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RCP 3

SYSTEM REMOTE
OWNER'S MANUAL
FOR USE WITH CP 40 SYSTEMS



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INTRODUCTION AND FEATURES

Please register your product on our Web site at www.harmanardon.com.

Note: You'll need the product's serial number. At the same time, you can choose to be notified about our new products and/or special promotions.

WWW.HARMANKARDON.COM

Thank you for choosing Harman Kardon®!

Your CP Series system combines the superior performance and practical flexibility of high-quality separate audio/video components with the convenience of a complete system in one carton. You will need to provide a video display or television, but you may also add almost any source device, ranging from a cassette deck or VCR all the way up to the latest digital cable or satellite television set-top box, or even products that may be released in the future.

The single RCP 3 remote replaces the original remotes supplied with the AVR 144 receiver and DVD 27 DVD player. Although the RCP 3 operates both products, along with a host of other products you may have added to your system, this manual describes a few differences from the original remotes. The most significant is the addition of EzSet, an automatic speaker-level calibration process that enables the receiver to perform properly without your having to supply additional metering devices or perform a tedious calibration procedure.

IMPORTANT NOTE: The instructions in this manual on running the EzSet procedure take the place of Step Four of the Initial Setup process described in the AVR 144 manual. Although you may still calibrate the speakers manually if you so desire, we strongly recommend that you first use the more convenient and simpler EzSet process.

To obtain the maximum enjoyment from your new home theater system, we urge you to read this manual, as well as the manuals included with the system components, and refer back to it as you become more familiar with its features and their operation. If you have any questions about this product, its installation or its operation, please contact your retailer or customer installer, or visit our Web site at www.harmanardon.com.

REMOTE CONTROL FUNCTIONS

The RCP 3 remote is capable of controlling seven devices, including the AVR 144 and the DVD 27 included in the CP 40 system. During the installation process, you may program the codes for each of your source components into the remote. Each time you wish to use the codes for any component, first press the Selector button for that component. This changes the button functions to the appropriate codes for that product.

Each Input Selector has been preprogrammed to control certain types of components, with only the codes specific to each brand and model changing, depending on which product code is programmed. The device types programmed into each selector may not be changed.

DVD: Controls DVD players and recorders. The DVD button functions are labeled in blue on the remote.

CD: Controls CD players and recorders.

Tape: Controls cassette decks.

Video 1: Controls VCRs, TiVo® and DVRs.

Video 2: Controls cable and satellite television set-top boxes.

Video 3: Controls televisions and other video displays.

For example, if you have inserted a disc in your CD player and you would like to skip ahead three tracks, but you then find that the volume is too loud, you would follow this procedure:

1. Press the CD Input Selector to switch to the codes that control your CD player.
2. Press the Play Button (in the Transport Controls section) if the disc is not already playing.
3. Press the Skip Up Button three times to advance three tracks.
4. Press the AVR Button so that you can access the Volume Controls.
5. Press the Volume Down Button until the volume level is satisfactory.

Any given button may have different functions, depending on which component is being controlled. The buttons are labeled with some of these functions, with the receiver's functions shown in white or gray, and the DVD player's functions shown in blue. For example, the Sleep and DSP Surround Buttons are labeled for use as Channel Up/Down Buttons when controlling a television or cable box. See Table A1 in the appendix for listings of the different functions for each type of component.

NOTE: Although we have described the applicable DVD function in this section, we strongly recommend that you review the DVD 27 manual for more information about using these functions.

IR Transmitter Lens: As buttons are pressed on the remote, infrared codes are emitted through this lens. Make sure it is pointing toward the component being operated.

EzSet® Microphone: This microphone "hears" the test tone used during the EzSet level-setting procedure. Make sure it is pointing toward the receiver when running EzSet.

Power On Button: Press this button to turn on the AVR or another device. The Master Power Switch on the AVR 144's front panel must be switched on first.

Mute Button: Press this button to mute the AVR 144's speaker and headphones outputs temporarily. To end the muting, press this button or adjust the volume. Muting is also canceled when the receiver is turned off.

Program/EzSet Indicator: This LED lights up or flashes in one of three colors as the remote is programmed with codes, and during the EzSet procedure.

Power Off Button: Press this button to turn off the AVR 144 or another device.

AVR Selector: Press this button to switch the remote to the codes that operate the receiver.

Input Selectors: Press one of these buttons to select a source device, which is a component where a playback signal originates, e.g., DVD, CD, cable TV, satellite or HDTV tuner. This will also turn on the receiver (if it is not already on) and switch the remote to the codes that operate the source device.

AM/FM Button: Press this button to select the tuner as the source, or to switch between the AM and FM bands.

6-Channel Input Selector: Press this button to select the 6-Channel Inputs as the audio source. The receiver will use the video input and remote control codes for the last-selected video source.

EzSet (SPL) Button: Press this button to run the EzSet output-level calibration procedure. Make sure to point the remote toward the receiver during EzSet.

Test Tone: Press this button to activate the test tone for manual output-level calibration.

