



DSR500 Series



User Guide



Welcome!

Thank you for purchasing the Motorola Digital Satellite Receiver (DSR). For optimum performance and safety, read this guide and retain it for future reference.



Graphical symbols and supplemental warning marking locations on bottom of terminal.

WARNING:

To reduce the risk of fire or electric shock, do not expose this unit to rain or moisture. Do not open the unit. Refer servicing to qualified personnel only.

CAUTION:

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



Lightning Flash Icon

The lightning flash with arrowhead symbol within an equilateral triangle is intended to alert the user to the presence of un-insulated "dangerous voltage" within the product's housing that may be strong enough to constitute a risk of electric shock to persons.



Exclamation Point Icon

The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

This installation should be made by a qualified service person and should conform to all local codes.

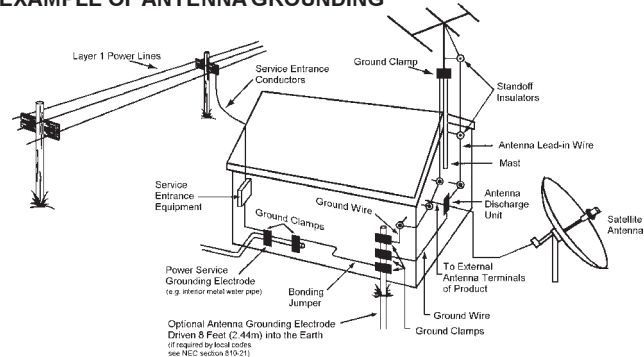
REPAIRS:

If you find the unit in need of repair, contact your system provider for repair or replacement.

NOTE TO SYSTEM INSTALLER

The purpose of this reminder is to call your attention to Article 820-40 of the NEC that 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 practical. The illustration is an example of antenna grounding according to the National Electrical Code Section 810, "Radio and Television Equipment." Check your local building and electrical codes for other restrictions on antenna grounding.

EXAMPLE OF ANTENNA GROUNDING



IMPORTANT SAFETY INSTRUCTIONS

Read instructions. The safety and operating instructions should be read before the appliance is operated.

Retain instructions. The safety and operating instructions should be retained for future reference.

Heed warning. Pay attention to all warnings on the equipment operating instructions.

Follow instructions. All operating and use instructions should be followed.

Cleaning. Do not use liquid cleaners or aerosol cleaners. Use a damp cloth to clean the outside of the unit. Do not open the unit for cleaning or any other reason.

Power Cord Protection. Place power supply cords so that they are not walked on or pinched by items placed on or against them. Pay particular attention to the cords where they join the plug, near convenience receptacles, and where they exit from the equipment.

Power Sources/Grounding. Operate the equipment from the type of power source indicated on the marking label. This product has a polarized alternating-current line plug as a safety feature. This plug fits into the power outlet only one way. If the plug does not fit, contact your electrician to replace your obsolete outlet. Do not try to change the plug or defeat its safety purpose.

Do Not Operate near Water. Do not use this product near water, for example, near a bath tub, wash bowl, kitchen sink, swimming pool, laundry tub, in a wet basement, or in similar situations.

Mounting and Placement. Do not place this product on an unstable surface such as a cart, stand, tripod, bracket, or table. It may fall,

causing serious injury to a child, adult, or to the unit itself. To mount the unit, follow the manufacturer's instructions, and use a mounting accessory recommended by the manufacturer. Do not place this product directly on wood or simulated wood surfaces because these surfaces may be damaged.

Heat. Do not place near heat sources such as radiators, stoves, or other products (including amplifiers) that produce heat.

Ventilation. Do not block or cover the slots and openings of the unit. They provide ventilation and protect it from overheating. Never place the unit on carpeting, which it may block ventilation through the bottom slots. Never place the unit near a source of heat or in a built-in installation rack unless there is proper ventilation.

Objects or Liquid in the Unit. Never push any object into this unit through any of its openings because they may touch dangerous voltage points or short out the parts. This could cause a fire or any electrical shock. Do not spill liquid of any kind on the unit.

Overloading. Do not overload power outlets or extension cords. This can result in a risk of fire or electrical shock.

Power Lines. Do not locate the satellite antenna system near overhead power lines, electrical light or power circuits, or where it can fall into power lines or circuits. When installing a satellite antenna system, avoid dangerous contact with power lines or circuits.

Outdoor Antenna Grounding. To provide some protection against voltage surges, lightning, and built-up static charges, make sure that the satellite antenna is properly grounded.

Outdoor Cable Protection. Protect all outdoor connections from moisture. During installation, treat all of the cable connectors on your LNB with coax seal, even if the connection is installed under a weatherproof cover. Internal

heating can draw moisture or condensation into the covering of the unit and affect its operation. Do not use silicone seal because it has a tendency to form air pockets.

Lightning. To protect the product from damage caused by lightning and power line surges, unplug it from the wall outlet and disconnect it from the antenna or cable system before a lightning storm or if the unit will be left unattended or unused for a long period of time. Once a storm passes, reconnect all antenna cables to the correct connectors. If you live in an area that has many lightning storms, buy polarized surge protectors and surge protectors for the power line, telephone line, and RF cable to protect your system from damage. Never attempt to connect or disconnect any wires during a thunderstorm or lightning storm.

Damage Requiring Service. Unplug this equipment from the power source, and contact a qualified service provider if any of the following situations occurs:

If the power supply cord or plug is damaged.
If liquid or objects have fallen into the unit.
If the unit became wet from rain or water.
If the unit was dropped or damaged.
If the unit's performance changes.

Service. Do not try to service this product yourself. If you open or remove the cover, you may be exposed to dangerous voltage or other hazards and may void the unit's warranty. Contact a qualified service provider for all service.

Replacement Parts. If replacement parts are required, be sure the service technician uses replacement parts specified by the manufacturer or have the same characteristics as the original part. Unauthorized substitution may result in risk of fire, electric shock, or other hazards.

Safety Check. After the unit is serviced or repaired, ask the service technician to perform safety checks to find out if the unit is in proper operating condition.

Programming Copyright Notice

Use of this device may violate Section 605 of the Communications Act of 1934, as amended, if that use consists of the unauthorized interception and divulgence of radio communications for one's own benefit where there is no entitlement to its receipt.

Changes or modifications to this device not expressly approved by the party responsible for compliance with FCC regulations (the manufacturer) could void the user's authority to operate the equipment.

Resale of signals received from broadcast satellites is explicitly regulated. In any use or application involving resale or distribution, the user should verify compliance with current laws, regulations, and approved procedures for use. Where required, local and federal licensing or franchise authorization is the sole responsibility of the user.

Export of this device requires a valid export license issued by the U.S. Department of Commerce.

FCC-Required Notification of Service

The Instant Pay-Per-View system is designed to be used on standard device telephone lines. The Instant Pay-Per-View connects to the telephone line by means of a standard jack called the USOC RJ11C. Connection to telephone company-provided coin service (central office implemented systems) is prohibited. Connection to party line service is subject to State tariffs.

Telephone Company Procedures

In order for your telephone company to provide service to you, it may occasionally be necessary for them to make changes in their equipment, operations, or procedures. If these changes affect your service or the operation of your equipment, the telephone company should give you notice, in writing, to allow you to make any changes necessary to maintain uninterrupted service.

If you have any questions about your telephone line, such as how many pieces of equipment you can connect to it, your telephone company should provide this information upon request.

In certain circumstances, it may be necessary for your telephone company to request information from you concerning the equipment which you have

connected to your telephone line. Upon request of your telephone company, provide the FCC registration number and the Ringer Equivalence Number (REN) of the equipment which is connected to your line; both of these items are listed on the equipment label. The sum of all the REN's on your telephone line should be less than five in order to assure proper service from your telephone company. In some cases, a sum of five may not be usable on a given line.

NOTE: The REN for the Digital Entertainment Receiver with Instant Pay-Per-View is 0.3B.

