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You can read the recommendations in the user guide, the technical guide or the installation guide for HARMAN KARDON AVR 2650. You'll find the answers to all your questions on the HARMAN KARDON AVR 2650 in the user manual (information, specifications, safety advice, size, accessories, etc.). Detailed instructions for use are in the User's Guide.

User manual HARMAN KARDON AVR 2650
User guide HARMAN KARDON AVR 2650
Operating instructions HARMAN KARDON AVR 2650
Instructions for use HARMAN KARDON AVR 2650
Instruction manual HARMAN KARDON AVR 2650

AVR 3650, AVR 365
AVR 2650, AVR 265

Audio/video receiver

Owner's Manual



harman/kardon
by HARMAN



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Manual abstract:

1-channel digital audio/video receivers continue this tradition with some of the most advanced audio and video processing capabilities yet, and a wealth of listening and viewing options. To obtain the maximum enjoyment from your new receiver, please read this manual 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 harman kardon retailer or custom installer, or visit the web site at www.harmankardon.com. Introduction, Supplied Accessories, Important Safety Information and Place the Receiver **IMPORTANT SAFETY INFORMATION** Verify Line Voltage Before Use the Avr 3650 and Avr 2650 have been designed for use with 120-volt Ac current. the Avr 365 and Avr 265 have been designed for use with 220 240-volt Ac current. @@@@we do not recommend that extension cords be used with this product. @@damaged power cords should be replaced immediately by an authorized service center with a cord meeting factory specifications. Handle the AC Power Cord Gently when disconnecting the power cord from an Ac outlet, always pull the plug; never pull the cord.

If you do not intend to use your receiver for any considerable length of time, disconnect the plug from the Ac outlet. Do Not Open the Cabinet there are no user-serviceable components inside this product. opening the cabinet may present a shock hazard, and any modification to the product will void your warranty. If water or any metal object such as a paper clip, wire or staple accidentally falls inside the unit, disconnect it from the Ac power source immediately, and consult an authorized service center. CATV or Antenna Grounding (AVR 3650/AVR 2650) If an outside antenna or cable system is connected to this product, be certain that it is grounded so as to provide some protection against voltage surges and static charges.

Section 810 of the united States national electrical code, AnSI/nfpA no. 70-1984, provides information with respect to proper grounding of the mast and supporting structure, grounding of the lead-in wire to an antenna discharge unit, size of grounding conductors, location of antenna discharge unit, connection to grounding electrodes and requirements of the grounding electrode. note to cAtv SyStem InStAller: this reminder is provided to call the cAtv (cable tv) system installer's attention to article 820-40 of the nec, which provides guidelines for proper grounding and, in particular, specifies that the cable ground shall be connected to the grounding system of the building, as close to the point of cable entry as possible. ENGLISH Supplied Accessories the following accessory items are supplied with your receiver. If any of these items are missing, please contact your harman kardon dealer or harman kardon customer service at www.harmankardon.com.

· System remote control · Zone 2 remote control (Avr 3650/Avr 365 only) · ezSet/eqTM microphone · Am loop antenna · fm wire antenna · Six AAA batteries (Avr 3650/Avr 365); four AAA batteries (Avr 2650/Avr 265) · Ac power cord Place the Receiver · place the receiver on a firm and level surface. be certain that the surface and any mounting hardware can support the Avr's weight. · provide proper space above and below the receiver for ventilation. If you install the receiver in a cabinet or other enclosed area, provide cooling air within the cabinet. under some circumstances, a fan may be required. · do not obstruct the ventilation slots on the top of the receiver or place objects directly over them. · do not place the receiver directly on a carpeted surface. · do not place the receiver in moist or humid locations, in extremely hot or cold locations, in areas near heaters or heat registers, or in direct sunlight.

3 AVR Front-Panel Controls power button Info button Front-Panel Controls power Indicator Setup button Ir Sensor message display up/down buttons volume knob uSb port resolution button video modes button Audio effects button Surround modes button back/exit button ok button Source list button hdmi® front Input connector left/right buttons headphone Jack/ ezSet/eq mic Input Continued on next page 4 AVR Front-Panel Controls, continued Power Indicator: this led has three possible modes: · led is off: Indicates that the Avr is unplugged or the rear-panel main power switch is off. · led glows amber: Indicates that the Avr is in the Standby mode. · led glows white: Indicates that the Avr is turned on. **IMPORTANT NOTE:** If the protect message ever appears on the Avr's frontpanel message display, turn off the Avr and unplug it from the Ac outlet. check all speaker wires for a possible short-circuit (the "+" and "-" conductors touching each other or both touching the same piece of metal). If a short-circuit is not found, bring the unit to an authorized harman kardon service center for inspection and repair before using it again. Power button: press this button to turn the receiver on or to place it in the Standby mode. Setup button: press this button to access the Avr's main menu. Info button: press this button to access the Avr's Source submenu, which contains the settings for the source currently playing. use the up/down buttons to scroll through the different settings.

Message display: various messages appear in this two-line display in response to commands and changes in the incoming signal. In normal operation, the current source name appears on the upper line, while the surround mode is displayed on the lower line. when the on-screen display menu system (oSd) is in use, the current menu settings appear. IR sensor: this sensor receives infrared (Ir) commands from the remote control. It is important to ensure that the sensor is not blocked.

AVR 3650/AVR 365 only: If covering the Ir sensor is unavoidable (such as when the receiver is installed inside of a cabinet), connect an optional infrared receiver to the remote Ir In connector on the Avr's rear panel. Up/Down buttons: use these buttons to navigate the Avr's menus. Volume knob: turn this knob to raise or lower the volume. USB port: you can use this port to perform software upgrades that may be offered in the future. do not connect a storage device, peripheral product or a pc here, unless you are instructed to do so as part of an upgrade procedure.

HDMI (High-Definition Multimedia Interface®) Front Input connector: connect an hdmi-capable source component that will be used only temporarily, such as a camcorder or game console, here. Front-Panel Controls, continued Resolution button: press this button to access the Avr's video output resolution setting: 480i, 480p, 720p, 1080i, 1080p or 1080p/24hz. use the up/down and ok buttons to change the setting. **IMPORTANT NOTE:** If you set the Avr's video output resolution higher than the capabilities of the actual connection between the Avr and your tv or video display, you will not see a picture.