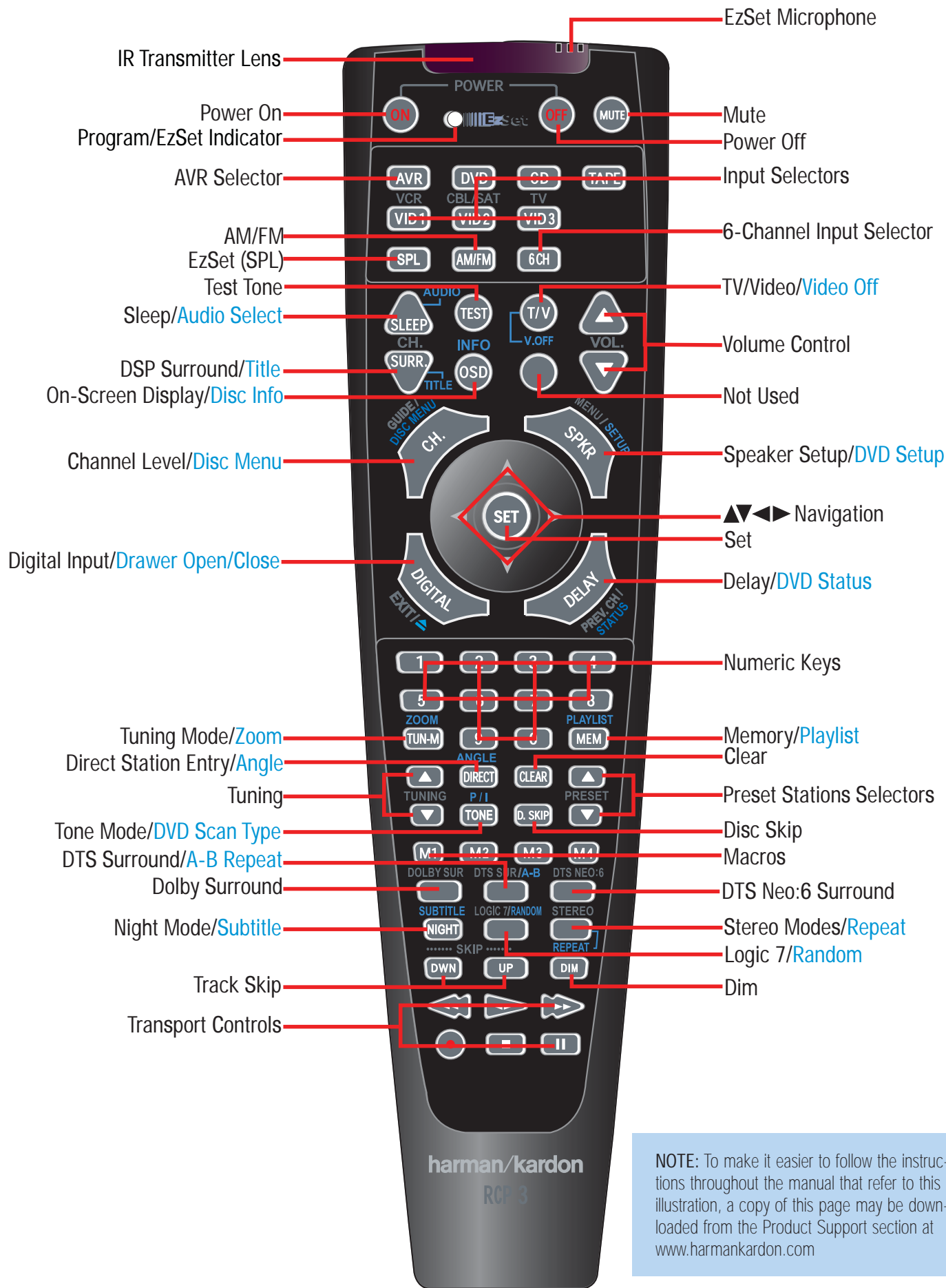
TV/Video/Video Off: This button has no effect on the receiver, but is used to switch video inputs on some video source components.

When the DVD player has been selected (by pressing the DVD Input Selector), pressing this button disables the DVD 27's video output to avoid "burning in" menus or still-images on sensitive video displays. This feature is particularly useful when listening to CDs or other audio-only presentations.

Sleep/Audio Button: Press this button to activate the sleep timer, which shuts off the receiver after a programmed period of time of up to 90 minutes.

When the DVD player has been selected, this button may be used to select another audio format or language, if one is available on the disc.

Volume Controls: Press these buttons to raise or lower the volume, which will be shown in decibels (dB) in the Message Display.



NOTE: To make it easier to follow the instructions throughout the manual that refer to this illustration, a copy of this page may be downloaded from the Product Support section at www.harmankardon.com

REMOTE CONTROL FUNCTIONS

DSP Surround/Title: Press this button to select a DSP surround mode (Hall 1, Hall 2, Theater).

When the DVD player has been selected, this button serves the Title function. When a DVD is playing, press this button to go back to the main title menu for the disc. If you are playing a DVD-Audio disc that contains formats the DVD 27 is capable of playing, such as linear PCM or Dolby® Digital 5.1, pressing this button may enable you to switch playback from one audio format to another.

On-Screen Display (OSD)/Disc Info: Press this button to activate the AVR 144's on-screen menu system.

When the DVD player has been selected, this button serves the Disc Info function. Press it once to access the Player Information menu for information on the current disc and the playback mode settings. This function is different from the Disc Menu and DVD Setup functions.

Channel Level/Disc Menu: Press this button to set the output levels for each channel so that all speakers sound equally loud at the listening position. Usually this is done while playing an audio selection, such as a favorite CD, after you have calibrated the levels using EzSet.

When the DVD player has been selected, this button serves the Disc Menu function. While a disc is playing, press this button to view the disc's menu. This function is different from the Disc Info and DVD Setup functions.

Speaker Setup/DVD Setup: Press this button to configure speaker sizes, that is, the frequency-range capability of each speaker. Usually this is done using the on-screen menu system, as described in the Initial Setup section of the AVR 144 owner's guide.

When the DVD player has been selected, this button serves the DVD Setup function. Press it to use the DVD 27's on-screen menu system to adjust the player's configuration settings. This function is different from the Disc Info and Disc Menu functions.

Navigation and Set Buttons: These buttons are used together to make selections within the AVR 144's or DVD 27's on-screen menu system, or when accessing the AVR functions of the four buttons surrounding this area of the remote – Channel Level, Speaker Setup, Digital Input or Delay.

Digital Input Select/Drawer Open/Close: Press this button to select the specific digital audio input (or analog audio input) you used for the current source.

When the DVD player has been selected, this button is used to open or close the disc drawer.

Delay/DVD Status: Press this button to set delay times that compensate for placing the speakers at different distances from the listening position, or to resolve a "lip sync" issue that may be caused by digital video processing. This may also be done using the on-screen menu system, as described in the Initial Setup section of the AVR 144 owner's guide.

When the DVD player has been selected, this button serves the DVD Status function. Press it while a DVD is playing to view the on-screen

Status Bar, which will display the current title and chapter, the play mode icon and the elapsed time, in addition to a "temperature bar" display of the time elapsed. The Status Bar may be navigated as described in the manual for the DVD 27.

Numeric Keys: Use these buttons to enter radio station frequencies when using the tuner (after pressing the Direct Button), or to select station presets.

Tuning Mode/Zoom: This button toggles between manual (one frequency step at a time) and automatic (seeks frequencies with acceptable signal strength) tuning mode. It also toggles between stereo and mono modes when an FM station is tuned.

When the DVD player has been selected, this button performs the Zoom function. Press it to zoom in on a DVD, VCD or JPEG image. The image may be enlarged by a factor of x2, x3, x4 or x5. Once the on-screen indication of the zoom ratio disappears from the screen, you may use the Navigation Buttons to explore the picture.

Memory/Playlist: After you have tuned a particular radio station, press this button, then the numeric keys, to save that station as a radio preset.