If Problems Arise

If any of your telephone equipment is not operating properly, you should immediately remove it from your telephone line, as it may cause harm to the telephone network. If your telephone company notes a problem, they may temporarily discontinue service. When practical, they will notify you in advance of this disconnection. If advance notice is not feasible, you should be notified as soon as possible. When you are notified, you should be given the opportunity to correct the problem and informed of your right to file a complaint with the FCC.

FCC Compliance

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation.

FCC Part 68

This equipment complies with Part 68 of the FCC rules. Located on the equipment is a label that contains, among other information, the FCC registration number and Ringer Equivalence Number (REN). If requested, this information must be provided to the telephone company.

The REN is used to determine the quantity of devices which may be connected

to the telephone line. Excessive REN's on the telephone line may result in the devices not ringing in response to an incoming call. In most, but not all areas, the sum of the REN's should not exceed five (5.0). To be certain of the number of devices that may be connected to the line, as determined by the total REN's contact the telephone company to determine the maximum REN for the calling area.

This equipment cannot be used on the telephone company-provided coin service. Connection to party line service is subject to state tariffs.

If this equipment causes harm to the telephone network, the telephone company will notify you in advance that temporary discontinuance of service may be required. If advance notice isn't practical, the telephone company will notify you as soon as possible. Also you will be advised of your right to file a complaint with the FCC if you believe it is necessary.

The telephone company may make changes in its facilities, equipment, operations, or procedures that could affect the operation of the equipment. If this happens, the telephone company will provide advance notice in order for you to make the necessary modifications in order to maintain uninterrupted service.

If trouble is experienced with this equipment, please contact:

Star Choice
1 888 554-STAR

If the trouble is causing harm to the telephone network, the telephone company may request you to remove the equipment from the network until the problem is resolved.

This equipment uses the following USOC jacks: RJ11C

It is recommended that the customer install an AC surge arrester in the AC outlet to which this device is connected. This is to avoid damaging the equipment caused by local lightning strikes and other electrical surges.

This equipment is Hearing-Aid Compatible (HAC).

The telephone consumer Protection Act of 1991 makes it unlawful for any person to use a computer or other electronic device, including fax machines, to send any message unless such message clearly contains in a margin at the top or bottom of each transmitted page or on the first page of the transmission, the date and time that it is sent and an identification of the business or other entity, or other individual sending the message and the telephone number of the sending machine or such business, other entity, or individual. (The telephone

number provided may not be a 900 number or any other number for which charges exceed local or long-distance transmission charges.)

User Instructions

If this equipment does cause interference to radio or television reception, which can be determined by turning the equipment off and then on, the user is encouraged to try to correct the interference by one of more of the following measures:

Reorient or relocate the receiving antenna.

Increase the distance between the equipment and receiver.

Connect the equipment into a different outlet so that the equipment and receiver are on different branch circuits.

Consult the dealer or an experienced radio/TV technician for help.

Changes or modifications not expressly approved by Motorola could void the user's right to operate the equipment and/or the equipment warranty.

Equipment Attachment Limitations

Note: This product was FCC approved under test conditions that included the use of shielded I/O cables and connectors between system components. To comply with FCC regulations, the user must use shielded cables and connectors and install them properly.

CP-01, Part 1, Section 10.1

"NOTICE: The Canadian Department of Communications label identifies certified equipment. This certification means that the equipment meets certain telecommunications network protective, operational and safety requirements. The Department does not guarantee the equipment will operate to the user's satisfaction.

Before installing this equipment, users should ensure that it is permissible to be connected to the facilities of the local telecommunications company. The equipment must also be installed using an acceptable method of connection. In some cases, the company's inside wiring associated with a single line individual service may be extended by means of a certified connector assembly (telephone extension cord). The customer should be aware that compliance

with the above conditions may not prevent degradation of service in some situations.

Repairs to certified equipment should be made by an authorized Canadian maintenance facility designated by the supplier. Any repairs or alterations made by the user to this equipment, or equipment malfunctions, may give the telecommunication company cause to request the user to disconnect the equipment.

Users should ensure for their own protection that the electrical ground connections of the power utility, telephone lines, and internal metallic water pipe system, if present, are connected together. This precaution may be particularly important in rural areas.

CAUTION: Users should not attempt to make such connections themselves, but should contact the appropriate electric inspection authority, or electrician, as appropriate.

NOTICE: The Ringer Equivalence Number (REN) of this device is displayed on this product. The REN assigned to each terminal device provides an indication of the maximum number of terminals allowed to be connected to a telephone interface. The termination on an interface may consist of any combination of devices subject only to the requirement that the sum of the Ringer Equivalence Numbers of all the devices does not exceed 5.

The standard connecting arrangement (telephone jack type) for this equipment is CA11A.

ATTENTION

This consumer unit is intended for the decoding of DigiCipher® II television signals for consumer use. Possession of this device does not enable or entitle the possessor to receive DigiCipher II television signals. Contact program providers to obtain appropriate authorization.

WARNING

The unauthorized modification of any decoder and the sale and use of any such decoder is prohibited by law. Any such modification or alteration of this product or any unauthorized reception of television programming could subject the user and/or seller and/or party modifying the decoder to fines, imprisonment and civil damages.

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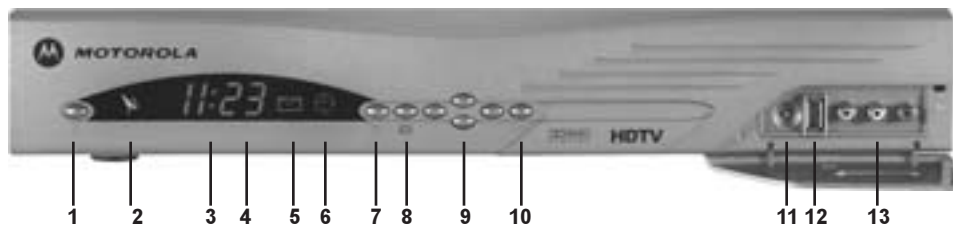
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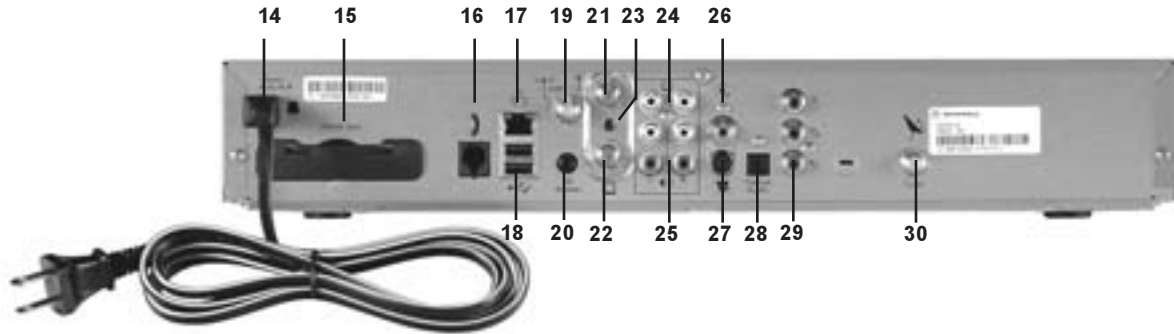
DSR Basics

Front Panel



- 1. ON/OFF** Alternates between ON and STANDBY modes.
- 2. SIGNAL LED** Green indicates a good satellite signal. Red indicates no signal.
- 3. REMOTE LED** Flashes to acknowledge a command from the remote control.
- 4. CLOCK** Indicates the current time or channel number.
- 5. MAIL LED** Indicates an unread message in the mailbox.
- 6. TIMER LED** A steady light indicates a timer is set. A flashing light indicates the DSR is tuned to a timer program or within two minutes of a timer program.
- 7. GO BACK** To return to a previous menu or the last channel viewed.
- 8. OPTIONS** To display the Main Menu.
- 9. NAVIGATION** To navigate within menus or change channels up and down.
- 10. SELECT** To select a highlighted menu option.
- 11. HDTV MODE SELECT** Toggles between 1080i, 480p, 480i and Native modes and is shown on the LED display.
- 12. USB PORT**
- 13. RIGHT/LEFT AUDIO and COMPOSITE VIDEO INPUTS**

