



Operator's Manual



Model 3220HD

Revision 3220-080326

Important Safety Instructions

Dear SunBriteTV Customer:

Congratulations on your ownership of the SunBriteTV Model 3220HD. This product is designed as a weatherproof LCD television that can be installed outdoors. To ensure safety and minimize mechanical malfunctions of your product, please read the Important Safety Instructions carefully before using this product.

IMPORTANT SAFETY INSTRUCTIONS

- 1) Read these instructions.
- 2) Keep these instructions.
- 3) Heed all warnings.
- 4) Follow all instructions.
- 5) Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
- 6) Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
- 7) Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
- 8) Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where the cord exits from the apparatus.
- 9) Only use attachments/accessories specified by the manufacturer.
- 10) Use only the cart, stand tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.
- 11) Unplug this apparatus during lightning storms or when unused for long periods of time.
- 12) Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.

PORTABLE CART WARNING



WARNING: TV must be plugged into a GFCI receptacle.

TV and GFCI RECEPTACLE MUST BE INSTALLED NO LESS THAN 5 FEET FROM ANY BODY OF WATER (SUCH AS POOL OR SPA). Check local building codes for proper installation guidelines.

WARNING: This unit is equipped with a 3-pin grounded plug. The plug will only fit into a grounded power outlet. This is a safety feature. If you are unable to insert the plug into the outlet, contact your electrician. Do not alter this plug, as this will defeat the safety feature.

WARNING: The mains plug is used as the disconnect device and shall remain readily operable.

WARNING: This product shall be connected to a mains socket outlet with a protective earthing connection.

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

WARNING: FCC Regulations state that any unauthorized changes or modifications to this equipment not expressly approved by the manufacturer could void the user's authority to operate this equipment.

NOTE TO CATV SYSTEM INSTALLER: This reminder is provided to call the CATV system installer's attention to Article 820-40 of the National Electrical Code 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.

WARNING: To reduce the risk of fire or electric shock, do not expose the inside of this apparatus to rain or moisture. The inside of this apparatus shall not be exposed to dripping or splashing, and no objects filled with liquids, such as vases, shall be placed on the apparatus.

This product utilizes tin-lead solder, and fluorescent lamp containing a small amount of mercury. Disposal of these materials may be regulated due to environmental considerations. For disposal or recycling information, please contact your local authorities or the Electronic Industries Alliance: www.eia.org.

Important Safety Instructions

Cleaning Instructions: Use a soft cloth with mild detergent in warm water to clean the SunBriteTV screen. Remove any dirt and salt deposits from the unit, being careful to rinse the cloth frequently to avoid scratching the screen surface. Avoid using harsh chemicals, abrasives, or solvents when cleaning any surface on the screen. Use a soft brush or towel to remove snow and ice from the TV. In areas where dust or salt air is prevalent, it is recommended that the fiber filter be cleaned regularly (see instructions on Page 41).


Attachments: Do not use attachments not specifically recommended by the manufacturer. Use of improper attachments can result in accidents.

Power Source: SunBriteTV must operate on a power source indicated on the specification label. If you are not sure of the type of power supply used in your home, consult your dealer or local power company. When using the TV outdoors, you must use a GFI-protected AC outlet with "in-use" waterproof cover.


Installation: Do not place the product on an unstable cart, stand, tripod, table, or anywhere the unit is not permanently installed. Placing the product on an unstable place can cause the product to fall, resulting in potential serious personal injuries, as well as damage to the product.


Precautions when Transporting the TV: Carrying the television requires at least two people.

WARNING: DO NOT IMMERSE TELEVISION IN WATER OR OTHER LIQUID. DO NOT INSTALL TV WITHIN 5 FEET OF BODY OF WATER (SUCH AS SPA OR POOL).




CAUTION
RISK OF ELECTRIC SHOCK.
DO NOT OPEN.





The lightning flash with arrow-head symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK), FROM THE TELEVISION OR EXTERNAL POWER PACK, EXCEPT WHERE SPECIFIED IN THE MANUAL. NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.



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

FCC Statement

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

1. Reorient or relocate the receiving antenna.
2. Increase the separation between the equipment and receiver.
3. Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
4. Consult the dealer or an experienced radio/TV technician for help.

Modifications not expressly approved by the manufacturer could void the user's authority to operate the equipment under FCC rules. This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

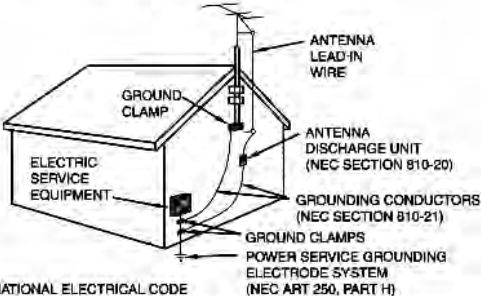
1. This device may not cause harmful interference.
2. This device must accept any interference received, including interference that may cause undesired operation.



IMPORTANT SAFETY PRECAUTIONS

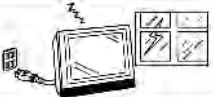
■ If an outside antenna is connected to the television equipment, be sure the antenna system is grounded so as to provide some protection against voltage surges and built-up static charges. Section 810 of the National Electrical Code provides information with respect to proper grounding of the mast and 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.

EXAMPLE OF ANTENNA GROUNDING AS PER NATIONAL ELECTRICAL CODE




NEC—NATIONAL ELECTRICAL CODE

■ For added protection for this television equipment during a lightning storm, or when it is left unattended and unused for long periods of time, unplug it from the wall outlet and disconnect the antenna. This will prevent damage to the equipment due to lightning and power-line surges.



■ An outside antenna system should not be located 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, extreme care should be taken to keep from touching such power lines or circuits as contact with them might be fatal.



Important Safety Instructions

Ventilation: Adequate ventilation must be maintained to ensure reliable and continued operation and to protect the television from overheating. Do not block ventilation slots and openings with objects, or install the television in a place where ventilation may be hindered. **SunBriteTV is not designed for built-in installation.** Do not place the product in an enclosed place such as bookcase or rack.

Power cord protection: The power cord must be routed properly to prevent people from stepping on it, or objects from resting on it. Check the cords at the plugs and product.

Power source: This product must operate on a power source specified on the specification label. If you are unsure of the type of power supply used in your home, consult your dealer or local power company.

Do not let metal pieces or objects of any kind fall into the television from ventilation holes. High voltage flows in the product, and inserting an object can cause electric shock and/or short internal parts.

Do not mount SunBriteTV near a motor or transformer where strong magnetism is generated. Images on the television will become distorted and the color irregular.

Do not mount SunBriteTV near heat sources such as radiators, heaters, stoves and other heat-generating products (including amplifiers).

Do not submerge SunBriteTV in water: The SunBriteTV will resist water exposure from normal rain, sprinklers, garden hoses, etc.; however, it is not designed to be submerged in water.

Do not pressure-wash SunBriteTV: SunBriteTV will resist water exposure from normal rain, sprinklers, garden hoses, etc.; however, it is not designed to withstand pressure washers, high-pressure water jets, or hurricane-type weather.

Do not service SunBriteTV yourself: Removal of the television screen cover may expose you to high voltage or other dangerous risks. Refer all servicing to a qualified service professional. Warranty will not be honored if you service the unit yourself.

Repair: If any of the following conditions occurs, unplug the power cord, and call a qualified service professional to perform repairs:

When power cord or plug is damaged.

When objects have fallen into the product.

If unit was submerged in water or pressure-washed.

When product does not operate properly as described in the operating instructions. Do not touch the controls other than as described in the operating instructions. Improper adjustments of controls not described in the instructions can cause damage, which can require extensive repair work by a qualified technician.

When the product has been dropped or damaged.

When the product displays an abnormal condition. Any noticeable abnormality in the product indicates that the product needs servicing.

Replacement parts: In case the product needs replacement parts, make sure that the service person uses replacement parts provided by SunBriteTV. Use of unauthorized parts can result in fire, electric shock and/or other danger.

Safety checks: Upon completion of service or repair work, ask the service technician to perform safety checks to ensure that the product is in proper operating condition.

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Supplied Accessories

Unpacking

After unpacking the SunBriteTV television, please make sure that the following items are included in the carton and that they are in good condition. If items are damaged or missing, contact your dealer immediately.

SunBriteTV LCD Television Model 3220HD

Remote Control with Batteries

Operator's Manual

Table Stand Installation Kit



Model 3220HD



Operator's
Manual



Water-Resistant
Wireless Remote
Control with
Lithium Batteries



Detachable Speaker Module

TV Installation - Choose a Location for the TV

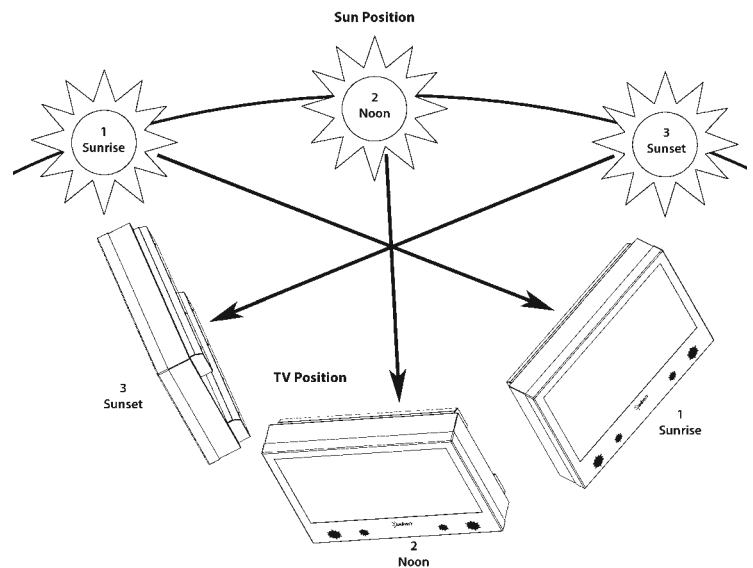
Choose a Location for the TV

Important: The TV must be installed at least 5 feet from pool, spa, or other body of water.

The TV should be installed so the screen is not facing direct sunlight, or can be easily turned away from direct sunlight.

Ideal placement is in an area where the TV is shaded by trees, landscape and/or structures, or under a patio cover or gazebo.

If the sun shines directly on the screen for long periods of time, dark areas may develop on the screen. This is a normal reaction for the LCD panel, and will not cause damage to the screen. Either turn the screen away from the sun, or apply shade to the TV, and the dark areas will quickly disappear.



TV Installation - Detachable Speaker Module Installation

Detachable Speaker Module Installation

Tools Needed: Phillips screwdriver

Note:

- If you mount the TV on the Table Stand, *the Detachable Speaker Module must be installed before you attach the Table Stand.*
- If you mount the TV to a ceiling or wall mount, it is best to install the Detachable Speaker Module after the TV has been mounted.

1. Prepare a flat work surface, free of any debris or items which may scratch the front surface of the TV.
2. Lay the TV face-down on the work surface with the bottom of the unit closest to you

WARNING: Use at least two people when transporting the TV.

3. Position the TV so that the bottom edge overhangs the table by about one inch.
4. On the bottom rim of the TV, there are four Pan Head Mounting Screws. Remove the Pan Head Mounting Screws, and set aside.

Important Note: Always replace mounting screws. Failure to do so will allow water to seep inside your TV. This can cause serious injury and can damage your TV.

5. Turn the Speaker Module with the speaker grill facing the floor. Align the Speaker Mounting Holes to the TV Mounting Holes, and replace Pan Head Mounting Screws through Speaker Mounting Holes and TV Mounting Holes. (Figure 2).

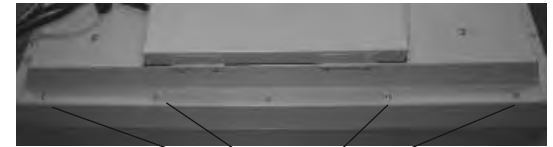
6. Screw securely (Figure 3).