When the DVD player has been selected, this button performs the Playlist function, which enables you to change the order in which tracks or chapters are played.

Tuning: Press these buttons to tune a radio station. Depending on whether the tuning mode has been set to manual or automatic, each press will either change one frequency step at a time, or seek the next frequency with acceptable signal strength.

Direct Station Entry/Angle: Press this button before using the Numeric Keys to directly enter a radio station frequency.

When the DVD player has been selected, this button is used for the Angle function. Press it during passages on a DVD where the director has programmed multiple camera angles to view the alternate perspectives. When a JPEG file is on screen, each press of this button rotates the image by 90 degrees clockwise.

Clear: Press this button to clear a radio station frequency you have started to enter.

When the DVD player has been selected, this button may be used to clear any on-screen displays from view. In addition, press and hold it for 5 seconds to reset all user settings on the DVD 27 to their factory defaults.

Preset Stations Selector: Press these buttons to select a preset radio station.

Tone Mode/DVD Scan Type: Press this button to access the tone controls (bass and treble). Use the Navigation buttons to make your selections.

When the DVD player has been selected, this button adjusts the Video Scan Type setting for the component video outputs. Each press toggles between progressive and interlaced scanning. This button is useful if you

REMOTE CONTROL FUNCTIONS

inadvertently set the scan type to progressive when your video display or television is not capable of displaying progressively scanned video. Although your video display may be distorted, you may restore interlaced scanning by pressing this button.

Disc Skip: This button has no effect on the AVR 144 or the DVD 27, but is used with some optical disc changers to skip to the next disc.

Macros: These buttons may be programmed to execute long command sequences with a single button press. They are useful for programming the command to turn on or off all of your components, or for accessing specialized functions for a different component than the one you are currently operating.

Dolby Surround Mode Selector: The first press of this button will select the last-used Dolby surround mode, and each additional press will cycle through the variants that are currently available. Not all modes are available with all sources; see the AVR 144 manual for more information.

DTS® Surround Mode Selector/A-B Repeat: The first press of this button will select the last-used DTS Digital mode if DTS processing is available, and each additional press will toggle between the 2.0 and 5.1 variants. See the AVR 144 manual for more information.

When the DVD player has been selected, this button serves the A-B Repeat function. The first press while a disc is playing selects the beginning of the passage you wish to repeat, and the second press selects the end of the passage. The selected passage will play continuously until the A-B button is pressed a third time, or play is stopped.

DTS Neo:6® Surround Mode Selector: The first press of this button will select the last-used DTS Neo:6 surround mode if it is available, and each additional press will cycle through the variants that are currently available. See the AVR 144 manual for more information.

Logic 7® Surround Mode Selector/Random: The first press of this button will select the last-used Logic 7 surround mode if it is available, and each additional press will cycle through the Cinema, Music and Enhance modes. See the AVR 144 manual for more information.

When the DVD player has been selected, this button serves the Random function. When a CD is playing and no playlist is active, each press of this button turns Random track selection on or off.

Night Mode/Subtitle: Press this button to activate Night mode with specially encoded Dolby Digital discs or broadcasts. Night mode compresses the audio so that louder passages are reduced in volume to avoid disturbing others, while dialogue remains intelligible.

When the DVD player has been selected, this button performs the Subtitle function. Press it to select a subtitle language or to turn subtitles off.

NOTE: Due to the variations in how DVD discs are authored, the subtitle languages displayed by the DVD 27 may not accurately reflect the actual languages available on the disc. It is recommended that subtitles be selected using the disc's menu.

Stereo Modes/Repeat: The first press of this button will select the last-used Stereo mode, which may be Surround Off or two-channel processing. Each additional press will toggle between Surround Off and 5-Channel Stereo. When an analog audio source is in use and the AVR 144's tone mode control has been set to Out, you may also select analog bypass mode, which passes the analog input signal to the volume control, bypassing digital signal processing. See the AVR 144 manual for more information.

When the DVD player has been selected, each press of this button cycles through the available repeat modes, excluding A-B Repeat.

Track Skip: These buttons have no effect on the receiver, but are used with the DVD 27 and many source components to change tracks or chapters.

Dim: Press this button to partially or fully dim the AVR 144's front-panel display.

Transport Controls: These buttons have no effect on the receiver, but are used to control the DVD 27 and many source components. By default, when the remote is operating the receiver, these buttons will control the DVD 27.

BATTERIES

The RCP 3 remote control uses three AAA batteries, which are included.

To remove the battery cover located on the back of the remote, firmly press the ridged depression and slide the cover towards the top of the remote.

Insert the batteries as shown in Figure 1, making sure to observe the correct polarity.

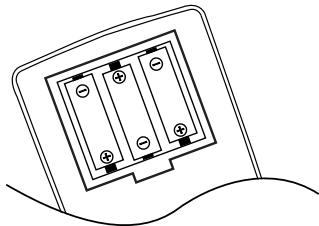


Figure 1 – Remote Battery Compartment

When using the remote, remember to point the lens toward the front panel of the AVR 144 or DVD 27. Make sure no objects, such as furniture, are blocking the remote's path. Bright lights, fluorescent lights and plasma video displays may interfere with the remote's functioning. The remote has a range of about 20 feet, depending on the lighting conditions. It may be used at an angle of up to 30 degrees to either side of the component.

If the remote seems to operate intermittently, or if pressing a button on the remote does not cause the AVR Selector or one of the Input Selectors to light up, then make sure the batteries have been inserted correctly, or replace all three batteries with fresh ones.

PROGRAMMING SOURCES

Programming Sources

The RCP 3 remote is capable of controlling not only the receiver and DVD player included in your CP system, but it may also be programmed to control many brands and models of VCRs, DVD players, CD players, cable boxes, satellite receivers, cassette decks and TVs.

It may help to think of the remote as a book with pages. Each page represents the button functions for a different device. In order to access the functions for a particular device, you first need to turn to that page. This is done by pressing the AVR Button to access the codes that control the receiver, or the Input Selector buttons to access the codes for the devices programmed into the remote.

At the factory, the codes to control the AVR 144 and DVD 27 are preprogrammed. If you have other source devices in your system, such as a VCR, or a cable or satellite television set-top box, follow these steps to program the correct codes into the remote.

1. Using the codes in Tables A2–A8 of the Appendix, look up the product type (e.g., DVD, cable TV box) and the brand name of your source. The number(s) listed are potential candidates for the correct code set for your particular device.
2. Turn on your source device.
3. Put the remote into Program mode by pressing and holding the Input Selector and the Mute button simultaneously until the LED on the remote starts to flash, and then releasing the buttons.