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If you are using the composite video connection from the Avr to your tv (see connect your tv or video display, on page 17), press the resolution button and use the up/down and ok buttons to change the resolution to 480i. Audio Effects button: press this button to access the Audio effects submenu, which allows you to adjust the Avr's tone controls and other audio controls. See Set up your Sources, on page 26, for more information. Video Modes button: press this button for direct access to the video modes submenu, which contains settings you can use to improve the video picture. use the ok button to scroll through the different modes, and use the up/down and left/ right buttons to make adjustments within each mode. See Set up your Sources, on page 26, for more information.

Surround Modes button: press this button to select a listening mode. the Surround modes menu will appear on screen, and the menu line will appear in the front-panel display. use the up/down buttons to change the surround-mode category and the left/right buttons to change the surround mode for that category. See Set up your Sources, on page 26, for more information. Back/Exit button: press this button to return to the previous menu or to exit the menu system.

Left/Right buttons: use these buttons to navigate the Avr's menus. OK button: press this button to select the currently highlighted item. Headphone jack/EzSet/EQ Mic input: connect a 1/4" stereo headphone plug to this jack for private listening. this jack is also used to connect the supplied microphone for the ezSet/eq procedure described in configure the Avr for your Speakers, on page 25. Source List button: press this button to select a source device to watch/listen to.

use the up/down buttons to scroll through the source-device list, and press the ok button to select the source being displayed. 5 ENGLISH AVR Rear-Panel Connectors composite video Input connectors digital Audio Input connectors composite video monitor out connector composite video record out connector composite video Input connectors Rear-Panel Connectors STrLuS® tuner connector (Avr 3650/Avr 2650) 12v trigger connector Zone 2 Ir In connector (Avr 3650/Avr 365) the bridge IIp connector Analog record out connector hdmi monito Trigger connector: this connector provides 12v dc whenever the Avr is on.

It can be used to turn on and off other devices such as a powered subwoofer. Zone 2 IR Input connector (AVR 3650/AVR 365 only): connect a remote Ir receiver located in Zone 2 of a multizone system to this jack to control the Avr (and any source devices connected to the remote Ir output connector) from the remote zone. The Bridge IIIP connector: connect an optional harman kardon the bridge IIp docking station to this input.

Insert the plug until it snaps into place in the connector. IMPORTANT: connect the bridge IIp only with the Avr's power turned off. Radio Antenna connectors: connect the included Am and fm antennas to their respective terminals for radio reception. Zone 2 Out connectors: connect these jacks to an external amplifier to power the speakers in the remote zone of a multizone system. Subwoofer connector: connect this jack to a powered subwoofer with a line-level input.

See connect your Subwoofer, on page 17, for more information. Analog Audio Input connectors: use the Avr's Analog Audio Input connectors for source devices that don't have hdmi or digital audio connectors. See connect your Audio and video Source devices, on page 18, for more information. Optical Digital

Output connector: connect a digital audio recorder's optical digital input to the Avr's optical digital output connector. you can record both coaxial and optical digital audio signals. Rear-Panel Connectors, continued Speaker connectors: use two-conductor speaker wire to connect each set of terminals to the correct speaker. See connect your Speakers, on page 17, for more information. NOTE: the speaker connectors, also called Assigned Amp speaker connectors are used for the surround back channels in a 7.1- channel home theater, or you can reassign them to a remote room for multizone operation or to front height channels for dolby pro logic® IIz operation. See place your Speakers, on page 13, for more information.

Network connector: use a cat. 5 or cat. 5e cable (not supplied) to connect the Avr's network connector to your home network to enjoy Internet radio and content from dlnA®-compatible devices that are connected to the network. See connect to your home network, on page 20, for more information. Main Power switch: this mechanical switch turns the Avr's power supply on or off. It is usually left on, and it cannot be turned on or off using the remote control. AC Input

connector: After you have made all other connections, plug the supplied Ac power cord into this receptacle and into an unswitched wall outlet. RS-232 connector: this connector is used to connect to external control hardware. consult a certified professional installer for more information. IR Remote In/Out connectors (AVR 3650/AVR 365 only): when the Ir sensor on the front panel is blockou have adjusted the picture settings on your tv or video display.

See the Advanced functions section, on page 33, for more information. Surround Modes button: press this button to access the Surround modes submenu.

Select a surround-mode category: Auto Select, virtual Surround, Stereo, movie, music or game. when you select the category, it is highlighted and the surround mode changes. to change the surround mode for the selected category, press the ok button when the menu line is highlighted and use the up/down buttons to select one of the available surround-mode options.

press the ok button; or press the back/exit button to exit the Surround modes menu and display the next higher menu in the hierarchy. See the Advanced functions section, on page 33, for more information. Number buttons: use these buttons to enter numbers for radio-station frequencies or to select station presets. Last Channel button: when controlling a cable, satellite or hdtv set-top box or a tv, press this button to return to the previous television channel.

Activity button: with this button you can program the remote to store up to 11 different macros (Activities).

(A macro is a series of commands that are transmitted by a single button press.) execute a macro by pressing this button, followed by the number button (or the Avr power on button) into which you programmed the macro. See programming macro (Activity) commands, on page 41, for more information. System Remote Control Functions, continued Back/Exit button: press this button to return to the previous menu or to exit the menu system. Menu button: this button is

used within the tuner menus (including STrLuS radio) and the bridge IIp control menu, and is also used to display the main menu on some source devices. to display the Avr's menu system, press the Setup button. Up/Down/Left/Right buttons: these buttons are used to navigate the menu system and to operate the tuner.



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OK button: this button is used to select items from the menu system. **Backlight button (AVR 3650/AVR 365 only):** press this button to illuminate the buttons on the remote. press it again to turn the backlight off, or wait 5 seconds after the last button press for the light to turn off on its own.

Disc Menu button: to display the disc's menu while a dvd or blu-ray disc is playing, press the blu-ray Source Selector button, then press this button. **A/B/C/D buttons:** these buttons can be used as additional source buttons and can also operate certain functions when used with some source devices. See table A13 in the Appendix for details. these buttons are also used with a teletext®-capable television if your broadcast, cable or satellite provider offers teletext service.

Volume Up/Down buttons: press these buttons to raise or lower the volume. **Channel Up/Down and Page buttons:** when the tuner has been selected, press these buttons to select a preset radio station. while operating a cable, satellite or hdtv set-top box or a television, press these buttons to change channels.

Mute button: press this button to mute the Avr's speaker-output connectors and headphone jack. to restore the sound, press this button or adjust the volume.

Transport Control buttons: these buttons are used to control source devices and the bridge IIIp.

