 073 078 093 112 117 121 127
HITACHI	018 025 039 044 074 087 090 134 138 149 160
HYPER	155
HYPSON	155
IMPERIAL	039 042 096 148 155
INGELEN	044 045 090 106

Manufacturer/Brand	Setup Code Number														
INGERSOL	078														
INNO HIT	042	054	093	160											
INTERFUNK	054	084	155	160											
INTERVIDEO	148														
INTERVISION	148	155													
ITT	015	019	042	044	084	090	103	133	139						
ITT-NOKIA	015	019	042	044	045	084	090	103	106	133	139	149	150	155	160	162
JENSEN	044														
JVC	001	004	007	010	044	045	047	085	090	112	115	133	135	141	
KAMBROOK	148														
KANSAI	148														
KAPSCH	160														
KARCHER	042	054	134	155											
KENDO	103														
KENWOOD	019	044	047	112											
KOENIG	159														
KOERTING	155														
KOLSTER	155														
KRIESLER	049	091	109												
KUBA	147	148													
LENOIR	155														
LEYCO	155														
LLOYD	039	148													
LG (GOLDSTAR)	036	055	134	148	155	173									
LOEWE	065														
LOEWE OPTA	054	082	091	109	140	155									
LOGIK	029	042	073	078	103										
LUMA	032														
LUXOR	103	106	134	148	149	160									
LXI	055														
M ELECTRONIC	039	148	155												
MAGNADFON	160														
MAGNADYNE	054	155	159	160											
MAGNASONIC	019	106													
MAGNAVOX	060	062													
MANESTH	148														
MARANTZ	036	050	054	073	091	109	111	140							
MATSUI	011	032	042	055	073	078	114	118	121	127	134	136	160		
MAXWELL	155														
MEMOREX	008	015	019	039	049	055	148								
METZ	091	098	105	109	140										
MGA	053														
MINERVA	086	098	109	140											
MINOLTA	018	025	149												
MITSUBISHI	047	053	054	076	098	123	154	155	168						
MONEXE	148														
MTC	039	042	148												
MULTITECH	021	029	039	054	098	144	148	155							
MURPHY	039	148	160												
NAKAMURA	148														

Manufacturer/Brand	Setup Code Number																		
NAONIS	044	045	090																
NATIONAL	107																		
NEC	036	044	047	090															
NECKERMANN	011	019	042	044	054	090	109	127	133	134	139	140	155	156	157	158	160		
NEI	054	155																	
NESCO	148																		
NEWTECH	155																		
NIKKAI	061																		
NOBLIKO	109	140																	
NOGAMATIC	044	045	090																
NOKIA	015	019	042	044	045	084	090	103	106	133	139								
NORDMENDE	004	007	010	014	016	020	022	023	037	039	044	045	047	090	095	097	101	102	125	126
	128	132	133	141	142	159	161												
OCEANIC (ITT)	160																		
OCEANIC	149																		
OLYMPUS	107	147																	
OMAGA	148																		
OPTONICA	049	050																	
ORAVA/OTF	155																		
ORION	011	031	032	033	059	073	078	127	148	155									
OSAKI	039	055	148	155															
OTTO VERSAND	054	098	134	147	155	156	157	158	159										
PALLADIUM	148	160																	
PANAMA	155																		
PANASONIC	017	071	084	088	089	107	129	137	147	148	160	167							
PATHÉ MARCONI	044	045	090																
PCM	155																		
PENTAX	018	025																	
PERDIO	039	148																	
PHILCO	148	155	160																
PHILIPS	006	041	043	046	049	050	054	065	079	082	091	109	145	146	155	175	176	177	
PHONOLA	049	054	082	091	109														
PIONEER	047	054	113	145															
PLANTRON	160																		
PORTLAND	061																		
PROLINE	039	148																	
PROSCO	148																		
PYE	049	054	082	091	109														
QUALCRAFT	148	150																	
QUARTZ	019																		
QUELLE	011	042	044	048	054	055	098	107	109	127	139	140							
RADIOLA	049	091	109																
RADIONETTE	084	160																	
RCA	060	062																	
REALISTIC	008	015	019	039	042	049	050	147	148										
RECOR	155																		
REDIFFUSION	160																		
REX	004	007	044	045	090														
ROADSTAR	029	042	055	148															
SABA	004	007	009	012	013	014	016	022	023	044	045	047	090	102	125	128	132	133	142

