

SAMSUNG

Color Television

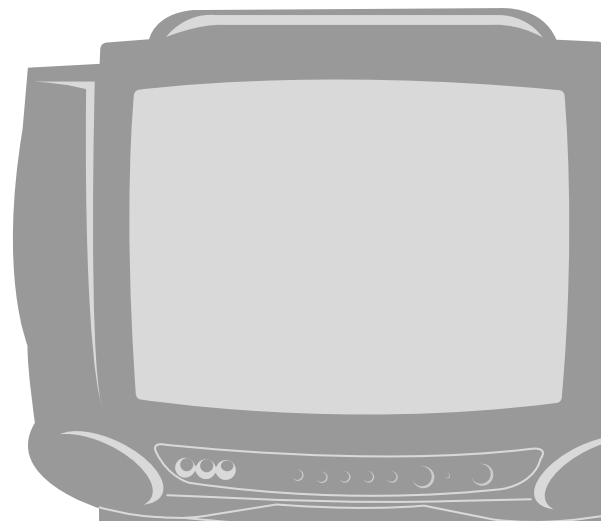
Owner's Manual

CT-1488BL / CT-2088BL

CT-2088BW / CT-2188BW

CT-21S4W / CT-20S4BL

CT-21D8L / CT-21D8BW



IMPORTANT SAFETY INSTRUCTIONS



Warning! Important Safety Instructions

CAUTION

RISK OF ELECTRIC SHOCK
DO NOT OPEN

CAUTION:

TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.



This symbol indicates high voltage is present inside. It is dangerous to make any kind of contact with any inside part of this product.



This symbol alerts you that important literature concerning operation and maintenance has been included with this product.

Note to CATV system installer: This reminder is provided to call CATV system installer's attention to Article 820-40 of the National Electrical Code (Section 54 of Canadian Electrical Code, Part I), 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.

Caution: FCC regulations state that any unauthorized changes or modifications to this equipment may void the user's authority to operate it.

Caution: To prevent electric shock, match the wide blade of plug to the wide slot, and fully insert the plug.

Important: One Federal Court has held that unauthorized recording of copyrighted TV programs is an infringement of U.S. copyright laws.

To prevent damage which may result in fire or electric shock hazard, do not expose this appliance to rain or moisture.

Save These Instructions

Important Safety Information



Always be careful when using your TV receiver. To reduce the risk of fire, electrical shock, and other injuries, keep these safety precautions in mind when installing, using, and maintaining your machine.

- Read all safety and operating instructions before operating the TV receiver.
- Retain the safety and operating instructions for future reference.
- Heed all warnings on the TV receiver and in the operating instructions.
- Follow all operating and use instructions.
- Unplug the TV receiver from the wall outlet before cleaning. Use a damp cloth; do not use liquid or aerosol cleaners.
- Never add any attachments and/or equipment without approval of the manufacturer. Such additions may result in the risk of fire, electric shock, or other personal injury.
- Do not use the TV receiver where contact with or immersion in water is a possibility, such as near bath tubs, sinks, washing machines, swimming pools, etc.
- Provide ventilation for the TV receiver. The unit is designed with slots in the cabinet for ventilation to protect it from overheating. Do not block these openings with any object, and do not place the TV receiver on a bed, sofa, rug, or other similar surface. Do not place it near a radiator or heat register. If you place the TV receiver on a rack or bookcase, ensure that there is adequate ventilation and that you've followed the manufacturer's instructions for mounting.

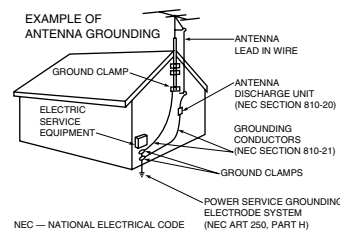
Important Safety Information, continued

- Do not place the TV receiver on an unstable cart, stand, tripod, bracket, or table. The TV receiver may fall, causing serious injury to a child or adult, and serious damage to the appliance. Use only with a cart, stand, tripod, bracket, or table recommended by the manufacturer or sold with the TV receiver. Follow the manufacturer's instructions when mounting the unit, and use a mounting accessory recommended by the manufacturer. Move the TV receiver and its cart with care. Quick stops, excessive force, and uneven surfaces may cause the unit and cart to overturn.
- Operate your TV receiver only from the type of power source indicated on the marking label. If you are not sure of the type of power supplied to your home, consult your appliance dealer or local power company.
- Protect the power cord. Power supply cords should be routed so that they are unlikely to be walked on or pinched by items placed on or against them. Pay particular attention to cords at plugs, convenience receptacles, and the point where they exit from the unit.
- Unplug the TV receiver from the wall outlet and disconnect the antenna or cable system during a lightning storm or when left unattended and unused for long periods of time. This will prevent damage to the unit due to lightning and power-line surges.
- Avoid overhead power lines. An outside antenna system should not be placed in the vicinity of overhead power lines or other electric light or power circuits or where it can fall into such power lines or



circuits. When installing an outside antenna system, be extremely careful to keep from touching the power lines or circuits. Contact with such lines can be fatal.