Info button: press to display the Avr's Info menu, which contains the settings for the current source. **Setup button:** press to display the Avr's main menu or to switch the remote to the Avr control mode. **Sleep button:** press this button to activate the sleep timer, which turns off the receiver after a programmed period of time. each press increases the time by 10 minutes, up to 90 minutes ending with the "Sleep off" message. **Learn button (AVR 3650/AVR 365 only):** the Avr 3650/Avr 365 remote is capable of "learning" individual Ir codes from the original remote that came with a source device.

See program the remote to control your Source devices and tv, on page 23, for more information. **Zone Selector switch:** use this switch to select whether the Avr commands will affect the main listening area (Zone 1) or the remote zone of a multizone system (Zone 2). for normal operation, leave the switch in the Zone 1 position. **9 ENGLISH AVR Zone 2 Remote Control Functions (AVR 3650/AVR 365 only) Zone 2 Remote Control Functions (AVR 3650/AVR 365 only)** Ir transmitter lens power off button mute button Source Selector buttons Sleep button Avr button back/exit button menu button up/down/left/right buttons ok button volume up/down buttons transport control buttons Zone Selector button Zone Indicator light Continued on next page **10 AVR Zone 2 Remote Control Functions (AVR 3650/AVR 365 only), continued Zone 2 Remote Control Functions (AVR 3650/AVR 365 only), continued by installing an Ir receiver in the remote zone of a multizone system and connecting it to the Avr's Zone 2 Ir Input connector, you can use the Zone 2 remote to control the sound in the remote zone from within the remote zone. you can use it to control the Avr's power, volume and mute functions or to select a source input for the remote zone, and to control a harman kardon source device connected to one of the Avr's remote Ir out connectors.**

See connect Ir equipment, on page 22, for more information. you can also use the Zone 2 remote in the main listening room to control the Avr and harman kardon blu-ray disc™, dvd, cd or tape players. when the Zone 2 remote is in the Zone 1 control mode (the remote's Zone Indicator light will turn green), its power, volume and mute controls will affect only the main listening area. to restore operation to the remote zone, press the remote's Zone Selector button so that its Zone Indicator light turns red. **IR Transmitter lens:** As buttons are pressed on the remote, infrared codes are emitted through this lens. **Power Off button:** press this button to turn the Avr off. **Mute button:** press to mute the Avr's remote-zone speakers. to restore the sound, press this button, adjust the volume or turn off the multizone system. make sure to switch the remote to Zone 2 mode so that only the remote zone will be affected. **Source Selector buttons:** with the remote in Zone 2 mode, press one of these buttons to select a source device for the remote zone.

pressing the button will also turn on the multizone system and switch the remote to the selected source device's control mode. you may select a different external source device than that for the main room, but not different tuner bands. If you select the same source as that for the main room, any commands sent to the source device will affect both zones. the first press of the radio Source Selector button switches the Avr to the last-used tuner band (Am, fm or S/IrUs). each successive press changes the band. **Sleep button:** press this button to activate the sleep timer, which turns off the receiver after a programmed period of time. each press increases the time by 10 minutes, up to 90 minutes ending with the "Sleep off" message. **AVR button:** press this button to turn on the Avr and select the last-used source. this button is also used to switch the remote control to Avr control mode. **Back/Exit button:** press this button to return to the previous menu or to exit the menu system.

Menu button: this button is used within the tuner menus (including S/IrUs radio) and the bridge IIIp control menu, and is also used to display the main menu on some source devices. to display the Avr's menu system, press the Setup button. **Up/Down/Left/Right buttons:** these buttons are used to navigate the menu system and to operate the tuner. **OK button:** this button is used to select items from the menu system. **Volume Up/Down buttons:** press to raise or lower the volume level in the remote zone.

Transport Control buttons: these buttons are used to control source devices and the bridge IIIp. **Zone Selector button and Zone Indicator light:** each press of the Zone Selector button determines whether the Avr commands will affect the main listening area (Zone 1) or the remote zone (Zone 2). the Zone Indicator light will turn green when Zone 1 has been selected, and red when Zone 2 has been selected. the Zone Indicator light will also light up briefly when any button is pressed. **ENGLISH 11 AVR Introduction to Home Theater** this introductory section will help you to familiarize yourself with some basic concepts unique to multichannel surround-sound receivers, which will make it easier for you to set up and operate your Avr.

Introduction to Home Theater Surround Modes there are different theories as to the best way to present surround sound and to distribute each audio channel's sounds to the surround-sound system's speakers. A variety of algorithms have been developed in an effort to recreate the way we hear sounds in the real world, resulting in a rich variety of options. Several companies have developed different surround-sound technologies, all of which can be accurately reproduced by your Avr: · Dolby Laboratories: dolby truehd, dolby digital plus, dolby digital, dolby digital ex, dolby pro logic® IIx and IIz.



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· DTS: dtS-hd high resolution Audio, dtS-hd master Audio, dtS, dtS-eS (discrete and matrix), dtS neo:6®, dtS 96/24TM. · HARMAN International: logic 7®, hArmAn virtual speaker, hArmAn headphone. · Stereo Modes: generic modes that expand upon conventional two-channel stereo, including 5ch and 7ch Stereo. Appendix table A12, on page 50, contains detailed explanations of the different surround-sound options available on your Avr. digital surround-sound modes, such as the dolby digital and dtS modes, are available only on specially encoded programs, such as those available via hdtv, dvd and blu-ray disc media and digital cable or satellite television. other surround modes may be used with digital and analog signals to create a different surround presentation or to use a different number of speakers. Surround-mode selection depends upon the number of speakers in your system, the program you are watching or listening to, and your personal tastes.

Typical Home Theater System A home theater typically includes an audio/video receiver, which controls the system and supplies amplification for the loudspeakers; a disc player; a source component for television broadcasts (cable box, satellite dish receiver, hdtv tuner or antenna connected to the tv); a tv or video display; and multiple loudspeakers. Multichannel Audio the main benefit of a home theater system is its ability to produce "surround sound." Surround sound uses multiple speakers and amplifier channels to immerse you in the audio/video presentation for a dramatically increased sense of realism. your Avr may have up to seven main speakers connected directly to it, plus a subwoofer. each main speaker is powered by its own amplifier channel inside the Avr. A system with more than two speakers is called a multichannel system. the different main speaker types in a home theater system are: · Front Left and Right: the front left and right speakers are used as in a two-channel system. In many surround-sound modes, these speakers are secondary, while the main action, especially dialogue, is reproduced by the center speaker. · Center: when you are watching movies and television programs, the center speaker reproduces most of the dialogue and other soundtrack information, anchoring it with the picture. when you are listening to a musical program, the center speaker helps to create a seamless front soundstage, creating a realistic "you-are-there" listening experience.

