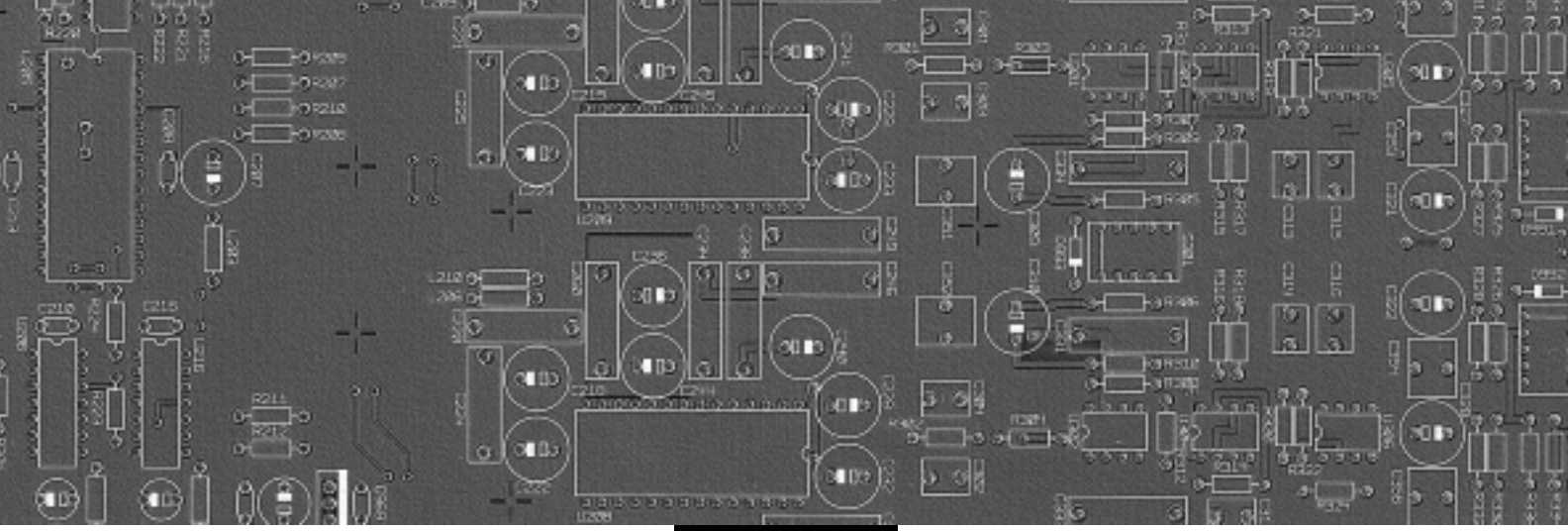


ROTEL

Owner's Manual

RSP-1066

Surround Sound Processor

CAUTION

RISK OF ELECTRIC SHOCK DO NOT OPEN

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

This symbol is to alert the user to the presence of uninsulated dangerous voltages inside the product's enclosure that may constitute a risk of electric shock.

This symbol is to alert the user to important operating and maintenance (service) instructions in this manual and literature accompanying the product.

APPLICABLE FOR USA, CANADA OR WHERE APPROVED FOR THE USAGE

CAUTION: TO PREVENT ELECTRIC SHOCK, MATCH WIDE BLADE OF PLUG TO WIDE SLOT. INSERT FULLY.

ATTENTION: POUR EVITER LES CHOCS ELECTRIQUES, INTRODUIRE LA LAME LA PLUS LARGE DE LA FICHE DANS LA BORNE CORRESPONDANTE DE LA PRISE ET POUSSER JUSQU AU FOND.

This Class B digital apparatus complies with Canadian ICES-003.

Cet appareil numérique de la classe B est conforme à la norme NMB-003 du Canada.

CE

Notice

The **COMPUTER I/O connection** should be handled by authorized person only.

FCC Information

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instruction, may cause harmful interference to radio communications.

However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.(TV, radio, etc.)
- Increase the separation between the equipment and receiver
- Connect the equipment to an outlet on circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for additional help.

Caution

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

Important Safety Instructions

WARNING: There are no user serviceable parts inside. Refer all servicing to qualified service personnel.

WARNING: To reduce the risk of fire or electric shock, do not expose the unit to moisture or water. Do not allow foreign objects to get into the enclosure. If the unit is exposed to moisture, or a foreign object gets into the enclosure, immediately disconnect the power cord from the wall. Take the unit to a qualified service person for inspection and necessary repairs.

Read all the instructions before connecting or operating the component. Keep this manual so you can refer to these safety instructions.

Heed all warnings and safety information in these instructions and on the product itself. Follow all operating instructions.

Clean the enclosure only with a dry cloth or a vacuum cleaner.

You must allow 10 cm or 4 inches of unobstructed clearance around the unit. Do not place the unit on a bed, sofa, rug, or similar surface that could block the ventilation openings. If the unit is placed in a bookcase or cabinet, there must be ventilation of the cabinet to allow proper cooling.

Keep the component away from radiators, heat registers, stoves, or any other appliance that produces heat.

The unit must be connected to a power supply only of the type and voltage specified on the rear panel. (USA: 115 V/60Hz, EC: 230V/50Hz)

Connect the component to the power outlet only with the supplied power supply cable or an exact equivalent. Do not modify the supplied cable. Do not defeat grounding and/or polarization provisions. The cable should be connected to a 2-pin polarized wall outlet, matching the wide blade of the plug to the wide slot of the receptacle. Do not use extension cords.

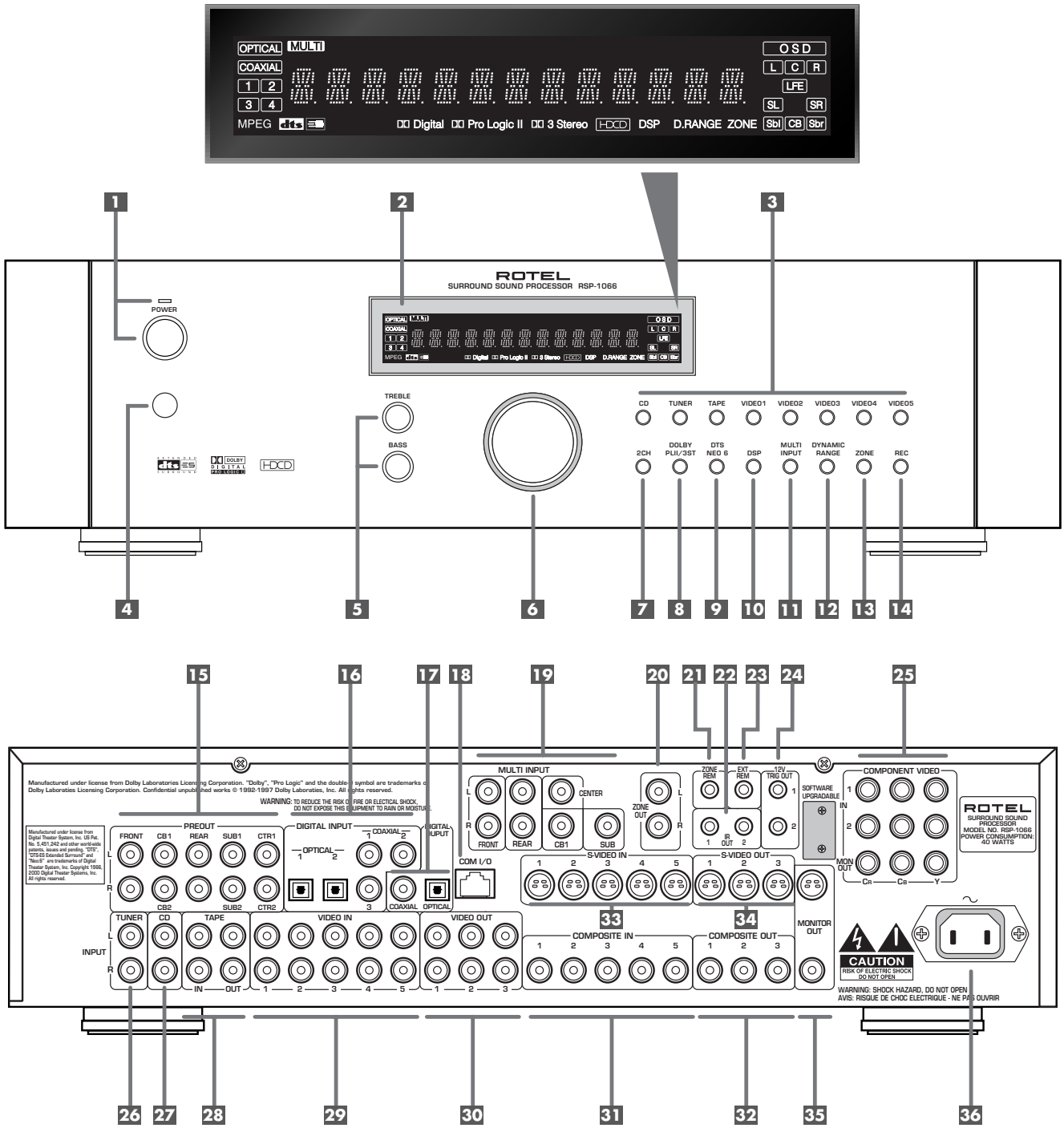
Do not route the power cord where it will be crushed, pinched, bent, exposed to heat, or damaged in any way. Pay particular attention to the power cord at the plug and where it exits the back of the unit.

The power cord should be unplugged from the wall outlet if the unit is to be left unused for a long period of time.

Immediately stop using the component and have it inspected and/or serviced by a qualified service agency if:

- The power supply cord or plug has been damaged.
- Objects have fallen or liquid has been spilled into the unit.
- The unit has been exposed to rain.
- The unit shows signs of improper operation
- The unit has been dropped or damaged in any way

1: Controls and Connections



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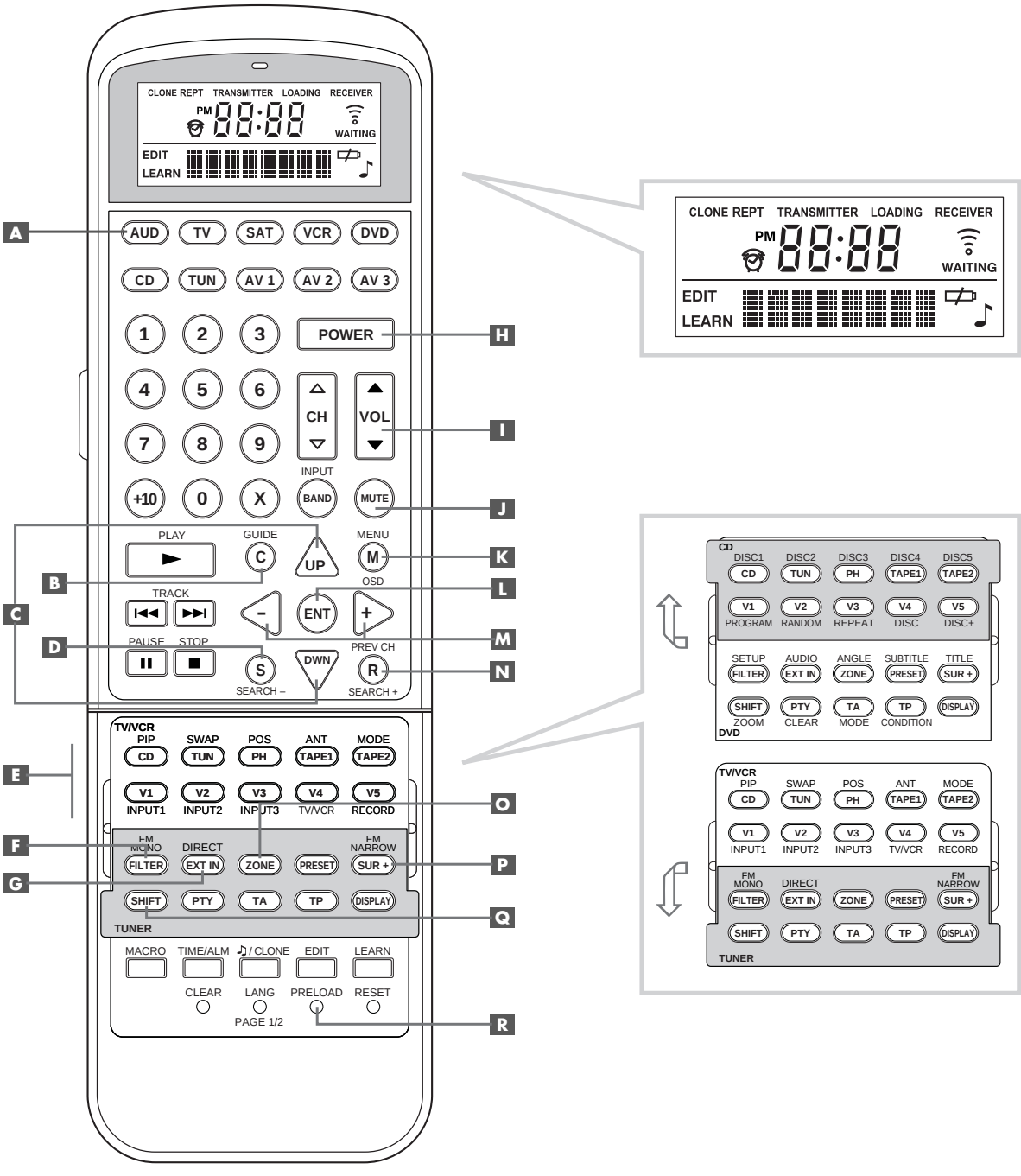