- Do not overload the wall outlet or extension cords. Overloading can result in fire or electric shock.
- Do not insert foreign objects through openings in the unit, as they may touch dangerous voltage points or damage parts. Never spill liquid of any kind on the TV receiver.
- Ground outdoor antennas. If an outside antenna or cable system is connected to the TV receiver, be sure the antenna or cable system is grounded so as to provide some protection against voltage surges and built-up static charges. Section 810 of the 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 for the grounding electrode.
- Do not attempt to service the TV receiver yourself. Refer all servicing to qualified service personnel. Unplug the unit from the wall outlet and refer servicing to qualified service personnel under the following conditions:



Important Safety Information, continued

- when the power-supply cord or plug is damaged
- if liquid has been spilled on or objects have fallen into the unit
- if the TV receiver has been exposed to rain or water
- if the TV receiver does not operate normally by following the operating instructions
- if the TV receiver has been dropped or the cabinet has been damaged
- when the TV receiver exhibits a distinct change in performance

If you make adjustments yourself, adjust only those controls that are covered by the operating instructions. Adjusting other controls may result in damage and will often require extensive work by a qualified technician to restore the TV receiver to normal.

- When replacement parts are required, be sure the service technician uses replacement parts specified by the manufacturer or those that have the same characteristics as the original part. Unauthorized substitutions may result in additional damage to the unit.
- Upon completion of any service or repairs to this TV receiver, ask the service technician to perform safety checks to determine that the TV receiver is in a safe operating condition.

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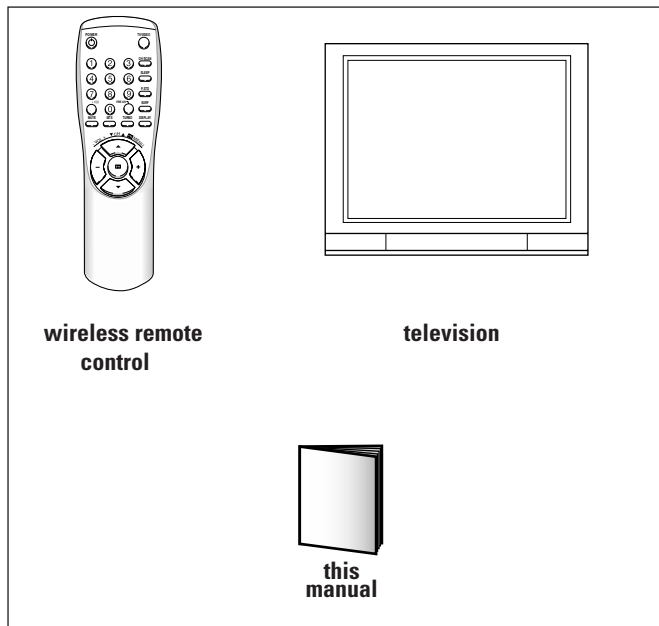
List of features

Your Samsung TV was designed and engineered using the latest technology. This TV is a full-featured, high-performance unit that not only meets, but exceeds, industry standards. Along with the standard features you expect, Samsung has included the following special features:

- Easy-to-operate remote control
- Easy-to-use on-screen menu system you can use from the front panel or the remote control
- Automatic timer to turn the TV on and off at any time you choose
- Special picture settings, pre-set at the factory for the highest resolution
- Automatic channel tuning for up to 181 channels
- A previous channel button to quickly see the last channel you were viewing
- Fine tuning control for the sharpest picture possible
- A special sleep timer
- Tri-lingual on-screen displays (English, Spanish, and French)

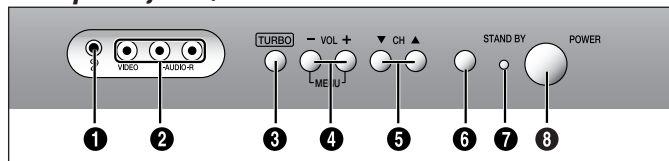
Checking parts

Once you have unpacked your TV, check to make sure that you have all the parts shown here.



Learning about your new TV

Front panel jacks, buttons and indicators



1 EARPHONE jack (Option)

Connect a set of external earphones to this jack for private listening.

2 VIDEO and AUDIO input jacks

Use these jacks to connect a camcorder or video game.

Note: This figure shows the Standard connector-jack panel. The actual configuration for your TV may be different.

3 TURBO

Press to feel the middle and low sound effects when watching a music program.

4 - VOL and VOL +

Press to change the volume or to change features on the menu.

MENU

Press the VOL+/- buttons simultaneously to see the menu of TV function. (Same function as the MENU button on the remote control.)

5 CH ▼ and CH ▲

Press to change channels or to select features on the menu.

6 Remote Control Sensor

Aim the remote control towards this spot on the TV.

STAND BY

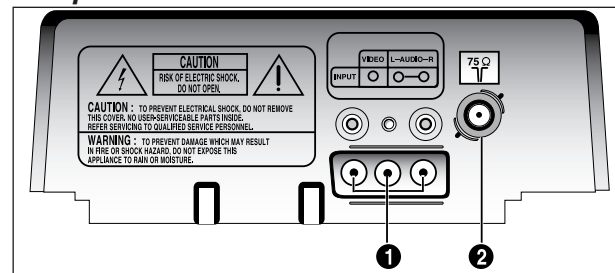
7 Lights up when you turn the power off.