· Surround Left and Right: the surround left and right speakers produce ambient sounds that help create a realistic and immersive surround-sound environment. they also help recreate directional sound effects such as aircraft flyovers. · Surround Back Left and Right: Surround back channel speakers are used with surround modes such as the dolby digital ex, dolby digital plus, dolby truehd, dtS-eS® (discrete and matrix), dtS-hdTM high resolution Audio, dtS-hd master AudioTM and logic 7® 7.1 modes that are designed for 7.1-channel systems.

the surround back channel speakers are optional. If your system does not include surround back left and right speakers, you can set up your Avr with a 5.1-channel surround-sound system in the main listening area, and you can reassign the surround back channel amplifiers to power loudspeakers located in another room in a multizone system. (Alternately, you can reassign the surround back channel amplifiers to power front height speakers for use with dolby pro logic IIz. See manual Speaker Setup, on page 36, for more information.

) many people expect the surround speakers to play as loudly as the front speakers. Although you will calibrate all of the speakers in your system to sound equally loud at the listening position, most artists use the surround speakers for ambient effects only, and they create their programs to steer relatively little sound to these speakers. · Subwoofer: A subwoofer is designed to play only the lowest frequencies (the deep bass). It augments smaller, limited-range main speakers that are usually used for the other channels. many digital-format programs, such as movies recorded in dolby digital, contain a low-frequency effects (lfe) channel that is directed to the subwoofer. the lfe channel packs the punch of a rumbling train or airplane, or the power of an explosion, adding realism and excitement to your home theater. Some people use two subwoofers for additional power and for even distribution of the sound. 12 AVR Place Your Speakers determine the locations for your system's speakers according to their manufacturer's directions and the layout of your listening room. use the illustrations below as a guide for 7.1-channel and 5.

1-channel systems. to create the most realistic surround-sound environment possible, you should place your speakers in a circle with the listening position at its center. you should angle each speaker so it directly faces the listening position. use the diagrams below as a guide. tv fl c fr Sub Place Your Speakers

NOTE: In a 7.1-channel system, you must choose to use either surround back speakers or front height speakers you cannot use both simultaneously. Placing the Left, Center and Right Speakers place the center speaker either on top of, below or mounted on the wall above or below the tv or video display screen. place the front left and right speakers along the circle, about 30 degrees from the center speaker and angled toward the listener. place the front left, front right and center speakers at the same height, preferably at about the same height as the listener's ears. the center speaker should be no more than 2 feet (0.

6m) above or below the left/right speakers. If you're using only two speakers with your Avr, place them in the front left and right positions. Placing the Surround Speakers in a 5.1-Channel System you should place the left and right surround speakers approximately 110 degrees from the center speaker, slightly behind and angled toward the listener. Alternatively, place them behind the listener, with each surround speaker facing the opposite-side front speaker. you should place the surround speakers 2 feet 6 feet (0.6m 1.8m) higher than the listener's ears. Sl Sr Placing the Surround Speakers in a 7.1-Channel System In a 7.

1-channel system, place the side surround speakers 90 degrees from the center speaker, directly to either side of the listening position. place the surround back left and right speakers 150 degrees from the center speaker, directly facing the opposite-side front speaker. you should place all the surround speakers 2 feet 6 feet (0.6m 1.8m) higher than the listener's ears. Speaker positioning for 5.1-channel Systems tv fl c fr Sub Placing Front Height Speakers in a 7.1-Channel System your Avr includes dolby pro logic IIz decoding, which uses the Avr's Assigned Amp channels as front height channels. the addition of front height channels an additional pair of speakers positioned above the front left and right speakers produces a surroundsound experience with added depth and dimension by creating lifelike sound that comes at you from varying heights.



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Sr we recommend placing front height speakers at least 3 feet (0.

9m) higher than the front left and front right speakers, and directly above or farther apart than the front left and right speakers. the higher and further apart you place the front height speakers, the more you should angle them down and in toward the listening position. NOTE: your receiver will sound its best when the same model or brand of loudspeaker is used for all positions. SI Sbl Sbr Placing the Subwoofer because a room's shape and volume can have a dramatic effect on a subwoofer's performance, it is best to experiment with placement so that you will find the location that produces the best results in your particular listening room. with that in mind, these rules will help you get started: fhr · placing the subwoofer next to a wall generally will increase the amount of bass in the room. · placing the subwoofer in a corner generally will maximize the amount of bass in the room. · In many rooms, placing the subwoofer along the same plane as the left and right speakers can produce the best integration between the sound of the subwoofer and that of the left and right speakers. · In some rooms, the best performance could even result from placing the subwoofer behind the listening position. A good way to determine the best location for the subwoofer is by temporarily placing it in the listening position and playing music with strong bass content. move around to various locations in the room while the system is playing (putting your ears where the subwoofer would be placed), and listen until you find the location where the bass performance is best. place the subwoofer in that location. tv fl c fr Sub fhl* SI Sr * fhl and fhr speakers should be at least 3 ft (0.9m) above the fl and fr speakers. Speaker positioning for 7.1-channel Systems (top: with Surround back Speakers; bottom: with front height Speakers) 13 ENGLISH AVR Types of Home Theater System Connections there are different types of audio and video connections used to connect the Avr to your speakers, your tv or video display, and your source devices.*

the consumer electronics Association has established the ceA® color-coding standard. Types of Home Theater System Connections Subwoofer Connections the subwoofer is a speaker dedicated to reproducing only the low (bass) frequencies, which require more power. to obtain the best results, most speaker manufacturers offer powered subwoofers that contain their own amplifiers. use a single rcA audio cable to make a line-level (non-amplified) connection from the Avr's Subwoofer connector to a corresponding input jack on the subwoofer. Analog Audio Connection front left/right center Surround left/right Surround back/front height left/right Subwoofer Color white/red green blue/gray brown/tan purple Digital Audio Connection coaxial (input or output) optical Input optical record output Color orange black gray Although the Avr's purple subwoofer output looks similar to a full-range analog audio jack, it is filtered so that only the low frequencies pass through it.