Figure 2 – Input Selectors

4. Enter a code from Step 1 above.
 - a) If the device turns off, then press the Input Selector again to accept the code, which will flash. The remote will exit the Program mode.
 - b) If the device does not turn off, try entering another code. If you run out of codes, you may search through all of the codes in the remote's library for that product type by pressing the ▲ or ▼ button repeatedly until the device turns off. When the device turns off, enter the code by pressing the Input Selector, which will flash. The remote then exits Program mode.

NOTE: When you enter a valid 3-digit code, the Program Indicator LED will change color to green. However, entering an invalid code changes the color of the LED to red.

5. Once you have accepted a code, it's a good idea to try using some other functions to control the device. Sometimes manufacturers use the same Power code for several different models, while other

codes will vary. You may wish to repeat this process until you've programmed a satisfactory code set that operates most of the functions you frequently use.

6. You may find out which code number you have programmed by pressing and holding the Input Selector and Mute Button simultaneously to enter Program mode. Then press the Set Button, and the LED will flash in the code sequence. One flash represents "1", two flashes for "2", and so forth. A series of many fast flashes represents "0". Record the codes programmed for each device here.

Table 1 – Remote Control Codes

Source Input	Product Type (circle one)	Remote Control Code
Video 1	VCR, PVR	
Video 2	Cable, Satellite	
Video 3	TV	
DVD*	DVD	
CD	CD, CDR	
Tape	Cassette	

* Do not reprogram the DVD Source Selector unless you are replacing the DVD player included in the CP 40 system with another product.

If you are unable to locate a code set that correctly operates your source device, it will not be possible to use the RCP 3 remote to control that device. However, you may still connect the source to the AVR 144 and operate it using the device's original remote control. Alternatively, you may wish to consider purchasing Harman Kardon's optional TC 30 activity-based remote, which is programmed by accessing a large database of product codes on the Internet. The TC 30 is also capable of "learning" codes from your device's original remote. However, the TC 30 is not equipped with the EzSet feature that automatically calibrates the system's speaker levels.

Most of the button labels on the remote describe the button's function when used to control the AVR 144 (white or gray labels) or DVD 27 (blue labels). However, the button may perform a very different function when used to control another device. Refer to the Remote Control Function List, Table A1 in the Appendix, for a list of each button's functions with the various product types.

If you wish, you may program Macros, which are preprogrammed code sequences that execute many code commands with a single button press. You may also program "punch-through" codes, which allow the remote to operate the volume, channel or transport controls of another device without having to switch the remote to the mode for that device. See page 11 for instructions on these advanced programming functions.

NOTE: The RCP 3 remote is preprogrammed to operate the transport controls of the DVD 27 when the AVR or VID2 or VID3 device is selected. You may change this punch-through programming at any time, as explained in the Advanced Functions section.

USING EZSET

Using EzSet

This section replaces Step Four in the Initial Setup section of the AVR 144 owner's guide.

An essential step in setting up your multichannel audio/video receiver is calibrating the channel output levels so that they all sound equally loud at the listening position. This sets a baseline, enabling the director to create a desired mood by moving the dialogue, action and ambient sounds around the soundstage, resulting in a more realistic presentation.

EzSet takes the guesswork out of the manual process described in the AVR 144 owner's guide, replacing multiple steps with a simple button press.

By now you should have connected all of your speakers and sources and your video display. You should have turned on the receiver and used the Manual Setup menus to program each of your speakers as Large or Small.

Sit in the listening position with the remote control, and make sure to eliminate external noises for the few minutes needed to run the EzSet procedure.

Use the volume control buttons on the remote to adjust the volume to -15dB .

Point the remote at the receiver. Press and hold the SPL Button until the LED remains steadily lit, then press the "5" key. See Figure 3. The procedure works best if you hold the remote at about ear level, pointed toward the receiver. Try not to tilt the remote out of line with the AVR's front panel.



Figure 3 – EzSet (SPL) Button

The receiver will generate a loud test tone, which sounds like static. In fact, it's a tone that simultaneously uses all frequencies from 20Hz to 20kHz.

The tone should be heard first through the front left speaker. It will circulate to the other speakers in this order: front left, center, front right, surround right, surround left. The tone pauses for a few moments at each speaker position, while a microphone built into the remote measures the loudness (sound pressure level) of the tone. The remote contains programming that compares the loudness of the tone at each position to a reference and sends commands to the receiver to adjust the output level for that channel until the tone matches the reference.

A tri-color LED on the remote indicates EzSet's findings. The LED turns red if the channel's level is too high, amber if the level is too low, and green when the level is correct.

The result is that each speaker will be heard equally loudly at the listening position. This is important for movie directors, who adjust the loudness of each channel in the recording to produce a desired sound presentation. Usually, the director reduces the loudness of, or even the presence of information in the surround channels so as not to distract the viewer from the main action taking place on screen. If the test tone sounds as loud in the rear speakers as it does coming from the other speakers, then the receiver is performing correctly.

As the tone circulates to each speaker position, the semi-OSD system and the front panel will display a message reporting which channel the tone is being sent to. Make sure that the message matches the speaker you are actually hearing the tone from, and that you are hearing a tone from each speaker. If that isn't the case, press the Test Button *twice* to stop EzSet, and turn off the receiver and unplug it. Then check your speaker-wire connections.

The semi-OSD system and front panel will also display the level adjustments being made. The levels may vary from -10dB to $+10\text{dB}$. If you notice that the levels for all speakers are being adjusted very far in either direction, then stop EzSet by pressing the Test Button *twice*, and adjust the master volume level higher to compensate for EzSet pushing each speaker close to $+10\text{dB}$, or lower to compensate for EzSet lowering each speaker close to -10dB .

As the levels are being adjusted, the LED on the remote will change until it is green for all channels.

The tone will circulate a second time, and then the procedure will end.

NOTE: In order to optimize performance for each of the many surround modes and their variants, the AVR 144 is able to associate a different set of output level settings with each mode. While this results in extremely realistic reproduction of surround sound presentations, it does require that you determine the correct settings for each surround mode.

The first time you turn on the AVR, it will default to the Logic 7 Music mode. Harman Kardon recommends that at initial setup you use the default Logic 7 mode, and then copy down the settings produced by EzSet. Change the surround mode either by using the on-screen Surround Setup menu, or by pressing the desired surround mode group button on the remote, and reenter the same settings for each new mode, selecting all modes you are likely to use.