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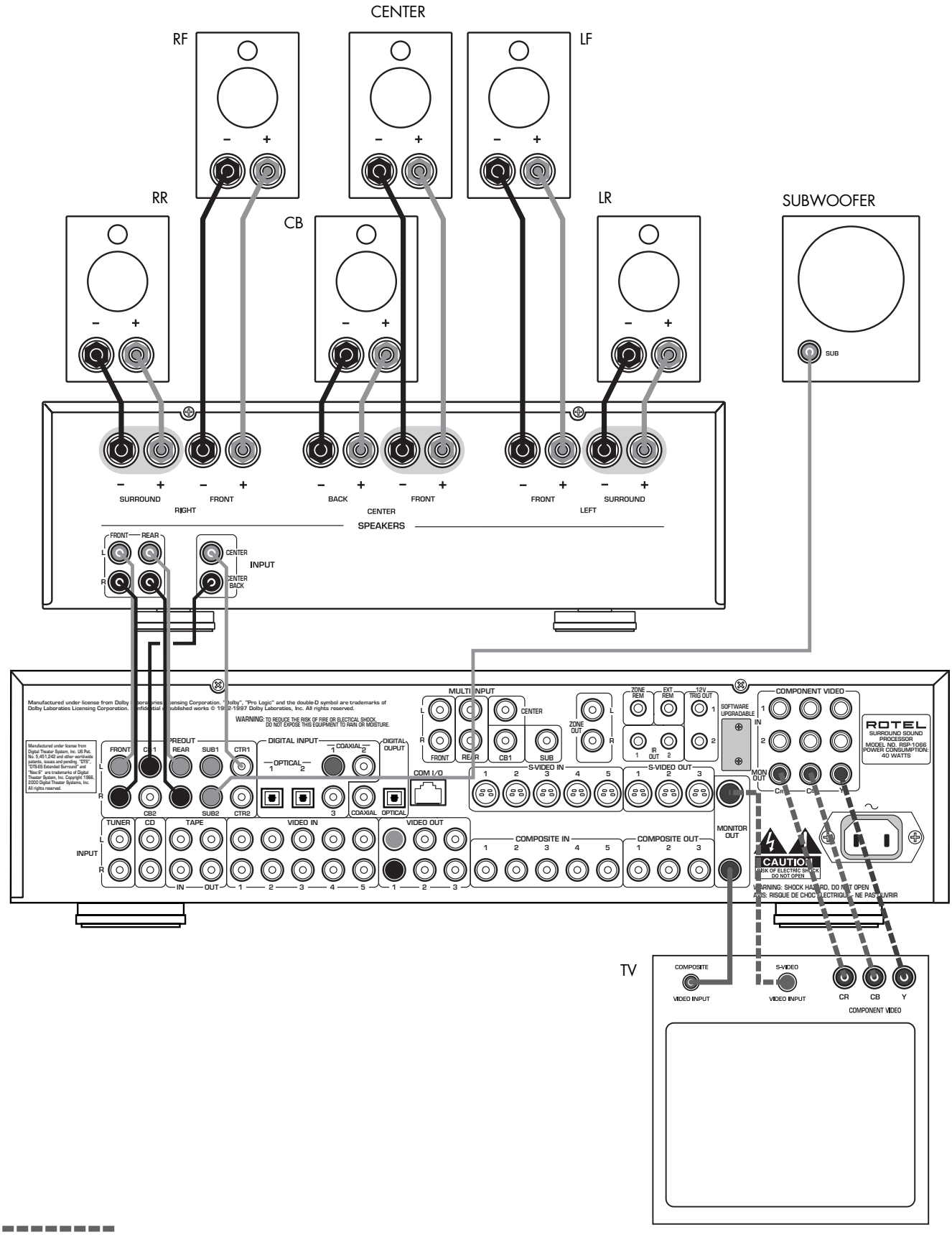
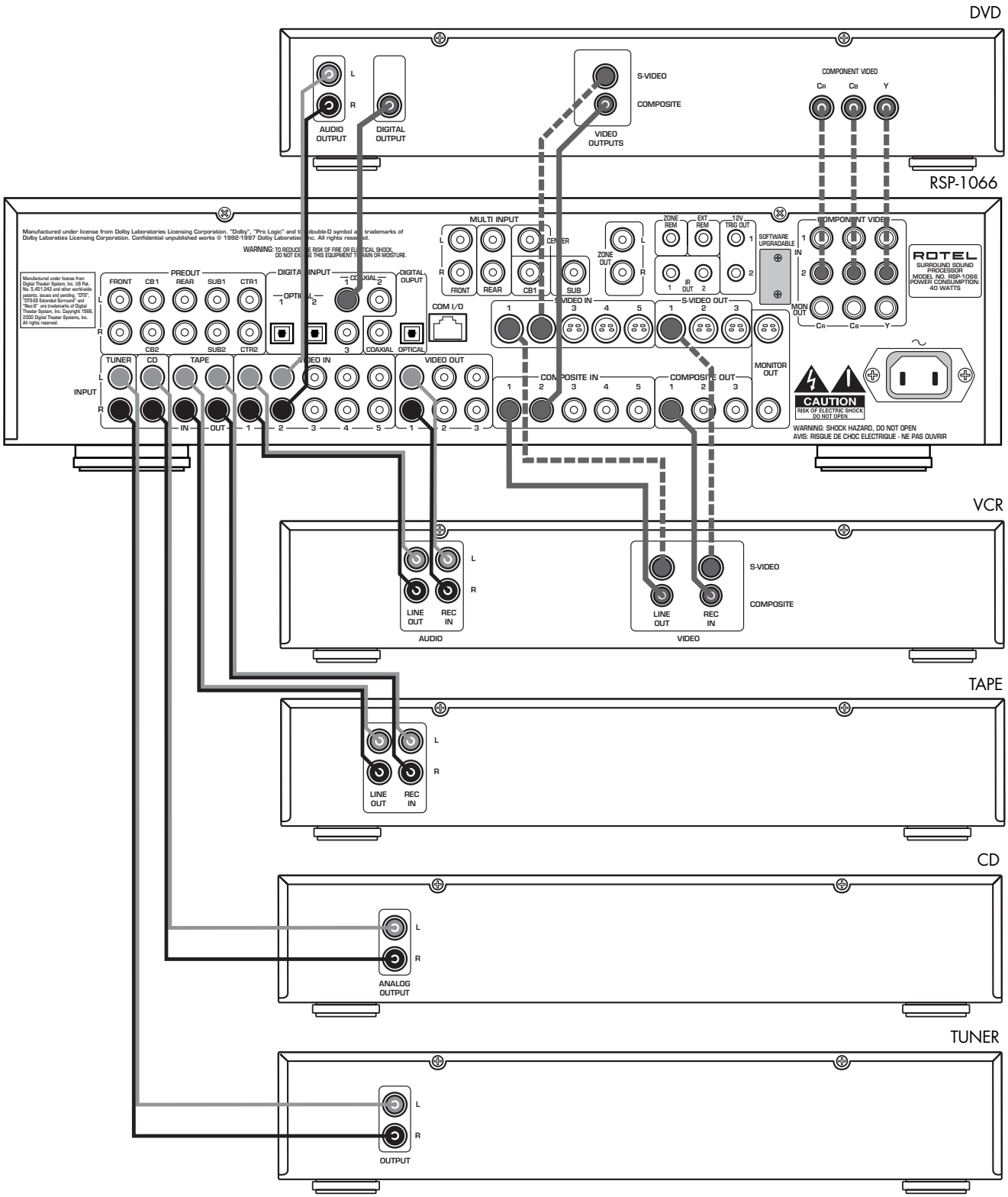


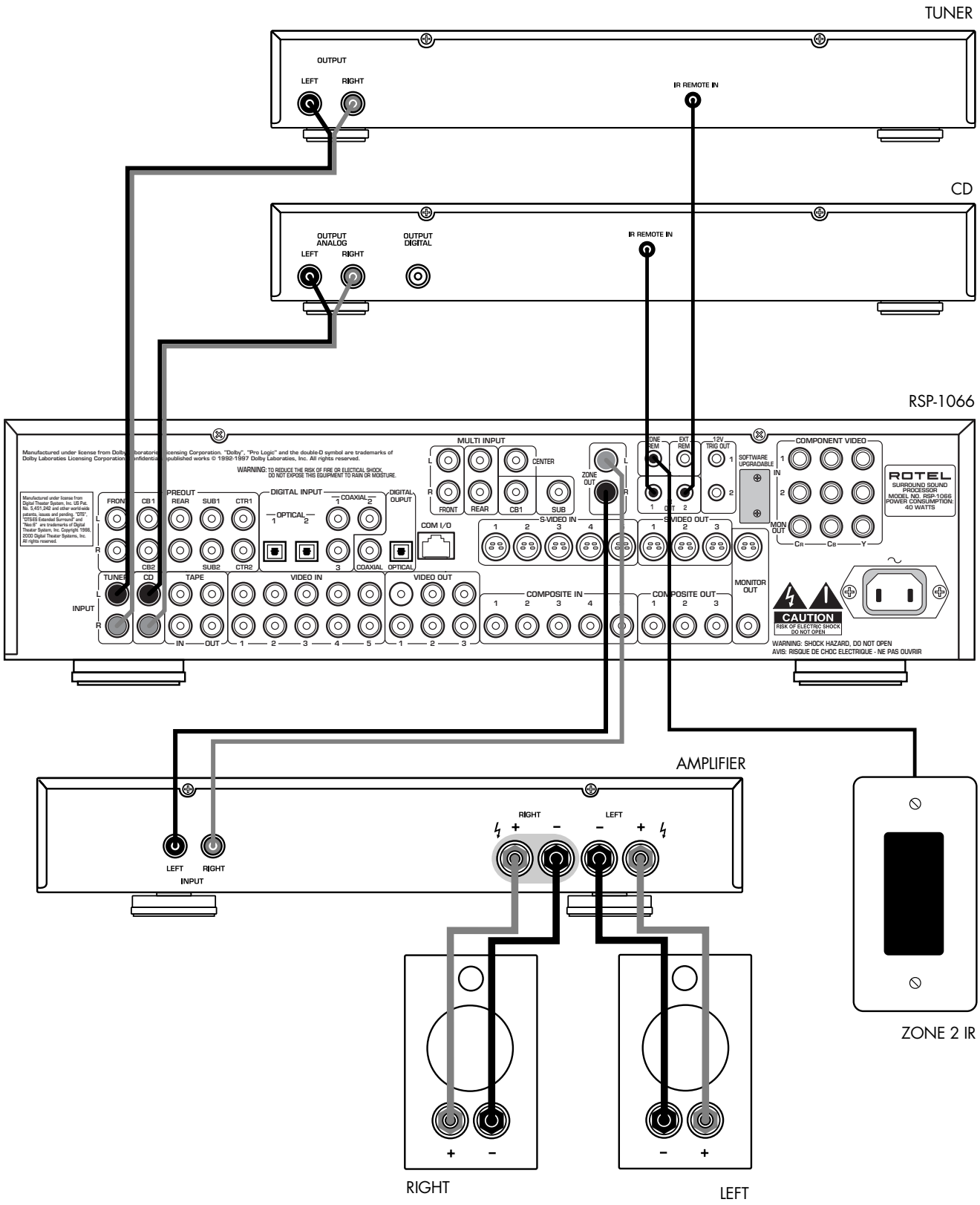
Alternate Video Connections

4: Inputs

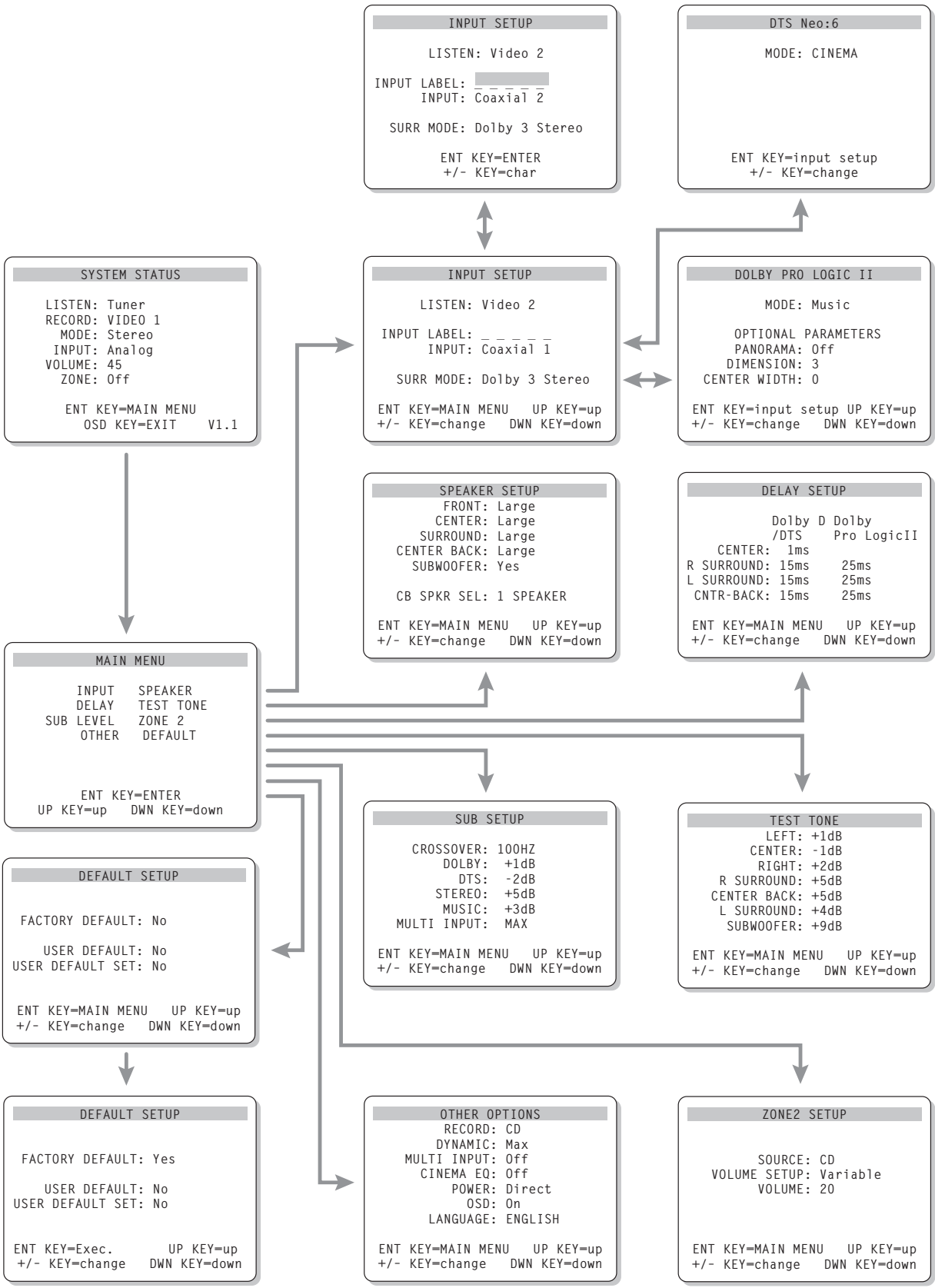


Alternate Video Connections

5: Zone 2 Connections



6: On-Screen Display Menus



Contents

Boxed numbers refer to RSP-1066 illustration.
Boxed letters refer to RR-969 illustration.

About Rotel

A family whose passionate interest in music led them to manufacture high fidelity components of uncompromising quality founded Rotel 40 years ago. Through the years that passion has remained undiminished and the family goal of providing exceptional value for audiophiles and music lovers regardless of their budget, is shared by all Rotel employees.

The engineers work as a close team, listening to, and fine tuning each new product until it reaches their exacting musical standards. They are free to choose components from around the world in order to make that product the best they can. You are likely to find capacitors from the United Kingdom and Germany, semi conductors from Japan or the United States, while toroidal power transformers are manufactured in Rotel's own factory.

Rotel's reputation for excellence has been earned through hundreds of good reviews and awards from the most respected reviewers in the industry, who listen to music every day. Their comments keep the company true to its goal - the pursuit of equipment that is musical, reliable and affordable.

All of us at Rotel, thank you for buying this product and hope it will bring you many years of enjoyment.

Getting Started

Thank you for purchasing the Rotel RSP-1066 Surround Sound Processor. The RSP-1066 is full-featured audio/video control center for analog and digital source components. It features digital processing for a wide range of formats including Dolby Surround®, Dolby Digital®, DTS® and HDCD® source material.

"DTS", "DTS-ES Extended Surround", "DTS ES® Matrix 6.1", "DTS ES® Discrete 6.1" and "DTS Neo:6®" are trademarks of Digital Theater Systems, Inc.

Manufactured under license from Dolby Laboratories. "Dolby", "Pro Logic", "Dolby Digital", "Surround EX"and the double-D symbol are trademarks of Dolby Laboratories.

HDCD®, HDCD®, High Definition Compatible Digital® and Pacific Microsonics™ are either registered trademarks or trademarks of Pacific Microsonics, Inc. in the United States and/or other countries. HDCD system manufactured under license from Pacific Microsonics, Inc. This product is covered by one or more of the following: In the USA: 5,479,168, 5,638,074, 5,640,161, 5,808,574, 5,838,274, 5,854,600, 5,864,311, 5,872,531, and in Australia: 669114. Other patents pending.