POWER

8 Press to turn the TV on or off.

✓ The front panel buttons control basic features, including the on-screen menu system. To use the more advanced features, you will need the remote control.

Rear panel



VIDEO and AUDIO input jacks

1 Use these jacks to connect a VCR or other video equipment.

VHF/UHF Antenna terminal

2 Use this terminal to connect an outdoor antenna or cable system.

✓ For information on connecting equipment, please see page 6.

Learning about your new TV, continued

Remote control

You can use the remote control up to a distance of about 23 feet from the TV. When using the remote, always point it directly at the TV.

1 POWER

Press to turn the TV on and off.

2 TV/VIDEO

Press to watch TV picture and a picture from a connected component (VCR, LDP etc.).

3 Number buttons

Press to directly select channels on the TV.

4 +100

Press to directly select channels over 100. For example, to select channel 121, press +100, then press 2 and 1.

5 CH ▲ and CH ▼ (Channel)

Press CH ▲ or CH ▼ to change channels. Also use with the on-screen menu system.

6 DISPLAY

Press to see the time, channel, etc., on-screen. Also press to exit (quit) the menu system.

7 SURF

Press when viewing a channel to automatically return to that channel after an amount of time that you set.

8 P-STD

Press to adjust the TV picture by selecting one of the special factory settings or your own custom setting.

9 MUTE

Press to mute (silence) the volume.

10 MENU

Press this button to see the easy-to-use menu system.

11 VOL – and VOL + (Volume)

Press VOL – to lower the volume; press VOL + to raise the volume. Also use with the menu system.

12 SLEEP

Press for the TV to automatically turn off after an amount of time that you set.

13 CH.SCAN (Channel Scan)

Press to have the TV automatically scan all of the channels it has memorized.

14 PRE-CH (Previous Channel)

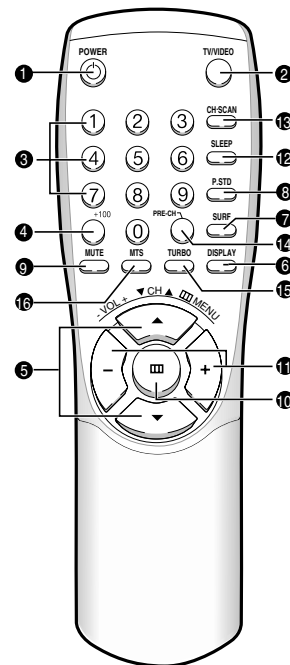
Press to see the last channel you were watching.

15 TURBO

Press to feel the middle and low sound effects when watching a music program.

16 MTS (Option)

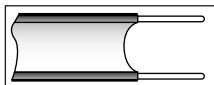
Press to select stereo, mono, or secondary audio program(SAP).



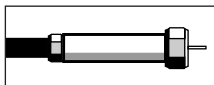
Connecting VHF and UHF antennas

If you do not have cable TV, you will need to connect an antenna to your TV. To connect an antenna, follow the instructions in one of the following sections.

- If your antenna has a set of leads that look like the illustration below, see “Antennas with 300-ohm Flat Twin Leads,” on this page.



- If your antenna has one lead that looks like the illustration below, see “Antennas with 75-ohm Round Leads,” on page 7.

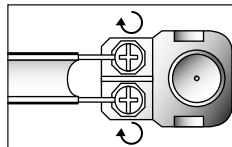


- If you have two antennas, see “Separate VHF and UHF Antennas,” on page 7.

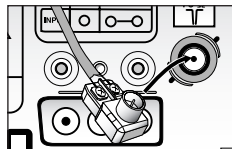
Antennas with 300-ohm flat twin leads

If you are using an off-air antenna (such as a roof antenna or rabbit ears) that has 300-ohm twin flat leads, follow the directions below.

- Place the wires from the twin leads under the screws on the 300-75 ohm adapter. Use a screwdriver to tighten the screws.



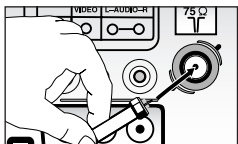
- Plug the adapter into the terminal on the bottom of the back panel.



Connecting VHF and UHF antennas, continued

Antennas with 75-ohm round leads

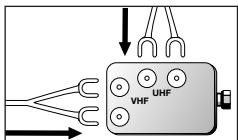
- 1 Plug the lead into the terminal on the bottom of the rear panel.



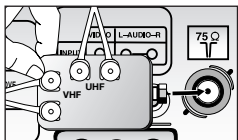
Separate VHF and UHF antennas

If you have two separate antennas for your TV (one VHF and one UHF), you must combine the two antenna signals before connecting the antennas to the TV. This procedure requires a combiner attachment. You'll find the type of combiner you need at an electronics store.

- 1 Connect both antenna leads to the combiner.



- 2 Plug the combiner into the terminal on the bottom of the rear panel.



Connecting cable TV

Choose one of the sections below for connecting a cable system.