If you prefer, you may run EzSet for the major surround modes, such as Logic 7® (select either Cinema or Music), Dolby (select Dolby Pro Logic® II Movie) and DTS (select DTS Neo:6). Then you may copy the resulting level settings for the other mode variants within each group.

Advanced users may rerun EzSet for each mode individually.

ADVANCED FUNCTIONS

The RCP 3 remote control not only operates the AVR 144 and DVD 27, but it also serves as a universal remote that may be programmed to operate many of your other home theater components. The punch-through and macro features add even more flexibility and versatility.

Punch-Through Programming

The RCP 3 remote allows you to select one component for the remote to operate, while simultaneously setting certain groups of controls to operate another component. For example, while using the AVR to control surround modes and other audio functions, you may wish to operate the transport controls of your DVD player. Or while using the remote to control video functions on your TV, you may wish to use your cable box to change channels and the AVR to control the volume.

All of this is possible using punch-through programming.

NOTE: It is not necessary to program the remote to control your DVD player's transport controls while the AVR or a device connected to the VID2 or VID3 inputs is in use, as the remote is preprogrammed at the factory with this function.

To program punch-through control while operating any device:

1. Simultaneously press and hold the Input Selector (or AVR selector) for the main device the remote will be operating and the Mute button until the LED flashes and the remote enters program mode.
 2. Select the type of punch-through programming.
 - a) To program volume control punch-through, press the Volume Up Button.
 - b) To program channel control punch-through, press the Volume Down Button.
- NOTE:** Do not program channel-control punch-through for the AVR. Doing so will override the Sleep command, which is not accessible in any other way, and the DSP Surround Mode Selector. If you have inadvertently done so, repeat Steps 1 through 3, but press the AVR Selector in both Steps 1 and 3.
- c) To program transport control punch-through, press the Play Button.
3. Press the Input Selector (or AVR selector) for the device whose volume, channel or transport controls you would like to be active while operating the device you selected in the first step. The LED will flash green to confirm the programming.

For example, if you wish to watch your TV (programmed into the Video 3 button) while changing channels using your cable box (Video 2), you would first press the Video 3 and Mute buttons until the LED flashed. You would then press the Play Button, followed by the Video 2 button.

To undo punch-through programming, follow the same steps as above, but press the same Input (or AVR) Selector in Steps 1 and 3.

NOTE: As mentioned earlier, the AVR, VID2 and VID3 devices are factory-programmed with transport-control punch through to operate the DVD player. You may reprogram these selectors

following the instructions in Steps 1 through 3 above to operate another device, such as a CD player.

If you wish to reprogram these selectors to have no transport-control punch-through, the process is slightly different. Each of these three selectors has no native transport control commands. Therefore, when reprogramming them to eliminate transport-control punch-through, in Step 3 you must select one of these three selectors, but not the same one you are reprogramming. For example, to remove transport-control punch-through from the VID2 device, follow the instructions in Steps 1 through 3, but press either the AVR or VID3 button in Step 3.

Macros

Macros are used to program sequences of up to nineteen commands that are executed with a single button press. Macros are well-suited for power on and off commands, or to send out a favorite multidigit channel number with one button press, or to have the ability to send out a code sequence to control another device while the remote is operating one device but with more flexibility than the built-in punch-through controls.

Some commands may not be programmed into macros: Mute, Dim, Channel Up/Down, any of the surround mode commands.

NOTE: Use caution when programming complicated macros. It isn't possible to program a pause or delay before sending commands after Power On, and the component may not be ready to respond to commands instantaneously after powering on.

To program, or "record" a macro, follow these steps:

1. Simultaneously press one of the four Macro Buttons or the Power On Button and the Mute Button at the same time to enter program mode.
2. Press the Input (or AVR) Selector for each device before you enter commands to be transmitted to that device. This step counts as one of the 19 commands allowed for each macro.
3. For the Power On command, do not press the Power On button. Press the Mute Button instead.
4. Press the Power Off Button to program the Power Off command.
5. Press the Sleep Button to end the programming process.

It isn't possible to "edit" a command within a macro. However, you may erase the macro as follows:

1. Simultaneously press and hold the Mute Button and the Macro Button containing the macro until the LED flashes.
2. Press the Surround Button to erase the macro.

Resetting the Remote

To reset the remote to its factory defaults, simultaneously press and hold any Input Selector and the "0" Numeric Key. When the LED flashes amber, enter the code "333". When the green LED goes out, the remote will have been fully reset.

APPENDIX



Refer to the numbered buttons in this drawing when using the Function List.