Key Features

- Rotel's Balanced Design Concept combines advanced circuit board layout, comprehensive parts evaluation, and extensive listening tests for superior sound and long term reliability.
- Dolby® Pro Logic II® decoding with improved separation and frequency response for Dolby Surround® matrix encoded recordings. Can be optimized for Music or Cinema sources plus an emulation mode for the original Dolby Pro Logic decoding.
- Automatic decoding for Dolby Digital® recordings.
- Automatic decoding for DTS® 5.1 channel, DTS-ES® Matrix 6.1 channel, and DTS-ES® Discrete 6.1 channel digital recordings.
- Rotel XS (eXtended Surround) automatically ensures proper decoding and optimum performance from any multichannel digital signal on 6.1 and 7.1 channel systems. Always active in any system with center back speaker(s), Rotel XS even works with signals that would not otherwise activate the proper decoding (such as non-flagged DTS-ES and Dolby Surround EX discs) or for which there is no extended surround decoder (such as DTS 5.1, Dolby Digital 5.1, and even Dolby Pro Logic II decoded Dolby Digital 2.0 recordings).
- DTS® Neo:6® Surround modes for deriving surround channels for 5.1, 6.1 or 7.1 channel systems from 2-channel stereo or matrix surround recordings. Can be optimized for Music or Cinema sources.
- Automatic HDCD® decoding for signals from High Definition Compatible Digital® compact discs.
- Automatic decoding of digital signals from MP3 (MPEG-1 Audio Layer 3) players.
- Surround modes for playback of surround sound material on 2 channel and 3 channel systems for total compatibility.
- Zone 2 output with independent input selection and volume adjustments for multi-zone custom installations along with IR-repeater capability for operation from the remote zone.
- MULTI Input for outboard adaptor and future upgradeabilty
- User friendly ON-SCREEN DISPLAY with programmable labels for video components. Choice of English or German languages.
- Universal learning remote control to operate the RSP-1066 and nine other components.
- Upgradeable microprocessor software to accommodate future upgrades.

Unpacking

Remove the unit carefully from its packing. Find the remote control and other accessories. Save the box as it will protect the RSP-1066 if you move or need to return it for maintenance.

Placement

Place the RSP-1066 on a solid, level surface away from sunlight, heat, moisture, or vibration. Make sure that the shelf can support the weight of the unit.

Place the RSP-1066 close to the other components in your system and, if possible, on its own shelf. This will make initial hookup, and subsequent system changes easier.

The RSP-1066 can generate heat during normal operation. Do not block ventilation openings. Allow a minimum of 10 cm (4 inches) of unobstructed space around the unit. If installed in a cabinet, make sure that there is adequate ventilation.

Don't stack other components or objects on top of the RSP-1066. Don't let any liquid fall into the unit.

RR-969 Remote Control

The RSP-1066 includes a full-function learning remote control that can operate the RSP-1066 plus nine other audio/video components.

A separate manual, included with the remote, gives detailed instructions on programming and using the RR-969 to replace all of the remote controls in your system. The RR-969 manual covers many extra features (such as custom labeling of remote buttons that appear in its LCD display) and we recommend that you review the manual to maximize the benefits from the RR-969. To avoid duplication, we provide only basic information about using the RR-969 to operate the RSP-1066 in this manual.

Many of the RR-969 functions duplicate the front-panel controls. For that reason, we cover the controls on the remote under appropriate topics throughout this manual. Letters in gray boxes next to the name of a function refers to the labeled illustration of the remote at the front of this manual.

Using the RR-969 AUDIO Button A

To operate the RSP-1066 with the remote, make sure that the AUDIO mode is active by pressing the AUD button A on the remote before you start. If one of the other buttons (CD, TAPE, etc.) is pressed, the remote will control another component, not the RSP-1066. The AUDIO mode will stay active until another DEVICE button is pressed.

Programming the RR-969 PRELOAD Button R

The RR-969 is programmed at the factory to operate the RSP-1066. Should the AUDIO command set on your RR-969 not operate the RSP-1066, the programming may have been inadvertently changed. To restore the RSP-1066 programming, press the recessed PRELOAD button R on the remote with the tip of a ballpoint pen.

NOTE: *Pushing the PRELOAD button will erase all custom programming and learned commands, restoring the RR-969 to its factory condition.*

Basic Controls

We suggest you look over the RSP-1066's front and rear panels before you start connecting other components. The following explanations will help you get familiar with the unit's connections, features, and controls.

NOTE; *Most functions are duplicated on the front-panel and on the remote. A few are found only on one or the other. Throughout this manual, numbers in gray boxes refer to the RSP-1066 illustration at the front of this manual. Letters refer to the RR-969 remote illustration. When both appear, the function is found on both the RSP-1066 and the remote. When only one appears, that function is found only on the RSP-1066 or the remote.*

POWER Button 1 H

The front-panel POWER switch on the RSP-1066 is a master power control allowing you to turn the unit on and off.

The button must be pressed IN for the unit to operate. When it is in the OUT position, the unit is fully off and cannot be activated from the remote control.

The POWER button on the remote functions as a standby switch, activating or deactivating the unit. In standby mode, minimal power is still supplied to memory circuits to preserve settings. When the unit has AC power applied and the front-panel POWER button is pressed IN, the front-panel POWER LED lights, regardless of whether the unit is in standby mode or fully activated in the main room

There are three available power mode options for the RSP-1066, selected during setup from an ON-SCREEN DISPLAY menu. These options can be selected to best suit your particular system configuration. The normal DIRECT mode fully activates the unit whenever AC power is supplied and the front-panel POWER button is pressed IN; however, the remote POWER switch can still be used to activate or deactivate the unit. With the STANDBY power option, the unit powers up in standby mode when AC is first applied and the front-panel POWER button is pressed IN. The unit must be manually activated with the remote control POWER button. With the ALWAYS-ON power option, the unit is fully operational whenever AC is applied and the front-panel POWER button is pressed IN. The remote POWER button is disabled.

When using Zone 2, the standby operation is completely independent for the main room and Zone 2. The remote control POWER button will not affect Zone 2. Pressing the POWER button on a remote located in Zone 2 will only affect that zone and not the main room. When the unit is activated in ZONE 2, the ZONE indicator in the front-panel FL DISPLAY is lit.

Remote Sensor 4

This sensor receives IR control signals from the remote control. Do not block this sensor.

Front-panel Display 2

The fluorescent (FL) display in the upper portion of the RSP-1066 provides information about the status of the unit and activation of special features. The main portion of the display typically shows the current input source selected for listening at the left and the current input source selected for recording at the right.

Icons along the left side of the display show the currently selected digital input. Icons at the right of the display show individual surround channels and are used in configuring the system. Icons across the bottom of the display show the current surround mode and other special features.

The FL display can be turned off, if desired. See the MENU button section for instructions.

Volume Control 6 I

The VOLUME control adjusts the output level of all channels. Rotate the front-panel control clockwise to increase the volume, counterclockwise to decrease. The control is duplicated by RR-969 remote's VOLUME UP and DOWN buttons.

When you adjust the volume, a digital readout appears in the front-panel display and the new setting appears on your TV monitor.

NOTE: *The VOLUME control can also be used to change the volume in Zone 2. Press the front-panel ZONE button and adjust the volume. After 10 seconds, the VOLUME control reverts to normal operation. See the section on Zone 2 Operation for details.*

MUTE Button J

The MUTE button allows you to temporarily reduce the volume of the system and later restore it to the original volume (for example, when answering the phone). Push the MUTE button once to turn the sound off. An indication appears in the front-panel and on-screen displays. Press the button again to restore previous volume levels.

Tone Controls 5 Q C

The front-panel BASS and TREBLE controls 5 increase or decrease the audio signal's low and high frequency content respectively and allow you to tailor the sound to your own preferences. Rotate clockwise to increase the bass or treble and counterclockwise to reduce. The front-panel display and ON-SCREEN DISPLAY show tone control settings as you adjust them.

Bass an treble adjustments can also be made from the remote control:

1. Press the SHIFT button Q to select BASS or TREBLE mode, pressing it again to toggle between the two.
2. Press the UP/DOWN buttons C to adjust the bass or treble.

FILTER Button F

The FILTER button (remote only) activates or deactivates a special CINEMA EQ setting. This equalization may be desirable for playback of movie source material to compensate for the acoustic differences between a commercial cinema and a home theater environment.

The FILTER setting is independent for each source input. Using the button only changes the setting for the currently active source input.

MENU Button K

The MENU button is used to access the ON-SCREEN DISPLAY system used in configuring the RSP-1066. Push the MENU button on the remote to turn on the ON-SCREEN DISPLAY menu system. If the menu system is already visible, push this button to cancel the display.

The front panel FL display can be turned off by pressing and holding the MENU button on the remote for three seconds. Briefly press the MENU button again to turn the display back on. The display also turns back on whenever the POWER button on the front-panel or remote is pressed.

ENTER Button L

The ENTER button is used to confirm and memorize various settings in the setup and operation of the RSP-1066. Its use is described in detail in the relevant sections.

Input Controls

Input Source Buttons 3 E

The RSP-1066 can be used with up to eight source components. Press any of the eight front-panel buttons to select an audio or video input source (TUNER, CD, VCR, etc.) for listening. You will hear this source and, if you have selected a video source, see its picture on your TV monitor.

The front-panel display and the ON-SCREEN DISPLAY on the TV will show the name of the current listening source selection. The labels for VIDEO sources can be customized to match your components.

All of the inputs (the five video inputs, the CD input, the TUNER input, and the TAPE input) can accept either analog signals or digital signals from one of the five assignable digital inputs. When a digital input is assigned during system configuration, the RSP-1066 checks for the presence of a digital signal at that input. If a digital signal is present when the source is selected, it is automatically activated and the proper surround mode enabled. If no digital signal is present, the analog inputs for that source are activated. This auto-sensing is the preferred configuration for digital source inputs such as DVD players. When an ANALOG input is assigned, the unit will not access a digital signal, even though one may be available at the digital input.

By default, the source input buttons are factory configured to select the following inputs:

CD:	*Analog input*
Tuner:	*Analog input*
Tape:	*Analog input*
Video 1:	*Digital Coaxial 1*
Video 2:	*Digital Coaxial 2*
Video 3:	*Digital Coaxial 3*
Video 4:	*Digital Optical 1*
Video 5:	*Digital Optical 2*

NOTE: *See the INPUT MENU topic in the On-Screen Display/Configuration section of this manual for details about configuring inputs.*

The input source buttons can also be used with the REC button 14 (described in the next section) to select an analog input source signal to be available at the outputs for recording. Additionally, the input source buttons can be used with the ZONE button 13 to select an analog input source for ZONE 2.

REC Button 14
ZONE Button O

The RSP-1066 can record from any analog source to a VCR or other recorder connected to the VIDEO 1, 2 or 3 outputs or the TAPE outputs, even while you are listening to a different input source. To select an input source for recording, press the REC button on the front-panel (or the equivalent ZONE button on the remote). Then, press one of the INPUT SOURCE buttons within 5 seconds to select the signal you wish to record. After making your selection (or if more than five seconds passes), the input source buttons return to their normal function, selecting a listening source.

Remember, this selection is independent of the listening source. While recording, you may still select a different source for listening. The record selection appears in the display to the right of the listening selection.

NOTE: *The RECORD function requires analog signals. If you use a digital connection from a CD player or DVD for listening, you should also connect an analog signal for recording.*

MULTI Input 11
EXT IN G

The RSP-1066 can accept 6.1 channel discrete analog signals from an outboard digital processor, thus allowing compatibility with future surround sound formats.

Press the MULTI INPUT button (or the EXT IN button on the remote) to override any other audio input (both analog and digital) and select the audio signal from an external digital adaptor.

NOTE: *Temporary adjustments in the levels for all channels of the MULTI Input can be made with the remote control. See the Speaker Level Adjustment instructions in the following Surround Sound Controls section. In addition, the subwoofer default level for the MULTI Input can be set using the SUBWOOFER SETUP menu of the ON-SCREEN DISPLAY system.*

This input only changes the audio signal; the video signal from the currently selected input remains in use. When activated, the RSP-1066's digital processing is bypassed. An indicator appears in the front-panel display.

NOTE: *When the MULTI CH input is selected, the CB output is available only at the CB1 PREOUT connector. No signal is available at the CB2 PREOUT connector.*

Overview of Surround Formats

To get best performance from your RSP-1066, it helps to understand the many surround sound formats available today, to know which decoding process to use for a particular recording, and how to select it. This section provides basic background information about surround sound formats. The next sections provide detailed operating instructions.

Dolby Surround Dolby Pro Logic

The most widely available surround sound format for consumer audio/video is Dolby Surround®, available on nearly all commercial VHS tapes, many television broadcasts, and most DVDs. Dolby Surround is the consumer version of the analog Dolby Stereo system first introduced in the film industry in 1972. It is a matrix-encoding system that records front left, front center, front right, and a mono surround channel into a 2-channel stereo recording. During playback, a Dolby Pro Logic® decoder extracts each channel and distributes it to the appropriate speakers.

Dolby Pro Logic decoding delivers a mono signal with reduced high-frequency content to the surround speakers. The more advanced decoder in the RSP-1066, Dolby Pro Logic II, increases the separation and frequency response of the surround channels for significantly improved performance with Dolby Surround encoded recordings.

Dolby Pro Logic II decoding is used for any analog soundtrack or recording labeled "Dolby Surround" or any Dolby Digital 2.0 soundtrack. While it is specifically designed to decode Dolby Surround recordings, Dolby Pro Logic can derive surround sound from conventional 2-channel stereo recordings, using phase relationships to extract front, right, center, and surround channels.

Activate Dolby Pro Logic II decoding with the Dolby PLII/3ST button described in the next section of the manual.

Dolby Digital

In 1992, an entirely new digital recording system, called Dolby Digital, was first used in the film industry. Dolby Digital is a recording/playback system that uses compression techniques to store large amounts of audio data efficiently, much like the JPEG format stores large photographs in small files on a computer. Dolby Digital is the standard audio format for DVDs and for digital television broadcasting in the United States.

The Dolby Digital system can be used to record up to six discrete audio channels, but can con be used for fewer. For example, a Dolby Digital 2.0 recording is a 2-channel stereo recording such as a matrix encoded Dolby Surround soundtrack. To play this type of recording, use Dolby Pro Logic II decoding as previously described.

The most common use of Dolby Digital, in both the film industry and in home theater, is Dolby Digital 5.1. Instead of encoding multiple surround channels on a two-channel recording, Dolby Digital 5.1 records six discrete channels: front left, front center, front right, surround left, surround right, and a Low Frequency Effects (LFE) channel containing ultra-low bass signals intended for a subwoofer. A Dolby Digital decoder extracts the channels from the digital bitstream, converts them to analog signals and routes them to the appropriate speakers. All channels provide full frequency response with total separation between all channels and large dynamic range capability. A Dolby Digital 5.1 soundtrack will provide significantly more impressive surround sound than Dolby Pro Logic decoding of matrix Dolby Surround.

Decoding of Dolby Digital 5.1 soundtracks is automatic. When the RSP-1066 detects a Dolby 5.1 signal on one of its digital inputs, it activates the proper processing. Keep in mind that Dolby Digital is only available from digital sources (a DVD, a LaserDisc, or a Digital TV/Cable/SAT tuner). Also, you must connect the source with a digital cable (coax or optical) to an active digital input on the RSP-1066.