Back Panel



14. POWER CORD

15. TVPASS® CARD SLOT

16. TELCO PHONE JACK For Instant Pay-Per-View (IPPV) reportback.

17. ETHERNET PORT

18. USB PORTS

19. UHF REMOTE CONTROL ANTENNA PORT

20. IR BLASTER PORT To control the VCR with the receiver.

21. ANTENNA INPUT For analog off-air broadcast antenna.

22. RF OUTPUT

23. CH3/4 SWITCH To set the RF output to channel 3 or 4.

24. COMPOSITE VIDEO OUTPUTS

25. STEREO AUDIO OUTPUTS (R/L)

26. ELECTRICAL DIGITAL AUDIO OUTPUT

27. S-VIDEO OUTPUT

28. OPTICAL DIGITAL AUDIO OUTPUT

29. COMPONENT VIDEO OUTPUT (Y Pb Pr)

30. SATELLITE INPUT

Connecting Your DSR

Make sure that the satellite receiver is not plugged into a power source before you connect any cables to the receiver. First connect the satellite dish to your receiver.

There are several ways to connect your DSR to your television or monitor and other home theater components.

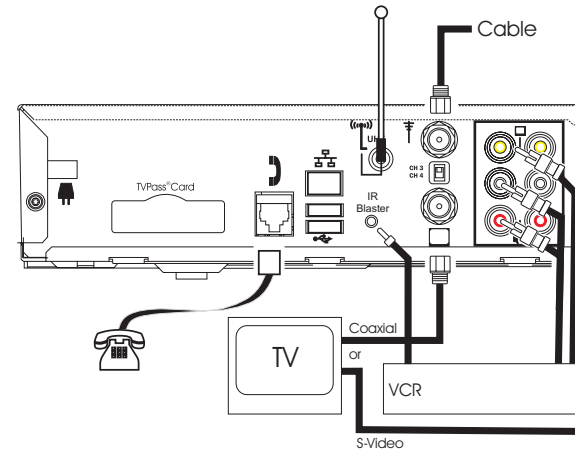
Video: Utilize the modulated RF output (good), Composite video output (better), S-Video output (best for standard definition), or Component video outputs (best for high definition) to connect the DSR directly to your television, VCR, and home theater A/V receiver.

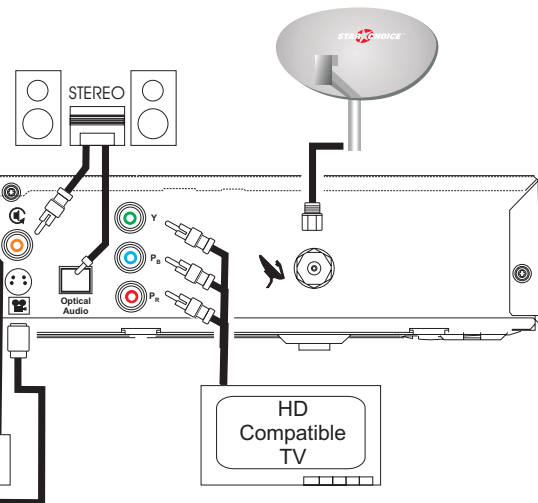
Audio: The modulated RF output also provides audio along with video to televisions or VCRs (good). Utilize the stereo audio output (better) or the electrical or optical Digital audio outputs (best) to connect the DSR directly to your television, VCR, and home theater A/V receiver.

PPV: Connect the telco phone jack to a home telephone jack for Instant Pay-Per-View (IPPV) reportback. Star Choice will not permit IPPV unless this remains connected.

Connect the external antenna input if applicable for local off-air TV broadcast.

Plug the DSR power cord into a standard power outlet. Wait one minute, and then press the ON key located on the left side of the satellite receiver's front panel.





Notes:

Video and audio quality should be best when the DSR is connected directly to the primary output component, such as the television or monitor (for video), and the television or home theater A/V receiver (for audio). Use quality cables designed for these applications.

If you are using the component video outputs, you may have to toggle the HDTV mode select button behind the flip-down door on the front panel. This toggles the HDTV output between 1080i, 480p, 480i, and native modes. Native mode (0000) is the original transmitted signal. You should leave this on native mode unless your TV or monitor requires a specific mode such as 1080i.

If you are using the RF output tune your TV to channel 3 or 4 to match the position of the channel 3/4 switch on the back panel of the satellite receiver.

Home theater A/V receivers can provide a method to connect multiple input sources if your television does not have enough input connectors. Some home theater A/V receivers may also provide very good or enhanced quality. Refer to your home theater A/V receiver instructions for further information.

Menu Navigation





Using the Menus

You will be making various adjustments to your receiver using menus displayed on your TV.

If you use the remote control, use the **OPTIONS** key to display the Main Menu screen. There are two ways to select a menu option:

Press the **◀ ▶** keys or the **▲ ▼** keys to highlight the option you wish to select. Then press the **ENTER** key to select it.

If the options are numbered, simply press the number key to select.

To use the keys on the front panel of the receiver, press the **MENU**  key to first display the Main Menu screen. Then press the **◀ ▶** keys or the **▲ ▼** keys to highlight an option. Then press the **SELECT**  key to select the highlighted option.

The remainder of this section provides instructions for various installation settings using the remote control, however you can also use the front panel keys if necessary.



Authorizing Your Receiver

Press the EXIT key on the remote control. Then press the number keys to select the authorization channel. This number is obtained from your provider.

Press the OPTIONS key on the remote control, System Setup (option 6), and System Settings (option 4), then System Status (option 7) and the menu will appear. Line A shows your Unit ID number, which you or your installer will need to provide to authorize your unit.

Once this unit ID number is provided, press GO BACK to return to the System Settings menu. Select Installation Settings (option 3) then select Reportback (option 3) to view the Trip Count.

When your receiver has received the authorization message the Trip Counter will advance.

Press EXIT to exit the menus or GO BACK to return to the Installation Settings menu.



Menu Navigation



Overview

System Settings. The System Settings menu provides access to menus that allow you to adjust the operation of your system. These include the following:

Systems Settings: Option 1. View and Lang Settings

Audio Language. The Audio Language option allows you to select the audio language for your programs. The choices are English (eng) or French (fre). The default is eng.

Text Message Language. The Text Message Language option allows you to select the language for Electronic Personal Messages (EPM), black out-related messages (TAMs) Track, Title, and Artist Messages (TTAs). The choices are English (eng) or French (fre). The default setting is English.

GUI Language. The GUI (Graphical User Interface) Language option allows you to select the language of the on-screen menus for your programs. The choices are English (eng) or French (fre). The default setting is English.

Clock on During Standby. Enabling this option will allow a clock to appear on the segmented front panel display when the receiver is placed into Standby mode (i.e. Off). If disabled, a clock will not appear.

Use the \leftarrow \rightarrow \uparrow \downarrow keys to scroll through the selections. Press ENTER to select your language choice.

Save your choices, then press the GO BACK key to return to the System Settings menu or press the EXIT key to exit and return to watching programs.





System Settings: Option 2. Audio Settings

From the System Settings menu select Audio Settings (option 2). If you are in SAT mode (digital) broadcast, three options appear on the Audio Settings menu.

AudioConnections. Select Audio Connections, and you will be able to select either TV, HiFi, or No Compress (the default is TV). Select TV if the receiver's AUDIO OUT port is connected to your TV. Select HiFi if it is connected to your stereo system. Select No Compress if connected to a home theater system.

Analog Audio. The Analog Audio option allows you to set the output of your stereo audio jacks. The options are Mono, Stereo, or Surround. The default is Surround.