Figure 4 – Remote Control Function List Reference

Table A1 – Remote Control Function List

No.	Button Name	AVR Function	DVD	CD/CD-R	Tape	VCR (VID1)	TiVo (VID1)	CBL (VID2)	SAT (VID2)	TV (VID3)
1	Power On	Power On	Power On	Power On		Power On	Power On/Off	Power On	Power On	Power On
2	Power Off	Power Off	Power Off	Power Off		Power Off	TV Power	Power Off	Power Off	Power Off
3	Mute	Mute	Mute (AVR)	Mute (AVR)	Mute (AVR)	Mute	Mute	Mute	Mute	Mute
4	AVR	AVR Select	AVR Select	AVR Select	AVR Select	AVR Select	AVR Select	AVR Select	AVR Select	AVR Select
5	DVD	DVD Input Select	DVD Select	DVD Select	DVD Select	DVD Select	DVD Select	DVD Select	DVD Select	DVD Select
6	CD	CD Input Select	CD Select	CD Select	CD Select	CD Select	CD Select	CD Select	CD Select	CD Select
7	Tape	Tape Input Select	Tape Select	Tape Select	Tape Select	Tape Select	Tape Select	Tape Select	Tape Select	Tape Select
8	VID 1 (VCR)	Video 1 Select	VCR Select	VCR Select	VCR Select	VCR Select	VCR Select	VCR Select	VCR Select	VCR Select
9	VID 2 (CBL/SAT)	Video 2 Select	CBL/SAT Select	CBL/SAT Select	CBL/SAT Select	CBL/SAT Select	CBL/SAT Select	CBL Select	SAT Select	CBL/SAT Select
10	VID 3 (TV)	Video 3 Select	TV Select	TV Select	TV Select	TV Select	TV Select	TV Select	TV Select	TV Select
11	SPL	EzSet								
12	AM/FM	Tuner Select	Tuner Select	Tuner Select	Tuner Select	Tuner Select	Tuner Select	Tuner Select	Tuner Select	Tuner Select
13	6CH	6/8 Ch. Input Select	6/8 Ch. Input Select	6/8 Ch. Input Select	6/8 Ch. Input Select	6/8 Ch. Input Select	6/8 Ch. Input Select	6/8 Ch. Input Select	6/8 Ch. Input Select	6/8 Ch. Input Select
14	Sleep/CH+/Audio	Sleep	Audio			Channel +	Channel +	Channel +	Channel +	Channel +
15	Test Tone	Test Tone								
16	TV /V. OFF		V. OFF or TV/DVD*	Input Select		TV/VCR	TV Input	TV/CBL	TV/SAT	TV/VCR
17	Vol Up	Volume Up	Volume Up	Volume Up		Volume Up	Volume Up	Volume Up	Volume Up	Volume Up
18	Surr/CH-/Title	DSP Surround Mode Select	Title or Disc Menu*	CDR Select		Channel -	Channel -	Channel -	Channel -	Channel -
19	OSD/Info	OSD	Disc Info	Program		OSD	Live TV	OSD	OSD	OSD
20	Blank		HD Mode*							
21	Vol Down	Volume Down	Volume Down (AVR)	Volume Down		Volume Down	Volume Down	Volume Down	Volume Down	Volume Down
22	CH./Guide/Disc Menu	Channel Trim	Disc Menu or Title*	Continuous Play			Guide	Info/Guide	Info/Guide	
23	▲	Move/Adjust Up	Up			Up	Up	Up	Up	Up
24	Speaker/Menu/Setup	Speaker Setup	Setup or Menu*	Intro Scan		Menu	Menu	Menu	Menu	Menu
25	◀	Move/Adjust Left	Left			Left	Left	Left	Left	Left
26	Set	Set	Enter			Enter	Select	Enter	Enter	Enter
27	▶	Move/Adjust Right	Right			Right	Right	Right	Right	Right
28	▼	Move/Adjust Down	Down			Down	Down	Down	Down	Down
29	Digital/Exit/ ▲	Digital Input Select	Open/Close				Return/Exit			
30	Delay/Prev. Ch./Status	Delay Adjust	Status or Return*	Open/Close				Prev Channel	Prev Channel	Prev Channel
31	1	1	1	1		1	1	1	1	1
32	2	2	2	2		2	2	2	2	2
33	3	3	3	3		3	3	3	3	3
34	4	4	4	4		4	4	4	4	4
35	5	5	5	5		5	5	5	5	5
36	6	6	6	6		6	6	6	6	6
37	7	7	7	7		7	7	7	7	7
38	8	8	8	8		8	8	8	8	8
39	Tun-M/Zoom	Tuner Mode	Zoom or Chapter+*	Repeat						
40	9	9	9	9		9	9	9	9	9
41	0	0	0	0		0	0	0	0	0
42	Memory/Playlist	Memory	Playlist or Audio*	Time						
43	Tuning Up	Tuning Up	Next Chapter*	Track Direct		Cancel		PPV	Cancel	Sleep

APPENDIX

No.	Button Name	AVR Function	DVD	CD/CD-R	Tape	VCR (VID1)	Tivo (VID1)	CBL (VID2)	SAT (VID2)	TV (VID3)
44	Direct/Angle	Direct Tuner Entry	Angle	Random Play				FAV	FAV	
45	Clear	Clear	Clear	Clear		Clear	Clear	Bypass	Next	
46	Preset Up	Preset Tune Up	Slow Forward*					Music	Alt	
47	Tuning Down	Tuning Down	Prev Chapter*	Track Increment						
48	Tone/P/I	Tone mode	P/I	Program						
49	D. Skip	Disc Skip (DVD)	Disc Skip*	Disc Skip			Skip			
50	Preset Down	Preset Tune Down	Slow Rev*							
51	M1	Macro 1	Macro 1	Macro 1	Macro 1	Macro 1	Macro 1	Macro 1	Macro 1	Macro 1
52	M2	Macro 2	Macro 2	Macro 2	Macro 2	Macro 2	Macro 2	Macro 2	Macro 2	Macro 2
53	M3	Macro 3	Macro 3	Macro 3	Macro 3	Macro 3	Macro 3	Macro 3	Macro 3	Macro 3
54	M4	Macro 4	Macro 4	Macro 4	Macro 4	Macro 4	Macro 4	Macro 4	Macro 4	Macro 4
55	Dolby Surround	Dolby Modes								
56	DTS Surround/A-B	DTS Digital Modes	A-B Repeat							
57	DTS Neo:6	DTS Neo:6 Select								
58	Night/Subtitle	Night Mode Select	Subtitle On/Off	CDP Select						
59	Logic 7/Random	Logic 7 Select	Random							
60	Stereo/Repeat	Stereo Mode Select	Repeat							
61	Skip Down	Skip – (DVD)	Step –	Skip –		Scan –	Thumbs Down	Skip – (DVD)	Skip – (DVD)	Skip – (DVD)
62	Skip Up	Skip + (DVD)	Step +	Skip +		Scan +	Thumbs Up	Skip + (DVD)	Skip + (DVD)	Skip + (DVD)
63	Dim	Dimmer	Dimmer							
64	Rewind (◀◀)	R. Search (DVD)/Slow	R. Search/Slow	R. Search/Slow	Rewind	Rewind	R. Search	R. Search (DVD)	R. Search (DVD)	R. Search (DVD)
65	Play (▶▶)	Play (DVD)	Play	Play	R. Play/F. Play	Play	Play	Play (DVD)	Play (DVD)	Play (DVD)
66	F F (▶▶▶)	F. Search (DVD)/Slow	F. Search/Slow	F. Search/Slow	Fast Fwd	Fast Fwd	F. Search	F. Search (DVD)	F. Search (DVD)	F. Search (DVD)
67	Record			Record	Record/Pause	Record	Record			
68	Stop	Stop (DVD)	Stop	Stop	Stop	Stop	Slow	Stop (DVD)	Stop (DVD)	Stop (DVD)
69	Pause	Pause (DVD)	Pause	Pause		Pause	Pause	Pause (DVD)	Pause (DVD)	Pause (DVD)

* This command is not available when the DVD 27 (product code 007) has been programmed into the remote's DVD mode.

NOTE: When any of the transport controls are pressed while the remote is in AVR, Video 2 or Video 3 mode, the remote will automatically switch to DVD mode and the command will be applied to the DVD player. If you then press a button native to the original mode, e.g., Volume Down for the AVR, the remote will revert to the original mode. See Punch-Through Programming, as described in the Advanced Functions section, for more information.