don't connect this output to any device other than a subwoofer. Source Device Connections Audio and video signals originate in source devices (components where a playback signal originates) such as your blu-ray disc or dvd player, cd player, dvr (digital video recorder) or other recorder, tape deck, game console, cable or satellite television tuner, an ipod or iphone (docked in an optional the bridge IIIp docking station) or an mp3 player. the Avr's fm/Am tuner also counts as a source, even though no external connections are needed other than the fm and Am antennas and an optional SIrIuS tuner module. Separate connections are required for the audio and video portions of the source device's signal, except for digital hdmI connections. the types of connections you use will depend upon the capabilities of the source device and of your tv or video display. Digital Audio Connections HDMI there are two types of audio connections digital and analog. digital audio signals are required for listening to sources encoded with digital surround modes, such as dolby digital and dtS, or for uncompressed pcm digital audio. your Avr has three types of digital audio connections: hdmI, coaxial and optical. do not use more than one type of digital audio connection for each source device. however, it's okay to make both analog and digital audio connections to the same source.

your Avr is equipped with five rear-panel hdmI input connectors, and one hdmI monitor output connector. (the Avr 3650 and Avr 365 also have a front-panel hdmI input connector.) hdmI technology enables digital audio and video information to be carried using a single cable, delivering the highest quality picture and sound. If your tv or video display device has an hdmI input connector, make a single hdmI connection from each source device to the Avr. usually, a separate digital audio connection is not required. the Avr's hdmI monitor output connection contains an Audio return channel (Arc) that carries a digital audio signal from your tv or video display back to the Avr. It allows you to listen to hdmI devices that are connected directly to your tv (such as an Internet connection) without making an additional connection from the device to the Avr. the Arc signal is active when the tv source is selected. See System Settings, on page 39, for more information. the hdmI connector is shaped for easy plug-in (see illustration, below), and hdmI cable runs are limited to about 10 feet (3m).

If your video display has a dvI input and is hDcp-compliant, use an hdmI-to-dvI adapter (not included), and make a separate audio connection. Analog Video Connection component video composite video Color red/green/blue yellow Speaker Connections Speaker cables carry an amplified signal from the Avr's speaker terminals to each loudspeaker. they contain two wire conductors, or leads, that are differentiated in some way, such as with colors or stripes. the differentiation helps you maintain proper polarity, without which your system's lowfrequency performance can suffer. each speaker is connected to the Avr's speakeroutput terminals using two wires, one positive (+) and one negative (-).

Always connect the positive terminal on the speaker, which is usually colored red, to the positive terminal on the receiver, which is colored as indicated in the connection color guide table, above. the negative terminals on the speakers and the Avr are black. your Avr uses binding-post speaker terminals that can accept bare-wire cables or banana plugs. bare-wire cables are installed as shown below: 1. unscrew cap 2.

Insert bare wire 3. tighten cap banana plugs are inserted into the hole in the middle of the terminal cap, as shown below: A. tighten cap b. Insert banana connector into hole in cap Always connect the colored (+) terminal on the Avr to the (+) terminal on the speaker (usually red), and the black (-) terminal on the Avr to the (-) terminal on the speaker (usually black).



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IMPORTANT: Make sure the (+) and (-) bare wires do not touch each other or the other terminal. Touching wires can cause a short circuit that can damage your receiver or amplifier. **14 AVR Digital Audio Connections** Coaxial coaxial digital audio jacks are usually color-coded in orange. Although they look like standard rCA-type analog jacks, you should not connect coaxial digital audio outputs to analog inputs or vice versa. **Types of Home Theater System Connections Video Connections** many source devices output both audio and video signals (e.g.

, blu-ray disc, dvd player, cable television box, hdtv tuner, satellite box, vcr, dvr). In addition to an audio connection as described above, make a video connection for each of these source devices. make only one type of video connection for each device. **Digital Video Connections** If you have already connected a source device to one of the Avr's hdmi input connectors, you have automatically made a video connection for that device, since the hdmi cable carries both digital audio and digital video signals. **Analog Video Connections Composite Video** your Avr uses two types of analog video connections: composite video and component video. composite video is the basic connection most commonly available. both the chrominance (color) and luminance (intensity) components of the video signal are transmitted using a single cable. the jack is usually color-coded yellow and looks like an analog audio jack. do not connect a composite video jack to an analog audio or coaxial digital audio jack, or vice versa. **ENGLISH Digital Audio Connections Optical** optical digital audio connectors are normally covered by a shutter to protect them from dust.

the shutter opens as the cable is inserted. optical input connectors are color-coded using a black shutter, while optical outputs use a gray shutter. **Analog Audio Connections two-channel analog connections** require a stereo audio cable, with one connector for the left channel (white) and one for the right channel (red). these two connectors are attached to each other. **Analog Video Connections Component Video** component video separates the video signal into three components one luminance ("y") and two sub-sampled color signals ("pb" and "pr") that are transmitted using three separate cables that are color-coded green (y), blue (pb) and red (pr).

component video cables that join three separate green, blue and red connectors into a single cable are sold separately. for source devices that have both digital and analog audio outputs, you may make both connections. If you are going to be setting up a multizone system, remember that Zone 2 is an audio-only zone (the Avr does not have a Zone 2 video output). therefore, make analog connections for any audio source devices (such as a cd changer) that you will want available for listening in Zone 2 at all times. the analog connections also feed the analog record outputs.

you may record materials from blu-ray disc recordings, dvds or other copy-protected sources using only analog connections. remember to comply with all copyright laws if you choose to make a copy for your own personal use. **The Bridge IIIp Connection** your Avr includes a proprietary, dedicated connector for an optional the bridge IIIp docking station for the ipod or iphone. the bridge IIIp outputs analog audio to the Avr and is available as a source to Zone 2 in a multizone system. If your tv or video display has an hdmi connection, we recommend it as the best quality connection. your Avr converts composite and component analog video input signals to the hdmi format, upscaling them to high-definition 1080p resolution. **15 AVR Types of Home Theater System Connections Radio Connections** your Avr uses separate terminals for the included fm and Am antennas. the fm antenna uses a 75-ohm f-connector. **USB Port** the uSb port on your Avr is used for firmware upgrades. If an upgrade for the Avr's operating system is released in the future, you will be able to download it to the Avr using this port.