Digital Audio. The Digital Audio option allows you to set the output of the digital audio jacks. The options are PCM and Dolby Digital. The default is Dolby Digital.



Systems Settings: Option 3. Installation Settings

The Installation Settings menu allows you to tune in the satellite signal, change the remote control address and initiate a manual reportback.

1. Tune in Satellite Signal. This option is for the installer use only.

2. Remote Control Address. This option allows you to set the remote control address of the satellite receiver. You can set up to eight separate addresses (0000 through 0007). The default address is 0000.

From the Main Menu choose System Settings, and Installation Settings (option 3).

- On the Installation Settings menu, choose Remote Control Address (option 2). Follow the instructions on the Remote Control Address screen.



To program a remote control for each receiver, hold down the SAT key on the remote control until the light flashes then enter the four digit address that matches the receiver.

Menu Navigation



3. Reportback

If your receiver has been authorized to receive Instant Pay Per View (IPPV) events this menu allows you to initiate a manual reportback. This screen shows the Trip Count and the Reportback Status. The Trip Counter displays the message activity from your service provider.

Select START to begin the reportback or press GO BACK to return to Installation Settings Menu.

System Settings: Option 4. Closed Caption



This menu allows the receiver to configure the appearance of high definition closed captions. Select Enable to turn on closed captions on the high definition video output. If closed captions are present, they will be seen on the television. Select Disable to prevent closed captions from appearing. Your receiver automatically formats closed captions if available.

Select user settings to manually format how closed captions are displayed. Utilize the user settin sub-menus to modify the color opacity, background, and font attributes of the available hi-def closed captions.

System Settings: Option 5. Video Settings



This menu allows you to set the TV output aspect ratio and select a method of conversion when the original aspect ratio does not match your TV.

TV Type. Select one of three 4x3 options if your TV screen is a typical screen with a 4:3 ratio of width to height. Select 16x9 if your TV screen is a wide screen with a 16:9 ratio (as in HDTV's or digital TV's). The default setting is 4x3.

4:3 Override. By selecting 480i or 480p the receiver will send standard definition video to your TV in its original broadcast format. Select Off and the receiver will default to the resolution selected by the front panel button.

After you make your selections press SAVE to your changes or press GO BACK to return to the System Settings menu without making any changes.



System Settings Option 6: Video Adjustments

This menu allows you to re-position your picture horizontally and vertically.

After you make your selections press SAVE to your changes or press GO BACK to return to the System Settings menu without making any changes.

System Settings Option 7: System Status

This is a view-only screen that displays information about the status of the receiver.

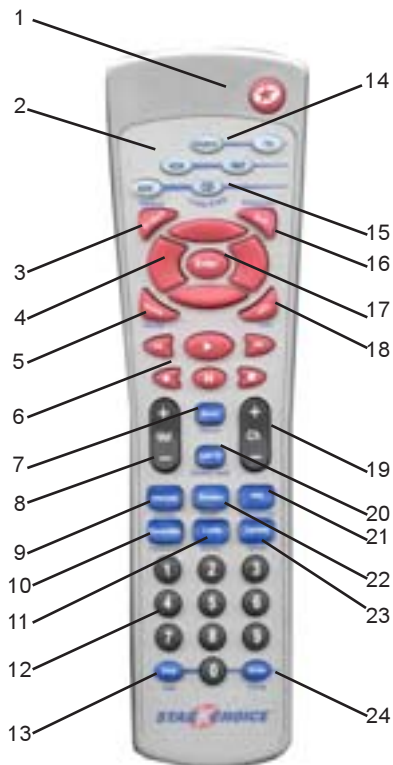
Authorization Screens

Sometimes when you tune to a program, an Authorization screen will appear. It will fade to black after a short time, it will reappear when:



- The channel or program is locked out because of your parental control setting, which requires you to enter a password. (If you have not set a password, just press the ENTER key.)
- The receiver is not authorized.
- A subscription is required to receive the program.
- There is a program blackout in your area.
- There is a technical problem.

Remote Control



The remote control provided with your DSR may be used to operate and access all features of your DSR. Additionally, the remote control may also be used to operate your TV, DVD, VCR, A/V receiver, and other home theater components.

The remote control utilizes two AA batteries which were provided with your equipment packaging. To add batteries to the remote control, remove the cover on the center back of the remote control by pressing down the latch and pulling outward. Position each battery in the compartment so that the flat base of the battery (-) is against the spring and the raised contact of the battery (+) is against the flat terminal. Make sure the batteries are securely seated and replace the panel.

The remote control will operate the DSR while in the SAT mode. TV, VCR, and other modes may need to be programmed (see page 20) before the remote control will operate your specific home theater components.

1. Power.

2. Mode keys (SAT, TV, VCR, AUX). Press once to set the mode of the remote control functions. Press and hold to program the mode for specific component models.

3. Go Back. To return to the previous menu.

4. Navigation Keys. To navigate within menus or change channel up and down.

5. Guide. To display the Interactive Program Guide.

6. DVR/DVD/VCR Keys. Press ◀ for rewind or back, ▶ for play, ►► for fast-forward or skip, ● for record, ■ for stop, and || for pause.

7. Mute. To mute the TV sound.

8. Vol (+ and -). To raise or lower the volume level.

9. Interests. To display the Interests menu.

10. Favourites. Changes the channel using only your favourite (pre-selected) channels.

11. Locks. Displays the parental controls menu.

12. Number Keys. Enter the three-digit channel number, or the number followed by "Enter" for channels below 100.

13. Help. To display the main help screen menu.

14. Source. To control the input source to your components.

15. DVR List. To view a list of recorded programs. (Select models only.)

16. Exit. To exit all menus or to view the current channel, program title, and time.

17. Enter. Press ENTER to select a highlighted menu option, or press ENTER to tune in the channel whose numbers you have already pressed.

18. Info. To display detailed information about the current program or a highlighted program in the Guide.

19. Ch (+ and -). To channel up or down. These keys also function as page (screen) up and down when you are viewing the guide.

20. Last Ch. To return to the last channel viewed.

21. PPV. To display the current Pay-Per-View programs.

22. Browse. To display the current program title at the bottom of the screen, and activate the browser to preview program title on other channels or at a later time.

23. Options. To display the Main Menu.

24. Enter. Press ENTER to select a highlighted menu option, or press ENTER to tune in the channel whose numbers you have already pressed.

Programming

Your DSR remote control can be programmed to operate your TV and auxiliary components. Follow these instructions to program the remote control.

- Turn on the TV or component you wish to program.
- Use the table in this section to find the brand of the desired component. After the manufacturer's brand name is one or more four-digit codes.
- Press and hold the TV, VCR or AUX key on the remote control until the mode keys on the remote flash.
- While the mode keys are flashing, key in the first of the four-digit codes listed in the table for your brand.
- If it is a usable code the mode key will flash rapidly to indicate that it has accepted the code. Press the POWER key on the remote control to make sure the remote control is able to turn your TV or component off and back on.
- If it is not a usable code use the next four-digit code from the list until the remote control is programmed correctly.

Components may respond to more than one code. If your component does not respond to the remote as it should then an alternate code may be more functional or you can try scanning for an alternate code by using the following procedure.

If Your Four-Digit Code is not in the Tables (Scan)

If you try to program your remote control using the four-digit codes, and the remote control does not work correctly, you may be able to find a code that works by using the "scan" process.

- Turn on the TV.
- Press and hold the TV mode key on the remote control until the mode keys on the remote begin to flash.
- While pointing the remote control at your TV, press the UP navigation key to scan upward to the next code. (Use the DOWN key to return to the previous code.)
- If a transmitted code is the correct one, your TV will turn off, responding as if its POWER key were pressed. The mode key will remain lighted. Press ENTER and the mode key will blink rapidly indicating acceptance.
- If your TV does not respond, press the UP navigation key to try the next code. When your component turns off you will know that you have found the correct code. Press ENTER to confirm.