NOTE: *Many DVDs have a Dolby Digital 2.0 matrix soundtrack as the default, which should be decoded with Pro Logic II. The Dolby Digital 5.1 soundtrack may have to be selected as an option from the setup menus at the beginning of the DVD. Look for a Dolby Digital 5.1 selection under "Audio" or "Languages" or "Setup Options" when you insert the disc.*

DTS 5.1

DTS® (Digital Theater Systems) is an alternative digital format competing with Dolby Digital in both movie theaters and home theater markets. The basic features and functions of the DTS system are similar to those of Dolby Digital (for example, 5.1 discrete channels), however the technical details of the compression and decoding processes differ somewhat and a DTS decoder is required.

Like Dolby Digital, DTS can only be used on a digital recording and, therefore, is only available for home use on LaserDiscs, DVDs, or other digital formats. To use the RSP-1066's DTS decoder, you must connect your DVD player to the RSP-1066's digital inputs.

As with Dolby Digital 5.1, detection and proper decoding of DTS 5.1 signals is automatic.

NOTE: *DVDs with a DTS soundtrack almost always have it configured as an option to the standard matrix Dolby Surround format. To use DTS, you may have to go to the setup menus at the beginning of the DVD and select "DTS 5.1" instead of "Dolby Surround" or "Dolby Digital 5.1". In addition, many DVD players have the DTS digital bitstream turned off by default and cannot output a DTS soundtrack, even if selected on the disc's menu, until you activate the player's DTS output. If you here no sound the first time you attempt to play a DTS disc, you may have to go to the DVD player's configuration menus and turn on the DTS bitstream. This is a one-time setting and need only be done once. See your DVD owners manual for details.*

The RSP-1066 features a second type of DTS surround sound decoding: DTS Neo:6. This decoding system is similar to Dolby Pro Logic II in that it is designed for playback of any 2-channel stereo recording, either matrix-encoded or not. The Neo:6 decoder can by used with any conventional 2-channel source such a stereo TV or FM broadcast or a CD. It can also be used as an alternative method of decoding matrix-encoded Dolby Surround recordings or TV broadcasts. Activate the DTS Neo:6 decoding with the DTS:Neo 6 button as detailed later in this section. DTS Neo:6 is not used with DTS 5.1 digital sources and the button need not be pressed for those recordings.

6.1 and 7.1 Surround

In 1999, the first Dolby Digital soundtrack was released to theaters with an additional center back surround channel, intended to increase the directional effects from behind the audience. This additional surround channel is encoded into the two existing surround channels in Dolby Digital 5.1, using a matrix encoding process similar to that used previously in Dolby Surround. This new extended surround capability is called Dolby Digital Surround EX.

DTS has added a similar capability for recording this extended surround information called DTS-ES® 6.1 Matrix. They have also taken it one step further and developed the capability to record this extended surround information as a fully discrete channel in a system called DTS-ES® 6.1 Discrete.

All of these systems are extensions of the existing Dolby Digital 5.1 and DTS 5.1 digital surround sound formats. Users with one center back speaker (a 6.1 configuration) or two center back speakers (a 7.1 configuration) can take advantage of this extended surround information. Users with traditional 5.1 channel systems can play Dolby Digital Surround EX or DTS-ES 6.1 discs and they will sound exactly the same as 5.1 channel discs in each respective format. The extended surround recordings are 100% backwards compatible.

If you have configured your system with one or two center back speakers, decoding of DTS-ES discs is automatic, just as it is with standard DTS soundtracks.

The RSP-1066 also features Rotel XS (eXtended Surround) processing that automatically ensures optimum extended surround performance on 6.1 and 7.1 channel systems. The key benefit of Rotel XS is that it works at **all** times with **all** multichannel digital signals, even those that might not otherwise activate proper surround decoding for the center back channel(s). Always active in any system configured with center back speaker(s), Rotel XS monitors the surround channels, properly decodes them, and distributes the extended surround channels to the center back speaker(s). Rotel XS works with matrix-encoded surround signals (such as Dolby Surround EX discs and non-flagged DTS-ES) as well as non-matrix digital source material (such as DTS 5.1, Dolby Digital 5.1, and even Dolby Pro Logic II decoded Dolby Digital 2.0 recordings) to derive superb center back channel surround effects.

Other Formats

Three other digital formats are not surround sound formats at all, but rather systems for digital 2-channel recordings.

The first is PCM 2-channel. This is a straight 2-channel digital signal such as that used for standard CD recordings.

The second is HDCD® encoding for compact discs. This system uses a variety of enhancements to improve the sonic performance compared to standard audio CDs. These discs, labeled HDCD, can be played on standard CD players. However, when the digital signal is decoded using an HDCD decoder like that in the RSP-1066, they will provide exceptional musical reproduction.

The RSP-1066 also features a decoder for the digital MP3 (MPEG1- Audio Layer 3) compression format. MP3 format recordings are available on the Internet and can be played on portable MP3 players or some disc players that can read CD-ROM discs.

PCM 2-channel, HDCD, and MP3 are digital formats. They can only be decoded by the RSP-1066 from digital sources connected to the digital inputs.

DSP (Digital Signal Processing)

Finally, one more related issue to be addressed is DSP modes. Unlike all of the formats mentioned above, DSP is not a recording/playback system. Instead, it is a digital processing feature of the RSP-1066 that adds special acoustic effects to any signal. DSP processing can be used with Dolby Surround recordings, Dolby Digital recordings, CDs, radio broadcasts, or any other source material; however, typically DSP settings would be used with source material for which there is no specific surround decoder.

In general, DSP is used to create the ambience of a large listening environment: a jazz club, a concert hall, a stadium, etc. It uses digital processing to delay the signal to various speakers and mix in various levels of reverberation. Its use is strictly a matter of personal taste.

Surround Controls

Automatic Surround Modes

Decoding of digital sources connected to the digital inputs is generally automatic, with detection triggered by a "flag" embedded in the digital recording telling the RSP-1066 what decoding format is required. For example, when Dolby Digital 5.1 or DTS 5.1 channel surround is detected, the RSP-1066 activates the proper decoding, confirmed by a lighted indicator in the front-panel display.

The unit will also detect DTS-ES Matrix 6.1 or DTS-ES Discrete 6.1 discs and activate DTS-ES® Extended Surround decoding. Likewise, a digital input from an HDCD® encoded compact disc, a standard CD, or MP3 player will be auto-detected and properly decoded to 2CH stereo operation.

Rotel XS processing is automatically active in all systems configured with center back speaker(s) and will ensure proper extended surround decoding of all multichannel digital signals, even those that might not otherwise trigger the proper extended surround mode.

In many cases, the RSP-1066 will also recognize a digital signal with Dolby Surround encoding (such as the default soundtrack on many DVDs) and activate Dolby® Pro Logic II® decoding. Additionally, you can configure a default surround mode for each input using the ON-SCREEN DISPLAY menu system.

NOTE: *A digital signal coming into the RSP-1066 will be recognized and properly decoded. However, on a DVD with multiple soundtracks, you must tell the DVD player which one to send to the RSP-1066. For example, you may need to use the DVD's menu system to select the Dolby Digital 5.1 or DTS 5.1 soundtrack rather than the default Dolby Digital 2.0 Dolby Surround soundtrack. If in doubt about what type of soundtrack is being sent from the DVD, check the front panel indicator lights on the RSP-1066 to see which type of decoding is activated: Dolby Pro Logic (for Dolby Surround matrix soundtracks), Dolby Digital, or DTS.*

Manually Selecting Surround Modes

Four front panel MODE buttons and the SUR+ button on the remote provide manual selection of surround sound settings when you wish to use a surround mode that is not automatically detected or, in some cases, when you wish to override an automatic setting.

Manual settings available from the front panel and/or the remote might be used when you want to play:

- standard 2-channel stereo (left/right speakers only) – press the 2CH button
- Dolby 3-channel stereo (left/right/center) or Pro Logic II processing of any source material, including material that is not Dolby Surround encoded – press the Dolby PLII/3ST button to toggle to the desired mode.
- Derived 5.1, 6.1, or 7.1-channel surround for music or cinema from 2-channel sources using DTS Neo:6 processing – press the DTS Neo:6 button.
- 5-channel or 7-channel stereo from 2-channel sources – press the DSP button to toggle to the 5CH Stereo or 7CH Stereo setting.
- Four DSP ambience settings simulating concert halls - press the DSP button to toggle to the desired MUSIC effect.

The manual surround sound options are only available for certain source material and surround modes. Some discs may automatically activate one of the following surround modes with override options as follows:

- DTS, DTS-ES Matrix 6.1, DTS-ES Discrete 6.1, Dolby Digital, MP3, HDCD (96kHz), and PCM 2-channel (96kHz) digital signals are auto-detected and cannot be overridden.
- HDCD (non 96kHZ) and PCM 2-channel (non 96kHZ) digital signals can be overridden to Dolby Pro Logic II, Dolby 3-Stereo, DTS Neo:6, Music 1 – 4, 5CH Stereo, 7CH Stereo, and Stereo.
- Dolby Digital 2-channel Stereo can be overridden to Dolby Pro Logic II, Dolby 3-Stereo, and Stereo.

The following topics describe the use of each of the surround mode buttons in greater detail.

2CH Button 7

Press this button to activate conventional 2-speaker stereo mode with no surround sound or other processing. This is "pure" stereo, using the front left and front right speakers (with or without subwoofer), with no surround channels and no center channel.

When used with Dolby Digital or DTS source material, the 2CH button engages a downmix feature, combining all of the channels and sending them to the front speakers. The spatial effects of surround sound are lost, but all of the information on the original recording are preserved.

NOTE: *2CH mode allows you to hear 2-channel stereo recordings in their original format using the analog inputs.*

DOLBY PLII/3ST Button 8

This button offers two settings for Dolby processing: Dolby Pro Logic II and Dolby 3-Stereo. Press the button once to activate Dolby Pro Logic II (with the last used settings). Press again to toggle to the Dolby 3-Stereo setting. A front-panel display indicator shows the selected mode.

Use Dolby 3-Stereo for playback on front and center speakers, but no rear surround. With stereo recordings, it derives a center channel signal. With 5.1 channel recordings, the surround channels are mixed into the front speakers for a larger, more ambient sound than conventional stereo.

Dolby Pro Logic II decodes surround sound from any matrix encoded Dolby Surround 2-channel recording. It also can be used to create ambience in 2-channel musical source material that is not Dolby Surround encoded.

There are three optional modes for Dolby Pro Logic II decoding:

MUSIC: optimized for music.
CINEMA: optimized for movie soundtracks.
EMULATION: emulates the older Dolby Pro Logic decoder with mono frequency-limited surround channels.

When the PRO LOGIC II setting is selected, the front-panel display shows that Pro Logic II decoding is activated, along with the current mode setting (MUSIC, CINEMA, EMULATION).

The mode setting can be changed using the ON-SCREEN MENU system. You can also switch among the three mode settings (MUSIC, CINEMA, EMULATION) by pressing the +/– buttons M on the remote control. However, this feature works **only** when the Pro Logic II surround mode is active and when the ON-SCREEN MENU system is not being displayed.

NOTE: *If you have one or more center back speakers, the Rotel XS processing automatically optimizes the surround output for 6.1 and 7.1 systems. Rotel XS works with all multichannel digital signals, including Dolby Digital Surround EX discs as well as sources that would not otherwise activate an extended surround decoder.*

DTS Neo:6 Button 9

The DTS Neo:6® mode provides advanced matrix processing to generate 5.1 and 6.1 surround channels from two-channel source material, much like Dolby Pro Logic II. DTS Neo:6 can process analog 2 channel sources, digital 2-channel sources, and matrix encoded digital 2-channel sources.

DTS Neo:6 features two different decoding settings, one optimized for music sources and the other optimized for cinema sources. Press the DTS Neo:6 button to activate Neo:6 processing in the last previously used mode. The DTS icon lights and the label Neo:6 scrolls in the FL display followed by "CINEMA" or "MUSIC" depending on the currently active mode.

Press the Neo:6 button again to toggle to the Neo:6 CINEMA mode. You can also change the Neo:6 mode using the ON-SCREEN MENU system. Or, you can press the +/– buttons M on the remote after Neo:6 is activated to change between cinema to music modes: however, this feature only works when Neo:6 processing is active and the ON-SCREEN MENU system is not being displayed.

NOTE: *It is not necessary to press this button when playing a DTS or DTS-ES encoded digital disc. Activation of the correct decoding for these discs is automatic, as indicated by the illumination of the DTS indicator in the front-panel display.*

DSP Button 10

This button activates digital synthesis of six ambience modes (MUSIC 1, MUSIC 2, MUSIC 3, MUSIC 4, 5CH Stereo, and 7CH Stereo).

- The four MUSIC settings use digital delay and reverberation effects to simulate progressively larger acoustic environments. Typically used to add ambience and a sense of space when listening to music sources or other sources that lack surround sound encoding.
- 5CH Stereo derives surround channels from stereo source material on a 5 channel system (FRONT LEFT/RIGHT, CENTER, and SURROUND LEFT/RIGHT).
- 7CH Stereo derives surround channels from stereo source material on a 7 channel system (FRONT LEFT/RIGHT, CENTER, SURROUND LEFT/RIGHT, and CENTER BACK 1/2).

Press the button to activate the DSP mode. Each press of the button will step forward to the next mode in the following order: MUSIC 1 > MUSIC 2 > MUSIC 3 > MUSIC 4 > 5CH Stereo > 7CH Stereo. An indicator lights in the front-panel display when DSP mode has been activated.

Setting Surround Modes from the Remote SUR+ Button P

The SUR+ button on the remote selects the surround modes described in the previous section. Each time you press the button, the surround mode cycles to the next setting (2-Stereo > Dolby Pro Logic II > Dolby 3-Stereo > Music 1 – 4 > 5CH Stereo > 7CH Stereo > Neo:6 > 2-Stereo) as indicated by the front-panel display and an ON-SCREEN DISPLAY indicator. Repeatedly press the button until you reach the desired setting.

NOTE: *The following type of source material are generally detected automatically and the proper decoding activated with no action required: DTS, DTS-ES Matrix 6.1, DTS-ES Discrete 6.1, Dolby Digital, MP3, HDCD and PCM 2-channel. Some surround modes may not be available for all source material.*

Speaker Level Adjustment Selection Buttons B D N UP/DOWN Buttons C

The levels of all channels should be calibrated using test tones with an ON-SCREEN DISPLAY menu during the initial setup of the RSP-1066. You can also make a temporary change in the relative volume of the center, rear, or subwoofer channels using buttons on the remote control:

1. Press one of the selection buttons on the remote to select a channel (or pair of channels) for adjustment. Press the C button B to adjust the CENTER channel. Press the S button D to adjust the SUBWOOFER channel. Press the R button N to adjust the rear SURROUND or CENTER BACK channels (each press of the R button toggles between the SURROUND channels and the CENTER BACK channels). The selected speaker and its current setting appear briefly in the display.
2. Use the UP or DOWN buttons C on the remote to adjust the output level of the selected channel(s).
3. Repeat the procedure for each channel.

If no level adjustment is made for 5 seconds after pressing one of the selection buttons, the levels revert to the default calibrated settings.