7. Unscrew the three Thumb Screws, and pull the Connect Source Cover open (Figure 4).

8. Take the Speaker Cable from the speaker, making sure that the Speaker Cable Wire is placed over the right side of the Rubber Sealing Gasket (Figure 5), and plug it into the Speaker Connector.

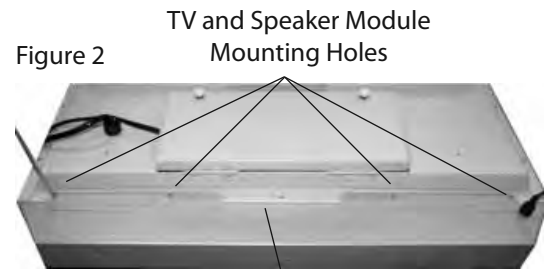
10. When you close the Connect Source Cover, be sure that the Speaker Cable Wire is placed across the outside portion of the Rubber Sealing Gasket. The Speaker Cable Wire should not be placed across the bottom of the Rubber Sealing Gasket (Figure 6).

Figure 1



Pan Head Screws

Figure 2



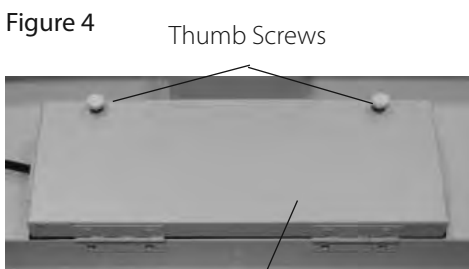
TV and Speaker Module Mounting Holes

Speaker Module

Figure 3



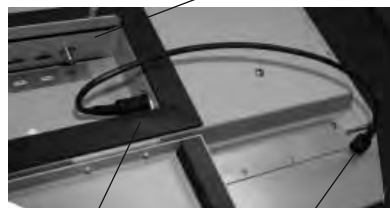
Figure 4



Thumb Screws

Connect Source Cover

Figure 5 Speaker Connector



Rubber Sealing Gasket

Speaker Cable

Figure 6



Speaker Cable Wire should not come out of this area

TV Installation – Rear Panel Internal Connect Source

WARNING: Do not connect the power source before making connections.

Internal Connect Source

The Internal Connect Source allows you to easily connect to the Audio, Video, S-Video, SVGA, HDMI, Audio Out, and RF connectors. The Internal Connect Source is inside the Cable Cover located on the back of the unit (Figure1).

1. Unscrew the two gray Thumb Screws (Figure1), and pull the cover towards you.
2. Route the cables to the proper inputs, and place the cable cords over the Rubber Sealing Gasket (Figure 2).
3. Close the cover.
4. Press firmly on the cover, and screw the Thumb Screws tightly (Figure3).

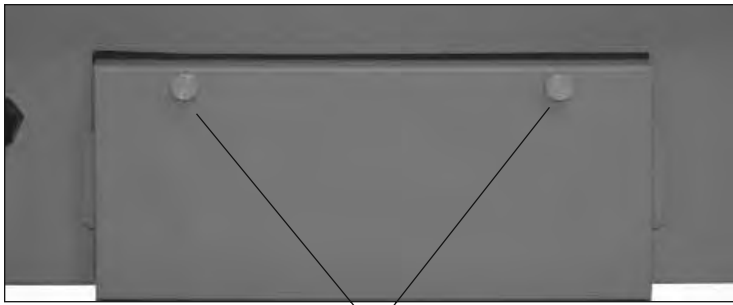


Figure 1

Thumb Screws



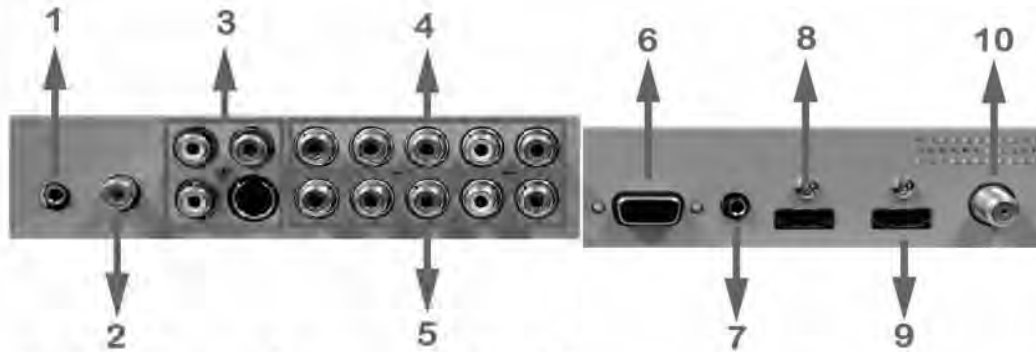
Figure 2

need new photo here



Figure 3

TV Installation – Rear Panel Connections

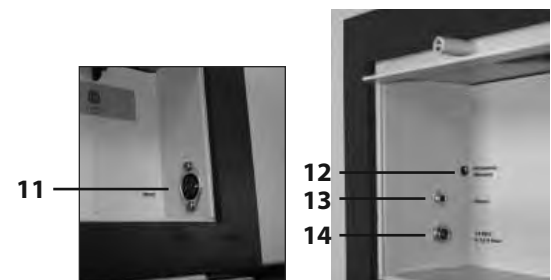


The following descriptions are for connections from left to right.

1. **SERVICE** – This port is for factory service
2. **LINE OUT** – This connection port is used for sending out digital audio signals to digital surround sound receivers. The orange (COAXIAL SPDIF OUT) connector sends out either bit-stream or PCM digital sound signal to a home theater receiver with digital input.
3. **AV1** – Composite connects to devices that use composite video cables such as VCR or camcorder or video game consoles. The S-Video connector is associated with AV1's S-Video. Please connect the video portion with either the yellow connector or the S-Video connector. Do NOT connect both video connectors.
4. **YPbPr1** – This connection port is for DVD players or satellite / cable set-top boxes that use component cables. From left to right, connect green, blue, and red for video, and then connect white for left channel audio, and red for right channel audio.
5. **YPbPr2** – This connection port is for DVD players or satellite / cable set-top boxes that use component cables. From left to right, connect green, blue, and red for video, and then connect white for left channel audio, and red for right channel audio.
6. **VGA** - This connection port connects to a PC for video using VGA cable. Be sure to connect your audio cable to the VGA Stereo input if you want sound out of VGA video source.
7. **VGA STEREO INPUT** - This connection port is for people who want to provide audio to the TV when using a PC or a DVI video device. The sources use 3.5mm mini-jack audio cable.
8. **HDMI1** – HDMI connects to devices that use HDMI cable, such as Blu-ray or HD DVD player, or HD cable / satellite set-top box. This connection port receives pure digital audio and high definition signal through one single cable. This port also can accept a HDCP video device for video.
9. **HDMI2** – HDMI connects to devices that use HDMI cable, such as Blu-ray or HD DVD player, or HD cable / satellite set-top box. This connection port receives pure digital audio and high definition signal through one single cable. This port also can accept a HDCP video device for video.
10. **TV** – This connection is for digital or analog cable without the cable box or over-the-airwave antennas. The tuner is a hybrid tuner that tunes to both analog and digital channels. This connection uses coaxial RF cable. For over-the-airwave digital stations please check <http://www.antennaweb.org>.
11. **SPEAKER MODULE CONNECTOR:** *This port is for the SunBriteTV Model 3220HD Detachable Speaker Module only.*

Please Note:

- This TV features a power saving function which will turn off the TV automatically after 5 minutes of idling on a connection with no signal. This feature is present on all connection.
12. **IR EMITTER WINDOW** - The Internal Infrared (IR) Control Window allows the TV to be controlled from a remote system using IR commands.
 13. **RS232** - The RS232 connection allows the TV to be controlled from a remote system using RS232 commands. (See Appendix A of this manual for a list of RS232 control commands.)
 14. **12 VDC** - This port is for the SunBriteTV FM Radio (Item SB-FM322) connector only.



TV Installation – Rear Panel Connections

IR Emitter Window:

Figure 15 shows an Emitter* installed. One end of the Emitter is to be mounted in front of the IR Emitter Window. The other end is to be connected to an appropriate control block*.

* Neither the emitter or control block are supplied by SunBriteTV. See instructions that come with your IR Emitter and control block to determine how to make the connection.

Important note: SunBriteTV recommends using a high-output IR Emitter, such as Xantech 282M.

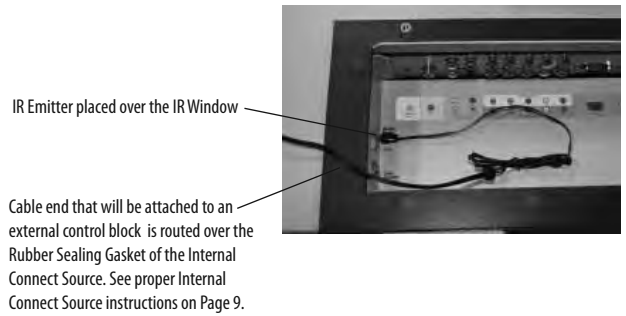


Figure 15

Connection Descriptions:

Port Quality & Name	Port Picture	Cable Used & Resolution	Devices that use this Port
Best HDMI (Digital HD Capable)		HDMI 1080p (scaled), 1080i (scaled), 720p, 480p, 480i	Blu-ray DVD Player, HD-DVD Player, High Definition Cable or Satellite Set-top Box
Best/Fair ATSC/NTSC (Digital HD Capable)		Coaxial RF 1080i (scaled), 720p, 480p, 480i	Antenna or Digital Cable without the cable box
Best VGA (HD Capable)		VGA 1360x768 or lower	PC or MAC with VGA connection
Better COMPONENT (HD Capable)		Component 1080i (scaled), 720p, 480p, 480i	DVD Player, Video Game Console, High Definition Cable or Satellite Set-top Box
Good COMPOSITE (Non-HD)		S-Video 480i only	Non-High Definition Cable or Satellite Set-top Box, S-Video VCR
Fair COMPOSITE (Non-HD)		Composite 480i only	Non-High Definition Cable or Satellite Set-top Box, VCR, Camcorder
Good VGA STEREO INPUT (Audio)		3.5mm mini-jack	HDCP devices, PC, MAC
Best LINE OUT (Digital Audio)		Coaxial SPDIF	Receiver with Digital Surround Sound Decoding

Cable Descriptions:

Cable Name	Cable Picture
HDMI	
Coaxial RF	
VGA	
Component	Red Green Blue
S-Video	
Composite	Yellow
3.5 mm Mini-jack	Green
RCA Audio	Red White
AC Power	
Coaxial SPDIF	

TV Installation – Rear Panel Connections

Switching Sources for Ports:

Model 3220HD offers several options when connecting your devices to the TV. The chart below will help you understand which source you switch to for each of the ports.

Port Picture	Cable Used	Source Name to Switch to
	HDMI or HDMI-DVI	HDMI
	COAXIAL RF	TV (CABLE / AIR)
	VGA	VGA
	COMPONENT	YPBPR1 or YPBPR2
	S-VIDEO	AV1 (S-VIDEO)
	COMPOSITE	AV1 (CBVS)

CONNECTING TO AN ANTENNA



Connecting to Digital Cable without Cable Box or Antenna



1. Make sure the power to the TV is turned off.
2. Connect the Coaxial RF cable from your antenna or digital cable to the ATSC/NTSC port off the back of your the TV.
3. Turn on the TV.
4. Select TV (Air) for antenna or TV (Cable) for digital cable from either your remote control's source button or source button on the right side of the TV.
5. Use the On-Screen Display to scan for channels.

Connecting to Cable or Antenna



1. Make sure the power of the TV is turned off.
2. Connect the Coaxial RF cable from your antenna or cable to the ATSC/NTSC port off the back of your TV.
3. Turn on the TV.
4. Select TV (Air) for antenna or TV (Cable) for cable from either your remote control's source button or source button on the right side of the TV.
5. Use the On Screen Display to scan for channels.