- The VCR and AUX keys may be programmed to operate a variety of components but you must first program the selected mode with a valid code or program it using the following starting points: press "1000" if scanning TV codes; "2000" if scanning VCR codes; "3000" if scanning CD or DVD codes; "4000" if scanning audio receiver codes; "5219" if scanning TV/VCR combinations or "6235" if scanning for cable boxes. The mode key will flash rapidly indicating acceptance. Then press and hold the AUX or VCR key until all the mode keys flash. Press the UP navigation key until your component turns off. Press ENTER and the mode key will flash to indicate acceptance.

Remote Control

Verifying Your Component Codes

To verify the accepted programming codes follow these steps.

- Press the SAT, TV, VCR or AUX key for at least three seconds or until the LED blinks.
- Press the "INFO" key. The LED will blink, indicating the code of your component in the following sequence. For example, if your TV code is for a Tandy brand TV (code 1005) the blink pattern will be:

Pause>long blink "1;" Pause>short blink "0;" Pause>short blink "0;"
Pause>long blink, long blink, long blink, long blink, long blink "5."

A zero in the code will always be represented by a short blink.

Programming the Master Power Feature

You can control the power on/off function of your satellite receiver and all connected equipment with a single press of the POWER key on your remote control. Enable the remote control's Master Power feature by following these steps:

- Press the SAT key on the remote control for at least three seconds or until the light on the key blinks.
- Press the POWER key on the remote. The light will remain on steady. Press the power key a second time, and the light on the remote will blink on and off briefly, which indicates that the remote has accepted the Master Power command.

To cancel the Master Power feature, just repeat the steps above.

Volume Control Crossover

Your remote control is programmed from the factory to control the volume of your television set when you re using the remote control in the TV mode. You can choose to have the SAT mode control the volume of your television directly, instead. The AUX mode can also be programmed to control the audio. To program your remote control for this feature:

- Press the SAT for at least three seconds or until the LED blinks then press the TV or AUX key to allow the TV or AUX device to control the volume.
- If another device (TV or AUX) is currently controlling the volume and you wish to transfer it to the satellite receiver press the device mode key until the mode keys blink then press the SAT mode key again.

If You Have More Than One Satellite Receiver

If you have more than one satellite receiver, you may want to prevent the remote controls from affecting the other receivers. To prevent this interference, you must "pair" each remote control and receiver and assign a new "address" to each pair. If you have multiple receivers, see page 16 for the procedure to assign addresses.

If you have programmed the receiver for volume control crossover and change the address, volume control crossover must be reprogrammed.

TV Codes

AOC	1005, 1006, 1019, 1020, 1023	Curtis Mathes	1006, 1016, 1018, 1023	.....	1052, 1053, 1054	.....	1146, 1149, 1151, 1163, 1172
.....	1024, 1120, 1140, 1163, 1173	.....	1026, 1041, 1059, 1090, 1125, 1131	.....	1055, 1126, 1172, 1194, 1210, 1224, 1225	Matsui	1032, 1109, 1146
Admiral	1003, 1018, 1034, 1041, 1090	.....	1151, 1163, 1172, 1192, 1194, 1224	Infinity	1010, 1066, 1151	Memorex	1018, 1032, 1034, 1072, 1090
.....	1125, 1129, 1176,	Daewoo	1005, 1023, 1024, 1026, 1029	JBL	1010, 1066, 1151	.....	1149, 1172
Aiko	1024	.....	1030, 1032, 1130, 1146, 1172, 1224	JC Penney	1003, 1005, 1006, 1014, 1016	Midland	1001, 1003
Aiwa	1090	Daytron	1024, 1026, 1192, 1194, 1224	.....	1026, 1043, 1044, 1096, 1125, 1131, 1134	Mitsubishi	1004, 1005, 1023, 1034, 1070, 1071
Akai	1000, 1032, 1070, 1149, 1163, 1172	.....	1125	JVC	1149, 1163, 1172, 1194, 1207, 1224	.....	1072, 1122, 1123, 1129
Alaron	1034	Dixi	1120, 1146	.....	1057, 1058, 1059, 1060	.....	1149, 1172, 1173, 1192, 1194
Amark	1120, 1224, 1225	Dumont	1001	Jensen	1056	Multitech	1041
Amstrad	1033, 1132	Electrohome	1026, 1149, 1224	KEC	1041	NAD	1002, 1117, 1131, 1172
Anam	1005, 1009, 1021, 1041, 1120, 1121	Emerson ..	1017, 1023, 1026, 1028, 1033, 1034	KMC	1224, 1225	NEC	1005, 1006, 1007, 1009, 1023, 1028, 1090
Anam National	1211	.....	035, 1037, 1038, 1039, 1041, 1090, 1122, 1132	KTV	1026, 1039, 1041, 1163, 1172, 1224, 1225	.....	1141, 1149, 1163, 1172, 1173, 1191, 1192, 1194
Archer	1120	.....	141, 1143, 1163, 1172, 1176, 1181, 1203, 1222	Kenwood	1006, 1163	National ...	1008, 1011, 1151, 1190, 1196, 1211
Audiovox	1024, 1041, 1120	.....	1224, 1225, 1227	Kloss	1022, 1110, 1175	Nikkai	1113, 1118, 1146
Bell & Howell	1018, 1034, 1090, 1129	Envision	1163	LXI ..	1003, 1010, 1066, 1090, 1117, 1125, 1129	Onwa	1041
Broksonic	1005, 1010, 1172, 1173	Fishe	1042, 1090, 1099	.....	1131, 1132, 1134, 1151, 1172, 1173, 1194	Optimus	1012, 1090
.....	1174, 1176	Fujitsu	1034	Lloytron	1224	Optonica	1129, 1141
CXC	1041	Funai	1024, 1034, 1041, 1132	Lodgenet	1018	Orion	1037, 1146, 1176
Candle	1005, 1006, 1022, 1023, 1025, 1163	Futuretech ..	1041	Loewe	1146	Osume	1091
Capehart	1019	General Electric	1003, 1008, 1009, 1023, 1043	Logik	1018	Panasonic	1008, 1009, 1010, 1011
Carver	1151	.....	1044, 1125, 1130, 1134, 1143, 1163	Luxman	1023	.....	1012, 1066, 1151, 1196, 1211
Centurion	1028, 1192, 1194	.....	1172, 1182, 1207, 1211	MGA	1004, 1005, 1006, 1023, 1034, 1071	Philco	1005, 1006, 1009, 1010, 1024
Citizen	1005, 1006, 1010, 1016, 1018	Goldstar ..	1005, 1023, 1026, 1028, 1045, 1046	.....	1072, 1149, 1163, 1172, 1192, 1194	.....	1025, 1067, 1068, 1110, 1149
.....	1022, 1023, 1024, 1025, 1026	.....	1088, 1120, 1146, 1163, 1172, 1173	MTC	1005, 1006, 1010, 1016, 1023, 1024, 1163	.....	1151, 1163, 1172, 1175, 1176, 1224, 1225
.....	1163, 1172, 1224	Magnasonic	1194, 1224, 1225	.....	1024, 1034, 1129, 1131, 1151	Philips	1005, 1010, 1025, 1027, 1066, 1068
Concerto	1005, 1010, 1023	Gradiente	1060	Magnavox	1000, 1006, 1008, 1010, 1017, 1020	.....	1088, 1146, 1151, 1163, 1164, 1220, 1225
Contec	1041, 1054, 1091, 1181, 1227	Granada	1146	.....	1024, 1025, 1027, 1028, 1034, 1066, 1067, 1068	Pioneer ...	1002, 1008, 1031, 1048, 1051, 1076,
Coronado	1224, 1225	Hallmark	1023, 1172	.....	1110, 1132, 1151, 1163, 1164, 1167, 1172, 1173	1131	
Craig	1021, 1041, 1203	Hinari	1034, 1146	.....	1175, 1192, 1194, 1200, 1224, 1225	Portland ...	1005, 1024, 1026, 1172, 1224, 1225
Crown	1026, 1041	Hitachi	1005, 1018, 1023, 1024, 1026	Majestic	1018	Proscan	1125, 1172
.....		1044, 1048, 1049, 1050, 1051	Marantz ...	1006, 1010, 1066, 1068, 1072, 1088	Proton	1006, 1013, 1019, 1023, 1026