Manufacturer/Brand	Setup Code Number
SAISHO	011 032 073 078 087 090 114 127 136 148
SALORA	001 019 053 134 162
SAMBERS	148
SAMSUNG	009 042 054 056 057 060 062 066 067 092 096 150 155 169 172
SANYO	002 008 015 019 040 073 106 149 151 160
SBR	054 079 082
SCHAUB LORENZ	044 045 084 090 106 160
SCHNEIDER	029 039 042 049 054 091 096 109 148 155 160
SEG	042 096 148
SEI-SINUDYNE	078
SELECO	044 045 090 155
SENTRA	061 149
SHARP	049 050 058 075 148
SHINKO	148
SHINTOM	029 148
SIAREM	159 160
SIEMENS	019 086 091 098 106 109 140
SIERA	049 091 109
SIMKO	148
SINGER	155
SINUDYNE	054 078 146 155 160
SOLAVOX	149 160 162
SONAMIC	148
SONOKO	144 155
SONTEC	155
SONY	039 048 051 052 077 081 156 157 158 171
STERN	044 045 090
STRONG	148
STS	018
STZ	148
SUNKAI	073
SUNSTAR	039 148
SUPERTEC	148 155
SUPRA	148 155
SYLVANIA	039 053 148
SYMPHONIC	039 053 148
TANDBERG	032 127
TASHIKO	039 049 148
TATUNG	039 044 148
TEAC	039 044 148
TEAK	155
TEC	148 155
TECHNICS	107 147
TEINEL	155
TEKNIKA	039 148
TELEAVIA	044 045 090
TELEFUNKEN	004 007 016 024 026 038 044 045 090 128 132 133
TELERENT	147 148
TELEVIDEON	155 159 160
TEMPEST	150
TENDBERG	098

Manufacturer/Brand	Setup Code Number																		
TENOSAL	029																		
TENSAI	148	155																	
TETUNG	054																		
THOMSON	016	020	044	045	047	090	126	128	133	141									
THORN	044	085	090	110	135														
THORN-FERGUSON	004	022	023	044	083	085	090	094	100	104	108	130	131	133	135	149	155	156	157	158
	160	162																	
TMK	127																		
TOSHIBA	009	044	045	053	080	090	153	155	170										
TOTEVISION	042																		
TRANSONIC	155																		
UHER	042	044	096																
ULTRAVOX	139	155	159	160															
UNIC RADIO	148																		
UNITECH	042																		
UNIVERSUM	147	148	149	155	156	157	158	160											
UNIVOX	155																		
URANYA	155	160																	
VEXA	155																		
VICTOR	044	047	141																
VICTOR RESEARCH	036																		
VIDEO TEC	148																		
VIDITAL	160																		
WARDS	060	062																	
WATSON	155	159																	
WATTRADIO	159	160																	
WELTBLICK	155																		
WHITE WESTINGHOUSE	139	160																	
XENON	032																		
YAMAHA	036	044																	
YOKO	042	098	148	155															
ZANELA	148																		
ZANUSSI	044	045	090																
ZENDER	090																		
ZOPPAS	044	045																	

SETUP CODE TABLE: CD

Manufacturer/Brand	Setup Code Number								
ADC	012								
ADCOM	049	063	069						
AIWA	072	111	118	156	170				
AKAI	050	177	184						
ARCAM	221								
AUDIOACCESS	125								
AUDIOFILE	211								
AUDIOMECA	221								
AUDIO TECHNICA	053								
BSR	044	064							
CALIFORNIA AUDIO	015	109							
CAPETRONIC	070								
CARRERA	064	087							
CARVER	051	057	136	140	141	144	145	185	186
CASIO	066	117	122	166					
CLARINETTE	122	166							
CROWN	042								
CURTIS MATHES	066								
DENON	187	188	212						
EMERSON	049	052	093	108					
FISHER	023	055	057	068					
FRABA	117								
FUNAI	126								
GE	164								
GENEXXA	017	096	108						
GRUNDIG	221	225	226	227	228				
HAITAI	099	214							
HARMAN KARDON	001	002	025	040	054	190	218	219	
HITACHI	049	093							
INKEL	026	027	216						
JC PENNEY	021	066	098	147					
JENSEN	153								
JVC	029	176	195	196					
KENWOOD	014	020	023	030	062	078	079	148	151	176	178	181
KYOCERA	012								
LG (GOLDSTAR)	016	087							
LINN	221								
LOTTE	108								
LUXMAN	018	035	077	102					
LXI	066	164							
MAGNAVOX	039	051	113						
MARANTZ	043	051	058	084	191	192	193		
MCINTOSH	194								
MCS	021	066	080	098					
MEMOREX	096								
MERIDIAN	221								
MGA	032								
MISSION	051								
MITSUBISHI	032								
MITSUMI	152								