Please Note :

1. Not all broadcasts are in High Definition (HD). Please refer to your local broadcasting stations for more information.
2. The TV's tuner is designed for HDTV therefore requires a stronger signal than normal TVs. If you cannot achieve that signal level with your antenna or cable, your TV might lose picture or sound.

TV Installation – Rear Panel Connections

CONNECTING TO AN ANTENNA--(Continued)

Connecting to Cable or Antenna through VCR



1. Make sure the power of the TV is turned off.
2. Make sure there is an antenna or cable connection to the VCR already.
3. Use a Coaxial RF cable and connect from your VCR's Antenna Out or Output to TV to the ATSC/NTSC port off the back of your TV.
4. Turn on the TV.
5. Select TV (Air) for antenna or TV (Cable) for digital cable from either your remote control's source button or source button on the TV.
6. Use the On-Screen Display to scan for channels.



Please Note :

1. Some VCRs must be turned On before its output will have a signal to the TV. Please consult your VCR manual for further reference.
2. Not all broadcasts are in High Definition (HD). Please refer to your local broadcasting stations for more information.
3. The TV's tuner is designed for HDTV therefore requires a stronger signal than normal TVs. If you cannot achieve that signal level with your antenna or cable, the TV might lose picture or sound.

CONNECTING TO A DVD PLAYER



1. Make sure the power of the TV and your DVD player is turned off.
2. Connect a HDMI cable to the HDMI port of your DVD player and the other end to the HDMI port off the back of your TV.
3. Turn on the TV and your DVD player.
4. Use the remote control's source button or the source button on the TV to switch to HDMI.

Please Note :

Refer to the DVD player's manual to make sure the DVD player is configured to output correctly to the TV.



1. Make sure the power of TV and your DVD player is turned off.
2. Obtain a Component Cable. Connect the green color connector to both your DVD player and Component 1's green connector port off the back of your TV.
3. Connect the blue color connector to both your DVD player and Component 1's blue connector port off the back of your TV.
4. Connect the red color connector to both your DVD player and Component 1's red connector port off the back of your TV.
5. Obtain a RCA Audio Cable. Connect the white color connector to both your DVD player and Component 1's white connector port off the back of your TV to the right side of your green, blue, red component connection.
6. Connect the red color connector to both your DVD player and Component 1's red connector port off the back of your TV to the right side of your green, blue, red component connection.
7. Turn on the TV and your DVD player.
8. Use the remote control's source button or the source button on the TV to switch to YPbPr1.

Please Note :

1. Refer to the DVD player's manual to make sure the DVD player is configured to output correctly to the TV.

CONNECTING TO A DVD PLAYER (Continued)

Connecting with S-Video (Good)



1. Make sure the power of the TV and your DVD player is turned off.
 2. Obtain an S-Video Cable. Connect the S-Video connector to both your DVD player and Composite's S-Video connector port off the back of your MODEL 3220HD.
 3. Obtain a RCA Audio Cable. Connect the white color connector to both your DVD player and Composite's white connector port off the back of your MODEL 3220HD.
 4. Connect the red color connector to both your DVD player and Composite's red connector port off the back of your TV.
 5. Turn on the TV and your DVD player.
 6. Use the remote control's source button or the source button on the right side of the TV to switch to AV1 (S-Video).
- Please Note :

1. Make sure the yellow connector in the same group is not connected. You can only connect either the S-Video port or the Yellow Video connector port. **DO NOT CONNECT BOTH.**
2. Please reference the DVD player's manual as well, to make sure the DVD player is configured to output correctly to the TV.

Connecting with Composite (Fair)



1. Make sure the power of the TV and your DVD player is turned off.
2. Obtain a Yellow Video Cable. Connect the Yellow Video connector to both your DVD player and Composite's Yellow Video connector port off the back of your TV.
3. Obtain a RCA Audio Cable. Connect the white color connector to both your DVD player and Composite's white connector port off the back of your TV.
4. Connect the red color connector to both your DVD player and Composite's red connector port off the back of your TV.
5. Turn on the TV and your DVD player.
6. Use the remote control's source button or the source button on the right side of the TV to switch to AV1 (CVBS).

Please Note :

1. Make sure the yellow connector in the same group is not connected. You can only connect either the S-Video port or the Yellow Connector port. **DO NOT CONNECT BOTH.**
2. Please reference the DVD player's manual as well, to make sure the DVD player is configured to output correctly to the TV.

TV Installation – Rear Panel Connections

CONNECTING TO A SATELLITE OR CABLE SET-TOP BOX

Connecting with HDMI (Best)



1. Make sure the power of the TV and your set-top box is turned off.
2. Connect a HDMI cable to the HDMI output of your set-top box and the other end to the HDMI port off the back of your TV.
3. Turn on the MODEL 3220HD and your set-top box.
4. Use the remote control's source button or the source button on the right side of the TV to switch to HDMI.

Please Note :

- 1 Please refer to the set-top box's manual, to make sure the set-top box is configured to output correctly to the TV.
- 2 SunBriteTV's MODEL 3220HD supports SONY's universal remote code. Please look up SONY's codes in your universal remote's hand book.

Connecting with Component (Better)



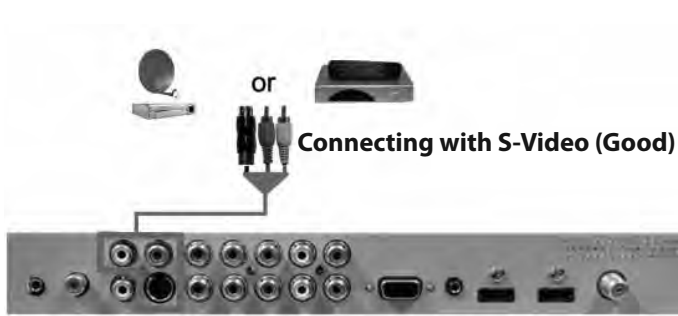
1. Make sure the power of TV and your set-top box is turned off.
2. Obtain a Component Cable. Connect the green color connector to both your set-top box and Component 1's green connector port off the back of your TV.
3. Connect the blue color connector to both your set-top box and Component 1's blue connector port off the back of your TV.
4. Connect the red color connector to both your set-top box and Component 1's red connector port off the back of your TV.
5. Obtain a RCA Audio Cable. Connect the white color connector to both your set-top box and Component 1's white connector port off the back of your TV to the right side of your green, blue, red component connection.
6. Connect the red color connector to both your set-top box and Component 1's red connector port off the back of your TV to the right side of your green, blue, red component connection.
7. Turn on the TV and your set-top box.
8. Use the remote control's source button or the source button on the TV to switch to YPbPr1.

Please Note :

1. If Component 1 is already occupied, please use Component 2 as your connection port and switch to source YPbPr2.
2. Please refer to the set-top box's manual to make sure the set-top box is configured to output correctly to the TV.
3. SunBriteTV's MODEL 3220HD supports SONY's universal remote code. Please look up SONY's codes in your universal remote's hand book.

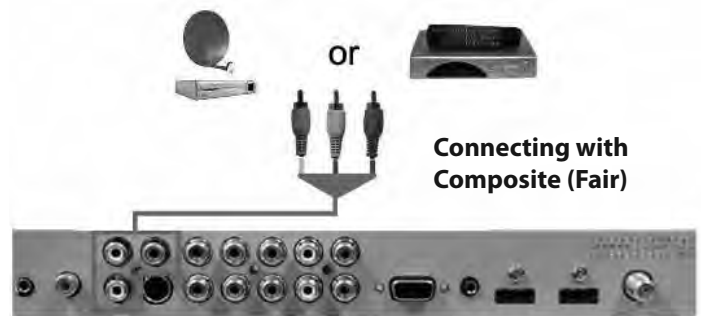
TV Installation – Rear Panel Connections

CONNECTING TO A SATELLITE OR CABLE SET-TOP BOX (Continued)



1. Make sure the power of the TV and your DVD player is turned off.
 2. Obtain an S-Video Cable. Connect the S-Video connector to both your DVD player and Composite's S-Video connector port off the back of your MODEL 3220HD.
 3. Obtain a RCA Audio Cable. Connect the white color connector to both your DVD player and Composite's white connector port off the back of your MODEL 3220HD.
 4. Connect the red color connector to both your DVD player and Composite's red connector port off the back of your TV.
 5. Turn on the TV and your DVD player.
 6. Use the remote control's source button or the source button on the right side of the TV to switch to AV1 (S-Video).
- Please Note :

1. Make sure the yellow connector in the same group is not connected. You can only connect either the S-Video port or the Yellow Video connector port. **DO NOT CONNECT BOTH.**
2. Please reference the DVD player's manual as well, to make sure the DVD player is configured to output correctly to the TV.
3. SunBriteTV's MODEL 3220HD supports SONY's universal remote code. Please look up SONY's codes in your universal remote's hand book.



1. Make sure the power of the TV and your DVD player is turned off.
2. Obtain a Yellow Video Cable. Connect the Yellow Video connector to both your DVD player and Composite's Yellow Video connector port off the back of your TV.
3. Obtain a RCA Audio Cable. Connect the white color connector to both your DVD player and Composite's white connector port off the back of your TV.
4. Connect the red color connector to both your DVD player and Composite's red connector port off the back of your TV.
5. Turn on the TV and your DVD player.
6. Use the remote control's source button or the source button on the right side of the TV to switch to AV1 (CVBS).

Please Note :

1. Make sure the yellow connector in the same group is not connected. You can only connect either the S-Video port or the Yellow Connector port. **DO NOT CONNECT BOTH.**
2. Please reference the DVD player's manual as well, to make sure the DVD player is configured to output correctly to the TV.
3. SunBriteTV's MODEL 3220HD supports SONY's universal remote code. Please look up SONY's codes in your universal remote's hand book.

TV Installation – Rear Panel Connections

Connecting with Coaxial SPDIF Digital (Best)



1. Make sure the power of the TV and your receiver is turned off.
2. Obtain a Coaxial SPDIF cable, connect it to your receiver's coaxial SPDIF digital input and the Coaxial SPDIF connection on the LINE OUT port off the back of the TV.
3. Turn on the TV and your receiver.

Please Note :

1. If you want pure digital stream for your receiver to decode, you must also configure the TV's OSD Sound->Digital Audio Out function. Make sure the option is on Bit Stream.
2. If your receiver is making static noises when receiving Bit Stream, you must use the PCM option instead.
3. Refer to the receiver's manual to make sure the receiver is configured to receive signals correctly from the TV

CONNECTING TO A PC



1. Make sure the power of the TV and your PC is turned off.
2. Obtain a 15-pin D-Sub VGA cable, connect to the VGA output of your PC and the other end to the VGA port off the back of your TV.
3. Obtain a 3.5 mm Mini-jack, connect to the audio out of your PC and the other end to the VGA Stereo Input port.
4. Turn on the power of the TV and your PC.
5. Use the remote control's source button or the source button the TV to switch to VGA.
6. Change your PC resolution to 1360x768 at 60hz refresh rate.
7. Press MENU to use the OSD's SETUP option.
8. Under the SETUP option select PC function.
9. Under PC function use AUTO ADJUST to adjust the screen, AUTO COLOR to adjust the color and use PREF. RESOLUTION to select 1360x768 at 60hz.

Please Note :

1. For the best results, please set your PC resolution to 1360x768 at 60 Hz. Refer to the PC or graphic card's manual for further instructions on how to set your resolution and refresh rate.
2. Refer to your PC manual for video output requirements of the video card.
3. The VGA port of the TV features a power saving mode which will automatically turn off the TV if there is no signal provided for more than 5 minutes.

Starting up the TV

1. Make sure your power cable is connected and the standby red light in the front of the TV is lit up.
2. Check all your connection cables off the side or the back of your TV and also your AV devices. Make sure they are all connected securely.
3. Turn on your TV and other AV devices if necessary.
4. Select the correct source according to the Connecting pages.

If You've Connected Antenna or Cable to the TV...

If an antenna or cable is connected to your TV's ATSC/NTSC port, you will need to use the source button on the remote control or the source button on the right side of the TV to switch to TV (Cable / Air) and auto-scan for channels.