complete instructions will be provided at that time. In addition to performing firmware upgrades, the Avr 3650/Avr 365 can play mp3 and wma audio files from a uSb device inserted into the uSb port. Insert the device into the uSb port with the device's plug oriented so it fits all the way into the port. you may insert or remove the device at any time there is no installation or ejection procedure. the Am antenna connector uses spring-clip terminals. After assembling the antenna as shown below, press the levers to open the connectors, insert the bare wires into the openings, and release the levers to secure the wires. the antenna wires are not polarized, so you can insert either wire into either connector. **IMPORTANT:** Do not connect a PC or other USB host/controller to the AVR's USB port, or you may damage both the AVR and the other device. **SIRIUS Satellite Radio** to enjoy SIRIUS satellite radio, purchase a SIRIUSconnect tuner module and a subscription to the SIRIUS service. visit www.sirius.com for information on SIRIUSconnect tuner modules. the Siriusconnect modules include an eight-pin dIn cable for connection to the eight-pin jack on the Avr, allowing you to control the tuner module via the Avr. Although you may also use a "plug-and-play" tuner module equipped with standard audio connections, you will not be able to use the Avr to control the SIRIUS tuner. **RS-232 Connector** your Avr's rS-232 serial port may be connected to an external control system to allow it to transmit control commands to the Avr.

the port is bidirectional so that the Avr can transmit status updates to the control device. connecting and using the rS-232 port requires considerable technical knowledge and is best left to a professional custom installer. **Network Connector** the Avr's network connector allows you to enjoy Internet radio or content from other dlnA-compatible devices that are connected to the same network. use a cat. 5 or cat. 5e cable to connect the Avr's rJ-45 connector to your home network. **16 AVR Making Connections CAUTION:** Before making any connections to the audio/video receiver, ensure that the AVR's AC cord is unplugged from the receiver and the AC outlet. Making connections with the receiver plugged in and turned on could damage the speakers. **Making Connections Connect Your Subwoofer** use a single rCA audio cable to connect the Avr's Subwoofer connector to your subwoofer as explained in Subwoofer connections, on page 14. consult your subwoofer's user manual for specific information about making connections to it. **Avr Subwoofer AVR Subwoofer Connector** connector powered **Powered Subwoofer Subwoofer Connect Your Speakers** After you have placed your loudspeakers in the room as explained in place your Speakers, on page 13, connect each speaker to its color-coded terminal on the Avr as explained in Speaker connections, on page 14.



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connect the speakers as shown in the illustration. Single Single rca Audio cable RCA Audio Cable (not supplied) (notsupplied) Connect Your TV or Video Display If your tv has an hdmI connector: use an hdmI cable (not included) to connect it to the Avr's hdmI monitor out connector. you do not need to make any other connections to your tv from the receiver or from any of your video source components. receiver hdmI monitor out connector hdmI cable (not supplied) tv If your TV does not have an HDMI connector: use a composite video cable (not included) to connect the Avr's composite monitor out connector to your tv's composite video connector.

receiver composite monitor out connector composite video cable (not supplied) NOTE: the hdmI connection to your tv is preferred. If you use the composite video connection to your tv, you will not be able to view the Avr's on-screen menus. tv NOTE: If you installed front height speakers, connect them as shown for the Sbl and Sbr speakers. 17 ENGLISH AVR Connect Your Audio and Video Source Devices your receiver has several different types of input connectors for your audio and video source devices: hdmI, component video, composite video, optical digital audio, coaxial digital audio and analog audio. the connectors are not labeled for specific types of source devices; they are labeled numerically, so you can connect your devices according to your individual system's makeup. your Avr's various source buttons have default assignments to different input connectors (listed in the "default Source button" column of the table below). for ease of setup, you should connect each source device to the connector where the corresponding default Making Connections source button is assigned (e.g., connect your blu-ray disc player to hdmI 1). however, you can connect your source devices as you wish and re-assign any of the source buttons to any of the input connectors listed in the table according to where you actually connect each of your source devices.

As you connect your various source components, fill out the "connected component" column in the table it will make it easier for you to assign the various source buttons after you have completed making all of the connections. (you will make any changes to the source-button assignments and fill in the "Assigned Source button" column later in the setup process.) AVR Input Connector hdmI 1 hdmI 2 hdmI 3 hdmI 4 hdmI 5 (Avr 3650/Avr 365 only) hdmI front component video 1 component video 2 composite video 1 composite video 2 optical digital Audio 1 optical digital Audio 2 coaxial digital Audio Input 1 coaxial digital Audio Input 2 Analog Audio In 1 Analog Audio In 2 Analog Audio In 3 Connected Component Default Source Button AVR 3650/AVR 365 AVR 2650/AVR 265 Assigned Source Button blu-ray cable/Sat game media Server tv Aux A (red) b (green) c (yellow) d (blue) A (red) b (green) c (yellow) blu-ray/tv cable/Sat game media Server dvr A (red) b (green) c (yellow) d (blue) A (red) b (green) c (yellow) d (blue) d (blue) Aux Monitor Output Connector hdmI monitor out composite video monitor out Connected Component ----- Record Output Connector composite video rec out optical digital Audio out Connected Component ----- Input connections and Assigned Source buttons 18 AVR Connect Your HDMI Devices If any of your source devices have hdmI connectors, using them will provide the best possible video and audio performance quality. Since the hdmI cable carries both digital video and digital audio signals, you do not have to make any additional audio connections for devices you connect via an hdmI cable. receiver hdmI connectors Connect Your Optical Digital Video Devices Making Connections If your non-hdmI source devices have optical digital outputs, connect them to the Avr's optical digital audio connectors.

NOTE: make only one type of digital connection (hdmI, optical or coaxial) from each device. receiver digital Audio connectors hdmI cable (not supplied) to hdmI output optical digital Audio cable (not supplied) to optical digital Audio output hdmI-equipped Source device NOTE: If you have hdmI devices (such as an Internet connection) already connected directly to your tv, you can feed their sound to the Avr via the hdmI monitor out connector's Audio return channel, and they will not require additional connections to the Avr. Connect Your Component Video Devices If any of your video source devices have component video connectors (and do not have hdmI connectors), using the component video connectors will provide superior video performance. you will also need to make an audio connection from the device to the receiver. receiver video connectors optical digital-equipped Source device Connect Your Coaxial Digital Audio Devices If your non-hdmI source devices have coaxial digital outputs, connect them to the Avr's coaxial digital audio connectors.