Manufacturer/Brand	Setup Code Number															
MODULAIRE	122	166														
NAD	013	074	197	198												
NAKAMICHI	199	200	201	229												
NAIM	221															
NEC	021	069														
NIKKO	053	055														
NSM	051															
ONKYO	037	038	045	046	171	175	202	203								
OPTIMUS	020	036	056	057	064	065	089	090	091	092	096	099	104	212		
PANASONIC	015	075	109	119	158	183	204									
PHILIPS	039	051	138	149	209											
PIONEER	017	036	071	094	096	100	112	123	131	160	161	162	215			
PROTON	051	210														
QUASAR	015	109														
RADIO SHACK	122	126	213													
RCA	024	049	081	093	150											
RCX	169															
REALISTIC	049	056	057	058	093	095	104	105	108	164	166					
REVOX	221	251														
ROTEL	051															
SAE	051															
SAMSUNG	028															
SANSUI	047	051	081	134	157	172										
SANYO	033	057	068	082	095	168										
SCOTT	108															
SEARS	066															
SHARP	020	058	073	105	114	151	159	167	180	181						
SHERWOOD	003	026	027	041	058	105	133	230	231	232	233	234	235	236	237	238
	239	240	241	242	243											
SIGNATURE	040															
SONY	060	103	115	116	118	132	139	163	205	206	207	208	212	217		
SOUNDSTREAM	124															
STS	012															
SYLVANIA	051															
SYMPHONIC	059	110														
T & A	222															
TAEKWANG	177															
TANDY	096															
TEAC	011	022	048	058	085	086	106	107	110	121	137	146	154			
TECHNICS	244	245	246	247	248	249	250									
TECHWOOD	083															
THETA DIGITAL	039															
THOMSON	252															
THORENS	221															
TOSHIBA	013	074	097	151	155	173										
UNIVERSUM (QUELLE)	220	221	223	224												
VECTOR RESEARCH	087															
VICTOR	029	120	130													
WARDS	040	095														
YAMAHA	019	031	053	061	135	169										
YORX	122	166														

SETUP CODE TABLE: TAPE

Manufacturer/Brand	Setup Code Number
HARMAN KARDON	001

SETUP CODE TABLE: DVD

Manufacturer/Brand	Setup Code Number							
APEX DIGITAL	061							
CALIFORNIA AUDIO	040							
DENON	002	019	022	034	051			
GE	003	004						
HARMAN KARDON	001	032	066	080	081			
JBL	001	081						
JVC	006							
KENWOOD	007	050	069					
KLH	068							
LG (GOLDSTAR)	005	055	064	070	078			
LOTTE	008							
MAGNAVOX	033	056						
MARANTZ	033	059						
MITSUBISHI	023	036						
NAD	010	062						
ONKYO	009	015	048					
OPTIMUS	011	050						
PANASONIC	024	025	030	034	035	044	052	074 077
PHILIPS	033	056						
PIONEER	012	020	038	041	046	047	065	
PROCEED	060							
PROSCAN	003	004	037					
RCA	003	004	018	037				
RUNCO	027							
SAMSUNG	031	053	054	075	079			
SANYO	013	049						
SHARP	021	028	050	071				
SONY	015	029	043	045	067	072	076	
TECHNICS	026							
THOMSON	003	004						
TOSHIBA	009	033	047	057	058	073		
YAMAHA	016	017	030	063				
ZENITH	005	033	055	064				
ZENITH DIVX	039							