Refer to Tables A2 through A8 when programming the codes for your components into the remote.

Table A2 – Remote Control Product Codes – TV

TV Manufacturer/Brand	Setup Code Number
AIWA	027
A MARK	122 132
ADMIRAL	192
AKAI	123 160
AMPRO	164
ANAM	045 109 122
AOC	122 123 128
BLAUPUNKT	084
BROKSONIC	205 206
CANDLE	123 128
CAPEHART	059
CENTURION	123 171
CENTRONIC	045
CITIZEN	045 123 128 132
CLASSIC	045
CONCERTO	128
CONTEC	045
CORANDO	172
CORONADO	132
CRAIG	045 157 158 159
CROWN	045 132
CURTIS MATHES	123 128 132
CXC	045
DAEWOO	045 087 102 105 108 111 116 127 128 132
DAYTRON	128 132
DIGI LINK	200
DYNASTY	045
DYNATECH	063
ELECTROHOME	115 132
EMERSON	045 123 128 132 139 157 158 159 162 205
FUNAI	045
FUTURETECH	045
GE	029 087 121 123 128 133 145 159 163
GOLDSTAR/LG	110 122 128 132
GRUNDIG	193
HALL MARK	128
HARMAN KARDON	201
HITACHI	123 128 132 147
INFINITY	148
INKEL	120
JBL	148
JC PENNEY	115 123 128 132 145
JENSEN	019
JVC	079 087 134
KAWASHO	173
KEC	045
KENWOOD	123 204
KMC	132
KTV	045 123 132 162
LLOYTRON	172 173
LODGENET	069

TV Manufacturer/Brand	Setup Code Number
LOGIK	069
LUXMAN	128
LXI	077 145 148
MAGNAVOX	030 123 128 132 145 148
MARANTZ	115 123 148
MATSUI	148
MEMOREX	069 128
METZ	084
MGA	115 123 128
MINERVA	084
MITSUBISHI	077 115 123 128 160 167 168
MTC	175 176
NATIONAL	148 177 179 180 181 182
NEC	115 121 123 125
NIKEI	045
ONKING	045
ONWA	045
OPTONICA	077
ORION	207 208 209 210 211
PANASONIC	087 148 169
PHILCO	045 115 123 128 132 148
PHILIPS	033 034 035 036 123 128 132 145 148
PIONEER	024 123 128
PORTLAND	128 132
PROSCAN	133
PROTON	059 122 128 132 165
QUASAR	032 087
RADIO SHACK	045 128 132 180 196 197
RCA	021 115 123 128 133 145 161 163
REALISTIC	045 167 196
RUNCO	152 153
SAA	183
SAMPO	059 123 128
SAMSUNG	020 022 124 128 132 145
SANYO	026 054
SCOTT	045 128 132
SEARS	128 132 145
SHARP	077 128 132
SIEMENS	084
SIGNATURE	069
SONY	028 031 117 130 136 194 212
SOUNDESIGN	045 128
SPECTRICON	122
SSS	045
SYLVANIA	025 123 128 145 148
SYMPHONIC	184
TANDY	077
TATUNG	063
TECHNICS	181
TECHWOOD	128
TEKNIKA	045 069 115 123 128 132

APPENDIX

Table A2 (continued)

TV Manufacturer/Brand	Setup Code Number
TELERENT	069
TERA	156
THOMSON	190 191
TMK	128
TOSHIBA	063 129 202
TOTEVISION	132
VIDEO CONCEPTS	160
VIDTECH	128
WARDS	069 128 132 148
YAMAHA	123 128
YORK	128
YUPITERU	045
ZENITH	069 090
ZONDA	122

Table A3 (continued)

VCR Manufacturer/Brand	Setup Code Number
MEMOREX	017 020 040 053 054 076 142
MGA	049
mitsubishi	049 131
MULTITECH	040
NAD	139
NATIONAL	140
NEC	018 048
NORDMENDE	048
OPTIMUS	159
ORION	147
PANASONIC	125 150 167 172
PHILCO	040
PHILIPS	040 075
PORTLAND	094
PULSAR	076
QUASAR	001 125
RADIO SHACK	055 134 140 142 158 159
RCA	095 124 125 157 172
REALISTIC	017 020 040 045 159
SALORA	020
SAMSUNG	045 095 105 109
SANSUI	048 116 147
SANYO	017 020
SCOTT	110 112
SEARS	017 020
SHARP	129 156
SONY	080 129
SOUNDESIGN	040
SYLVANIA	040
SYMPHONIC	040
TANDY	017 040
TASHICO	134
TATUNG	048
TEAC	040 048
TEKNIKA	040
THOMAS	040
TIVO	003 004 005 006 007 008 009 010 012
TMK	013
TOSHIBA	112 155
TOTEVISION	045
UNITECH	045
VECTOR RESEARCH	018
VIDEO CONCEPTS	018 040
VIDEOSONIC	045
WARDS	040 045 112
YAMAHA	018 040 048
ZENITH	040 050 076 083

Table A3 – Remote Control Product Codes – VCR

VCR Manufacturer/Brand	Setup Code Number
AIWA	040
AKAI	048 108 109 126
AMPRO	076
ASA	134
AUDIO DYNAMICS	018 048
BROKSONIC	110 147
CANDLE	134 135
CANON	135 140
CAPEHART	094
CITIZEN	134
CRAIG	045 116
DAEWOO	017 094 104
DAYTRON	094
DBX	018 048
DYNATECH	040
EMERSON	013 040 042 110 112
FISHER	017
FUNAI	040
GE	076 095 124
GO VIDEO	113
GOLDSTAR/LG	018 107
HARMAN KARDON	002 003 018 049
HITACHI	040 048
JC PENNEY	018 045
JENSEN	048
JVC	018 048 111 132
KENWOOD	020 048
LLOYD	040
LXI	020 040
MAGIN	045
MAGNAVOX	040
MARANTZ	018