NOTE: make only one type of digital connection (hdmI, optical or coaxial) from each device. receiver digital Audio connectors coaxial digital Audio cable (not supplied) to coaxial digital Audio output component video cable (not supplied) to component video outputs component video-equipped Source device coaxial digital-equipped Source device Connect Your Analog Audio Devices use the Avr's analog audio connectors for source devices that don't have hdmI or digital audio connectors. NOTE: If you're installing a multizone system, make analog audio connections for any source devices you want to be able to listen to in Zone 2. only analog sources are available in Zone 2. receiver Analog Audio connectors Connect Your Composite Video Devices use composite video connectors for video source devices that don't have hdmI or component video connectors. you will also need to make an audio connection from the source device to the receiver. receiver video connectors composite video cable (not supplied) to composite video output composite video-equipped Source device Stereo Audio cable (not supplied) to Stereo Analog Audio output Analog Source device 19 ENGLISH AVR Connect Your Audio Recorders connect a digital audio recorder's optical digital input to the Avr's optical digital output. you can record both coaxial and optical digital audio input signals. receiver digital Audio recorder connector Making Connections Connect The Bridge IIIP connect an optional the bridge IIIP to the Avr's the bridge IIIP connector. Insert the plug until it snaps into place in the connector.

IMPORTANT: Connect The Bridge IIIP only with the AVR's power turned OFF. Avr the bridge IIIP connector optical digital Audio cable (not supplied) to optical digital record Input the bridge IIIP digital recording device connect an analog audio recorder's inputs to the Avr's analog audio rec out connectors.



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you can record any analog audio input signal. receiver Analog Audio recorder connectors dock your ipod or iphone (not included) in the bridge IIIp, and you may listen to its audio through your high-performance audio/video system. you may also view still images or video materials stored on a photo- or video-capable ipod or iphone that supports video browsing. you can use the Avr remote to control the ipod, with navigation messages displayed on the Avr's front panel and on a video display connected to the Avr. Connect to Your Home Network use a cat. 5 or cat. 5e cable (not supplied) to connect the Avr's network connector to your home network to enjoy Internet radio and content from dlnA-compatible devices that are connected to the network. Stereo Audio cable (not supplied) to Stereo Analog record Inputs receiver network connector network modem to Internet and IAn Analog recording device Connect Your Video Recorder connect an analog video recorder's video input connector to the Avr's composite video rec out connector.

you can record any composite video signal. NOTE: to record the audio and video from the source device, connect the Avr's analog audio rec out connectors to the analog video recorder's audio inputs. receiver Analog video recorder connectors receiver Analog Audio recorder connectors Analog Audio/video cable (not supplied) cat. 5/5e cable (not supplied) Connect the Radio Antennas · connect the supplied fm antenna to the Avr's fm 75 antenna connector. for the best reception, extend the fm antenna as far as possible.

· bend and fold the base of the supplied Am antenna as shown and connect the antenna wires to the Avr's Am and gnd connectors. (you can connect either wire to either connector.) rotate the antenna as necessary to minimize background noise. Avr Antenna connectors fm Antenna (supplied) to Analog Audio/video record Inputs Analog video recording device Am Antenna (supplied) bend and fold base 20 AVR Connect a SIRIUSConnect Radio Tuner (AVR 3650 and AVR 2650 only) connect the multi-pin dIn cable supplied with the SIRIUSConnect tuner to the Avr's SIRIUS tuner connector and to the corresponding connector on the SIRIUS module. the Avr will supply power to the SIRIUS module so you will not need to connect the power supply included with the module. you will need to purchase a SIRIUS radio subscription and activate the tuner module, following the instructions included with the SIRIUS module and from the SIRIUS web site at www.sirius.com. Avr SIRIUS tuner connector Making Connections Install a Multizone System IMPORTANT SAFETY NOTE: Installing a multizone system typically requires running cables inside walls. Always comply with the appropriate safety codes when installing concealed wiring, particularly all applicable building codes. Failure to do so may present a safety hazard. If you have any doubt about your ability to work with electrical wiring, hire a licensed electrician or custom installer to install the multizone system. NOTE: only the following analog audio sources are available to Zone 2: the internal radio (fm, Am and SIRIUS, if connected Avr 3650/Avr 2650 only), an ipod/iphone device docked in a connected the bridge IIIp, a uSb memory device inserted in the Avr's uSb port (Avr 3650/Avr 365 only) and up to three source devices connected to the rear-panel Analog Audio 1, 2 and 3 connectors. ENGLISH 21 SIRIUSConnect tuner your Avr offers two different methods of distributing audio to other areas in your home. each requires different connections: A.

Connect the Zone 2 speakers directly to the Assigned Amp Speaker Output connectors. Assign the Assigned Amp channels to power the Zone 2 speakers (see manual Speaker Setup, on page 36). this method allows you to power a single pair of speakers for Zone 2. this method offers the benefit of reduced cost and complexity, but your home theater system will be limited to 5.1 channels the Avr will automatically downmix the playback of programs recorded in 6.1 or 7.1 channels to 5.1 channels. Zone 2 Speakers eight-pin dIn cable (supplied with SIRIUS tuner) Zone 2 Assigned Amp Speaker connectors Main Room Speaker wire (not supplied) Speaker wire (not supplied) Avr fl c 5.1-channel home theater Speaker System fr lfe Sl Sr AVR B.

Connect an external amplifier to the AVR's Zone 2 Out connectors. this method offers the benefit of retaining a 7.1-channel home theater in the main room simultaneously with multizone operation, although it does require an additional component (the Zone 2 amplifier). we recommend that you place the Zone 2 amplifier in the same room as the Avr so that you can use a short length of stereo audio cable along with a long run of speaker wire to the remote room. A long run of stereo audio cable would increase the chance of signal degradation.

depending on your amplifier, distribute the audio signal to a single pair of speakers or to several pairs placed in different rooms. Zone 2 Speakers Making Connections Connect IR Equipment (AVR 3650/AVR 365 only) the Avr 3650/Avr 365 is equipped with remote Ir Input and output connectors and a Zone 2 Ir Input connector that let you remotely control the Avr in a variety of situations: · when you place the Avr inside a cabinet or facing away from the listener, connect an external Ir receiver, such as the optional harman kardon he 1000, to the Avr's Ir remote In jack. Avr Ir remote In Jack external Ir receiver Zone 2 Main Room Speaker wire (not supplied) Speaker wire (not supplied) Stereo Audio cable (not supplied) Avr and Source devices Installed Inside of cabinet Zone 2 Amplifier (not supplied) · If any source devices are equipped with a compatible Ir input, use a 1/8-inch (3.5mm) mini-plug interconnect cable (not included) to connect the Avr's Ir remote out jack to the source device's Ir input. external Ir receiver Avr Avr mono 1/8-inch (3.