NOTE: *This adjustment is temporary. Selecting a different input or turning the unit off reverts to the default levels.*

DYNAMIC RANGE Button 12 DWN Button C

Digital sources are capable of wide dynamic range (the difference between the softest and loudest sounds). In some cases, this may tax amplifiers and/or speakers. In other cases, you may want to reduce the dynamic range when listening at low volume levels. Pressing the front-panel DYNAMIC RANGE button (or the DWN button on the remote) steps through the three dynamic range settings:

- **MAX** (no compression/full dynamic range)
- **MID** (moderate compression)
- **MIN** (full compression/minimum dynamic range)

A "D. RANGE" indicator in the front-panel display lights when the dynamic range is not set to the MAX setting. The new dynamic range setting appears briefly in the alphanumeric display when the setting is changed.

NOTE: *The DYNAMIC RANGE feature is only available in Dolby Digital mode. It is designed to keep dialog intelligible while adjusting the loudest and softest sounds.*

Connections: Overview

The RSP-1066 connections include standard RCA audio inputs and outputs, composite video inputs and outputs, S-Video inputs and outputs, Component Video inputs, plus coaxial and optical digital inputs and outputs.

NOTE: *Surround formats like Dolby Digital and DTS are digital formats and the RSP-1066 can only decode them when a digital input signal is available. For this reason, you should always connect your DVD player's digital outputs to the RSP-1066, using either the optical or coax inputs.*

The RSP-1066 has RCA preamp audio outputs for use with power amplifiers as well as composite video, S-Video, and Component Video outputs to connect your TV monitor.

The RSP-1066 also has MULTI input connections, a remote IR sensor input, and two 12V trigger connections for remote turn-on of Rotel amplifiers.

NOTE: *Do* ***not*** *plug any system component into an AC source until all connections have been properly made.*

Video cables should have a 75 ohm impedance rating. The S/PDIF digital audio interface standard also specifies a 75 ohm impedance and all good digital cables adhere to this requirement. Because the video and S/PDIF standards are so close, you can use a video cable for digital audio data transmission. Do NOT substitute conventional audio interconnect cables for digital or video signals. Standard audio interconnects will pass these signals, but their limited bandwidth reduce performance.

When making signal connections, connect LEFT channels to LEFT channel jacks and RIGHT channels to RIGHT channel jacks. All RCA-type connections on the RSP-1066 follow these standard color codes:

Left channel audio: white RCA jack
Right channel audio: red RCA jack
Composite video: yellow RCA jack

NOTE: *Each source input must be properly configured using the INPUT MENU of the ON-SCREEN DISPLAY system. We recommend going to this menu after connecting each source to configure it as desired. See the INPUT MENU topic of the On-Screen Display/Configuration section for information.*

Video Connections

The RSP-1066 provides S-Video and Component Video connections for those who wish to use them. However, standard Composite video cables provide excellent picture quality in most systems and their use for **all** input and output connections will simplify installation and configuration of the unit.

If you choose to use S-Video or Component Video connections, be aware of the following implications for the configuration of your system:

On Screen Menu Display: The RSP-1066 ON-SCREEN MENU system is available for **all** inputs when using a Composite or S-Video cable from the TV MONITOR outputs to the TV set. The ON-SCREEN MENU is not available when using Component video cables.

System Set-Up: System setup should be done while using a Composite video or S-Video cable connecting the RSP-1066 TV MONITOR outputs to the video inputs of the TV or projector. Select OSD (ON-SCREEN MENU) from the RR-969 remote control to complete system setup.

NOTE: *On a PAL standard monitor, the OSD cannot be displayed until a video signal is present, irrespective of the type of video cables in use. For setup, connect the video output from your DVD player and select its input on the RSP-1066. The OSD will be displayed as an overlay to the video signal from the DVD player.*

Composite and S-Video: With certain exceptions, a system should be connected with either **all** Composite or **all** S-Video cables. S-Video signals from sources cannot be sent to a TV set from the RSP-1066 TV MONITOR outputs with a Composite video cable. Conversely, Composite video signals from sources cannot be sent to a TV set from the RSP-1066 TV MONITOR outputs with an S-Video cable. Therefore, Composite and S-Video connections cannot be "mixed" in a system.

However, both Composite and S-Video cables may be connected from the RSP-1066 TV MONITOR outputs to both Composite and S-Video inputs on a TV or projector. This dual connection from the RSP-1066 will provide limited S-Video capability in a system that is predominantly connected with Composite video cables.

When both Composite and S-Video cables are connected from the same source, **both** Composite and S-Video signals are available at the RSP-1066's TV MONITOR outputs, allowing the selection of the desired signal with the TV input selector. The Composite video signal is available at the REC Out for recording. This dual connection can be used to provide video taping in a system that is predominantly connected with S-Video cables, but also includes a VCR with Composite video.

Component Video: Component Video connections can significantly improve the picture quality when using a digital "high-definition" television monitor and a DVD player's progressive scanning feature. They provide little benefit with standard analog TV monitors. Their use will almost certainly require running multiple outputs to the TV and switching between the TV's various inputs when changing sources.

Audio Source Connections

See Figure 4.

Connect your audio-only source components to these RCA inputs and outputs:

CD Inputs 27

Connect the left and right analog outputs from your CD player to the input jacks labeled CD.

TUNER Inputs 26

Connect the left and right analog outputs from your tuner to the input jacks labeled TUNER.

TAPE Inputs and Outputs 28

The RSP-1066 provides a pair of inputs and a pair of record outputs for connecting an analog audio tape deck.

The analog source signal available for recording at the TAPE outputs is selected with the REC button on the front-panel (or the ZONE button on the remote) and its label appears in the display. If the TAPE input signal is selected as the recording source, its signal will not be available at the TAPE output, but will be available at the VIDEO outputs for recording.

Connect the left and right analog *outputs* from an audio tape deck to the TAPE IN jacks. Connect the TAPE OUT jacks to the *inputs* on the audio tape deck.

Video Source Inputs

See Figure 4.

There are input connections for five video source components. Each of the five provides a pair of RCA inputs for analog audio signals. Each of the five also provides a choice of an RCA composite video input or S-Video input for the video signal from the source component. In addition, two of the video source inputs (Video 1 and Video 2) also feature Component Video input connections as an alternative to the composite video or S-Video connections.

NOTE: *There is no need to use more than one type of video connection from a source component. We recommend selecting one type of video connection and using it for all video inputs and outputs. As a general rule, using RCA composite video connections will simplify system setup and operation.*

There are also video record outputs (described in a following section) which correspond to three of the video source inputs – Video 1, 2, and 3). For this reason, you should plan ahead and designate each source component as Video 1, Video 2, etc. All connections (both input and output) from a source component must be made consistently to the same set of connections. For example, **all** input and output connections to a particular VCR could be made to Video 1 connectors.

Also, be sure that the channels are connected consistently, i.e. left channel signals connected to left channel inputs/outputs and right channel signals connected to right channel inputs/outputs.

NOTE: *These video source inputs can also be used for additional audio-only sources, omitting the video signal connections.*

VIDEO 1–5 Audio Inputs 29

Using standard audio interconnect cables, connect the left and right channel analog audio *outputs* of VCRs or other source components to the VIDEO 1, 2, 3, 4, or 5 *inputs* using standard RCA audio cables.

VIDEO 1–5 Composite Video Inputs 31

If you use the RCA composite video connections for a source component, connect the RCA video *output* of the source component to one of the video *inputs* labeled COMPOSITE IN. Use a standard 75 ohm video cable.

VIDEO 1–5 S-Video Inputs 33

S-Video signals use a special cable which divides the video signal into several elements carried by separate conductors, providing higher quality than the standard RCA composite cables. If you choose to use an S-Video input connection from a source component, connect the S-Video *output* of that component to one of the *inputs* on the RSP-1066 labeled S-VIDEO IN using a standard S-Video interconnect cable.

NOTE: *Signals from S-Video inputs will only be available at the S-Video outputs to the TV.*

VIDEO 1–2 Component Video Inputs 25

Component Video connections split the video into three signals – luminance (Y) and separate chrominance (CB and CR) elements, allowing delivery of a reference-quality picture. Each of these signals is carried by a separate 75 ohm video cable with RCA connectors.

The VIDEO 1 and VIDEO 2 source inputs provide an option for using Component Video connections. If you choose to use Component Video input connection from a source component, connect the three Component Video *outputs* of that component to the corresponding *inputs* on the RSP-1066 labeled COMPONENT VIDEO IN. Make sure that you connect each of the three cables to the proper connector (Y to Y, CB to CB, and CR to CR) and that you use standard 75 ohm video interconnect cables.

NOTE: *Signals from Component Video inputs will only be available at the Component Video outputs to the TV monitor. The ON-SCREEN DISPLAY system is not available when using Component Video connections.*

MULTI Inputs 19

These RCA inputs accept seven channels of analog signals from a 5.1 or 6.1 channel processor or source component. When selected with the front-panel MULTI INPUT button or remote EXT IN button, this input overrides any other audio input signal.

Use audio interconnect cables to connect the outputs of the source component to the RCA jacks labeled MULTI INPUT, making sure that you observe proper channel consistency, i.e. connect the right front channel to the R FRONT input, etc. Depending on your system configuration, you will make six connections (FRONT RIGHT/FRONT LEFT/REAR RIGHT/REAR LEFT/ CENTER/SUBWOOFER), seven connections (FRONT RIGHT/FRONT LEFT/ REAR RIGHT/ REAR LEFT/CENTER/CENTER BACK/SUBWOOFER).

Video Source Outputs

See Figure 4.

Three of the available video sources (VIDEO 1, 2 and 3) feature outputs that allow you to send a signal to a VCR or other source component for recording. The recording signal available at all of these outputs is selected globally using the REC button on the front-panel or the ZONE button on the remote and is independent of the source selected for listening.

NOTE: *Recording signals are available at all source outputs, including the source selected for recording. As a general rule, you should not attempt to record to the component whose signal has been selected for recording.*

The record outputs for VIDEO 1, 2, and 3 include a pair of RCA analog audio outputs plus a choice of composite video or S-Video output. To hook up a video component for recording, you will need to connect it to both analog audio outputs and to your choice of video outputs. Keep in mind that composite video input signals will not be available at the S-Video record outputs and S-Video input signals will not be available at the composite video record outputs.

NOTE: *All connections (both input and output) from a source component must be made consistently to the same set of connections. For example, if you designate a VCR as VIDEO 1, you must connect all of its input and output signals to the VIDEO 1 connectors.*

VIDEO 1–3 Audio Outputs 30

Using standard audio interconnect cables, connect the left and right channel RCA audio *outputs* from the RSP-1066 to the audio *inputs* on the source component. Make sure that you are consistent. If you hook up a VCR to the VIDEO 1 inputs, hook up the VIDEO 1 outputs to the same VCR. Also make sure that the left channel is connected to the LEFT connectors and the right channel to the RIGHT connectors.

VIDEO 1–3 Composite Video Outputs 32

If you choose to use the RCA composite video connections for a source component, use a 75 ohm video interconnect cable to connect the RSP-1066's RCA video *output* (labeled COMPOSITE OUT) to the RCA video *input* on your VCR.

VIDEO 1–3 S-Video Outputs 34

If you choose to use S-Video connections for a source component, use an S-Video cable to connect the RSP-1066's S-Video *output* (labeled S-VIDEO OUT) to the S-Video *input* on your source component.

Digital Source Connections

See Figure 4.

The RSP-1066 provides digital connections which may be used in place of, or in addition to, the analog audio input and output connections described in the previous sections. These connections include five digital inputs and two digital outputs for recording.

These digital connections can be used with any source component that supplies a digital signal, such as a DVD player or CD player.

NOTE: *A digital connection means that the digital processors in the RSP-1066 will be used to decode the signal, rather than the source component's internal decoders. In general, you must use digital connections for a DVD player or other component that supplies a Dolby Digital or DTS signal, otherwise the RSP-1066 will not be able to decode these formats.*

Digital Inputs 16

The RSP-1066 accepts digital input signals from source components such as CD players, satellite TV receivers, and 5.1 channel Dolby Digital, DTS, or 6.1 channel DTS ES signals from DVD players. The built-in D/A converter senses and adjusts to the correct sampling rates.

There are five digital inputs on the rear panel, three coaxial and two optical. These digital inputs can be assigned to any of the input sources using the INPUT MENU screen described later in this manual. For example, you can assign the COAXIAL 1 digital input connector to the VIDEO 1 source and the OPTICAL 2 digital input to the VIDEO 3 source.

Connect the appropriate cable (optical or 75 ohm coaxial) from the digital *output* of your source component to a digital *input* on the RSP-1066 and then configure that digital input for use with the source component using the INPUT MENU.

NOTE: *When using digital connections, you should also make the analog audio input connections described previously. The analog connection is necessary to record to an analog recorder or for ZONE 2 operation*

Digital Outputs 17

The RSP-1066 has a digital output (with a choice of coaxial or optical connectors) to send the digital signal from any of the five digital inputs to a digital recorder or outboard digital processor. When a digital input source signal is selected for listening, that signal is automatically sent to both digital outputs for recording or outboard processing.

NOTE: *Only digital signals from source components are available at these outputs. Analog signals cannot be converted and are not available at the digital outputs.*

Connect the digital *output* to the digital *input* of your recorder or processor. You can use either a 75 ohm coaxial video cable or an optical cable.

Output Signal Connections

See Figure 3.

This section of the manual describes the audio and video signal output connections on the RSP-1066. These are used for routing the output signals to television monitors, audio amplifiers, and recording devices.

TV Monitor Output 25 35

The video output of the RSP-1066 sends the video signal to your TV monitor. Three types of video output connections are provided – RCA composite video, S-Video, and Component Video. Choose the type of video output connection that matches the type of video input connections you have made. Connect the TV MONITOR *output*, from either RCA composite or S-Video or Component Video connector, to the corresponding *input* on your television monitor, using appropriate video cables.

NOTE: *The RCA composite video output only sends signals from RCA composite video source inputs to the TV monitor. The S-Video output only sends signals from S-Video video source inputs to the TV. The Component Video output only sends signals from Component Video source inputs to the TV. If you have connected all of your source components with the same type of connection, then you only need to make one connection from the RSP-1066 to the TV monitor. However, in a mixed system with, for example, some S-Video and some RCA composite inputs, you will need to make two connections to the TV monitor and use its input selector to switch between the two when changing sources.*

NOTE: *The ON-SCREEN DISPLAY system is not available when using Component Video connections to the TV monitor*

Preamp Outputs 15

There are ten RCA preamp audio outputs: FRONT (LEFT/ RIGHT), CENTER (1/2), SURROUND REAR (LEFT/RIGHT), CENTER BACK (CB1/CB2), and SUBWOOFER (1/2). Use these outputs to send the RSP-1066's output signals to powered speakers or external amplifiers.

NOTE: *Depending on your system configuration, you may use some or all of these connections. For example, if you only have one center channel, you would connect it to the CTR 1 output. If you only have one center back channel, you would connect it to the CB1 output.*

To hook up a powered subwoofer, connect a standard RCA audio cable from the SUBWOOFER OUTPUT jack to the input on the subwoofer's power amp.

To hook up the RCA main audio outputs, connect an audio cable from each *output* to the *input* of the amplifier channel that will power the corresponding speaker. In a full home theater system, you will need to make six different connections corresponding to the six speakers (left front, center front, right front, left surround, right surround, and subwoofer).