1. Open up the OSD by pressing the MENU button on the remote control.
2. Make sure CHANNEL main option is highlighted in yellow; if not please use the ▲ or ▼ buttons to select CHANNEL then press the ► direction button to switch to TUNER MODE function.
3. Press the ⏴ button to go into TUNER MODE function.
4. Press the ▲ or ▼ buttons to select the options AIR or CABLE.
5. If you have an antenna connected to the TV, please select AIR as your option by pressing the ⏴ button.
6. If you have cable connected to your TV, please select CABLE as your option by pressing the ⏴ button. An additional option will pop up. Please use the ▲ or ▼ buttons to select AUTO as your cable option and press ⏴ to confirm the selection.



7. Once you have made the selection, the OSD will return you back to CHANNEL main options. Press the ▼ button to highlight the AUTO SCAN function and press ⏴ twice to start scanning for channels.
8. Once the scanning is done, you can watch the TV.

Please Note :

- Not all broadcasts are in High Definition (HD). Please refer to your local broadcasting stations for more information.
- The TV's tuner is designed for HDTV therefore requires a stronger signal than normal TVs. If you cannot achieve that signal level with your antenna or cable, your TV might lose picture or sound.

TV Installation - Starting the TV

Connecting the Power Cord

WARNING:

TV AND GFCI RECPTACLE MUST BE INSTALLED AT LEAST 5 FEET AWAY FROM STANDING WATER , SUCH AS (BUT NOT LIMITED TO) A POOL OR SPA.

Connect the power cord after you have made connections to your video equipment.



Connect the power cord to a GFCIprotected AC outlet with "in-use" waterproof cover.

Warning: TV must be installed at least 5 feet away from standing water, such as (but not limited to) a pool or spa.

Side Panel Controls



Power	Turn on the TV by pressing the button once. Press the button again to turn off the TV.
Input	This button switches between the different sources of the TV. When the On-Screen Display (OSD) is active, this button acts as the enter button and confirms the menu selection.
Menu	This button activates the OSD. If a sub-menu is active, pressing this button will return selection to the previous menu level.
CH+/CH-	These buttons change the TV channel up or down. If the OSD is active, these buttons function as up or down controls for the menu.
Vol+ /Vol-	These buttons increase or decrease the volume. If a sub-menu is active, pressing these buttons will move the selection left or right.

Front Panel



IR Sensor

Remote Control Guide



POWER – Turns the TV on or off.

MUTE – Mutes the TV's audio.

0~9 – Sets the channels.

Dash (-) – Inserts the dash for selecting digital channels directly.

R – Returns to the previous channel. **GUIDE** – Opens the current digital channel information guide.

SOURCE – Cycles between different inputs of the TV.

▲/▼/◀/▶/↵ – Selects and moves the item on screen.

▲/▼ also functions as channel up and down.

◀/▶ also functions as volume up and down.

↵ acts as the Enter button for OSD menu and changing channels in conjunction with number buttons.

MENU – Opens / Exits the TV menu.

EXIT – Exits the TV menu.

SLEEP – Sets the Sleep timer. **ASPECT** – Selects different screen size.

ADD – Adds the current channel. **FREEZE** – Freezes the TV picture. **CC** – Cycles between different closed captioning modes.

DELETE – Deletes the current channel.

INFO – Shows the TV info.

MTS – Selects stereo, mono, or second audio programming.

FAVORITE – Cycles the favorite channels

PICTURE – Selects various preset picture settings

SOUND – Selects various preset sound settings

This remote control follows Sony's TV remote codes with discrete on/off and input select.

Discrete TV code is 10,000

About the Water-Resistant Remote Control

The SunBriteTV™ All-Weather Outdoor Remote Control Model SB-RC23-WR is a water-resistant remote control that runs on two long-life lithium batteries. "Water-resistant" means that this remote control can be in water for short periods of time without damaging the internal workings of the unit. It can be left in the rain, and even dropped in water, as long as it is retrieved quickly. The remote control should not be left floating in water.

If the remote control is used properly, it will give you many years of service. The functionality of the remote control and the long-life lithium batteries are under warranty for one year.

If the remote control malfunctions or stops working within the one-year warranty period, SunBriteTV will repair or replace the remote control at SunBriteTV's option.

Do not attempt to replace the batteries yourself because the battery cover is sealed for water resistance. If the battery cover is removed, the warranty will become void.

If you have a warranty claim, contact the SunBriteTV Customer Support Team for further instructions.

OSD (On Screen Display) Controls

Via Remote Control

In order to adjust most of the options inside the On Screen Display (OSD), the picture below shows all the buttons used on the remote control.



▲ – This button changes the **channel to a higher number** and also functions as up direction in the OSD.

▼ – This button changes the **channel to a lower number** and also functions as down direction in the OSD.

◀ – This button **decreases the volume** and also functions as left direction in the OSD.

▶ – This button **increases the volume** and also functions as right direction in the OSD.

↵ – This button changes the channel in conjunction with the number pad and also functions as **enter** for selecting options in the OSD.



– This button opens the OSD and also exits the OSD by going to the previous level of the OSD.



– This button exits the OSD entirely.

Via the TV Side Panel Buttons

In order to provide more than one type of OSD control buttons, the side panel's buttons have also been made functional for adjusting the OSD.



MENU – This button opens the OSD and also exits out of menus.

CH(▲) – This button changes the channel to a higher number and also functions as up direction in the OSD.

CH(▼) – This button changes the channel to a lower number and also functions as down direction in the OSD.

VOL(+) – This button decreases the volume and functions as left direction in the OSD.

VOL(-) – This button decreases the volume and functions as right direction in the OSD.

Adjusting On-Screen Displays – On-Screen Display Menu

ON-SCREEN DISPLAY MENU



CHANNEL – This main option has functions for the ATSC/NTSC port, such as scanning channels, editing channels, checking signal strength...etc.

PICTURE – This main option has functions for changing the picture settings for all ports, such as tint, contrast, sharpness, and dynamic noise reduction.

SOUND – This main option has functions for changing sound settings for all ports, such as digital audio out, treble, bass...etc.

FUNCTION – This main option has functions for only composite and ATSC/NTSC port. Some of the functions are closed captioning and channel blocking for parents.

SETUP – This main option has functions for all ports, such as power on / off time, sleep, menu language, menu opacity, emergency alert for emergency broadcasting system.

CHANNEL MENU

This option chooses various antenna and cable functions. Extra functions include signal strength for digital signals and changing input via External Input function.

TUNER MODE – This function allows users to choose what connection the TV is accepting.



1. Press MENU to open the OSD and highlight CHANNEL.
2. Press \downarrow or \rightarrow to move to the functions and highlight TUNER MODE.
3. Once in TUNER MODE, press \rightarrow again to select either AIR or CABLE.
4. Use \uparrow or \downarrow to select which connection you have then press \downarrow to finalize the selection.

Please Note :

- If you are choosing cable, the default scanning mode is AUTO. Unless you know what cable system your cable company uses, please leave the tuner mode at AUTO.

AUTO SCAN – This function scans all the channels available from the ATSC/NTSC port.



1. Press MENU to open the OSD and highlight CHANNEL.
2. Press \downarrow or \rightarrow to move to the functions and highlight TUNER MODE.
3. Once in TUNER MODE, press \downarrow to select AUTO SCAN.
4. Press \downarrow twice to enter and begin scanning for channels.

Please Note :

- Not all broadcasts are in High Definition (HD). Please refer to your local broadcasting stations for more information.

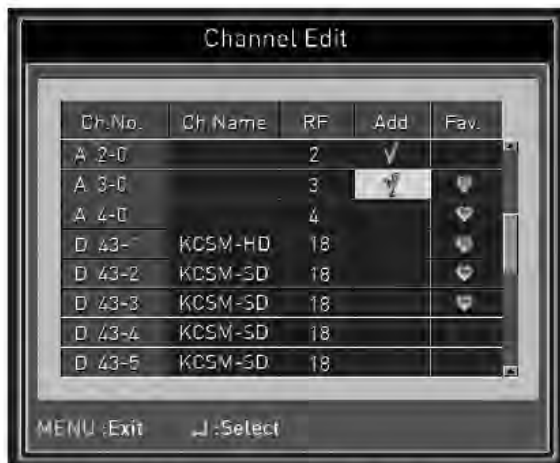
The TV tuner is designed for HDTV and therefore requires a stronger signal than normal TVs. If you cannot achieve that signal level with your antenna or cable, your TV might lose picture or sound.

Adjusting On-Screen Displays – Channel Menu

CHANNEL EDIT – This function allows users to add, delete, or add to favorites, the TV's scanned in channels.



1. Press MENU to open the OSD and highlight CHANNEL.
2. Press \downarrow or \rightarrow to move to the functions and highlight TUNER MODE.
3. Once in TUNER MODE, press \downarrow repeatedly to select CHANNEL EDIT.
4. Press \downarrow twice to enter start editing the scanned in channels.



5. You will be able to edit the channels by either deleting the channel or adding the channel to the favorites list.
 - a. You can delete the channel by removing the ✓ from the ADD column.
 - i. Match the channel you want to remove with the \uparrow \downarrow \leftarrow \rightarrow buttons in the ADD column then press \downarrow . If you do this, you will not be able to browse that channel until you go back into channel edit and add the ✓ back.
 - ii. Press the MENU button to save and exit.
 - b. You can add the channel to your favorite list by adding a ♥ in the FAV. column.
 - i. Match the channel you want to add to favorites with the \uparrow \downarrow \leftarrow \rightarrow buttons in the FAV. column then press \downarrow . If you do this, the channel will be part of the sequential cycling list of the FAVORITE button on the remote control, until you go back into channel edit and remove the ♥.
 - ii. Press the MENU button to save and exit.

SIGNAL STRENGTH – This function allows users to view their digital channel's signal strength.



1. Press MENU to open the OSD and highlight CHANNEL.
2. Press \downarrow or \rightarrow to move to the functions and highlight TUNER MODE.
3. Once in TUNER MODE, press \downarrow repeatedly to select SIGNAL STRENGTH.

Please Note :

- This function is only available if you are on a digital channel. This function will not work under analog channels.
- When using this function, the OSD menu will not auto exit.

EXTERNAL INPUT – This function allows users to change the current source to another.



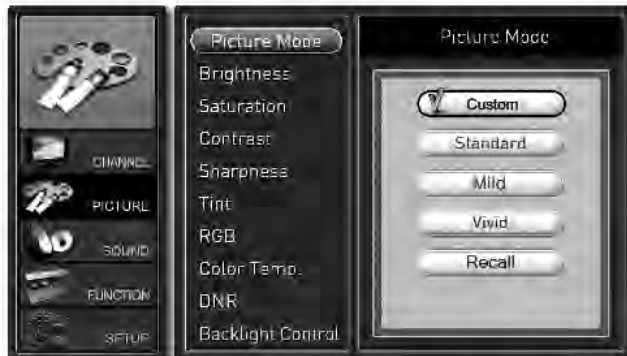
1. Press MENU to open the OSD and highlight CHANNEL.
2. Press \downarrow or \rightarrow to move to the functions and highlight TUNER MODE.
3. Once in TUNER MODE, press \downarrow repeatedly to select EXTERNAL INPUT.
4. Press \downarrow to select the function and use \leftarrow or \rightarrow to change the source of your choice and press \downarrow to finalize your selection.

Adjusting On-Screen Displays – Picture Menu

Picture Menu

This option allows users to adjust the TV's picture sharpness, color, tint, and other various functions.

PICTURE MODE – This function allows you to select the various picture modes of the TV from custom, standard, mild, to vivid.



1. Press MENU to open the OSD and highlight PICTURE by pressing the ▼ button.
2. Press ◀ or ▶ to move to the functions and highlight PICTURE MODE.
3. Press ◀ or ▶ to select PICTURE MODE function.
4. Use ▲ or ▼ to select which picture mode you want.
5. Press ◀ to confirm your selection.