5mm) mini-plug Interconnect (not supplied) fl c 7.1-channel home theater Speaker System fr lfe mono 1/8-inch (3.5mm) mini-plug Interconnect (not supplied) Sl Sr Source devices w/remote In/out Jacks Sbl Sbr 22 AVR to control more than one source device through the Avr's Ir remote out connector, connect all sources in "daisy chain" fashion, connecting each device's Ir output to the next device's Ir input, starting with the Avr. · If you install a multizone system, connect an Ir control device to the Zone 2 Ir In connector for remote-room control of the multizone system, source devices and volume in the remote zone. Zone 2 Speakers external Ir receiver Making Connections, Set Up the Remote Control Connect to AC Power connect the supplied Ac power cord to the Avr's Ac Input connector and then to a working Ac power outlet. Avr Ac Input connector ENGLISH Ac power outlet power cord (supplied) Zone 2 Main Room Set Up the Remote Control Install the Batteries in the Remote Control remove the remote control's battery cover, insert the four supplied AAA batteries as shown in the illustration, and replace the battery cover.



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Avr If a source device is shared with the main listening area, any control commands issued to that source will also affect the main room. Connect the 12V Trigger Output If your system has equipment that can be controlled by a dc trigger signal, connect it to the Avr's 12v trigger connector with a mono 1/8-inch (3.5mm) mini-plug interconnect cable. the Avr will supply a 12v dc (100mA) trigger signal at this connection whenever it is powered on.

Avr NOTE: remove the protective plastic from the Avr's front panel so it doesn't reduce the remote control's effectiveness. Program the Remote to Control Your Source Devices and TV you can program your Avr remote to control many brands and models of audio/video source devices and tvs. the remote is also ready to operate your ipod or iphone when the ipod/iphone is docked in a connected the bridge IIIp (not included). each of the remote's Source Selector buttons has been preprogrammed to control certain types of source devices: Cable/Sat: controls cable tv and satellite tv tuner boxes Blu-ray: controls blu-ray disc and dvd players Bridge: controls an ipod/iphone device docked in a connected the bridge IIIp Radio: controls the Avr's built-in fm/Am tuner and a connected STruSconnect tuner TV: controls tvs and video displays USB (AVR 3650/AVR 365): browses compatible media on a uSb device that is inserted in the Avr's uSb port (Avr 3650/Avr 365 only) DVR (AVR 2650/AVR 265): controls tivo® recorders Game: controls video-game consoles Media Server: controls media servers Network: browses compatible media on dlnA-compatible devices connected to your home network. AUX: controls hdtv tuner boxes, cd players, vcrs and pvds. Although the Source Selector buttons are preprogrammed for the device types listed above, you can reassign a Source Selector button to a different device type. See reassigning a Source Selector button for a different device type, on page 24. device with trigger In connector mono 1/8-inch (3.5mm) mini-plug Interconnect (not supplied) 23 AVR once you have programmed the remote, you can switch the remote's control mode to access the functions for a particular device by pressing the remote's Source Selector button for that device. to control the receiver, press the remote's Setup button.

follow these steps to program the Source Selector buttons for your source devices: 1. turn on the source device you want to program the remote to control. 2. look up the code numbers for the device in tables A14 A24 in the Appendix. write all the applicable code numbers in a convenient place.

3. press the Source Selector button for the device and hold it as it glows red, goes dark and glows red again. then release it. the remote is now in the programming mode. NOTE: the remote will remain in the programming mode for 20 seconds.

If you do not complete Step 4 within 20 seconds, the remote will exit the programming mode, and you will need to repeat Step 3. 4. Aim the remote at the source device and use the remote's number buttons to enter a code number from Step 1, above. a) If the device turns off, press the Source Selector button again to save the code. the Source Selector button will flash, and the remote will exit the programming mode. b) If the device does not turn off, enter another code number. c) If you run out of code numbers for a device, you can search through all of the codes in the remote's library for devices of its type by pressing the remote's up button repeatedly until the device turns off. when it does, press the Source Selector button to save the code. 5. check that other functions control the device correctly.

Sometimes manufacturers use the same power code for several models, while other function codes vary. repeat this process until you've programmed a satisfactory code set that operates most of the device's functions. 6. If you searched through the remote's code library to find the code, you can find out which code number you have programmed by pressing and holding the Source Selector button to re-enter the programming mode. then press the remote's ok button, and the Source Selector button will flash in the code sequence. one flash represents "1," two flashes for "2," and so forth. A series of quick flashes represents "0." record the code number programmed for each device in table A9 in the Appendix. repeat Steps 3 6 for each source device you want to control with the Avr remote. Reassigning a Source Selector Button for a Different Device Type you can reassign a Source button to control a different device type (for example, you can program the media Server button to control a dvd player).

1. turn on the source device you want the remote to control. 2. look up the code numbers for the device in tables A14 A24 in the Appendix. write all the applicable code numbers in a convenient place.

3. press the Source Selector button you want to override and hold it for three seconds as it glows red, goes dark and glows red again. then release it. the remote is now in the programming mode. 4.

press the Source Selector button that corresponds to the source device's type (i.e., for a dvd player, press the blu-ray button). the Source Selector button you pressed in Step 3 will flash once. 5. Aim the remote at the source device and use the remote's number buttons to enter a code number from Step 2, above. a) If the device turns off, press the Source Selector button from Step 3 again to save the code. the Source Selector button will flash, and the remote will exit the programming mode. b) If the device does not turn off, enter another code number. c) If you run out of code numbers for a device, you can search through all of the codes in the remote's library for devices of its type by pressing the remote's up button repeatedly until the device turns off.

when it does, press the Source Selector button from Step 3 to save the code. Set Up the Remote Control most of the button labels on the Avr remote describe each button's function when the remote is used to control the Avr. however, the button may perform a different function when used to control another device. refer to the remote control function list, table A13 in the Appendix. you can also program the remote to perform macros (preprogrammed code sequences that execute many code commands with a single button press), and for "punchthrough" programming (allowing the remote to operate a device's channel or transport controls when the remote is in another device's mode). See Advanced remote control programming, on page 41, for instructions on these functions.

Learning (AVR 3650/AVR 365 only) If you have the device's original remote control, you may "teach" its individual button codes into the following "destination" buttons on the Avr 3650/Avr 365 remote: device power on/off buttons, number buttons, last button, back/exit button, menu button, up/down/left/right buttons, ok button, disc menu button, A/b/c/d buttons, channel up/down buttons, volume up/down buttons, mute button, transport control buttons.



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