- ✓ This TV is cable-ready; you don't need a converter for basic cable channels.

Cable without a Converter Box

To connect cable without a converter box:

- 1 Plug the incoming cable into the TV's antenna terminal.



Cable with a Converter Box

To connect cable with a converter box to descramble channels:

- 1 Find the cable that is connected to the ANTENNA OUT (also named ANT OUT, VHF OUT, or, OUT) terminal on your converter box.
- 2 Connect the other end of this cable to the TV's antenna terminal.



- ✓ If you only need to use the cable box to descramble a few channels, contact your cable company for suggestions on alternate connections.

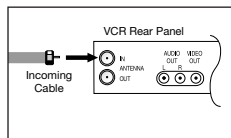
INSTALLATION

Connecting a VCR

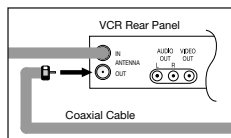
These instructions assume that you have already connected a cable or antenna to your TV., according to the instructions beginning on page 10. If you haven't, you can skip step 1.

✓ The coaxial, audio and video cables mentioned in the steps below are usually included with a VCR. You can also purchase them at your local electronics store.

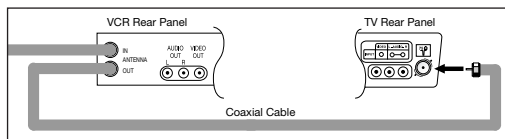
- 1 Unplug the cable or antenna from the back of the TV.
- 2 Connect the cable or antenna to the VCR's ANTENNA IN terminal.



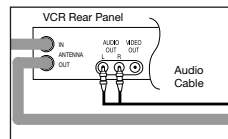
- 3 Connect a coaxial cable to the VCR's ANTENNA OUT terminal.



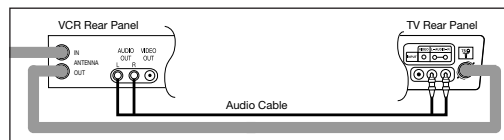
- 4 Connect the other end of the cable to the TV's antenna terminal.



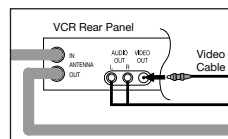
- 5 Connect an audio cable to the VCR's AUDIO OUT terminal.



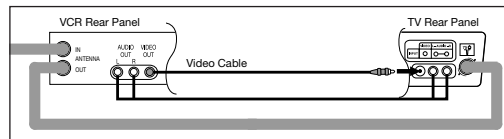
- 6 Connect the other end of the cable to the TV's AUDIO IN terminal.



- 7 Connect a video cable to the VCR's VIDEO OUT terminal.



- 8 Connect the other end of the cable to the TV's VIDEO IN terminal.



- ✓ If only one jack (Audio L or R jack) is connected, sound is output from only one speaker.
- ✓ If the Audio L/R jacks are connected but the Video jack is not connected, no sound is output.
- ✓ When connecting a mono equipment, if the front is connected to Audio L, the back must be also connected to Audio L. (If differently connected, malfunction may happen.)

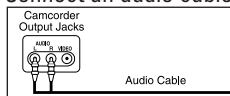
INSTALLATION

Connecting a camcorder

You can connect a camcorder to your TV, which enables you to view camcorder tapes without a VCR.

- ✓ The audio and video cables mentioned in the steps below are usually included with a camcorder. You can also purchase them at your local electronics store.

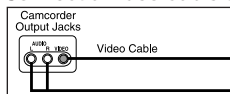
- 1 Locate the camcorder's A/V output jacks on the camcorder.
- 2 Connect an audio cable to the camcorder's AUDIO OUT terminal.



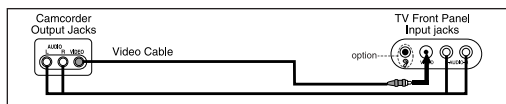
- 3 Connect the other end of the cable to the TV's AUDIO IN terminal.



- 4 Connect a video cable to the camcorder's VIDEO OUT terminal.



- 5 Connect the other end of the cable to the TV's VIDEO IN terminal.

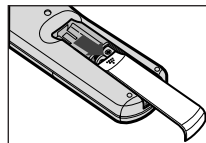


- ✓ Note: This figure shows the Standard connector-jack panel. The actual configuration for your TV may be different.

Installing batteries in the remote control

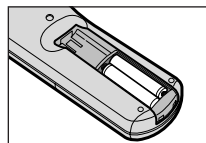
1

Pull the cover to the full to take it out



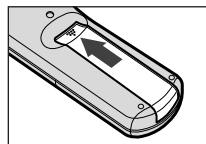
2

Install two AA size batteries. Make sure to match the + and – ends of the batteries with the diagram inside the compartment.



3

Replace the lid.



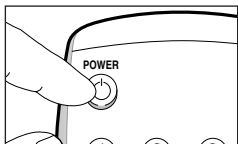
- ✓ Remove the batteries and store them in a cool, dry place if you won't be using the remote control for a long time.
- ✓ The remote control can be used up to about 23 feet from the TV.
- ✓ Batteries last for about one year.