Manufacturer/Brand	Setup Code Number										
AIWA	441										
AKAI	333										
ALBA	301	317	324	356	370	411	415	417	426		
ALDES	433										
ALLSONIC	433										
AMSTRAD	371	397	428	432							
ANKARO	351	421	433								
ARCON	379	432	436								
ARISTONA	353										
ARTHUR MARTIN	395										
AST	427										
ASTRA	368	398	399								
ASTRO	476	477	478	479	480	481	482	483			
BARCOM	351	421									
BLAUPUNKT	338	390									
BRUNS	433										
BT SATELLITE	419										
BUSH	324	348	356	370	377	406	426				
BUSH (UK)	353										
CAMBRIDGE	360	404									
CHAPARRAL	312	434									
CONNEXIONS	339	341	342	396							
DISKXPRESS	339	351	421								
DRAKE	329	340	344	361	378						
ECHOSTAR	316	321	347	350	365	366	372	386	431	487	
ELTASAT	359										
EMME ESSE	433										
FERGUSON	345	348	352	353	363	364	367	377	406	408	411	424
FINLUX	309	310									
FRACARRO	355	387									
FTE	380	436	437								
FUBA	314	347	421	428	431						
G SAT	430										
GALAXIS	433										
GIUCAR RECORD	307	389									
GOODMANS	411										
GRAETZ	388	399									
GRANADA	399										
GRUNDIG	303	338	353	367	390						
HIGH PERFORMANCE	385	422									
HIRSCHMANN	309	338	390								
HITACHI	406	411	420								
HUTH	433										
HUGHES	484										
ICX	438										
IMPERIAL	426										
INGELEN	388	399									
ITT	367	369	399	420	423						
ITT-NOKIA	321	367	388	399	420	423					
JEEMON	359										
JERROLD	345	438									
JOHANSSON	394										
KATHREIN	301	333	380	381	390	391	396	400	410	412	414	418
KOSMOS	380										
KRIESLER	353										
KYOTO GMI ATLAN	443										

Manufacturer/Brand	Setup Code Number								
LEMON	474								
LENCO	379								
LG(GOLDSTAR)	379	407	489						
LOEWE	475								
LOKIA	431								
LORENZEN	461	462	463	464	465				
LUXOR	343	388	395	399	420	423	425	429	430	431
MACAB	384								
MAGAI	380								
MANHATTAN	359	406	411	416					
MARANTZ	333								
MASPRO	302	349	353	393	396	406	408	413	
MATSUI	320	409	419						
MEMPHIS	434								
METZ	390								
MINERVA	390								
MITSUBISHI	390								
MORGAN	432								
MULTISTAR	380								
NEC	330	336	346	373					
NEIRU	379								
NETA	439	440							
NETWORK	363								
NEXTWAVE	438								
NOKIA	367	388	399	405	420	423			
NORSAT	346								
OLYMPIC	433								
OPTEX	435								
ORIGO	426								
OTTO VERSAND	390								
PACE	311	348	353	363	364	367	424		
PALCOM	392								
PANASONIC	331	424							
PHILIPS	319	332	333	353	421	424			
PHONOLA	353								
PLANET	426								
PROSAT	356								
PTT TELECOM	341								
PYE	353								
QUADRAL	466	467	468	469	470	471	472	473	
QUELLE	390								
RCA	486								
RADIOLA	353								
RADIX	347								
RC	404	438							
REDIFFUSION	336	346							
SAKURA	354	357							
SALORA	334	368	388	395	399	420	430	431	
SAMSUNG	380	427	432	488					
SAT	427								
SATECO	317								
SATPORTNER	379								
SCHAUB LORENZ	388	399							
SCHNEIDER	353								
SENTRA	337								

Manufacturer/Brand	Setup Code Number						
SIEMENS	338	390					
SIERA	353						
SILVA	379						
SINTRACK	313						
SKY MASTER	433						
SKYLAB	421						
SKY LIFE	490	491					
SONY	485						
STARSAT	380						
STELLA	341						
STRONG	325	362					
STV	314						
TAGRA	431						
TANDBERG	308						
TANDY	385	422					
TATUNG	335	374					
TECHNISAT	305	306	328	347	384	402	403
TELECOM	341						
TELEFUNKEN	383						
TELEMAX	318						
THORN-FERGUSON	323	345	348	352	353	363	364	367
TRIAD	384	385	401	427			
UNIDEN	358	375	376	380			
VIDIO WAY	315						
VORTEC	382	383	432	442			
WINERSAT	394						
WISI	304	322	326	327	347	423	427	431
WOLSEY	385	422					
ZEHNDER	380	427					
ZENITH	344						

SETUP CODE TABLE: CBL

Manufacturer/Brand	Setup Code Number					
BT CABLE	007					
CABLETIME	008	011	012	016		
CLYDE CABLE VISION	017					
C & M	042					
DECSAT CANAL	010					
DONG GUK	037					
FILMNET	018	019	020			
FRANCE TELECOM	013	021				
GEC	017					
JERROLD	001	022				
LG(GOLDSTAR)	039	040				
MEMOREX	041					
MOVIE TIME	028					
NSC	028					
PARAGON	041					
PHILIPS	023					
PIONEER	002					
PULSAR	041					
SAGEM	029					
SALORA	003					
SAMSUNG	002	024	035	036	037	
SATBOX	004					
SCIENTIFIC ATLANTA	005	006	025	026	030	031
SONY	032	033	034			
STS	028					
TAEKWANG	038					
TELESERVICE	011	014				
TOSHIBA	041					
TUDI	027					
UNITED CABLE	001					
VISIOPASS	009					
WESTMINSTER CABLE	007					
ZENITH	014	041				