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.....	1120, 1172, 1224	Starlite	1041	Westinghouse ...	1037, 1041, 1090, 1130, 1176	Daytron	2046
Pulsar	1001, 1024	Supra	1022, 1023	Yamaha	1005, 1006, 1163	Denon	2173
Quasar	1008, 1009, 1012, 1211	Sylvania ..	1006, 1010, 1024, 1025, 1066, 1068	Yorx	1192, 1194	Dimensia	2105
RCA 1003, 1005, 1008, 1009, 1014, 1028, 1048		.....	1110, 1112, 1132, 1151, 1163, 1172	Zenith	1001, 1018, 1024, 1178	Dual	2086
.....	1078, 1079, 1080, 1082, 1084, 1086, 1087	.....	1173, 1175, 1192, 1194	Zonda	1120	Dumont	2049
.....	1125, 1130, 1134, 1149, 1172, 1182, 1210	Symphonic	1041, 1132, 1179	VCR Codes			
Radio Shack	1003, 1026, 1041, 1072, 1090	TMK	1005, 1023, 1172	ASA	2065, 2134	Electrohome	2056, 2068
.....	1112, 1141, 1172, 1173, 1194, 1224	TNCI	1015	Admiral	2085, 2178	Emerson	2005, 2006, 2008, 2009, 2010, 2011
Realistic	1035, 1041, 1090, 1112, 1141	Tandy	1112, 1113, 1129	Aiwa	2056, 2088, 2202	.....	2012, 2034, 2056, 2059, 2068, 2070, 2088
.....	1163, 1172, 1194, 1222, 1224	Tatung	1009, 1146, 1211	Akai	2008, 2013, 2014, 2015, 2016, 2018	2090	2132, 2148, 2150, 2169, 2176, 2190, 2192
Runco	1001, 1163	Technics	1008, 1012	.....	2019, 2020, 2068, 2086	Finlandia	2049
SSS	1005, 1041	Techwood	1023	Alba	2046	Finlux	2049, 2065, 2088, 2134
Saba	1051	Teknika	1004, 1005, 1016, 1018, 1022	American High	2054, 2158	Fisher	2048, 2049, 2081, 2082, 2084, 2175
Saisho	1032, 1033, 1109	.....	1023, 1024, 1025, 1026, 1034, 1041, 1072	Amstrad	2088	Fuji	2054, 2158
Sampo	1006, 1019, 1163, 1192, 1194	.....	1114, 1149, 1151, 1224, 1225	Audio Dynamics	2013, 2030, 2046, 2086	Funai	2088
Samsung .	1005, 1006, 1016, 1023, 1026, 1032	Telerent	1018, 1224	Audiovox	2056	General Electric ..	2025, 2033, 2050, 2051, 2052
.....	1088, 1112, 1146, 1155, 1157, 1158, 1163	Teletch	1032	Bell & Howell	2049, 2175, 2177	.....	2054, 2091, 2105, 2133, 2139
.....	1167, 1172, 1173, 1192, 1194, 1224, 1225	Thomson	1051	Broksonic	2005, 2008, 2059, 2148	.....	2149, 2154, 2158, 2167, 2174, 2178, 2194
Sansui	1176	Toshiba	1016, 1017, 1090, 1096, 1117	Bush	2089	Go Video ...	2057, 2058, 2091, 2164, 2165, 2186
Sanyo	1041, 1042, 1089, 1090, 1091, 1092	.....	1118, 1129, 1131, 1180, 1201	CCE	20176	Goldstar	2030, 2033, 2056, 2092, 2102
.....	1109, 1184, 1194	Totevision	1026, 1224	Candle	2042, 2046, 2056, 2080, 2092, 2149	Goodmans	2085, 2089, 2161
Scott	1026, 1034, 1037, 1041, 1093	Universal	1043, 1044, 1207	Canon	2042, 2054, 2154, 2158	Gradiente	2061, 2062, 2088
.....	1172, 1173, 1192, 1194, 1224	Vector Research	1006, 1163	Capehart	2046	Granada	2049, 2081
Sears 1003, 1010, 1016, 1023, 1034, 1042, 1090		Victor	1057, 1060	Carver	2065, 2136	Grundig	2065, 2134
1096, 1098, 1099, 1102, 1104, 1117, 1125, 1131		Video Concepts	1070	Cineral	2176	HQ	2034
1132, 1134, 1151, 1172, 1184, 1194, 1224, 1225		Vidtech	1005, 1023, 1172, 1173	Citizen	2034, 2046, 2056, 2091, 2092	Harman Kardon	2030, 2065, 2069, 2136
Sharp 1026, 1091, 1129, 1141, 1200, 1224, 1225		Viking	1022	Craig	2044, 2056, 2082, 2091	Hinari	2089
Signature	1018, 1129, 1151	Wards	1005, 1006, 1008, 1018, 1023, 1034, 1043	Curtis Mathes	2034, 2051, 2054, 2088, 2092	Hitachi	2013, 2037, 2038, 2040, 2086, 2088
Sony	1000, 1189	.....	1044, 1067, 1068, 1119, 1125, 1141, 1151, 1163	.....	2105, 2114, 2139, 2149, 2154, 2158	.....	2094, 2095, 2139, 2173
Soundesign	1023, 1025, 1034, 1041, 1172	.....	1172, 1173, 1182, 1192, 1194, 1207, 1224	DBX	2013, 2030, 2046, 2086	ITT	2018, 2086
Spectricon	1120	.....		Daewoo	2034, 2046, 2049, 2150, 2176		