Turning the TV on/off

To turn your TV on or off:

- 1 Press **POWER** on the remote control or on the front panel.

The TV turns on and you will be ready to use the menus.



Viewing the menus

Your Samsung TV has a simple, easy-to-use menu system that appears on the TV screen. This system makes it simple and fast to use features on the TV. Please take a few moments to learn how to use the menus.

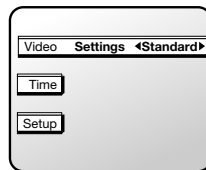
- 1 With the TV's power on, press the **MENU** button.

The main menu appears on the screen. The Video menu is highlighted.

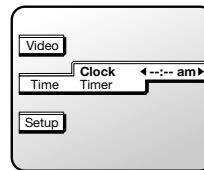
- ✓ All on-screen displays and menus disappear from the screen in less than twenty seconds.

- 2 With the main menu on the screen, press **MENU** repeatedly.

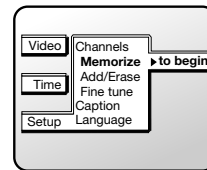
You will cycle through the Video menu, the Time menu, and the Setup menu.



Video menu



Time menu



Setup menu

- ✓ If you press **MENU** while the Setup menu is on the screen, the menus will disappear from the screen. Simply press **MENU** again to bring the menus back onto the screen.

Seeing Special Help

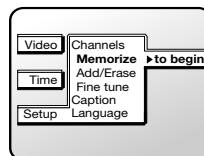
In certain situations, your Samsung TV will automatically display messages to guide you in operating it correctly.

- If you press the **TV/VIDEO** button without first connecting a VCR or camcorder, you will see the message "Connect the A/V Jacks."
 ✓ For more information about viewing a VCR or camcorder tape, see page 18.

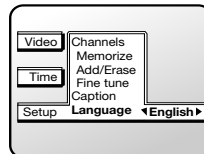
Selecting the menu language

You can display the TV menus in English, Spanish, or French.

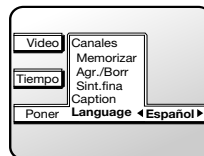
- 1 Press **MENU** repeatedly until you see the Setup menu.



- 2 Press **CH ▼** until "Language" is highlighted.



- 3 Press **– VOL** or **VOL +** to select either English, Spanish, or French.



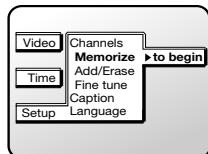
- 4 Press **DISPLAY** to exit the menus.

Memorizing the channels

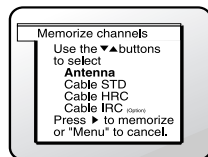
Storing channels in memory

Your TV can memorize and store all of the channels you can receive. Once these channels are in memory, you can use the **CH ▲** and **CH ▼** buttons to quickly scan through the available channels.

- 1 Press **MENU** repeatedly until you see the Setup menu.



- 2 Press **VOL+**. You will see a screen for selecting the kind of antenna or cable system you connected. If you connected an antenna, leave "Antenna" highlighted. If you connected cable, press **CH ▼** to highlight the type of cable you have: STD, HRC, or IRC.



✓ CT-20S4BL model for military market has a "AFN" channel instead of a "Cable IRC" channel.

As you press the **CH ▼**, the followings are selected one after:

Antenna ➡ STD ➡ HRC ➡ AFN ➡ Antenna

- ✓ If you are not sure which type of cable system you have, contact your cable company.

- 3 Press **VOL +**. The TV will begin memorizing all of the stations.

The TV cycles through the channel numbers and memorizes the available channels. This takes one to two minutes. When the TV is finished, it will display the "Memorize channels" screen.

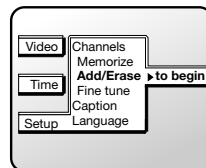
- ✓ Press **MENU** at any time to interrupt the memorization process and return to normal viewing.

- 4 Press **MENU** twice to clear the screen.

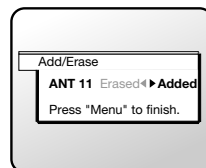
Adding and Erasing Channels

A channel can be manually added to or erased from memory.

- 1 Press **MENU** repeatedly until you see the Setup menu. Press **CH ▼** to highlight "Add/Erase."

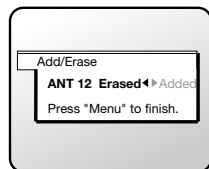


- 2 Press **VOL +**. You will see the Add/Erase menu screen.



Memorizing channels, continued

- ③ Press **CH ▲** or **CH ▼** to select a channel. Press **VOL+** to add the channel or **-VOL** to erase the channel.

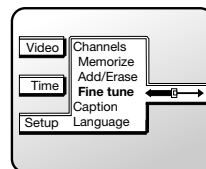


- ✓ You can also use the number buttons to enter the channel number.
- ④ When you are finished, press the **MENU** button twice to return to normal viewing.
 - ✓ You can still view a channel that is not stored in memory. To do so, use the number buttons on the remote control to select the channel.

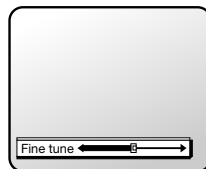
Fine tuning channels

You can fine tune a channel to make it come in clearer.