Make sure that you have each output connected to the correct amplifier channel (front right, left rear, etc.).

Power and Miscellaneous Connections

AC Input 36

Your RSP-1066 is configured at the factory for the proper AC line voltage in the country where you purchased it (USA: 115 volts/60Hz AC or CE: 230 volts /50 Hz AC). The AC line configuration is noted on a decal on the back of your unit.

Plug the supplied cord into the AC INPUT receptacle on the back of the unit.

See the POWER Button heading in the BASIC CONTROLS section of this manual for information about turning the unit on and off.

NOTE: *Memorized settings and video labels will be stored for up to one month if the RSP-1066 is disconnected from AC power.*

12V TRIGGER Connections 24

Several Rotel amplifiers offer the option of turning on and off by sensing a 12 volt trigger signal from the RSP-1066. This 12-volt trigger capability provides a remote turn-on mechanism while allowing power amplifiers with large current demands to be plugged directly into an AC wall outlet.

When the RSP-1066 is activated, a 12 volt DC control signal appears at these connectors and will turn on amplifiers whose 12 volt trigger sensor is connected to them. When the RSP-1066 is put in STANDBY mode, the trigger signal is interrupted and the amplifiers will turn off.

To use the 12-volt trigger system, either of these two output connections must be connected to the 12-volt trigger input on your Rotel amplifier, using a custom cable. The proper cable consists of mono 3.5 mm male mini-plugs attached to both ends of a small single-conductor insulated wire. One end of the cable is plugged into the 12V TRIGGER output of the RSP-1066. The other end is plugged into the 12V TRIGGER input of the amplifier. Consult your amplifier's instruction manual for information about configuring the unit for remote turn-on using the 12 volt trigger system.

NOTE: *Audio/Video systems vary in their complexity. There are many approaches to turning on and off the components in a system and it is impractical to cover every possible configuration in this manual. Please consult your authorized Rotel dealer for advice on configuring your system and using the 12-volt trigger connections, if appropriate.*

EXTERNAL REM IN 23

This 3.5 mm mini-jack (labeled EXT REM IN) receives command codes from an industry-standard infrared receivers (Xantech, etc.) located in the main listening room. This feature provides a method for remote control operation when the unit is installed in a cabinet where its front-panel IR sensor is blocked. This feature allows you to mount an external IR sensor outside of the cabinet so that signals from remote control can reach it. This external sensor is then attached to the EXT REM IN jacks of the RSP-1066.

There are many available infrared receivers which may use different wiring standards. Please consult your authorized Rotel dealer for information on external infrared receivers and the proper wiring of a jack to fit the mini-jack receptacle.

NOTE: *The IR signals from the EXTERNAL REMOTE IN jack (as well as those from the ZONE REMOTE IN jack) can be relayed to source components using external IR emitters or hard-wired connections from the IR OUT jacks. See the ZONE 2 section of this manual for additional information.*

Computer I/O 18

The RSP-1066 can be operated with a personal computer running audio system control software from third-party developers. This control is accomplished by sending operating codes (normally sent by the RR-969 remote control) from the computer via a hard-wired network connection.

The COMPUTER I/O input provides the necessary network connections on the back panel. It accepts standard RJ-45 8-pin modular plugs, such as those commonly used in 10-BaseT UTP Ethernet cabling.

For additional information on the connections, software, and operating codes for computer control of the RSP-1066, contact your authorized Rotel dealer.

Zone 2 Connection and Operation

The RSP-1066 provides Zone 2 multi-room capability, allowing you to enjoy music and operate the system from a second room. From the remote location, you can select a source component (even if different from the source playing in the main listening room), adjust the volume level in the remote zone, and operate the source components.

To use the Zone 2 capability, you need additional components: a pair of speakers installed in the remote zone, an amplifier to drive them, and a third-party IR repeater system.

Zone 2 can be controlled from the main room using RSP-1066's front-panel ZONE button. Operation from the remote zone requires the installation of an infrared repeater system (Xantech, Niles, etc.) which relays infrared remote control commands from Zone 2 to the ZONE REMOTE IN input on the back of the RSP-1066.

Several points to keep in mind about the Zone 2 function:

- An infrared repeater system (Xantech, Niles, etc.) is required for operation from the remote zone.
- There are two options for the Zone 2 output level, selectable from the ON-SCREEN DISPLAY menu system. VARIABLE output gives you full adjustment of the volume level, remembering last previous setting whenever Zone 2 is activated. FIXED output disables the Zone 2 volume control with the output permanently set to a specified level. This might be useful for sending a line level signal to a preamp or integrated amp with its own volume control or to a distribution amplifier with multiple volume controls.
- The RR-969 remote control supplied with the RSP-1066 will operate Zone 2 if used with a repeater system from the remote zone. It can also be programmed to operate Rotel source components via the RSP-1066's IR OUT jack.
- Any source component connected to the RSP-1066's inputs can be sent to the Zone 2 outputs. ZONE 2 operates independently of the main room. You can select a different source or adjust Zone 2 volume without affecting the MAIN outputs in any way.
- Avoid sending the same infrared command to the RSP-1066 front-panel sensor and a Zone 2 repeater at the **same** time. This means that Zone 2 **must** be in a different room from the RSP-1066.

Zone 2 Power On/Off

Once master power is applied to the unit by pressing the front-panel POWER button, the RSP-1066 provides independent power on/off operation for both zones. Pressing the remote control POWER button in the main room activates or deactivates the RSP-1066 in the main room only and has no effect on Zone 2. Conversely, activating or deactivating Zone 2 has no effect on the main listening room. However, placing the front-panel POWER button in the OFF position completely shuts off the unit, for both zones.

NOTE: *For proper power on and off operation with Zone 2, the RSP-1066's power mode should be set to the factory default DIRECT setting or to the STANDBY setting using the OTHER OPTIONS menu from the ON-SCREEN DISPLAY.*

Controlling Zone 2 from the Main Room ZONE Button 13

You can control Zone 2 from the front-panel of the RSP-1066 – activate or deactivate Zone 2, change input sources, and adjust the volume. Controlling Zone 2 from the front-panel is accomplished by pressing the ZONE button, which temporarily puts the RSP-1066 in Zone 2 control mode, even if the unit is in standby mode. When the ZONE button is pressed, the FL DISPLAY shows the current status of ZONE 2 for ten seconds, during which time you can use the VOLUME control and INPUT SOURCE buttons to change the ZONE 2 settings. When ZONE 2 is active, the ZONE indicator in the FL DISPLAY lights.

NOTE: *Zone 2 cannot be controlled from the remote in the main room.*

To turn Zone 2 on or off:

1. Press the front-panel ZONE button. The status of Zone 2 appears in the display. If Zone 2 is in standby, "ZONE OFF" appears. If Zone 2 is active, "ZONE xxxxx" showing the current input source appears.
2. If Zone 2 is ON, pressing the ZONE button a second time within 10 seconds turns it OFF. If Zone 2 is OFF, the second press of the ZONE button turns it ON with the last used input source and volume setting.
3. Following 10 seconds with no commands, the RSP-1066 reverts to normal operation.

To change the Zone 2 input source:

1. Press the front-panel ZONE button. The status of Zone 2 appears in the display. Make sure that Zone 2 is ON.
2. Within 10 seconds after pressing the ZONE button, press one of the INPUT SOURCE buttons to select a new source for Zone 2. The name of the selected source appears in the display.
3. Following 10 seconds with no commands, the RSP-1066 reverts to normal operation.

To change the Zone 2 volume:

1. Press the front-panel ZONE button. The status of Zone 2 appears in the display. Make sure that Zone 2 is ON.
2. Within 10 seconds after pressing the ZONE button, adjust the volume control to change the Zone 2 output level. The new setting appears in the display.
3. Following 10 seconds with no commands, the RSP-1066 reverts to normal operation.

Controlling Zone 2 from the Remote Location

With a properly configured IR repeater system, you have full control of Zone 2 using an RR-969 remote from the Zone 2 location. You can select and operate a source, adjust the volume, and turn Zone 2 on or off. Whatever commands you send from the RR-969 will change Zone 2 and only Zone 2, just as if you were controlling a totally independent audio system in that room. These changes will have no effect on the main listening room.

To turn Zone 2 on or off, press the POWER button H on the remote. To adjust the volume in Zone 2, press the VOLUME buttons I on the remote. To select a different analog input source, press one of the INPUT SOURCE buttons E on the remote.

Zone 2 Audio Outputs 20

See Figure 5.

These line-level RCA outputs send the Zone 2 audio signals to a stereo amplifier driving a pair of speakers in the remote zone.

NOTE: *Only analog input signals are available at the Zone 2 outputs. Source components connected to only the digital inputs are not available in Zone 2.*

Although you have the option of using an integrated amplifier or a receiver to power the remote speakers, we suggest using a fixed-gain power amplifier. This simplifies system installation and operation. Your authorized Rotel dealer may make another recommendation based on specific system requirements.

To configure your system for Zone 2 operation, connect the left and right Zone 2 *outputs* on the RSP-1066 to the left and right channel *inputs* of the amplifier powering the remote speakers, using standard RCA audio cables.

NOTE: *By default, the Zone 2 outputs provide a VARIABLE level signal, with control of the volume from the RSP-1066 front-panel and/or remote control from Zone 2. Alternatively, you can configure these outputs for FIXED level, which disables the volume control and sends a fixed line-level signal to an amplifier with its own volume control. See the ON-SCREEN DISPLAY/Configuration section for details.*

ZONE REM IN Jack 21

See Figure 5.

This 3.5 mm mini-jack accepts signals from a infrared repeater located in Zone 2. This IR repeater system is required for operation of the RSP-1066's ZONE 2 functions from the remote zone. There are many available IR repeater systems from third-party suppliers and it is impractical to cover the wiring of each type in this manual. Please consult your authorized Rotel dealer for information on configuring an IR repeater system for your application.

NOTE: *ZONE 2 and its IR repeater must be in a different location than RSP-1066 to prevent IR commands intended to control Zone 2 from inadvertently controlling the main room operations.*

IR OUT Jacks 22

See Figure 5.

The IR OUT 1 & 2 jacks send IR signals received at the ZONE REM IN jack or the EXTERNAL REM IN jack to an infrared emitter placed in front of a source component or to Rotel CD players, DVD players, or tuners with a compatible rear panel IR connector.

This output is used to allow IR signals from Zone 2 to be sent to the source components, or to pass along IR signals from a remote in the main

room when the sensors on the source components are blocked by installation in a cabinet. See your authorized Rotel dealer for information on IR repeater systems.

NOTE: *The EXT REM IN jack located to the right of these jacks is for use with an external IR sensor duplicating the front-panel IR sensor and located in the primary zone. It should* ***not*** *be used for ZONE 2 IR connections.*

On-Screen Display and System Configuration

The RSP-1066 features two on-screen systems to help operate the system. The first consists of simple status displays that appear on the TV screen whenever primary settings (Volume, Input, etc.) are changed. These status displays are self-explanatory.

A more comprehensive ON-SCREEN DISPLAY menu system is available at any time by pressing the MENU button on the remote control. These menus guide you through the setup and operation of the RSP-1066.

System Set-Up: System setup should be done while using a Composite video or S-Video cable connecting the RSP-1066 TV MONITOR outputs to the video input of the TV or projector. No other video connections should be made at this time. Select OSD (ON-SCREEN MENU) from the RR-969 remote control to complete system setup.

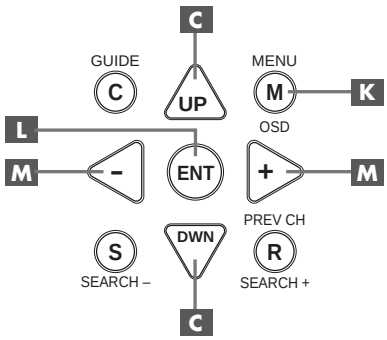
NOTE: *On a PAL standard monitor, the OSD cannot be displayed until a video signal is present, irrespective of the type of video cables in use. For setup, connect the Composite video output from your DVD player and select its input on the RSP-1066. The OSD will be displayed as an overlay to the video signal from the DVD player.*

The ON-SCREEN MENU system can be configured to display one of two languages: English or German. If you would like to change from the default English language, see the instructions for the OTHER OPTIONS menu later in this manual.

Navigation Buttons

C K L M

The following remote control buttons are used to navigate the ON-SCREEN DISPLAY menu system:



MENU Button K: To display the MAIN screen. All other menus are reached from this menu. If a menu is already visible, push this button to cancel the display.

DOWN/UP Buttons C: To move up and down in the lists that appear on the ON-SCREEN DISPLAY menu system.

+/– Buttons M: To change the current settings for a selected menu choice on some menus in the ON-SCREEN DISPLAY menu system.

ENTER Button L: To confirm a setting and return to the MAIN menu.

NOTE: *A help system at the bottom of each ON-SCREEN DISPLAY menu reminds you which buttons to press.*

SYSTEM STATUS Menu

```
        SYSTEM STATUS

    LISTEN: Tuner
    RECORD: VIDEO 1
      MODE: Stereo
     INPUT: Analog
    VOLUME: 45
      ZONE: Off

      ENT KEY=MAIN MENU
         OSD KEY=EXIT    V1.1
```

The SYSTEM STATUS menu provides a snapshot of the current system settings and a starting point for reaching all other screens and menus. This screen appears when you press the MENU button on the remote control and displays the following information:

LISTEN: the source selected for listening.

RECORD: the source selected for the VIDEO and AUDIO outputs.

MODE: the current surround sound mode.

INPUT: the input selected for the current source: Optical, Coaxial, Analog, etc.

VOLUME: the current volume setting.

ZONE: the current status of ZONE 2, ON or OFF.

VERSION: the version of the operating software currently installed in the RSP-1066. Your unit may have a different version than shown here.

No changes can be made using this screen; it only provides information. To go to the rest of the menus, press the ENTER button to go to the MAIN menu. Press the MENU key on the remote to cancel the display and return to normal operation.

NOTE: *The SYSTEM STATUS screen appears for ten seconds when the unit is turned on and automatically turns off.*

MAIN Menu

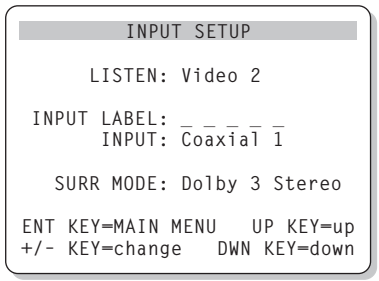
```
          MAIN MENU

       INPUT   SPEAKER
       DELAY   TEST TONE
   SUB LEVEL   ZONE 2
       OTHER   DEFAULT


       ENT KEY=ENTER
  UP KEY=up   DWN KEY=down
```

The MAIN menu provides access to eight other screens and menus and is reached by pressing the ENTER button from the SYSTEM STATUS menu described above or from most other menus. To go to another menu, move the highlight to the desired line using the UP/DOWN buttons on the remote and press the ENTER button. Press the MENU key on the remote to cancel the display and return to normal operation.

INPUT SETUP Menu



The INPUT SETUP menu configures the source inputs and is reached from the MAIN menu. The screen provides the following options, selected by placing the highlight on the desired line using the UP/DOWN buttons:

LISTEN: changes the current listening input source (CD, TUNER, TAPE, VIDEO1, VIDEO2, VIDEO3, VIDEO4, VIDEO5).