JC Penney	2030, 2046, 2050, 2052, 2054	Multitech	2088, 2089, 2091, 2154, 2174	Realistic ..	2049, 2054, 2056, 2080, 2081, 2082	Tashiko	2088
.....	2056, 2080, 2081, 2091, 2092, 2094	NAD	2073, 2153	.....	2084, 2085, 2088, 2091, 2130, 2139, 2149	Tatung	2013, 2086
.....	2114, 2139, 2149, 2154, 2158, 2173, 2175	NEC	2013, 2030, 2031, 2032, 2046	.....	2154, 2158, 2161, 2175, 2178	Teac	2013, 2086, 2088
JVC	2030, 2046, 2061, 2062, 2063, 2064	.....	2049, 2062, 2081, 2086, 2092	SBR	2065, 2134, 2155	Technics	2054, 2114, 2138, 2154, 2158
.....	2081, 2086, 2092, 2123, 2158, 2168	.....	2102, 2128, 2158, 2160	STS	2173	Teknika	2054, 2056, 2087, 2088, 2158
Jensen	2013, 2086	National	2054	Saisho	2006, 2009	Toshiba	2034, 2035, 2067, 2070, 2084
Kenwood	2046, 2062, 2081, 2086, 2088, 2092	Nokia	2176	Salora	2067, 2081	.....	2086, 2090, 2169
Kodak	2056, 2158	Olympus	2054, 2158	Samsung	2015, 2034, 2079, 2080	Totevision	2056, 2080, 2091
LXI	2034, 2056, 2088, 2173, 2175	Optimus	2049, 2056, 2088, 2091	.....	2088, 2091, 2165, 2174, 2186	Unitech	2080, 2091
Lloyd	2088	.....	2114, 2154, 2178	Sanky	2178	Vector	2034
Logik	2089	Optonica	2085, 2130, 2161	Sansui	2013, 2032, 2046, 2062, 2086, 2088	Vector Research	2030, 2046, 2067, 2092
Luxor	2018	Orion	2005, 2006	Sanyo	2044, 2048, 2049, 2081, 2082	Victor	2062
MEI	2054, 2158	Panasonic	2023, 2034, 2054, 2078, 2098	.....	2083, 2084, 2175, 2176, 2177	Video Concepts	2030, 2034, 2046, 2068
MGA	2067, 2068, 2070, 2169	.....	2114, 2129, 2137, 2138, 2139	Schneider	2089	.....	2088, 2092
MTC	2080, 2088, 2091	.....	2149, 2154, 2158, 2170, 2171	Scott	2008, 2009, 2034, 2059	Videosonic	2091
Magnavox ...	2027, 2033, 2034, 2050, 2054, 2065	Pentax	2037, 2092, 2094, 2173	.....	2067, 2070, 2090, 2169, 2174	Wards	2027, 2033, 2054, 2065, 2068, 2080
.....	2076, 2085, 2088, 2111, 2130, 2134, 2136	Philco	2054, 2076, 2088, 2111, 2134, 2137	Sears 2034, 2048, 2049, 2054, 2056, 2081, 2082	2084	.....	2082, 2085, 2088, 2089, 2090, 2091, 2130
.....	2137, 2138, 2139, 2158, 2159	.....	2138, 2139, 2154, 2158, 2176	2084	2088, 2094, 2158, 2173, 2175	.....	2136, 2158, 2161, 2173, 2178
Magnin	2091	Philips	2034, 2054, 2065, 2085, 2088, 2134	Semp	2034, 2080	XR-1000	2158
Marantz	2030, 2046, 2054, 2065, 2081, 2085	.....	2136, 2138, 2139, 2154, 2155, 2158, 2161	Sentra	2046	Yamaha	2013, 2030, 2046, 2081
.....	2092, 2102, 2134, 2136, 2139, 2158, 2159	Pioneer	2046, 2062, 2073-2076, 2111	Sharp	2068, 2085, 2130, 2161, 2178	.....	2086, 2088, 2092, 2175
Marta	2056	Portland	2046	Signature	2085, 2088	Zenith	2033, 2062, 2088
Matsui	2088	Proscan ...	2034, 2065, 2105, 2136, 2138, 2154, 2173	Sony	2000, 2001, 2002, 2054, 2158	Cable	
Matsushita	2054, 2114, 2137, 2138	Pulsar	2033, 2088, 2154	Soundesign	2088	AT&T	6238
.....	2139, 2154, 2158	Quartz	2081	Sylvania ..	2050, 2054, 2065, 2067, 2070, 2076	General Instrument	6235, 6236, 6238, 6241
Memorex ...	2033, 2049, 2054, 2056, 2066, 2081	Quasar	2054, 2078, 2114, 2129	.....	2088, 2111, 2134, 2136, 2137, 2139	.....	6242, 6243
.....	2082, 2085, 2088, 2091, 2114, 2158, 2161, 2178	.....	2137, 2139, 2149, 2158, 2170	.....	2154, 2158, 2159, 2169	Jerrold	6235 - 6238, 6241, 6242, 6243
Minolta	2094, 2173	RCA 2025, 2027, 2028, 2034, 2037, 2051, 2054	.....	2065, 2088, 2091, 2094, 2105, 2136, 2138	.....	.....	6249, 6250
Mitsubishi ..	2062, 2067, 2068, 2069, 2070, 2071	.....	2139, 2147, 2154, 2158, 2173, 2178, 2194	.....	2006, 2091, 2190	Pioneer	6244, 6245, 6246
.....	2124, 2125, 2140, 2169, 2178	.....	2139, 2147, 2154, 2158, 2173, 2178, 2194	TMK	2006, 2091, 2190	Scientific Atlanta	6239, 6240
Motorola	2054, 2158, 2178	2139, 2147, 2154, 2158, 2173, 2178, 2194	Tandy	2049, 2068, 2081, 2082	Sprucer	6249
.....	2054, 2158, 2178	2139, 2147, 2154, 2158, 2173, 2178, 2194	2084, 2085, 2088, 2161		

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Starcom	6235	Proscan	3205	B&K	4026	Linn	4008
Tocom	6241, 6242, 6243	Quasar	3236	Bose	4020, 4211	Lloyds	4170
Videoway	6248	RCA	3205, 3245	Capetronic	4253	Luxman	4069, 4127, 4166, 4167, 4168
Zenith	6247, 6248	Radio Shack	3225	Carver	4025, 4083, 4091, 4093, 4094, 4147	LXI	4021, 4067, 4169
DVD		Runco	3207	Casio	4021, 4170	Magnavox	4028, 4119, 4170, 4210
Aiwa	3179	Saba	3205	Cinema Sound	4036	Marantz	4015, 4074, 4081, 4086, 4091
Akai	3163	Samsung	3208, 3209, 3230	Citation	4052, 4212	.....	4093, 4094, 4099, 4120, 4171
Apex Digital	3001	Sanyo	3189	Clarion	4059	McIntosh	4122, 4172
CineVision .....	.....	Sharp	3197, 3253	Curtis Mathes	4021	MCS	4021
Denon	3006, 3222, 3223, 3224, 3239, 3241	Sherwood	3246	Daewoo	4105	Memorex	4151
Emerson	3002	Sony	3000, 3215, 3216, 3217, 3220	Denon	4036, 4106, 4107, 4108, 4109, 4110	Meridian	4025, 4095
Ferguson	3205	Sylvania	3002	Emerson	4163	Mitsubishi	4045, 4082
Fisher	3189, 3236	Technics	3235, 3236, 3240, 3241	Fisher	4083, 4087, 4147, 4158	Modulaire	4170
Funai	3225	Theta Digital	3229	Fujitsu	4250	Mondial	4029, 4065, 4144
General Electric	3205	Thomson	3201, 3205	Garrard	4075, 4163	NAD	4099
Goldstar	3221, 3233, 3247	Toshiba	3228, 3230, 3253	General Electric	4067, 4159	Nakamichi	4074, 4084, 4157, 4217
Harman Kardon	3004	Yamaha	3214, 3239, 3241, 3254, 3255	Goldstar	4112	NEC	4076
Hitachi	3181, 3226	Zenith	3203, 3221, 3230, 3233, 3247	Harman Kardon ..	4039, 4052, 4113, 4160, 4212	Onkyo	4050, 4061, 4070, 4071
JVC	3117, 3250	Audio		Hitachi	4077, 4110	.....	4085, 4096, 4124 4218, 4219
KLH	3187	ADC	4252	Inkel	4193	Optimus	4037, 4059, 4075, 4175, 4176
Kenwood	3227, 3253	Adcom	4024, 4032, 4042	JBL	4078, 4161	Panasonic	4038, 4080, 4126, 4177, 4220
Magnavox	3002, 3228, 3229, 3230, 3231	Admiral	4101, 4185	JC Penney	4021, 4148, 4170	Parasound	4035, 4178
Marantz	3231	Aiwa	4020, 4033, 4102, 4103, 4104	Jensen	4114, 4206	Philco	4179
Mitsubishi	3228, 3230, 3232, 3234	.....	4149, 4150, 4151, 4152, 4173	JVC	4034, 4041, 4043, 4044, 4079	Phillips	4015, 4086, 4093, 4181
NAD	3005, 3228	Akai	4075, 4119, 4153, 4207	JVC	4190	Pioneer	4023, 4062, 4088, 4187, 4221
Nordmende	3205	AMC	4040, 4208	Kenwood	4058, 4059, 4083, 4087	Pioneer	4188
Onkyo	3003, 3230	Anam	4065	.....	4135, 4162, 4214	Proscan	4010
Panasonic	3188, 3235, 3236, 3239, 3240, 3241	Audio Alchemy	4154	Koss	4148, 4163, 4164	Proton	4182, 4183
Philips	3229, 3230, 3231	Audio Design	4054	Krell	4017	Quasar	4011
Pioneer	3188, 3228, 3244	Audio Matrix	4209	Krell	4254	RCA	4053, 4063, 4089, 4119, 4129
Proceed	3007	Audio Source	4155	Lexicon	4165	.....	4130, 4131, 4158, 4184, 4222