- ① Press **CH ▲**, **CH ▼**, or the number buttons to select a channel.
- ② Press **MENU** repeatedly until you see the Setup menu. Press **CH ▼** until you select "Fine tune."



- ③ Press **-VOL** and **VOL+** until the channel becomes as clear as possible.



- ✓ When the "slide box" displays a single vertical line, this indicates the "average" fine tuning setting.
- ④ Press **DISPLAY** or **MENU** to clear the menus from the screen.

Changing channels

For your convenience, Samsung provides several different ways to change channels on your TV.

Using the channel buttons

- ❶ Press the **CH ▲** or **CH ▼** buttons to change channels.

When you press CH ▲ and CH ▼, the TV tunes in each channel in order, up or down. With this method, you will see all channels that the TV has memorized. You will not see channels that were not memorized, or that you erased.

Directly accessing channels

You can use the number buttons to quickly go to any channel.

- ❶ Press the number buttons to go directly to a channel. For example, to select channel 27, press “2,” then “7.” The TV will change channels when you press the second number.

✓ When you use the number buttons, you can also directly tune to channel that you have erased or that was not memorized by the TV.

- ❷ If you want to select a channel over 100, press the **+100** button on the remote control. For example, to see channel 122, press “+100,” then “2,” then “2.”

✓ To change to single-digit channels (1–9) faster, press “0” before the single digit. For example, to change to channel “4,” press “0,” then “4.”

Scanning the channels

You can automatically scan all of the channels in memory at the touch of just one button.

- ❶ Press the **CH.SCAN** button on the remote control.

The TV will change the channels automatically, one by one.

✓ To stop channel scan, press any button.

Selecting the previous channel

The previous channel feature lets you easily select the channel that you were previously watching.

- ❶ Press the **PRE-CH** button on the remote control.

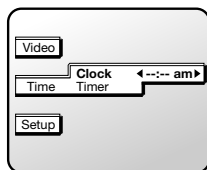
The TV changes to the last channel you were watching.

✓ You can easily switch between two channels that are “far apart.” To do this, tune to one channel, then use the number buttons to select the second channel. Then, use the PRE-CH button to quickly switch between channels.

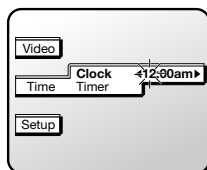
Setting the clock

To set the built-in clock:

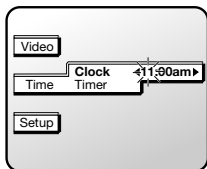
- 1 Press the **MENU** button repeatedly until you see the Time menu.



- 2 Press **VOL +**.

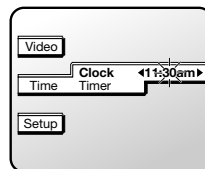


- 3 Press the **CH ▲** or **CH ▼** buttons to select the correct hour. When you have selected the correct hour, press **VOL +**.



- ✓ Make sure that you select the proper time of day: AM or PM. You will see AM or PM to the right of the minutes.

- 4 Press the **CH ▲** or **CH ▼** buttons to select the correct minute. When you have selected the correct minute, press **DISPLAY** to exit the menus.



*The clock will now appear every time you press **DISPLAY**.*

Adjusting the volume

Raising or lowering the volume

To raise or lower the TV's volume:

- 1 Press **VOL+** to raise the volume or **-VOL** to lower the volume.

Using Mute

At any time, you can mute (silence) the volume.

- 1 Press the **MUTE** button and the volume will be silenced.

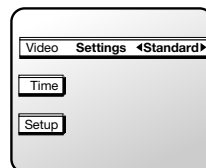
The word "Mute" appears in the lower-left corner of the screen.

- 2 To turn mute off, press **MUTE** again, or simply raise or lower the volume with the **-VOL** and **VOL+** buttons.

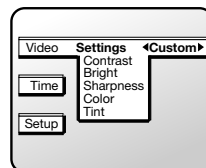
Customizing the picture

You can use the on-screen menus to change the contrast, brightness, sharpness, color, and tint on your TV. To customize your picture:

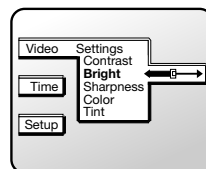
- 1 Press **MENU**. You will see the open Video menu.



- 2 Press **-VOL** or **VOL+** until the word "Custom" appears.

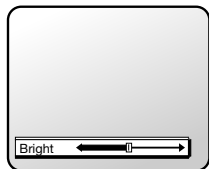


- 3 Press **CH ▼** to select the item you wish to change.



Customizing the picture, continued

- ④ Press **-VOL** or **VOL+** to raise or lower the value of the item. For example, when you select “Bright,” **VOL+** increases brightness; **-VOL** lowers brightness.

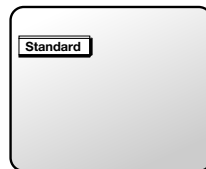


- ✓ You can find the exact mid-point of each setting by adjusting the “slide-box” until it shows a single vertical black line.
- ✓ When you are finished adjusting an item, wait a moment. The gauge will disappear and the Video menu will return.