INPUT LABEL: The labels for the five VIDEO inputs can customized (not available for the TUNER, CD, and TAPE inputs). Place the highlight on this line to call up a sub-menu that allows you to change the five-character label for the current VIDEO source. To change the label:

1. Press the +/– keys to begin labeling.
2. Press the +/– keys to change the first letter, scrolling through the list of available characters.
3. Press the ENT key to confirm that letter and move to the next position.
4. Repeat steps 2 and 3 until all five characters have been completed. The final press of the ENT button will save the new label and exit the sub-menu.

INPUT: selects which physical input connection to use as the default for the source displayed in the first line of the menu. The options are ANALOG inputs, two OPTICAL digital inputs (OPTICAL 1& 2), and three COAXIAL digital inputs (COAXIAL 1 – 3). When a digital input is selected, the unit will check for a digital signal when the INPUT SOURCE button is pressed. If no digital signal is present, the unit will automatically revert to the analog input. When an ANALOG input is selected, the unit will not access a digital signal, even though one may be present at the digital input; thus, the ANALOG setting forces the unit to use accept only an analog signal. Assigning a digital input (with its auto-sensing) is the preferred configuration for digital source inputs such as DVD players.

NOTE: *If a source connected to a digital input is selected, that signal will automatically be sent to both digital outputs for recording.*

SURR MODE: selects the default surround sound mode for the input shown at the top of the menu. The default setting will be used unless the source material triggers automatic decoding of a particular type or unless the default setting is overridden by the front panel or remote surround buttons. Options are: Stereo, Dolby Pro Logic II, Dolby 3-Stereo, Music 1 – 4, 5CH Stereo, 7CH Stereo, and DTS Neo:6.

This is a default setting for each input and, in some cases, can be manually overridden by the front-panel MODE buttons or the SUR+ button on the remote. See the SURROUND SOUND CONTROLS section of this manual for more information on which settings can be overridden.

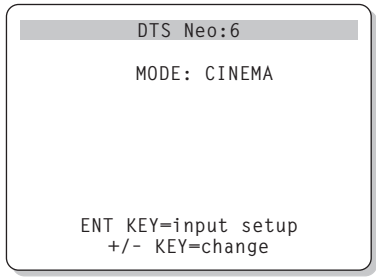
NOTE: *The following types of discs or source material are generally detected automatically and the proper decoding activated with no action or setting required: DTS, DTS-ES Matrix 6.1, DTS-ES Discrete 6.1, Dolby Digital, Dolby Digital 2-channel, PCM 2-Channel, MP3, and HDCD.*

Two of the default surround mode settings available on this menu offer additional choices. Dolby Pro Logic II decoding offers a choice of CINEMA, MUSIC, or EMULATION settings. DTS Neo:6 decoding offers a choice of CINEMA or MUSIC settings. When either Dolby Pro Logic II or DTS Neo:6 is selected with this menu item, the current setting choice will also be displayed. In addition, the function of the ENTER button changes, taking you to a sub-menu where you can change the settings and/or additional parameters for Dolby Pro Logic II or DTS Neo:6 decoding. See the following section for details.

To return to the MAIN menu (except when Dolby Pro Logic II or DTS Neo:6 is selected in the SURR MODE field), press the ENTER button. Press the MENU key on the remote to cancel the menu display and return to normal operation.

NOTE: *We suggest that you return to this menu after connecting each source component to properly configure that source.*

DTS Neo:6 Sub-Menu
DOLBY PRO LOGIC II Sub-Menu



When Dolby Pro Logic II or DTS Neo:6 is selected as the default surround mode on the INPUT SETUP menu (see previous section), there are additional option settings and parameters available to optimize the surround decoding for various types of recordings, music or movie soundtracks.

These settings are changed using one of the DOLBY PRO LOGIC II or DTS Neo:6 submenus, reached by pressing the ENTER key from the INPUT SETUP menu when either of these surround modes is selected.

The sub-menu will be similar to the example shown above, with the title at the top of the screen indicating either DOLBY PRO LOGIC II or DTS Neo:6 depending on the surround mode.

In DTS Neo:6 surround mode, there will only be one choice available on the sub-menu: selecting CINEMA or MUSIC modes. Use the +/– keys on the remote to change the settings.

- Select CINEMA to optimize the DTS Neo:6 decoding for movie soundtracks.
- Select MUSIC to optimize the DTS Neo:6 decoding for musical recordings.

In Dolby Pro Logic II surround mode, there will a similar choice available on the sub-menu except that there are three options: CINEMA, MUSIC, or EMULATION modes. Use the +/– keys on the remote to select a mode.

- Select CINEMA to optimize for Dolby Surround encoded movie soundtracks, using the enhanced matrix decoding of Dolby Pro Logic II including increased surround separation and full-bandwidth surround channel frequency response.
- Select EMULATION for Dolby Surround encoded movie soundtracks using decoding logic that emulates the original Dolby Pro Logic system. You may prefer this op-

tion for older movie soundtracks that are not of optimum audio quality. Compared to the CINEMA setting, EMULATION mode will reduce the high-frequency response and separation of the surround channels and may increase the delay setting to the surround channels for a more spacious effect.

- Select MUSIC to optimize for musical recordings. When the MUSIC mode is selected, three additional parameter will be available as shown in the following screen:

```
      DOLBY PRO LOGIC II

           MODE: Music

       OPTIONAL PARAMETERS
       PANORAMA: Off
      DIMENSION: 3
   CENTER WIDTH: 0

ENT KEY=input setup UP KEY=up
+/- KEY=change   DWN KEY=down
```

Use the UP/DOWN keys on the remote to select a parameter. Use the +/– keys to change the selected parameter as follows:

- **PANORAMA:** The Panorama option extends the front stereo image to include the surround speakers for a dramatic "wrap-around" effect. The options are OFF or ON.
- **DIMENSION:** The Dimension option allows you to gradually adjust the soundfield towards the front or towards the rear. There are seven incremental settings from 0 to 6. A setting of 0 shifts the soundfield towards the rear for maximum surround effect. A setting of 6 shifts the soundfield to the front for minimum surround effect. The default setting of 3 provides a "neutral" balance between the two extremes.
- **CENTER WIDTH:** The Center Width option allows you to send some of the signal intended for the center speaker to the left and right front speakers, thus widening the perceived soundfield. There are eight incremental settings from 0 to 7. With the default setting of 0, there is no center width spreading and all of the center channel information is sent to the center speaker . The maximum setting of 7 shifts all of the center channel signal to the left and right speakers, essentially muting the center speaker and maximizing the soundfield width. Other settings provide incremental steps between the two extremes.

When you have completed all the desired adjustments, press the ENTER key to return to the INPUT SETUP menu.

SPEAKER SETUP Menu

```
        SPEAKER SETUP
          FRONT: Large
         CENTER: Large
       SURROUND: Large
   CENTER BACK: Large
     SUBWOOFER: Yes

   CB SPKR SEL: 1 SPEAKER

ENT KEY=MAIN MENU   UP KEY=up
+/- KEY=change   DWN KEY=down
```

The SPEAKER SETUP menu is used to configure the RSP-1066 for use with your specific loudspeakers. The menu is accessed from the MAIN menu.

Home theater systems vary in the number of speakers and the bass capabilities of those speakers. The RSP-1066 offers surround modes tailored to systems with various numbers of speakers and bass management features which send bass information to the speaker(s) best able to handle it – subwoofers and/or large speakers. For optimum performance, you must tell the RSP-1066 the number of speakers in your system and how bass should be distributed among them.

NOTE: *There are two types of bass in a surround sound system. The first is normal bass recorded in each of the main channels (front, center, and surround). This bass is present in all recordings and soundtracks. In addition, Dolby Digital 5.1 and DTS 5.1 recordings have a Low Frequency Effects (LFE) channel – the .1 channel. This bass channel, typically played by a subwoofer, is used for effects such as explosions or rumble. The use of the LFE channel will vary from soundtrack to soundtrack. Recordings that are not encoded in Dolby Digital or DTS do not have the LFE channel.*

The following configuration instructions refer to LARGE and SMALL speakers, referring more to their desired bass configuration than their physical size. Specifically, use the LARGE setting for speakers that you want to play deep bass signals. Use the SMALL designation for speakers that would benefit from having their bass sent to more capable speakers. The bass management system redirects bass information away from all SMALL speakers and sends it to the LARGE speakers and/or the SUBWOOFER.

Four examples illustrate the principles behind bass management:

- A system with five LARGE speakers and a subwoofer: This system requires no bass redirection. All five speakers play the normal bass recorded in their respective channels. The subwoofer plays **only** the LFE channel bass. This may not be the most efficient use of system resources. Depending on the soundtrack, there may be minimal use of the LFE channel, so the subwoofer would be underutilized. Meanwhile the normal bass places higher demands on the capabilities of the other speakers and the amplifiers driving them.
- A system with LARGE front, center, and surround speakers, but no subwoofer. The normal bass from the front, center, and surround channels is played in its respective speakers. With no subwoofer, the LFE bass is redirected to all five LARGE speakers. This places significant demands on these speakers and their amplifiers, as they must play their own normal bass plus the very demanding LFE bass.
- A system with LARGE front speakers, SMALL center and surround speakers, and a subwoofer. The normal bass from the SMALL center and surround speakers is redirected to the LARGE front speakers and the subwoofer. The LARGE front speakers play their own normal bass plus the redirected bass from the SMALL speakers. The subwoofer plays the LFE bass plus some of the redirected bass from the SMALL center and surround channels. This might be an appropriate configuration with a pair of very capable front speakers driven by a large separate power amplifier.
- A system with all SMALL speakers and a subwoofer. The normal bass from all channels is redirected to the subwoofer, which also plays the LFE bass. The subwoofer handles ALL of the bass in the system, while the other speakers benefit from the added dynamic range and reduced strain of not having to play low bass. This configuration realizes the full benefits of bi-amping: bass is played by the speaker most suited to do so, the other speakers play louder with less distortion, and the need for amplifier power is reduced. This is the most

popular home theater configuration and should be strongly considered even if the speakers are physically large and capable of playing low bass. This configuration is particularly advantageous when driving the speakers with moderate power amplifiers.

NOTE: *An alternative configuration for setting up a satellite/subwoofer package as the front speakers: follow the speaker manufacturer's instructions, connecting the high-level inputs of the powered subwoofer directly to the speaker outputs of front amplifier and connecting the satellite speakers to the subwoofer's own crossover. In this arrangement, the speakers would be classified as LARGE and the subwoofer setting would be OFF for all surround modes. No information will be lost during playback because the system knows to redirect the bass information to the front LARGE speakers. While this configuration may ensure correct satellite speaker operation by using the speaker manufacturer's own crossovers, it has some disadvantages in terms of system calibration.*

The following speaker options are available:

FRONT SPEAKERS (small/large): This menu setting determines what kind of main front left and right speakers you are using. Use the LARGE setting to have the front speakers play low bass. Use the SMALL setting to redirect normal bass away from these speakers to a subwoofer.

CENTER SPEAKER(S) (small/large/none): Use the LARGE position (not available with SMALL front speakers) to have the center speaker play low bass. Use the SMALL position if your center channel speaker has more limited low frequency capability, or if you prefer that the bass be sent to the subwoofer. Select the NONE setting if your system does not have a center channel speaker (the surround modes will automatically divide all center channel information equally between the two front speakers, creating a phantom center channel).

SURROUND SPEAKERS (small/large/none): Select the LARGE setting (not available with SMALL front speakers) to have the surround speakers play low bass. If your rear speakers have limited bass capability or if you would prefer that the bass go to a subwoofer, use the SMALL setting. If your system has no rear surround speakers, select the NONE setting (surround channels are added to the front speakers so none of the recording is lost).

CENTER BACK SPEAKER(S) (small/large/none): Some systems have one or two additional center back surround speakers for use with 6.1 channel surround signals or 7CH stereo processing. With the RSP-1066, such a configuration is available using the preamp outputs and external amplifiers. Select the LARGE setting (not available with SMALL front speakers) to have your center back speakers play low bass. If your side speakers have limited bass capability or if you would prefer that the bass go to a subwoofer, use the SMALL setting. If your system has no center back speakers, select the NONE setting. With center back speakers, the Rotel XS extended surround and/or other decoders will provide the optimum center back signals for any surround mode and any type of recording.

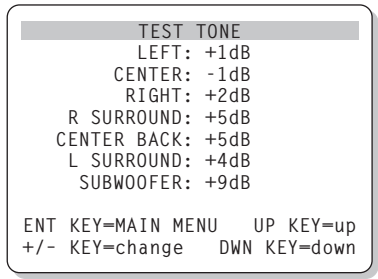
SUBWOOFER (yes/no/max): Use the YES setting if your system has a subwoofer. If your system does not have a subwoofer, select NO. Select the MAX setting to redirect all low frequency information from all speakers (including LARGE speakers) to the subwoofer. This will give you maximum bass performance with normal bass information being played by both the subwoofer and any LARGE speakers in the system.

CB SPKR SELECT (1 speaker/2 speakers): Use the 1 SPEAKER setting if your system has a single center back surround speaker. Use the 2 SPEAKERS setting if your system has 2 center back surround speakers. If your system does not have any center back speakers, select NONE on the previously described CENTER SPEAKER setting on this menu.

NOTE: *Speaker configuration is a global setting for all surround modes and need only be done once.*

To change a setting, place the highlight on the desired line using the UP/DOWN buttons and use the +/– buttons to toggle through the available settings. To return to the MAIN menu, press the ENTER button. Press the MENU key on the remote to cancel the display and return to normal operation.

TEST TONE Menu



This menu uses pink noise test tones to set equal volume levels for all speakers (left front, center, right front, right surround, center back, left surround, and subwoofer) to ensure proper surround sound reproduction. Setting the output levels using the test procedure provides the most accurate adjustment so that digital surround sound material will be reproduced as it was intended and is a critical step in calibrating the system.

NOTE: *If you have configured your system to use two center back speakers, there will be an additional line in the menu, giving you the ability to independently adjust the CENTER BACK 1 and CENTER BACK 2 speakers.*

To access this menu and perform the test tone calibration, you must be in one of the surround modes. To do this, press any of the MODE buttons except 2CH. Then, enter the ON-SCREEN DISPLAY menu system and select TEST TONE from the MAIN menu to reach this screen.

When you enter the TEST TONE menu, you will hear a test tone coming from the highlighted speaker. Highlight different speakers by moving the cursor to the desired line using the UP/DOWN buttons. The test tone will shift accordingly to the selected speaker.

While seated in the normal listening location, switch the test tone to the various speakers. Using the loudest speaker as a fixed reference, listen to hear if any other speakers are noticeably louder or quieter. If so, adjust that speaker's volume levels up or down (in 1dB increments) to match using the +/– buttons. Continue switching among the speakers and adjusting until all speakers are the same volume.

To return to the MAIN menu, press the ENTER button. Press the MENU key on the remote to cancel the menu display and return to normal operation.

Calibration with an SPL meter:

Calibrating the system with an SPL meter, rather than by ear, provides more precise results and improves the system's performance significantly. Inexpensive SPL meters are widely available and the procedure is quick and easy.

Both Dolby and DTS specify a standard calibration level for all theaters to ensure that soundtracks can be played at the volume level intended by the director of the film. This reference level should result in spoken dialog played at about 80 dB (a realistic level for normal speech) with the loudest peaks in any single channel at about 105 dB.