Please Note :

- CUSTOM allows you to adjust all the settings to your personal preference.
- STANDARD is for watching regular TV.
- MILD is for watching movies.
- VIVID is for watching sports and HDTV programming.
- RECALL is not a picture mode but a function to restore any changes under CUSTOM picture mode back to its original factory settings.

BRIGHTNESS – This function adjusts the black level in a picture.



1. Press MENU to open the OSD and highlight PICTURE by pressing the ▼ button.
2. Press ◀ or ▶ to move to the functions and highlight PICTURE MODE.
3. Press ▼ to select BRIGHTNESS function and press ◀.
4. Use ◀ or ▶ to adjust the brightness level.



Please Note :

- This function can be reset back to default via the RECALL subfunction under PICTURE MODE.
- If the brightness is too high, the picture will look washed out, if the brightness is too low the picture will not have much detail in dark spots of the picture.

SATURATION – This function adjusts how strong your picture's colors are going to be.



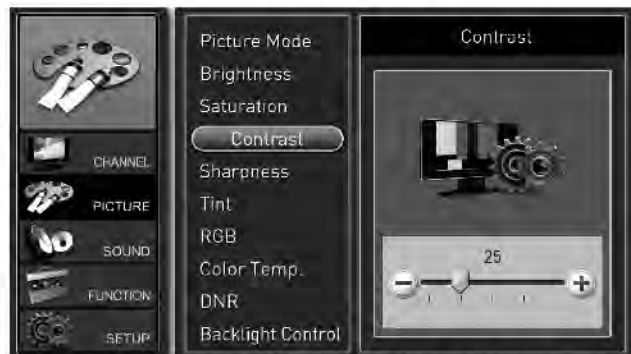
1. Press MENU to open the OSD and highlight PICTURE by pressing the ▼ button.
2. Press ◀ or ▶ to move to the functions and highlight PICTURE MODE.
3. Press ▼ repeatedly to select SATURATION function and press ◀.
4. Use ◀ or ▶ to adjust the saturation level.



Please Note :

- This function can be reset back to default via the RECALL subfunction under PICTURE MODE.

CONTRAST – This function adjusts the white levels in a picture.



1. Press MENU to open the OSD and highlight PICTURE by pressing the ▼ button.
2. Press ◀ or ▶ to move to the functions and highlight PICTURE MODE.
3. Press ▼ repeatedly to select CONTRAST function and press ◀.
4. Use ◀ or ▶ to adjust the contrast level.

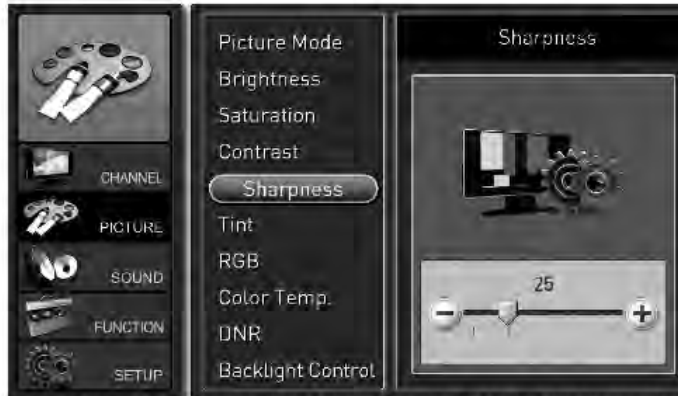


Please Note :

- This function can be reset back to default via the RECALL subfunction under PICTURE MODE.
- If the contrast is too high, the picture will not have any details in bright parts of the picture. If the contrast is too low, the picture will look washed out.

Adjusting On-Screen Displays – Picture Menu

SHARPNESS – This function adjusts how sharp objects in your pictures are.



1. Press MENU to open the OSD and highlight PICTURE by pressing the ▼ button.
2. Press ◀ or ▶ to move to the functions and highlight PICTURE MODE.
3. Press ▼ repeatedly to select SHARPNESS function and press ◀.
4. Use ◀ or ▶ to adjust the sharpness level.



Please Note :

- This function can be reset back to the default via the RECALL subfunction under PICTURE MODE.
- If the sharpness is adjusted too high, the picture will look overly pixilated. If the sharpness is adjusted too low, the picture will look blurry.

TINT – This function adjusts your picture's overall color with everything looking green on one end and everything looking red on the other.



1. Press MENU to open the OSD and highlight PICTURE by pressing the ▼ button.
2. Press ◀ or ▶ to move to the functions and highlight PICTURE MODE.
3. Press ▼ repeatedly to select TINT function and press ◀.
4. Use ◀ or ▶ to adjust the tint level.



Please Note :

- This function can be reset back to the default via the RECALL subfunction under PICTURE MODE.

RGB (RED, GREEN, BLUE) – This function adjusts the white color's overall balance of white colors in a picture. Each color, red, green, and blue will fine tune the overall white color's balance in small increments..



1. Press MENU to open the OSD and highlight PICTURE by pressing the ▼ button.
2. Press ◀ or ▶ to move to the functions and highlight PICTURE MODE.
3. Press ▼ repeatedly to select RGB function and press ◀.
4. Use ◀ or ▶ to adjust the RGB's 3 color levels level.
5. Use ▲ or ▼ to select the 3 colors; red, green, and blue.

Please Note :

- This function can be reset back to the default via the RECALL subfunction under PICTURE MODE.

COLOR TEMP. – This function adjusts the white color's overall balance of white colors in a picture. The function changes the white color's overall balance in large increments.



1. Press MENU to open the OSD and highlight PICTURE by pressing the ▼ button.
2. Press ◀ or ▶ to move to the functions and highlight PICTURE MODE.
3. Press ▼ repeatedly to select COLOR TEMP. function and press ◀.
4. Use ◀ or ▶ to adjust the color temperature level.
5. Press ◀ to finalize your selection.

Please Note :

- This function can be reset back to the default via the RECALL subfunction under PICTURE MODE.
- COOL – This option will produce a picture with overall bluish color.
- NORMAL – This option will produce a picture with normal white color.
- WARM – This option will produce a picture with overall reddish color.

Adjusting On-Screen Displays – Picture Menu

DNR (DIGITAL NOISE REDUCTION) – This function reduces the amount of pixilation under analog TV channels. This function works for analog TV channels only.



1. Press MENU to open the OSD and highlight PICTURE by pressing the ▼ button.
2. Press ◀ or ▶ to move to the functions and highlight PICTURE MODE.
3. Press ▼ repeatedly to select DNR function and press ◀.
4. Use ◀ or ▶ to adjust the DNR in 3 levels (minimum, medium, and maximum).
5. Press ◀ to finalize your selection.

Please Note :

- This function can be reset back to the default via the RECALL subfunction under PICTURE MODE.
- This function works under analog TV channels only.

BACKLIGHT CONTROL – This function adjusts the LCD lamp's current. The current affects the brilliance of the picture.



1. Press MENU to open the OSD and highlight PICTURE by pressing the ▼ button.
2. Press ◀ or ▶ to move to the functions and highlight PICTURE MODE.
3. Press ▼ repeatedly to select BACKLIGHT CONTROL function and press ◀.
4. Use ◀ or ▶ to adjust the backlight level.

Please Note :

- The backlight level does not affect the brightness or the contrast of the picture. It just affects the brilliance of the picture.
- This function can be reset back to the default via the RECALL subfunction under PICTURE MODE.

Sound Menu

This option allows users to adjust the TV's sound functions, including sound mode, auto volume level, digital audio out..etc.

SOUND MODE – This function allows you to select various sound modes among custom, standard, movies, music, and speech.



1. Press MENU to open the OSD and highlight SOUND by pressing the ▼ button.
2. Press ◀ or ▶ to move to the functions and highlight SOUND MODE.
3. Press ◀ or ▶ to select SOUND MODE function.
4. Use ▲ or ▼ to select which sound mode you want.
5. Press ◀ to confirm you selection.

Please Note :

- This function can be reset back to the default via the RECALL subfunction under SOUND MODE.
- CUSTOM allows you to adjust the sound levels to your personal preference.
- STANDARD is for normal TV programs.
- MOVIES – is for watching movies.
- MUSIC – is for watching MTVs and concerts.
- SPEECH – is for watching news.
- RECALL – is not a sound mode but a function to reset CUSTOM sound mode back to it's default settings.

TREBLE – This function adjusts the level of high pitch sound in a TV.



1. Press MENU to open the OSD and highlight SOUND by pressing the ▼ button.
2. Press ◀ or ▶ to move to the functions and highlight SOUND MODE.
3. Press ▼ repeatedly to select TREBLE.
4. Press ◀ or ▶ to select the function.
5. Use ◀ or ▶ to adjust the level.

Please Note :

- This function can be reset back to the default via the RECALL subfunction under SOUND MODE.

Adjusting On-Screen Displays – Sound Menu

BASS – This function adjusts the level of low pitch sound in a TV.



1. Press MENU to open the OSD and highlight SOUND by pressing the ▼ button.
2. Press ⏪ or ⏩ to move to the functions and highlight SOUND MODE.
3. Press ▼ repeatedly to select BASS.
4. Press ⏪ or ⏩ to select the function.
5. Use ◀ or ▶ to adjust the level.

Please Note :

- This function can be reset back to the default via the RECALL subfunction under SOUND MODE.

CC BACKGROUND – This function adjusts digital channel's closed captioning background.



1. Press MENU to open the OSD and highlight FUNCTION by pressing the ▼ button.
2. Press ⏪ or ⏩ to select the functions and highlight AUTO LOCK.
3. Press ▼ until you see CC BACKGROUND and use ⏪ to select it.
4. Use ▲▼◀▶ to select the option you want.
5. The normal closed captioning defaults to a solid black background with white color text.
6. COLOR adjusts the background color.
7. OPACITY adjusts how transparent or solid you want the background color to be.

Please Note :

- This function only works under digital channels. If you are

AVL (Auto Volume Level) – This function will enable an automatic balancing of sound when certain channels suddenly become over bearing.



1. Press MENU to open the OSD and highlight SOUND by pressing the ▼ button.
2. Press ⏪ or ⏩ to move to the functions and highlight SOUND MODE.
3. Press ▼ repeatedly to select AVL.
4. Press ⏪ or ⏩ to select the function.
5. Use ◀ or ▶ to enable or disable the auto volume level.

Please Note :

- This function can be reset back to the default via the RECALL subfunction under SOUND MODE.

AUDIO LANGUAGE – This function is for MTS (multi-channel television sound). It will change the spoken language of a TV program via SAP (secondary audio programming). The TV station will need to support the TV program in different languages in order for this function to work.



1. Press MENU to open the OSD and highlight SOUND by pressing the ▼ button.
2. Press ⏪ or ⏩ to move to the functions and highlight SOUND MODE.
3. Press ▼ repeatedly to select AUDIO LANGUAGE.
4. Press ⏪ or ⏩ to select the function.
5. Use ◀ or ▶ to switch between the languages.

Please Note :

- This function can be reset back to the default via the RECALL subfunction under SOUND MODE.
- This function is not always available. It is based upon the support of your local TV broadcasting station's signal. If the TV station does not support MTS/SAP, you will not be able to receive any alternative audio language. Please check with your local broadcasting stations for more information.

Adjusting On-Screen Displays – Sound Menu

DIGITAL AUDIO OUT – This function enables the TV to output sound in 2 digital formats, PCM, and Bit Stream for digital home theater receivers.



1. Press MENU to open the OSD and highlight SOUND by pressing the ▼ button.
2. Press ⏪ or ▶ to move to the functions and highlight SOUND MODE.
3. Press ▼ repeatedly to select DIGITAL AUDIO OUT.
4. Press ⏪ or ▶ to select the function.
5. Use ◀ or ▶ to select between the two options PCM and BITSTREAM.

Please Note :

- PCM & BIT STREAM are two formats of digital sound. If you have a digital home theater system, you should use BIT STREAM for your digital audio out.
- Not all TV programming will give you digital surround sound. The sound signal is based on the TV broadcasting station's support. Please check with your local broadcasting stations for more information.
- This function can be reset back to the default via the RECALL subfunction under SOUND MODE.