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 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** ⓭ • 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 37 so that the display is set to VFD FULL
No sound from any speaker; light around power switch is red	• Amplifier is in protection mode due to possible short • Amplifier is in protection mode due to internal problems	• Check speaker wire connections for shorts at receiver and speaker ends • Contact your local JBL service center
No sound from surround or center speakers	• Incorrect surround mode • Input is monaural • Incorrect configuration • Stereo or Mono program material	• Select a mode other than Stereo • There is no surround information from mono sources • Check speaker mode configuration • The surround decoder may not create center- or rear-channel information from nonencoded programs
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
Letters flash in the channel indicator display and digital audio stops	• Digital audio feed paused	• Resume play for DVD • Check that Digital Input is selected
Fan does not appear to operate	• Additional cooling may not be required	• The fan is activated only when additional cooling is required due to high internal temperature. It is normal for the fan to be inactive at normal volume levels.

Processor Reset

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

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

To clear the AVR580's entire system memory including tuner presets, output level settings, delay times and speaker configuration data, first put the unit in Standby by pressing the **System Power Control Button** ❷. Next, press and hold the **Surround Mode** ❼ and the **Tuner Mode Selector** ⓰ buttons for three seconds.

The unit will turn on automatically and display the RESET message in the **Main Information Display** ㉙.

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 JBL service center.

AVR580 SPECIFICATIONS

Audio Section

Front: 100W + 100W (8 ohms/20Hz – 20kHz, 0.08% THD)
150W + 150W (6 ohms/EIAJ)

Center: 100W (8 ohms/20Hz – 20kHz, 0.08% THD)
150W (6 ohms/EIAJ)

Side   100W + 100W (8 ohms/20Hz – 20kHz, 0.08% THD)
Surround: 150W + 150W (6
ohms/EIAJ)

Back   100W + 100W (8 ohms/20Hz – 20kHz, 0.08% THD)
Surround: 150W + 150W (6
ohms/EIAJ)

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

Signal-to-Noise Ratio (IHF-A)   95dB

Surround System Adjacent Channel Separation
Analog Decoding
Pro Logic I/II   40dB

Dolby Digital (AC-3)   55dB

DTS   55dB

Frequency Response
@ 1W (+0dB, –3dB)   10Hz – 100kHz

Instantaneous
Current Capability   ±35 Amps

Transient Intermodulation
Distortion (TIM)   Unmeasurable

Rise Time   16 μsec

Slew Rate   40V μsec[†]

FM Tuner Section

Frequency Range   87.5–108.0MHz
Tuner Step Size
China, Singapore: 0.05MHz
Korea: 0.1MHz
Usable Sensitivity   IHF 1.3μV/13.2dBf
Signal-to-Noise Ratio   Mono/Stereo 70/65dB (DIN)
Distortion   Mono/Stereo 0.15/0.3%
Stereo Separation   35dB @ 1kHz
Selectivity   ±300kHz, 65dB
Image Rejection   80dB
IF Rejection   90dB

AM Tuner Section

Frequency Range   522 – 1620kHz
Tuner Step Size (all modes):   9kHz
Signal-to-Noise Ratio   45dB
Usable Sensitivity   Loop 500μV
Distortion   1kHz, 50% Mod 0.8%
Selectivity   ±9kHz, 30dB

Video Section

Video Format   PAL/NTSC
Input Level/Impedance   1Vp-p/75 ohms
Output Level/Impedance   1Vp-p/75 ohms
Video Frequency Response
(Composite and S-Video)   10Hz–8MHz (–3dB)
Video Frequency Response
(Component Video)   10Hz–35MHz (–3dB)

General

Power Requirement   AC 220–240V/50Hz
Power Consumption   118W idle, 890W maximum
                               (7 channels driven)

Dimensions   Width   440mm (17.3 inches)
                               Height   168mm (6.6 inches)
                               Depth   435mm (17.1 inches)

Weight   18.1kg (40 lb)

Depth measurement includes knobs, buttons and terminal connections.
Height measurement includes feet and chassis.
All features and specifications are subject to change without notice.
[†] Without input anti-slewing and output isolation networks.

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‖‖‖EzSet is a trademark of Harman International Industries, Incorporated (patent no. 5,386,478).

[*] Trademarks of Dolby Laboratories, Inc.

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UltraStereo is a trademark of UltraStereo Corp.

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NOTES

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