Realistic	4018, 4067, 4072, 4170, 4185	Yorx	4170	Panasonic	5231, 5232, 5255	Carver	3002
Rotel	4019, 4233, 4234	Zenith	4205, 4206, 4228	Philco	5251	DKK	3008
Samsung	4189	Satellite:		Philips	5223, 5251	Denon	3003
Sansui	4015, 4016, 4063, 4074, 4133, 4223, 4224	Motorola	0000, 0001, 0002, 0003 0004, 0005, 0006, 0007	Quasar	5231, 5232	Fisher	3005
Sanyo	4083, 4147	TV/VCR Combo		RCA	5231, 5251	Genexa	3011, 3013, 3014
Schneider	4134	Aiwa	5251	Radio Shack	5230, 5232, 5251	Harmon	3007, 3009, 3010
Scott	4031, 4191, 4192	Audio Dynamics	5234	Realistic	5223, 5251	Jensen	3012
Sears	4021	Broksonic	5219, 5226, 5228	Samsung	5221, 5229, 5233	Kenwood	3016, 3017
Sharp	4059, 4106, 4135, 4239	Curtis Mathes	5231, 5251	Sansui	5219, 5251	Linn	3015
Sherwood	4051, 4073, 4136, 4138 4193, 4194, 4195, 4196,	DBX	5234	Scott	5233	MTC	3006
Sontec	4197	Daewoo	5233, 5252,	Sears	5223, 5251	Magnavox	3019
Sony	4000, 4001, 4002, 4003 4004, 4005, 4006, 4007	Emerson .	5219, 5223, 5226, 5251, 5252, 5253,	Signature	5251	Mission	3015
Sound Stream	4027, 4030	Funai	5251,	Soundesign	5251	NSM	3015
Soundesign	4049, 4140	General Electric	5231,	Sylvania	5251	Nakamichi	3020
SSI	4249	Goldstar	5223, 5230, 5234, 5254	Symphonic	5251	Nikko	3013, 3018
Sunfire	4012, 4013, 4014, 4046	Harmon Kardon	5234	Tandy	5251	Onkyo	3021, 3022
Teac 4058, 4074, 4075, 4090, 4223, 4225, 4226		Hitachi	5231, 5251	Teac	5251	Optimus	3023
Technics	4056, 4057, 4076, 4080 4126, 4177, 4199, 4200	JC Penney	5223, 5231, 5234, 5254	Technics	5232	Panasonic	3025, 3026, 3027
Thorens	4047	JVC	5234	Teknika	5223, 5251	Polk Audio	3030
Topline	4201	Kenwood	5251	Toshiba	5228, 5233	QED	3015
Toshiba	4100	LXI	5223, 5251, 5254	Totevision	5223	Quasar	3024
Vector Research	4171, 4202	MTC	5251	Vector Research	5234	RCA	3028
Venturer	4251	Magnavox	5231, 5251	Video Concepts	5234, 5251	SAE	3015
Victor	4009	Marantz	5234	Wards	5251	Sansui	3034
Wards	4083	Marta	5223	Yamaha	5234, 5251	Sears	3031
Yamaha	4053, 4059, 4060, 4145 4180, 4203, 4204, 4227	Memorex	5223, 5232, 5251	Zenith	5219, 5223, 5251	Sharp	3032
		Multitech	5251	CD Player:		Sony	3035
		NEC	5234	ADC	3004	Tawscam	3006
		Optimus	5232	Aiwa	3000, 3001	Teac	3036, 3037
		Orion	5219, 5226	Burmeister	3006	Victor	3029
				California Audio	3024	Yamaha	3038, 3039, 3041

Specifications

INPUT

L-Band Input

Input frequency	950 to 2150 MHz
Input impedance	75 ohm
Input level	-65 dBm to -25 dBm
Return loss	8 dB minimum
Demodulator	QPSK demodulator

OUTPUTS

Component Video

S-Video

Output Level	
Luminance (Y)	1.0 V pp $\pm 15\%$ into 75 ohm
Chrominance (C)	286 mV pp $\pm 15\%$ into 75 ohm
Connector	4-contact Mini-DIN, Black
Freq Response Y	± 1.0 dB, 1 kHz to 4.2 MHz
Freq Response C	+ 1.25 to -4.25 dB (relative to 0 dB at 3.58 MHz)
S/N (Y)	57 dB minimum (unified weighting 100 kHz HPF, MHz LPF)

Composite Video

Output level	1.0 V p-p $\pm 10\%$ into 75 ohm
Connector	Yellow phono, marked Video out
Frequency response	± 1.0 dB, 1 kHz to 4.2 MHz
Differential gain	5.0% p-p maximum
Differential phase	5.0 deg. p-p maximum
S/N	57 dB minimum (unified weighting 100 kHz HPF, 5MHz LPF)

Optical Digital Audio

Optical power output	0.032mw max
Wave length	660nm typ +/- 30nm
Cable length	3 meter max (not provided)

Electrical Digital Audio

Stereo Audio

Modes	Digital baseband stereo Fixed volume output, volume control is from TV only
Frequency response	± 1.0 dB, maximum , 20 Hz to 20 kHz

RF Output (Channel 3/4)

Connector	"F" type receptacle, "Out to TV" NTSC & IEC
Impedance	75 ohm
Channel	Ch. 3 or 4 (NTSC, North America)
Audio	Mono

REMOTE CONTROL

Transmitter	IR/UHF
Batteries	2 x AA type
Range	Up to a maximum of 150 ft.
Angle	± 22 deg. (IR)

PHYSICAL/ENVIRONMENTAL

Temperature	0 deg. to 40 deg. C ambient
Humidity	95% relative
Dimensions	17" W x 2.5" H x 11" D
Weight	5.85 lbs
Power input	115V $\pm 10\%$ AC; 60 Hz nominal; 50W maximum
UL	Listed
CSA	Certified

Warranty Coverage

RECEIVER WARRANTY COVERAGE

Within 1-365 days from date of purchase.

- Call our Customer Care Centre (1 888 554-STAR) to see if we can help you troubleshoot the problem on the spot.
- If it can't be fixed over the phone, you'll be given a **Return Tracking Code # (RTC)** needed to return the receiver for warranty coverage.
- We'll have a replacement delivered to you.
- Your new receiver package will include instructions for returning the damaged receiver. When doing so, you must **enclose a proof of purchase** (i.e. sales receipt) and your **RTC # and fail code** (provided by Star Choice). Shipping fees may apply.
- We must get your damaged receiver within 30 days of you getting the replacement. Otherwise, a charge for the receiver will be applied to your account.

366 days or more – not covered under warranty.

RECEIVER / REMOTE CONTROL WARRANTY ENTITLEMENT WILL NOT APPLY IN THE FOLLOWING CASES

Improper Handling – if the unit appears to have been dropped or otherwise damaged as a result of accident or neglect

Opened Case – if the receiver cover has been opened, tampered with or altered in any way

Liquid Spills – includes any foreign matter found in receiver (e.g., soft drinks, coffee, animal hair, etc.)

Lightning/Power Surge – if equipment is separately connected to a proper surge protector, refer to the warranty detail provided by the manufacturer of the surge protector. Star Choice is not responsible for covering 3rd party extended warranties.

Unit Resold – if a unit has been resold from its original owner to another consumer

REMOTE CONTROL WARRANTY COVERAGE

Within 1-365 days from date of purchase.

- Call our Customer Care Centre (1-888-554-STAR) to see if we can help you troubleshoot the problem on the spot.
- If it can't be fixed over the phone, you'll be given a **Return Tracking Code # (RTC)** and fail code needed to return the remote for warranty coverage. Shipping fees may apply.
- We'll have a replacement delivered to you.



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Motorola, Inc. 2003-2004

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