Function Menu

This option allows users to turn on TV program filters for children, and also closed captioning support options. To use this option you will need to enter in the password first. **The password is "0000"**.



AUTO LOCK – This function helps parents filter TV programming by either locking channels by choice or blocking channels based on the ratings that TV stations submit through the signal.



1. SET BLOCKING – This subfunction turns blocking from CHANNEL BLOCKING on or off.



- a. Press MENU to open the OSD and highlight FUNCTION by pressing the ▼ button.
- b. Press ⏪ or ▶ to select the option and highlight AUTO LOCK.
- c. Press ⏪ to select the function.
- d. Use ⏪ or ▶ to select SET BLOCKING.
- e. **Enter "0000" as the default password.**
- f. Press ⏪ to select the function.
- g. Use ▲ or ▼ to choose the option you want and press ⏪ to select.

Please Note :

- Turning the subfunction on will enable the CHANNEL BLOCKING FUNCTION. Turning the subfunction off will disable the CHANNEL BLOCKING FUNCTION.
- You can also disable the function by pressing in the password.

Adjusting On-Screen Displays – Function Menu

2. **CHANNEL BLOCKING** – This subfunction blocks channels by selecting them off a channel list.

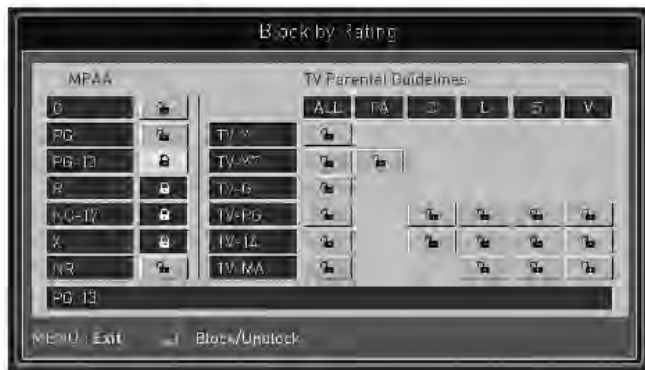


- Press MENU to open the OSD and highlight FUNCTION by pressing the ▼ button.
- Press ⏪ or ▶ to select the functions and highlight AUTO LOCK.
- Press ⏩ to select the function.
- Press ▼ to select CHANNEL BLOCKING.
- Press ⏩ to select the function.
- Highlight the channel you want to lock by using ▲ or ▼ buttons.
- Lock or unlock the channel by pressing the ⏩ button.
 - If a channel is locked it would have the 🔒 symbol.
 - If a channel is unlocked it would have the 🗝️ symbol.

Please Note :

- This function will only work if SET BLOCKING subfunction is turned on.
- You can disable the function during channel browsing when it asks you for the auto lock password.
- The default auto lock password is "0000".

3. **BLOCK BY RATING** – This subfunction blocks channels by reading each channel's TV program or movie rating.



- Press MENU to open the OSD and highlight FUNCTION by pressing the ▼ button.
- Press ⏪ or ▶ to select the functions and highlight AUTO LOCK.
- Press ⏩ to select the function.
- Press ▼ until you see BLOCK BY RATING and use ⏩ to select BLOCK BY RATING.
- You can block movies by selecting the ratings under MPAA and TV shows under TV Parental Guidelines.
 - Use ▲▼▶◀ to move to the ratings you want to block.
 - Press ⏩ to block or unblock. If a rating is locked it would have the 🔒 symbol. If a rating is unlocked it would have the 🗝️ symbol.

Please Note :

- This type of filtering for children watching TV will not always work since the ratings signal is dependent on whether the TV station sends the signal or not and whether the TV receives the ratings signal or not. For better assurance please use the CHANNEL BLOCKING subfunction.

4. **DTV RATING** – This subfunction gathers all digital channels's programming rating.



- Press MENU to open the OSD and highlight FUNCTION by pressing the ▼ button.
- Press ⏪ or ▶ to select the functions and highlight AUTO LOCK.
- Press ⏩ to select the function.
- Press ▼ until you see DTV RATING and use ⏩ to select it.
- Press ⏩ again to begin scanning for DTV ratings.

Please Note :

- This type of ratings for children watching TV will not always work since the ratings signal is dependent on whether the TV station sends the signal or not and whether the TV receives the ratings signal or not. For better assurance please use the CHANNEL BLOCKING subfunction.

5. **SETUP CODE** – This subfunction sets the password.



- Press MENU to open the OSD and highlight FUNCTION by pressing the ▼ button.
- Press ⏪ or ▶ to select the functions and highlight AUTO LOCK.
- Press ⏩ to select the function.
- Press ▼ until you see SETUP CODE and use ⏩ to select it.
- Input "0000" as your password and input your new password.

Please Note :

- There is no way of resetting the password.
- If you're going to change the password, please write it down and keep it in a safe place just in case you forget.

Adjusting On-Screen Displays – Function Menu

CAPTION – This function shows closed caption of TV programs.



1. Press MENU to open the OSD and highlight FUNCTION by pressing the ▼ button.
2. Press ⏪ or ⏩ to select the functions and highlight AUTO LOCK.
3. Press ▼ until you see CAPTION and use ⏪ to select it.
4. Use ▲▼◀▶ to select the option you want.
5. US stations usually use CC1 for analog and CS1 for digital closed captioning.
6. Other CC and CS services do not apply to TV captioning inside US.
7. TT refers to text boxes that display the TV channel's extra information.

Please Note :

- Analog and digital closed captioning will automatically switch for you when you switch channels.
- Not all TV programs support closed captioning. This function depends on the TV station to support the signal with captioning. For more information please contact your TV broadcasting stations.
- TT box information may or may not display any related info to the TV program you are watching

CAPTION OPTION – This function locks or unlocks options you can use to adjust the way your digital caption is displayed.



1. Press MENU to open the OSD and highlight FUNCTION by pressing the ▼ button.
2. Press ⏪ or ⏩ to select the functions and highlight AUTO LOCK.
3. Press ▼ until you see CAPTION OPTION and use ⏪ to select it.
4. Use ◀ or ▶ to select the option you want.
5. AUTO locks up the functions CC BACKGROUND and CAPTION TEXT.
6. OPTIONS unlocks the functions CC BACKGROUND and CAPTION TEXT.

Please Note :

- Only digital station's closed captioning will be affected by this function. If you are on an analog TV channel, the caption will remain the same as before

CC BACKGROUND – This function adjusts digital channel's closed captioning background.



1. Press MENU to open the OSD and highlight FUNCTION by pressing the ▼ button.
2. Press ⏪ or ⏩ to select the functions and highlight AUTO LOCK.
3. Press ▼ until you see CC BACKGROUND and use ⏪ to select it.
4. Use ▲▼◀▶ to select the option you want.
5. The normal closed captioning defaults to a solid black background with white color text.
6. COLOR adjusts the background color.
7. OPACITY adjusts how transparent or solid you want the background color to be.

Please Note :

- This function only works under digital channels. If you are on an analog channel this function will default to the regular black background with white text.

CAPTION TEXT – This function adjusts digital channel's closed captioning text styles.



1. Press MENU to open the OSD and highlight FUNCTION by pressing the ▼ button.
2. Press ⏪ or ⏩ to select the functions and highlight AUTO LOCK.
3. Press ▼ until you see CAPTION TEXT and use ⏪ to select it.
4. Use ▲▼◀▶ to select the options you want.
5. The normal closed captioning defaults to a solid black background with white color text.
6. CAPTION SIZE changes the font size of the text.
7. CAPTION STYLE changes the font style of the text.
8. TEXT COLOR changes the font color of the text.
9. TEXT OPACITY changes the caption text from transparent to solid.
10. EDGE STYLE enhances a caption text's visibility by adding a 3 dimensional detail to the text. There are various options to this subfunction.
11. EDGE COLOR changes the 3 dimensional effect's color.
12. ITALIC makes the caption text look slanted.
13. UNDERLINE puts a line across the bottom of the caption text.

Please Note :

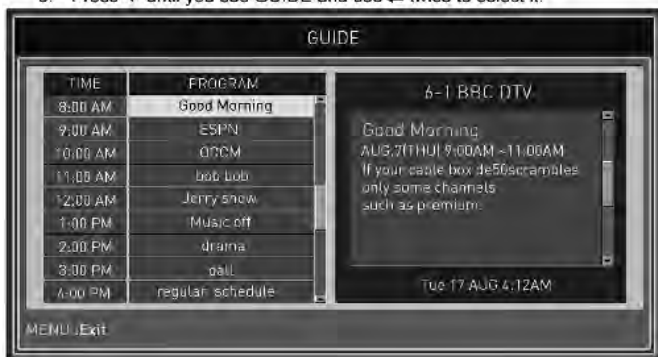
- These options only work under digital channels. If you are on an analog channel this function will default to the regular black background with white text.

Adjusting On-Screen Displays – Function Menu

GUIDE – This function shows you detailed information about your current digital channel's programming and the entire day's program list.



1. Press MENU to open the OSD and highlight FUNCTION by pressing the ▼ button.
2. Press ◀ or ▶ to select the functions and highlight AUTO LOCK.
3. Press ▼ until you see GUIDE and use ◀ twice to select it.



Set-Up Menu

This main option has functions that allows users to power the TV on or off at a specific time and date, adjusting PC resolutions for VGA cards, and changing time and date for the TV.

DATE / TIME – This function adjusts the time and date.



1. Press MENU to open the OSD and highlight SETUP by pressing the ▼ button.
2. Press ◀ or ▶ to select the functions and highlight DATE/TIME.
3. Press ◀ to select the function.
4. Use ▲▼◀▶ to select the options.
5. MANUAL allows you to choose your own time and date.
6. AUTO makes the TV receive time from TV station's broadcasting signals.
7. You can select the time zone of your TV and also whether you observe daylight savings time or not.

Please Note :

- The AUTO DATE/TIME feature only works under digital antenna channels. If you are on an analog antenna, analog cable, or digital cable channel, you will have to manually set the time.

POWER ON TIME – This function automatically turns the TV on to a specific channel at a set specific time and date.



1. Press MENU to open the OSD and highlight SETUP by pressing the ▼ button.
2. Press ◀ or ▶ to select the functions and highlight DATE/TIME.
3. Press ▼ to select POWER ON TIME and press ◀.
4. Use ▲▼◀▶ to select the options.
5. You choose the time, date, and channel.
6. After you have finished setting up the time, date, and channel, please choose if you want this option to turn on the TV daily or once only.
7. Select ACTIVATE and press ◀.

Please Note :

- This function is only for turning on the TV. If you do not setup POWER OFF TIME function, the TV will never turn itself off. If you are going on vacation for a long time, please do not forget to set the function POWER OFF TIME.

Adjusting On-Screen Displays – Set-Up Menu

POWER OFF TIME – This function automatically turns the TV off at a set specific time and date.



1. Press MENU to open the OSD and highlight SETUP by pressing the ▼ button.
2. Press ⏪ or ▶ to select the functions and highlight DATE/TIME.
3. Press ▼ repeatedly until you select POWER OFF TIME and press ⏩.
4. Use ▲▼◀▶ to select the options.
5. You choose the time, and date.
6. After you have finished setting up the time, and date, please choose if you want this option to turn on the TV daily or once only.
7. Select ACTIVATE and press ⏩.

SLEEP – This function makes the TV turn itself off after a set number of minutes.