Using Automatic Picture

This is a special Samsung feature that automatically adjusts your picture for you.

- ① With the power on, press **P-STD** to select an automatic picture setting.



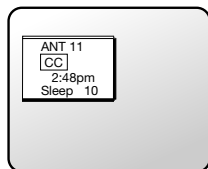
- Choose *Standard* to set the TV to operate at top performance according to your TV's specifications.
- Choose *Sports* for viewing the TV during the day or when there is bright light in the room.
- Choose *Movies* when viewing movies or VCR tapes.
- Choose *Mild* when viewing the TV in low light, or when playing video games.
- Choose *Custom* if you want to adjust the settings yourself.


Viewing the on-screen displays

Your Samsung TV provides you with on-screen displays. To see the displays:

- 1 With the power on, press **DISPLAY**.

The on-screen display will show the channel you are watching, the time of day, and the amount of time left on the sleep timer (if the sleep timer is set).



- ✓ To remove the displays, press **DISPLAY** a second time.
- ✓ If you are not using Closed Captions,  will not appear when you press **DISPLAY**. Please see page 21.

Setting the sleep timer

The sleep timer allows you to select the length of time your TV remains on before turning off automatically. This is especially convenient if you like to fall asleep with the television on.

- 1 Repeatedly press the **SLEEP** button to set the amount of time you want the TV to remain on.

A display will appear in the corner of the screen. You can set the timer for one of the following lengths of time: 10, 20, 30, 60, 90, 120, 150, 180, 210, 240, 270, 300, 330, or 360 minutes.

- 2 To cancel the sleep timer, press **SLEEP** until the on-screen display reads "Off." You can also cancel the sleep timer by turning the TV off, then turning it on again.

Viewing a VCR or camcorder tape

When you connect a VCR or camcorder to your TV with the A/V jacks, you need to adjust your TV. To do this:

- 1 Press the **TV/VIDEO** button when you wish to view a video tape, a video game, or any signal from equipment connected to the TV's A/V jacks.

- ✓ If you do not have any equipment connected to the A/V jacks, the TV will display the message, "Connect the A/V jacks."

If you have equipment connected to both the front and the rear A/V jacks, the TV will only display the signal from the front A/V jacks.

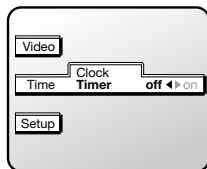
If you have equipment connected to either the front jacks or the rear jacks (but not both the front and the back), the TV will automatically display the signal from the connected equipment.

- 2 To return to normal TV viewing, press **TV/VIDEO** again.

Setting the On/Off Timer

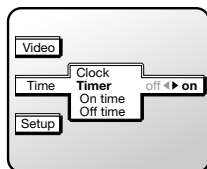
To set the TV to automatically turn on or off at a specific time:

- 1 Press **MENU** repeatedly until you see the Time menu. Press **CH ▼** to select "Timer."



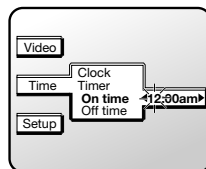
✓ Before using the timer, you must set the TV's clock.

- 2 Press **VOL+** to set the timer to "on."

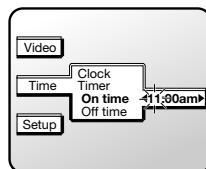


✓ When you later want to turn the timer off, press – VOL to set the timer to "off."

- 3 Press **CH ▼** to highlight "On time." Press **VOL +**.



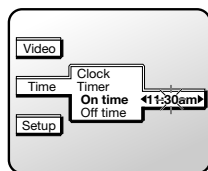
- 4 Press **CH ▲** or **CH ▼** to select the hour when you want the TV to turn on.



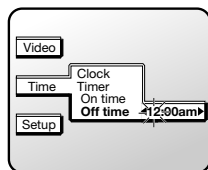
✓ Make sure the correct time of day (AM or PM) appears to the right of the minutes.

Setting the On/Off Timer, continued

- 5 Press **VOL +**. Press **CH ▲** or **CH ▼** to select the minutes when you want the TV to turn on.



- 6 When you are finished, press **VOL +**.
- 7 If you want to set the Off time, press **CH ▼** to highlight "Off time." Set the "Off time" just as you set the "On time."



- 8 When you are finished setting the timer, press **DISPLAY**.

Using the SURF

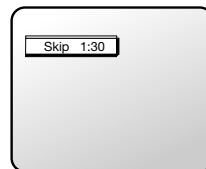
This feature allows you to set the TV to return to a particular channel after a certain amount of time. For example, you may be watching a channel when commercials start. You can set the **SURF** to "2 minutes," then switch channels. After 2 minutes, the TV will return to the original channel. To use the **SURF**:

- 1 While you are watching the channel to which you want to return, press **SURF**.


The on-screen display will read "Skip off."

- 2 Press **SURF** again to set the timer in thirty second intervals, up to five minutes.

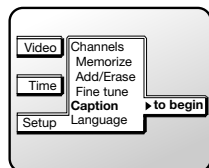
The time you set will begin counting down on the screen. When the time runs out, the TV will return to the channel you were watching when you set the timer.