Table A4 – Remote Control Product Codes – CD

CD Manufacturer/Brand	Setup Code Number
ADCOM	063 069
AIWA	072 111 118 156 170
AKAI	050 177 184
AUDIO TECHNICA	053
AUDIOACCESS	125
AUDIOFILE	211
BSR	044
CALIFORNIA AUDIO	109
CAPETRONIC	070
CARRERA	087
CARVER	136 140 141 143 144 145 185 186
CASIO	117 166
CLARINETTE	166
DENON	187 188 213
EMERSON	052 093 108
FISHER	055 095
FRABA	117
FUNAI	126
GE	164
GENEXXA	108
GOLDSTAR/LG	087
HAITAI	099 214
HARMAN KARDON	001 002 025 054 190
HITACHI	093
INKEL	216
JC PENNEY	098 147
JENSEN	153
JVC	176 195 196
KENWOOD	030 062 078 079 148 151 176 178 181
LOTTE	108
LUXMAN	077 102
LXI	164
MAGNAVOX	039 113
MARANTZ	058 084 191 192 193
MCINTOSH	194
MCS	080 098
MITSUMI	152
MODULAIRE	166
NAD	013 074 197 198
NAKAMICHI	199 200 201
NEC	069
NIKKO	053 055
ONKYO	037 038 045 046 171 175 202 203
OPTIMUS	065 089 091 092 099 104 212
PANASONIC	075 109 119 158 183 204
PHILIPS	039 138 149 209
PIONEER	071 094 100 112 123 131 161 162 215
PROTON	210
QUASAR	109
RADIO SHACK	126 166 213
RCA	024 081 093 150

Table A4 (continued)

CD Manufacturer/Brand	Setup Code Number
RCX	169
REALISTIC	058 093 095 104 105 108 164 166
SANSUI	047 081 134 157 172
SANYO	033 082 095
SCOTT	108
SHARP	058 105 114 151 159 167 180 181
SHERWOOD	003 041 058 105 133
SONY	103 115 116 118 132 139 163 205 206 207
208	212 217
SOUNDSTREAM	124
SYMPHONIC	059 110
TAEKWANG	177
TEAC	011 058 085 086 106 107 110 121 137 146
154	
THETA DIGITAL	039
TOSHIBA	013 074 097 151 155 173
VECTOR RESEARCH	087
VICTOR	120 130
WARDS	095
YAMAHA	019 031 053 061 135 169
YORK	166

Table A5 – Remote Control Product Codes – DVD

DVD Manufacturer/Brand	Setup Code Number
APEX DIGITAL	061
DENON	019 051
GE	003 004
GOLDSTAR/LG	005 055 064 066
HARMAN KARDON	001 002 007(Default)
JVC	006
MAGNAVOX	056
MARANTZ	059
MITSUBISHI	023
NAD	062
ONKYO	009 048
PANASONIC	024 030 044
PHILIPS	056
PIONEER	041 065
PROCEED	060
PROSCAN	003 004
RCA	003 004
SAMSUNG	053 054
SHARP	028
SONY	043 045
THOMSON	003 004
TOSHIBA	009 058 067
YAMAHA	030 063
ZENITH	005 055 064

APPENDIX

Table A6 – Remote Control Product Codes – SAT

SAT Manufacturer/Brand	Setup Code Number
ALPHASTAR	472
ALPHASTAR DBS	450
ALPHASTAR DSR	442
BIRDVIEW	425
CHANNEL MASTER	320 321 325 361
CHAPARRAL	315 316 451
CITOH	360
DRAKE	313 317 318 413
DX ANTENNA	331 352 379 483
ECHOSTAR	395 397 452 453 463 478 484 485
ELECTRO HOME	392
FUJITSU	324 329 334
GENERAL INSTRUMENT	303 311 323 365 403 454 468 474
HITACHI DBS	455
HOUSTON TRACKER	463
HUGHES	437 489
JANIEL	366
JERROLD	454 468 484
KATHREIN	410
LEGEND	453
MACOM	317 365 369 370 371
MAGNAVOX	461 473
MEMOREX	453
NEXTWAVE	423
NORSAT	373
OPTIMUS	466
PACE DSS	487
PANASONIC	366 469
PANASONIC DBS	457
PANSAT	420
PERSONAL CABLE	418
PHILIPS	375
PICO	407
PRESIDENT	381 404
PRIMESTAR	302 412 454 468
RCA	301 465 490
RCA DSS	458
REALISTIC	349 480
SAMSUNG	442
SATELLITE SERVICE CO	335 388
SCIENTIFIC ATLANTA	339
SONY	405
STAR CHOICE DBS	459
STARCAST	347
SUPER GUIDE	327 423
TEECOM	330 333 390 391 393 409
TOSHIBA	302 461 462
UNIDEN	323 332 348 349 350 351 354 355 381 383 389 403 466 479 480
ZENITH	384 385 387 394 419 488

Table A7 – Remote Control Product Code – TAPE

TAPE Manufacturer/Brand	Setup Code Number
HARMAN KARDON	001

Table A8 – Remote Control Product Codes – CBL

CBL Manufacturer/Brand	Setup Code Number
ABC	001 011
ALLEGRO	111
AMERICAST	212
ARCHER	112
BELCOR	113
CABLE STAR	113
CITIZEN	111
COLOUR VOICE	085 090
DIGI	114
EAGLE	186
EASTERN	066 070
ELECTRICORD	039
EMERSON	112
FOCUS	116
G.I.	001 011 017 096 097
GC ELECTRONICS	113
GEMINI	032 060
GENERAL	210
GENERAL INSTRUMENT	210
GOODMIND	112
HAMLIN	056 099 100 101 117 175 208
HITACHI	001 188
JASCO	111
JERROLD	001 002 011 017 096 097 162 188 210
LINSAY	118
MACOM	191
MAGNAVOX	017 019 068
MOVIE TIME	039
NSC	190
OAK	197 220
PACE	179
PANASONIC	053 176 177 189 214
PANTHER	114
PHILIPS	013 019 020 085 090
PIONEER	001 171 209 215 216
POPULAR MECHANICS	116
PRELUDE	120
PRIMESTAR	162
RADIO SHACK	111 112 213
RCA	053 214
RECOTON	116
REGAL	056 099 100 101 208
REMBRANT	032
SAMSUNG	003 072 186

Table A8 (continued)

CBL Manufacturer/Brand	Setup Code Number
SCIENTIFIC ATLANTA	183 203 221 222
SEAM	121
SIGNATURE	001 188
SPRUCER	053 081 177 189
STARCOM	002 011 163
STARGATE	120
TANDY	024
TELECAPATION	028
TEXSCAN	036
TFC	122
TIMELESS	123
TOCOM	170 205
UNITED CABLE	011
UNIVERSAL	033 034 039 042 113
VIDEOWAY	124 211
VIEWSTAR	019 025 086 089 190
ZENITH	065 125 211 219
ZENTEK	116

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