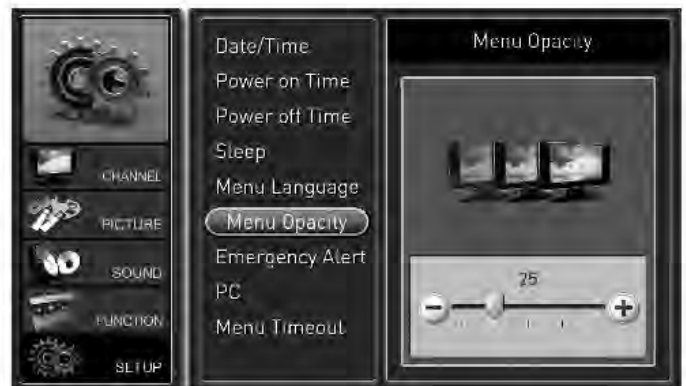
1. Press MENU to open the OSD and highlight SETUP by pressing the ▼ button.
2. Press ⏪ or ▶ to select the functions and highlight DATE/TIME.
3. Press ▼ repeatedly until you select SLEEP and press ⏩.
4. Use ▲ or ▼ to select how many minutes you want the TV to be on and press ⏩.
5. Once selected the TV will begin counting the minutes immediately.

MENU LANGUAGE – This function changes the entire OSD's language.



1. Press MENU to open the OSD and highlight SETUP by pressing the ▼ button.
2. Press ⏪ or ▶ to select the functions and highlight DATE/TIME.
3. Press ▼ repeatedly until you select MENU LANGUAGE and press ⏩.
4. Use ◀ or ▶ to select language you want the TV to display the OSD in and press ⏩.
5. Once selected the TV will display the language of your choice.

MENU OPACITY – This function changes the OSD menu's visual from transparent to solid.



1. Press MENU to open the OSD and highlight SETUP by pressing the ▼ button.
2. Press ⏪ or ▶ to select the functions and highlight DATE/TIME.
3. Press ▼ repeatedly until you select MENU OPACITY and press ⏩.
4. Use ◀ or ▶ to select how transparent or solid you want to display the OSD in and press ⏩.

Adjusting On-Screen Displays – Set-up Menu

EMERGENCY ALERT – This function adjusts options regarding your local emergency broadcasting service.



1. Press MENU to open the OSD and highlight SETUP by pressing the ▼ button.
2. Press ⏪ or ▶ to select the functions and highlight DATE/TIME.
3. Press ▼ repeatedly until you select EMERGENCY ALERT and press ⏪.
4. Use ▲▼◀▶ to select if you want to display medium or low emergency alerts in your local area and press ⏪.

Please Note :

- This function is dependent on your local TV station's support. If your local TV stations do not support such function, EMERGENCY ALERT will not work.

PC – This function is for people who use the X32 LCD HDTV's VGA port as a PC monitor only. The function adjusts the position and syncs the signal of the PC.



1. Press MENU to open the OSD and highlight SETUP by pressing the ▼ button.
2. Press ⏪ or ▶ to select the functions and highlight DATE/TIME.
3. Press ▼ repeatedly until you select PC and press ⏪.
4. Use ▲ or ▼ to select the subfunction you want and press ⏪.
5. AUTO ADJUST is a typical LCD monitor's auto adjust function. It syncs to the signal of the VGA card and auto adjusts the clock and phase of the signal so your picture comes out clear and centered.
6. AUTO COLOR calibrates the TV screen to display colors accurately.
7. POSITION moves the picture left, right, up, or down.
8. PHASE adjusts the video signal in a small increment to sync with the PC.
9. CLOCK adjusts the video signal in a large increment to sync with the PC.

Please Note :

- The X32 LCD HDTV's best PC resolution is 1360x768 at 60hz.
- Always try to use AUTO ADJUST over manual adjustments.
- The VGA port of the TV features a power saving mode which will automatically turn off the TV, if there's no signal provided for more than 5 minutes.

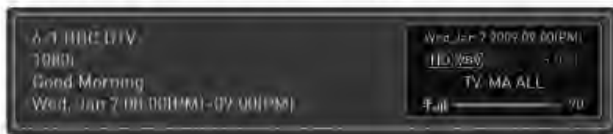
MENU TIMEOUT – This function adjusts how long the menu will be on the screen when you're not using it.



1. Press MENU to open the OSD and highlight SETUP by pressing the ▼ button.
2. Press ⏪ or ▶ to select the functions and highlight DATE/TIME.
3. Press ▼ repeatedly until you select MENU TIMEOUT and press ⏪.
4. Use ▲ or ▼ to select how long you want the OSD to display when it is idle.
5. Please finalize the selection by pressing ⏪.

Information Banner

The info banner is a banner that shows TV programming info on the top portion of your TV. This function is only available when you use the ATSC/NTSC tuner port. You can use the INFO button on the remote control to access this function.



The info banner's left side shows you typical programming information such as TV station name, number, program name, date, and times the show starts and ends.



The info banner's right side shows you the TV's display information such as HD (High Definition) or SD (regular TV) mode, stereo sound, closed captioning, and digital surround sound.

- **HD or SD** – If highlighted this symbol shows you whether the channel you are watching is in HD (High Definition) or Standard Definition (regular TV).



- **((S))** – If Highlighted this symbol shows you that the channel you are watching is in stereo sound.



- **(CC)** If highlighted this symbol shows you are using the SAP (secondary audio programming) function from the TV channel. You can do so via the MTS button on the remote control. Please Note : This function is always active under analog stations whether the station supports this function or not.



- **CC** – If highlighted, this symbol tells you that this channel supports closed captioning.



- **5.1 CH** – If highlighted this symbol tells you that this channel supports 5.1 channel digital surround sound.



- **TV-MA ALL** – This is a type of TV rating. This section tells you the TV ratings of the program you are watching. Please refer to ratings explained for more information on ratings.



Preset Modes

The TV features different preset modes of settings for audio and video. For people who like to optimize the TV for whichever program it is playing but do not want to individually tweak every setting, the preset modes are used.

For Video

To switch between the various modes, press the PICTURE button continuously.

1. **CUSTOM** – This mode saves the user's tweaked settings. If you changed settings under the OSD VIDEO main option, the settings would be saved under CUSTOM mode.
2. **MILD** – This mode is mainly used for movies.
3. **STANDARD** – This mode is mainly used for regular television viewing and video gaming.
4. **VIVID** – This mode is mainly used for nature channels and sporting events.

Please Note:

- Each preset modes can be used to your preference. The preset mode descriptions are merely usage suggestions.

For Audio

To switch between the various modes, press the SOUND button continuously.

1. **CUSTOM** – This mode saves the user's tweaked settings. If you changed settings under the OSD AUDIO main option, the settings would be saved under CUSTOM mode.
2. **STANDARD** – This mode is mainly used for regular television viewing.
3. **SPEECH** – This mode is mainly used for news and commentary programs.
4. **MOVIE** – This mode is mainly used for movies, sporting events, and video gaming.
5. **MUSIC** – This mode is mainly used for music videos.

Please Note:

- Each preset modes can be used to your preference. The preset mode descriptions are merely usage suggestions.

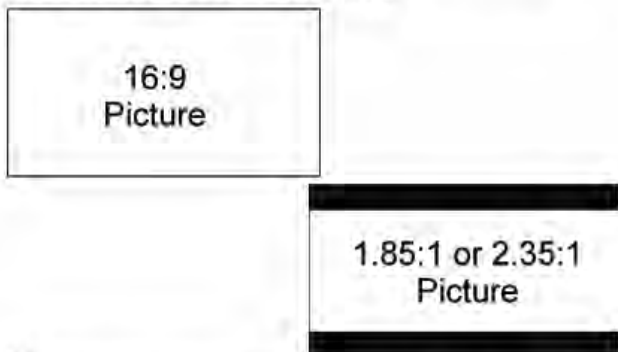
Aspect Ratio

Aspect Ratio

The X32 is a widescreen TV, but most TV programs are still broadcasting in a square format, therefore the TV is offering two ways of viewing videos. There are mainly two types of signal format, 16:9, 4:3, and ZOOM. Simply use the ASPECT button on the TV to cycle between both modes.

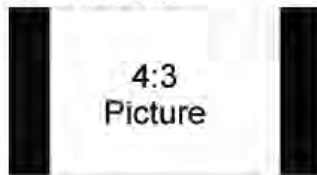
1. **16:9**

This mode will stretch the picture to a widescreen ratio. If you have a perfect 16:9 ratio picture you will not see any black bars. If you are watching a widescreen movie in 1.85:1 or 2.35:1 ratio, you will still get black bars on the top and bottom of the screen.



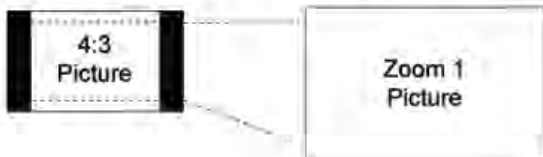
2. **4:3**

Most analog TV channels have 4:3 signal formats. If the original 4:3 aspect ratio (1.33:1 source) is preserved, black bars are added to the left and right of the display image. This aspect keeps that aspect ratio and shows you the black bars on the side.



3. **Zoom 1**

When watching a 4:3 aspect ratio TV or movie, this mode zooms in to cut off most of the black bars on the side while preserving the 16:9 ratio. Because of the zoom, the top and bottom are cut off as well.



Ratings

Ratings

General Operation

To block channels you don't want your children to watch, you can filter them with the ratings function. MPAA lets you control ratings for movies. For regular TV programs you can use USTV settings. USTV settings lets you filter what content you want at each age level, TV-Y, to TV-MA (refer to definitions below). Below are definitions for each setting.

USTV Rating

TV-Y (USTV) – For All Children

This program is designed to be appropriate for all children. Whether animated or live-action, the themes and elements in this program are specifically designed for a very young audience, including children from ages 2-6. This program is not expected to frighten younger children.

TV-Y7 (USTV) – Directed to Older Children

This program is designed for children age 7 and above. It may be more appropriate for children who have acquired the developmental skills needed to distinguish between make-believe and reality. Themes and elements in this program may include mild fantasy violence or comedic violence, or may frighten children under the age of 7. Therefore, parents may want to consider the suitability of this program for their very young children. Note: For those programs where fantasy violence may be more intense or more combative than other programs in this category, such programs will be designated TV-Y7-FV.

TV-G (USTV) – General Audience

Most parents would find this program suitable for all ages. Although this rating does not signify a program designed specifically for children, most parents may let younger children watch this program unattended. It contains little or no violence, no strong language and little or no sexual dialogue or situations.

TV-PG (USTV) – Parental Guidance Suggested

This program contains material that parents may find unsuitable for younger children. Many parents may want to watch it with their younger children. The theme itself may call for parental guidance and/or the program contains one or more of the following: moderate violence (V), some sexual situations (S), infrequent coarse language (L), or some suggestive dialogue (D).

TV-14 (USTV) – Parents Strongly Cautioned

This program contains some material that many parents would find unsuitable for children less than 14 years of age. Parents are strongly urged to exercise greater care in monitoring this program and are cautioned against letting children under the age of 14 watch unattended. This program contains one or more of the following: intense violence (V), intense sexual situations (S), strong coarse language (L), or intensely suggestive dialogue (D).

TV-MA (USTV) – Mature Audience Only

This program is specifically designed to be viewed by adults and therefore may be unsuitable for children under 17. This program contains one or more of the following: graphic violence (V), explicit sexual activity (S), or crude indecent language (L).

TV program description

- FV - Fantasy Violence
- V - Violence
- S - Sexual Situations
- L - Adult Language
- D - Sexually Suggestive Dialog

MPAA Rating

G (MPAA)

General audiences. All ages admitted.

PG (MPAA)

Parental guidance suggested. Some material may not be suitable for children.

PG-13 (MPAA)

Parents strongly cautioned. Some material may be inappropriate for children under 13.

R (MPAA)

Restricted. Under 17 requires accompanying parent or adult guardian (age varies in some jurisdictions).

NC-17 (MPAA)

No one 17 and under admitted.

X (MPAA)

X is an older rating that is unified with NC-17 but may be encoded in the data of older movies.