This calibration can be accurately done in a home theater using a sound pressure level (SPL) meter and the pink noise test tones described above. Set the meter to its SLOW response with C-weighting and hold it away from your body at your listening position pointing towards the speaker being adjusted. Increase the master volume control on the RSP-1066 until the meter reads 75dB when playing the test tone through one of the front speakers. Then, use the individual channel adjustments on the TEST TONE menu to adjust each of the individual speakers, including the subwoofer, to the same 75dB on the SPL meter. Note the setting of the master volume control. Whenever you play a Dolby Digital or DTS soundtrack with that master volume setting, you will be playing it at the reference volume level.

The idea of a reference volume setting to be used in every theater has its merits. However, many home theater listeners find this setting to be excessively loud. It's worthwhile calibrating your system to a known standard, but let your own ears be the judge for deciding how loud to playback movie soundtracks. Regardless of your listening levels, using an SPL meter to calibrate equal levels for all speakers in the system is well worth the effort.

DELAY SETUP Menu

```
          DELAY SETUP

              Dolby D Dolby
              /DTS    Pro LogicII
    CENTER:   1ms
R SURROUND: 15ms     25ms
L SURROUND: 15ms     25ms
 CNTR-BACK: 15ms     25ms

ENT KEY=MAIN MENU   UP KEY=up
+/- KEY=change    DWN KEY=down
```

This menu, which is reached from the MAIN menu, allows you to set the delay for individual speakers. This ensures that the sound from each speaker arrives simultaneously at the listening position, even when the speakers are not all placed at equal distances from the listener.

Although personal preference is the ultimate guide, you typically increase the delay to speakers located closer to the seating area and decrease the delay to speakers located farther from the seating area.

Start by measuring the distance from your seating position to each speaker. The speaker farthest away should receive no additional delay. Each of the other speakers will receive one millisecond of delay for each foot (30 cm) closer to you than the farthest speaker. For example, if the left front speaker is farthest away at 13 feet and the left rear speaker is 8 feet away, you should add 5 milliseconds of delay to the left rear speaker. Continue setting delays for each speaker until you have compensated for each speaker that is closer to you than the farthest speaker.

The delay times for the surround speakers are set longer for Dolby Pro Logic II mode than in Dolby Digital/DTS mode. When you change delay setting for Dolby Digital/DTS, the delay time for Dolby Pro Logic II will automatically be set for MUSIC or CINEMA/EMULATION modes.

The available settings for the CENTER channel (Dolby Digital/DTS only) are 0ms, 1ms, 2ms, 3ms, 4ms, and 5ms. For SURROUND and CENTER BACK (Dolby Digital/DTS), the settings are 0ms, 5ms, 10ms, and 15ms. For SURROUND and CENTER BACK (Dolby Pro Logic II), the MUSIC mode settings are the same as the Dolby Digital/DTS settings. For SURROUND and CENTER BACK (Dolby Pro Logic II), the CINEMA/EMULATION mode settings are 10ms, 15ms, 20ms, and 25ms.

To change a setting, place the highlight on the desired line using the UP/DOWN buttons and use the +/– buttons to increase or decrease the delay setting. To return to the MAIN menu, press the ENTER button. Press the MENU key on the remote to cancel the display and return to normal operation.

SUBWOOFER SETUP Menu

```
          SUB SETUP

     CROSSOVER: 100HZ
         DOLBY:  +1dB
           DTS:  -2dB
        STEREO:  +5dB
         MUSIC:  +3dB
   MULTI INPUT:  MAX

ENT KEY=MAIN MENU   UP KEY=up
+/- KEY=change    DWN KEY=down
```

The SUBWOOFER SETUP menu allows selection of the subwoofer crossover frequency and independent adjustment of subwoofer level for each surround mode. These settings are memorized and engaged automatically each time a music or theater surround mode is selected.

When going to the SUBWOOFER SETUP menu from the MAIN menu, the current surround mode is automatically highlighted. Use the +/– buttons to adjust the subwoofer level (–10dB to +10dB) for the current surround mode.

NOTE: *Only the current surround mode can be adjusted on this menu. You will need to change surround modes using the front-panel or remote buttons to adjust a different mode.*

We recommend starting with the level settings for all surround modes at the default 0 dB setting during the test tone calibration of the system and for a period of familiarization after that. As you listen to a variety of source material over time, you may notice that certain surround modes consistently produce too much or too little bass from the subwoofer. Use these subwoofer level settings to adjust the relative bass output of various surround modes.

NOTE: *In Dolby Digital and DTS recordings, the LFE channel is used to produce spectacular low bass effects. This LFE channel can generate output 10 dB louder than the other channels, placing considerable demands on your subwoofer system. If you hear distortion or other signs of distress from your subwoofer at loud listening levels, you may consider reducing the subwoofer level for the Dolby Digi-*

tal and/or DTS surround modes. In other surround modes, there is no LFE channel and the subwoofer will only reproduce redirected bass from the other channels, which is not as likely to tax the subwoofer.

The CROSSOVER setting activates a low-pass filter for the subwoofer and a corresponding high-pass filter for all SMALL speakers in the system at the selected frequency. To adjust the crossover frequency, highlight the CROSSOVER line using the UP/DOWN buttons. Then, use the +/– buttons to chose one of the following options: OFF, 40Hz, 60Hz, 80Hz, 100Hz, or 120Hz. The 80Hz or 100Hz crossover points are the most common in home theater systems. However, your best setting depends on the specific speakers in your system.

NOTE: *The OFF setting sends a full-range signal to your subwoofer so that you can use its built-in low-pass filter. With the OFF setting, a 100 Hz high-pass filter is activated for all SMALL speakers in the system.*

To return to the MAIN menu, press the ENTER button. Press the MENU key on the remote to cancel the display and return to normal operation.

OTHER OPTIONS Menu

```
        OTHER OPTIONS
         RECORD: CD
        DYNAMIC: Max
    MULTI INPUT: Off
      CINEMA EQ: Off
          POWER: Direct
            OSD: On
       LANGUAGE: ENGLISH

ENT KEY=MAIN MENU   UP KEY=up
+/- KEY=change   DWN KEY=down
```

This menu, accessed from the MAIN menu, provides access to several miscellaneous settings as follows:

RECORD: Select a signal for the record outputs by choosing one of the input sources.

DYNAMIC: steps through the three dynamic range settings available in digital modes:

- MAX (no compression/full dynamic range)
- MID (moderate compression)
- MIN (full compression/minimum dynamic range).

MULTI INPUT: determines whether the MULTI channel input is turned ON or OFF.

CINEMA EQ: determines if a special equalization setting is turned ON or OFF. This equalization may be desirable for playback of movie source material to compensate for the acoustic differences between a commercial cinema and a home theater environment. The CINEMA EQ setting can also be changed using the FILTER button on the remote.

POWER: This setting determines how the RSP-1066 powers up. With the default DIRECT setting, the unit is fully activated when AC power is applied and the front-panel POWER button is pressed in; however, it may be put in STANDBY mode using the remote POWER button. With the STANDBY setting, the unit powers up in standby mode when AC is applied and the front-panel POWER button is in the ON position. The unit must be activated using the remote control POWER button. In ALWAYS-ON mode, the unit remains fully active whenever AC is present and the front-panel POWER button is pressed in; the remote POWER button is disabled and the unit cannot be put in standby mode.

OSD: Determines whether the ON-SCREEN DISPLAYS are shown on your TV monitor during operation.

LANGUAGE: Selects one of the several languages for all of the ON-SCREEN MENUS.

Change settings on the OTHER OPTIONS menu by highlighting the desired line using the UP/DOWN buttons and using the +/– buttons to step through the available settings. To return to the MAIN menu, press the ENTER button. Press the MENU key on the remote to cancel the display and return to normal operation.

DEFAULT SETUP Menu

```
        DEFAULT SETUP

 FACTORY DEFAULT: No

    USER DEFAULT: No
USER DEFAULT SET: No

ENT KEY=MAIN MENU   UP KEY=up
+/- KEY=change   DWN KEY=down
```

```
        DEFAULT SETUP

 FACTORY DEFAULT: Yes

    USER DEFAULT: No
USER DEFAULT SET: No

ENT KEY=Exec.       UP KEY=up
+/- KEY=change   DWN KEY=down
```

The DEFAULT SETUP menu provides access to three functions:

- Restoring all features and settings to the original FACTORY DEFAULT settings.
- Memorizing a custom group of settings as a USER DEFAULT.
- Activating the USER DEFAULT settings.

To restore the FACTORY DEFAULT settings: Place the highlight on the FACTORY DEFAULT line using the UP/DOWN buttons and use the +/– buttons to change the setting to YES. The screen will change to a confirmation screen. Press the ENTER button to proceed with resetting the FACTORY DEFAULT settings. The unit will power off and then on, with the factory settings restored. To return to the MAIN menu without resetting the FACTORY DEFAULT settings, change the entry to NO and press the ENTER button.

NOTE: *Resetting to factory default settings will erase all stored settings including delay settings, speaker settings, balance settings, input settings and more. You will lose ALL system configuration settings. Be certain that you wish to do so before resetting the factory defaults.*

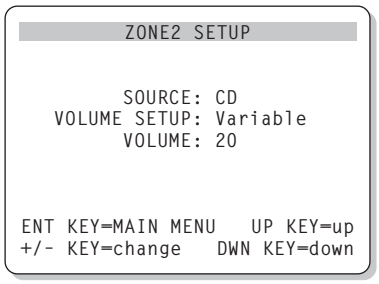
To save USER DEFAULT settings: Many of the current configuration settings can be stored as a USER DEFAULT, which can be activated at any time from this menu screen. To save the current settings as a USER DEFAULT Place the highlight on the USER DEFAULT SET line using the UP/DOWN buttons and use the

+/– buttons to change the setting to YES. The screen will change to a confirmation screen. Press the ENTER button to store the new USER DEFAULT settings. To return to the MAIN menu without saving any changes, change all entries on the screen to NO and press the ENTER button.

NOTE: *If there is insufficient memory to store a USER DEFAULT configuration file, the USER DEFAULT SET option will not be available.*

To activate memorized USER DEFAULT settings: After you have stored a USER DEFAULT configuration file, you can activate those settings at any time by placing the highlight on the USER DEFAULT line using the UP/DOWN buttons. Use the +/– buttons to change the setting to YES. The screen will change to a confirmation screen. Press the ENTER button to proceed with activating the USER DEFAULT settings. To return to the MAIN menu without activating the USER DEFAULT settings, change the entry to NO and press the ENTER button.

ZONE 2 SETUP Menu



The ZONE 2 SETUP menu provides settings and configuration options related to the operation of Zone 2. This menu is reached by highlighting the ZONE 2 line on the MAIN menu and pressing ENTER.

SOURCE: the source selected for listening in Zone 2. Selecting the OFF option turns Zone 2 off.

VOLUME SETUP: configures the Zone 2 outputs for VARIABLE or FIXED volume levels. VARIABLE allows control of the volume settings in Zone 2 from the RSP-1066 front-panel or from a remote control/IR repeater or keypad in Zone 2. FIXED output disables the Zone 2 volume control. In this mode, the Zone 2 level can be fixed at the level specified on the next line, thus optimizing system performance when sending a fixed level signal to a preamp or amplifier with its own volume adjustment.

VOLUME: In VARIABLE output mode, this line shows the current volume setting for Zone 2. In FIXED output mode, this volume setting establishes a permanent fixed output level for Zone 2.

Move the highlight to the desired line using the UP/DOWN buttons and use the +/– buttons to adjust the volume level. To return to the MAIN menu, press the ENTER button. Press the MENU key on the remote to cancel the display and return to normal operation.

Specifications

Audio

Total Harmonic Distortion
<0.05%

Intermodulation Distortion (60 Hz:7 kHz)
<0.05%

Frequency Response
10 Hz - 95 kHz, ±1 dB (line level)
10 Hz - 20 kHz, ±0.3 dB (digital level)

Signal to Noise Ratio (IHF A-weighted)
95 dB (Stereo) Analog
92 dB (Dolby Digital, dts) 0dBFs

Input Sensitivity/Impedance
Line Level: 200 mV/47 kohms

Tone Controls (Bass/Treble)
±8 dB at 100 Hz/10 kHz

Preamp Output Level
1.2 V (200 mV Input)

Video

Frequency Response
3 Hz – 10 MHz, ± 3 dB

Signal to Noise Ratio
45 dB

Input Impedance
75 ohms

Output Impedance
75 ohms

Output Level
1 volt

General

Power Consumption:
40 watts

Power Requirements (AC)
115 volts, 60Hz (USA version)
230 volts, 50Hz (CE version)

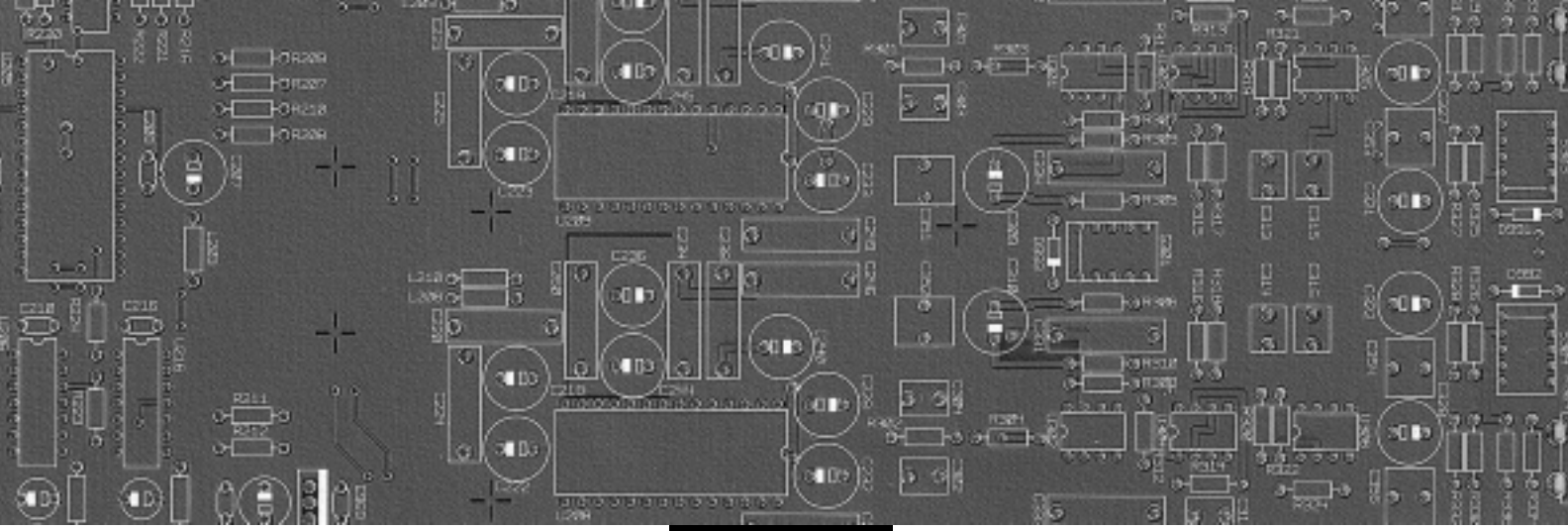
Weight
7.6 Kg/16.7 lb.

Dimensions (W x H x D)
432 x 122 x 341 mm
17" x 47/8" x 131/2"

Front Panel Height
(feet removed/for rack mount)
109 mm/45/16"

All specifications are accurate at the time of printing.

Rotel reserves the right to make improvements without notice.



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