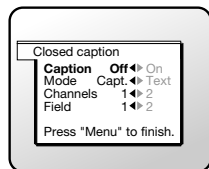
Viewing Closed Captions

Your TV displays the closed captions that are broadcast with some television shows. These captions are usually subtitles for the hearing impaired or language translations. All VCRs record the closed caption signal and most pre-recorded commercial video tapes provide closed captions. Check for the closed caption symbol in your television schedule and on the tape's packaging: .

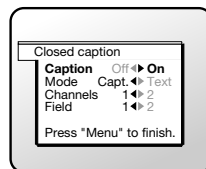
- 1 Press **MENU** repeatedly until you see the Setup menu. Press **CH ▼** to select "Caption."



- 2 Press **VOL+** to open the Closed Caption menu.

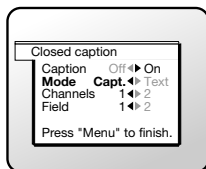


- 3 Press **VOL +** to turn closed captioning on.



✓ Misspellings and odd characters can occur in captioning. Also, there may be a captioning delay after changing channels. Neither situation is a TV malfunction.

- 4 Press **CH ▼** to highlight "Mode." Press **– VOL** or **VOL +** to choose "Capt." (captions) or "Text." In *caption* mode, captions appear and cover a small portion of the picture. In *text* mode, information unrelated to the program, such as news reports, are displayed and often cover a large portion of the screen.

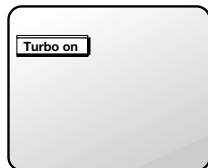


- 5 If you wish, use **CH ▲**, **CH ▼**, or **VOL +** to change the captioning channel or field. Then, press **DISPLAY** to return to normal viewing.
- ✓ Different channels and fields display different information, such as additional languages or supplemental information.

Using the TURBO

When you watch a music program, turn on the TURBO button to feel the middle and low sound effects.

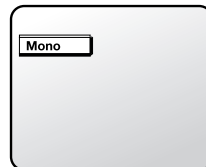
- 1 Press the **TURBO** button on the remote control, and either “Turbo On” or “Turbo Off” is selected.



MTS Settings: Choosing a Soundtrack (Option)

When watching a program broadcast in stereo, you can set your TV to play the soundtrack in stereo or in mono. Some stations also broadcast a Secondary Audio Program (SAP). SAP programs are usually versions of the program in another language, but they sometimes carry additional information like news or weather.

- 1 Press the **MTS** button on the remote control. You can choose between “Stereo”, “SAP” and “Mono”.



- Choose Mono if the channel is broadcasting in mono, or if you are having difficulty receiving a stereo signal.
- Choose Stereo for channels broadcasting in stereo.
- Choose SAP when you want to listen to the Secondary Audio Program, which is usually a soundtrack in another language.

Troubleshooting

Identifying Problems

Before you call a television repair person, scan this list of possible problems and solutions. It may save you time and money.

Poor picture.

- Try another channel.
- Adjust the antenna.
- Check all wire connections.

Poor sound quality.

- Try another channel.
- Adjust the antenna.

No picture or sound.

- Try another channel.
- Press the TV/VIDEO button
- Make sure the TV is plugged in.
- Check the antenna connections.

No color, wrong colors or tints.

- Make sure the program is broadcast in color.
- Adjust the picture settings.

Picture rolls vertically.

- Adjust the antenna.
- Check all wire connections.

The TV won't turn on.

- Make sure the wall outlet is working.

Cleaning and maintaining your TV

With proper care, your TV will give you many years of service. Please follow these guidelines to get the maximum performance from your TV.

Placement

- Do not place the TV near extremely hot, cold, humid or dusty places.
- Do not place the TV near appliances with electric motors that create magnetic fields, such as vacuum cleaners.
- Keep the ventilation openings clear; do not place the TV on a soft surface, such as cloth or paper.
- Place the TV in a vertical position only.

Liquids

- Do not handle liquids near or on the TV. Liquids that spill into it can cause serious damage.

Cabinet

- Never open the cabinet or touch the parts inside.
- Wipe your TV with a clean, dry cloth. Never use water, cleaning fluids, wax, or chemicals.
- Do not put heavy objects on top of the cabinet.

Temperature

- If your TV is suddenly moved from a cold to a warm place, unplug the power cord, and allow at least two hours for moisture that may have formed inside the unit to dry completely.

Using your TV in another country

If you plan to take your TV with you to a foreign country, please be aware of the different television systems that are in use around the world. A TV designed for one system may not work properly with another system due to differences in the TV channel frequencies.

Specifications

MODEL	CT-1488BL / CT-2088BL / CT-2088BW / CT-2188BW CT-21S4W / CT-20S4BL / CT-21D8L / CT-21D8BW
VOLTAGE	AC100-240V
FREQUENCY OF OPERATION	50/60Hz

MEMO

A large rectangular area defined by a dotted line, intended for writing the memo content.

MEMO

MEMO

A large rectangular area defined by a dotted line, intended for writing the memo content.