Closed Caption

Closed Caption

- Your TV is equipped with an internal Closed Caption decoder. It allows you to view conversations, narration and sound effects as subtitles on your TV. Closed Captions are available on most TV program, and on some VHS home video tapes, at the election of the program provider.
- Digital Closed Caption service is a new caption service available on digital TV programs (also at the election of the service provider). It is a more flexible system than the original Closed Caption system, because it allows a variety of caption sizes and font styles.
- Not all programs and VHS video tapes offer closed caption. Please look for the CC symbol to ensure that captions will be shown.
- In the Closed Caption system, there can be more than one caption service provided. Each is identified by its own number. The CC1 and CC2 services display subtitles of TV programs superimposed over the program's picture.
- In the Closed Caption system, the TEXT1 or TEXT2 services display text that is unrelated to the program being viewed (e.g., weather or news). These services are also superimposed over the program currently being viewed.

Trouble Shooting

The following table contains the common problems and the solutions to these problems. Please check this list before you contact the technicians.

Problems	Solutions
NO PICTURE	Connect power cord correctly.
	Turn on power.
	Connect video cable correctly.
ABNORMAL COLORS	Select the input signal source with proper cable connection with the source button. Match the colors on the cables to the ports off the back of the television. I.E. red cable to red colored port.
PICTURE IS TOO DARK	Adjust your contrast, brightness and lamp settings from the OSD Menu.
AUDIO ONLY NO PICTURE	Make sure you have connected both your video and audio cables. The TV's tuner signal must not be lower than 65 %.
PICTURE ONLY NO AUDIO	Make sure the audio cable is connected.
	Readjust your volume via the remote control.
	The TV's tuner signal must not be lower than 65 %.
REMOTE CONTROL DOES NOT WORK	Turn off the TV, unplug it from the socket. Remove the batteries out of the remote for 30 minutes. Press the remote buttons and the power button randomly for a good 2 seconds, and then reinstall the batteries. Try the remote to see if it works.
	The TV's remote sensor is also housed in the same place as the power indicator light. Please make sure there is line of sight from the remote control's front sensor to the remote sensor of the TV.
CANNOT RECEIVE SUFFICIENT CHANNELS THROUGH THE ATSC/NTSC TUNER	The TV's tuner signal must not be lower than 65 %. Change the direction of your antenna and rescan your channels. If you have cable call up your cable company and ask about signal strength of your local cable.
NO COLOR	Please adjust your picture setup and make sure the saturation and the RGB are not turned all the way down. The TV's tuner signal must not be lower than 65 %. Check your signal.
WEAK SIGNAL OR NO PROGRAM SYMBOL ON SCREEN	The TV's tuner signal must not be lower than 65 %. Change the direction of your antenna and rescan your channels. If you have cable call up your cable company and ask about signal strength of your local cable.
TV'S UNIVERSAL REMOTE CODE	This television follows SONY's universal remote code. To find the actual code you must read through your own universal remote's guide book.

Problems	Solutions
TV CHANNELS ARE BLOCKED	Check your auto lock function's settings inside the OSD. You may have locked up some channels but forgot about them.
UNIVERSAL REMOTE CODE	This TV follows SONY's universal remote code. Please check your hand book for SONY's codes then apply them.
THE TV TURNS ON OR OFF SLOWLY AND THE SCREEN SHOWS UP SLOWLY	This TV is a High Definition liquid crystal display panel TV. It requires a few more seconds than normal TVs to power up and show the picture.
NO SOUND ON PC	Make sure you have a 3.5 mm mini-jack cable connected from your pc's sound output to the TV's VGA STEREO INPUT.
HDCP VIDEO SAYS NO HDCP SUPPORT	Reboot your HDCP video device but turning them off and unplugging the power cord. Wait up to 8 minutes to plug the power back in to see if it works or not.
HDCP VIDEO HAS NO AUDIO	Make sure you have a 3.5 mm mini-jack cable connected from your HDCP video device's sound output to the TV's VGA STEREO INPUT. If your HDCP video device uses RCA AUDIO jacks, you'll need to obtain a RCA audio converted into 3.5 mm mini-jack cable.
CANNOT GET 1366X768 ON PC VGA	Although the screen's max resolution is 1366x768, no video card maker can support such resolution. The industry standard for similar resolution support is 1360x768. Please use that as you resolution.
PICTURE IS DISTORTED OR HAS ABNORMAL SOUND	This might be from interference from large electrical appliances, cars, motorcycles, or fluorescent lights. If the TV is close to the wall, try moving the TV to another room in your house to see if the problem still occurs.
PICTURE DOES NOT COVER THE ENTIRE SCREEN	If you're using HDMI or a TV digital channel make sure you use the ASPECT button to switch to 16:9 format. If you are using VGA, use the AUTO ADJUST function to adjust to the screen. Please Note : If you are using regular analog TV, AV, or component in 480i resolution, use the ASPECT button to switch to 16:9 in order to fill up the screen. Please Note ; This note this feature will distort the picture.
PICTURE QUALITY IS HORRIBLE!!	For best image quality, view HD widescreen programs where possible. If HD content is not available view "Standard Definition" from a digital source. Standard, analog TV will always be noticeable inferior to HD because your HDTV has video that is many times better than old TV's and so you can see interference and deficiencies you did not KNOW you had.
PICTURE HAS PIXELS THAT ARE ALWAYS DISPLAYING THE SAME COLOR	Your TV is manufactured using an extremely high level of precision technology, however, sometimes some pixels of your TV may not display. Pixels defects within industry specifications are inherent to this type of product and do not constitute a defective product.

Problems	Solutions
SWITCHING A CHANNEL OR SOURCE CHANGES THE VOLUME	Different channels and inputs will sometimes have this effect because the channel signal's own volume is already loud. There is no way remove this completely. The TV has an AUTO VOLUME LEVEL function that can combat this type of effect. Please make sure that function is turned on.
THERE IS NOISE OR TRASH PIXELS ON THE SCREEN	When your LCD HDTV's resolution is higher than the digital channel's broadcast resolution, the signal is up-converted to match your TV's resolution. Up-converting can cause this type of effect.
TIPS FOR HIGH DEFINITION USERS	The TV is an ideal platform for viewing High Definition Content. The best image quality can be achieved by HDMI, YPbPr (Component), then VGA. However, due to variances in broadcast practices, it is possible some image distortions can occur.
TIPS FOR LETTERBOX CONTENT USERS	Letterboxed (Widescreen) versions of DVD movies are most commonly formatted for standard 4:3 TVs. The TV has the capability of expanding this content so the entire screen is filled at the expense of the image proportion. To use this function press the aspect button on the remote control and cycle among the available options.
I CANNOT FIND THE VOLUME AND CHANNEL CHANGING BUTTONS	The buttons are represented by the ▲▼◀▶ buttons located on the remote control. ▲▼ changes the channels and ◀▶ changes the volume.
I CANNOT FIND ENTER BUTTON	The enter button has the symbol ↵. It is located in the center of the ▲▼◀▶ buttons.
TV TURNS OFF AUTOMATICALLY AFTER 5 MINUTES	The TV features a power saving mode which will automatically turn off the TV, if there's no signal provided for more than 5 minutes.

Important Information About the Anti-Reflective Window on your SunBriteTV Outdoor Television

The anti-reflective window on your all-weather TV is designed to dramatically reduce reflection and improve the contrast of the image on your TV. In order to preserve the anti-reflective properties of the window, it is imperative that you follow the maintenance guidelines below:

1. Clean the window by using the following directions:

To clean the SunBriteTV window, use an ammonia-free glass cleaner and a lint-free or micro-fiber cloth. Spray the solution on the cloth and then apply to the window. DO NOT use acrylic cleaners or ammonia.

2. When the TV is not in use, keep it covered with the SunBriteTV Outdoor Dust Cover

The fitted dust cover is constructed with weatherproof 4-ply polypropylene UV protection fabric that protects the window from direct and indirect sunlight, and keeps wind-blown objects from scratching the surface of the window.

To order the Dust Cover, contact your Authorized SunBriteTV dealer or SunBriteTV's Customer Service at 866.357.8688.

General Cleaning

Remove any dirt and salt deposits from the unit, being careful to rinse the cloth frequently to avoid scratching the TV or screen surface. Avoid using harsh chemicals, abrasives, or solvents when cleaning any surface on the unit.

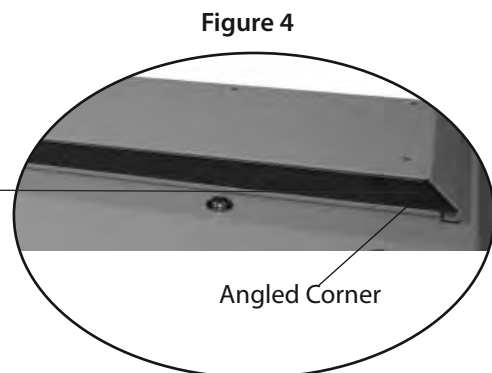
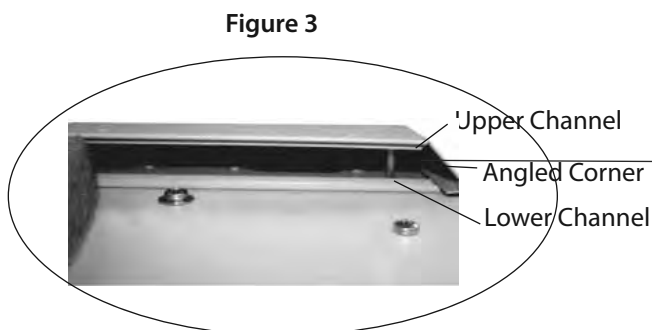
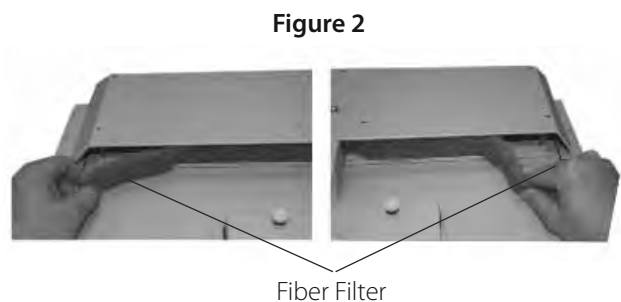
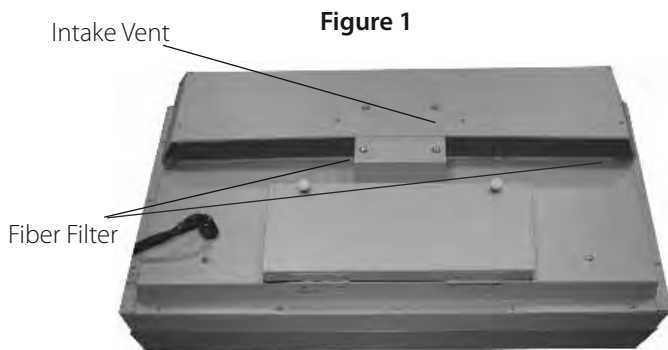
Snow and Ice

Use a soft brush and towel to remove snow and ice from the unit.

Fiber Filters

The Fiber Filters are located on the back of the TV, inside the Intake Vent at the top of the TV (Figure 1). In areas where dust or salt air is prevalent, it is recommended that the Fiber Filters be cleaned regularly.

1. Release the Fiber Filters by pulling them out from the corner of the Intake Vent (Figure 2). Notice how the Fiber Filters fit in the upper and lower channels, and tightly against the angled corners (Figure 3).
2. Pull the Fiber Filters out of the TV, and wash them with mild detergent and warm water. After rinsing, let them dry completely.
3. Put the Fiber Filters back up into the Intake Vent pushing the filter first into the upper channel, then fit it into the lower channel. Make sure the filters fits tightly against angled corners at each end of the Intake Vent.. (Figure 4).



Specifications

Specifications

LCD Screen	31.5-inch diagonal TFT Active Matrix
Resolution	1366 x 768
Aspect Ratio	16:9
Contrast Ratio	1500:1
H/V Viewing Angle	178° by 178°
Response Time	8 milliseconds
TV formats	1080i, 720p, 480i, 480p
Input Connectors:	
RF	Antenna/CATV (NTSC/ATSC/QAM)
HDMI	HDMI Input x2
Video Composite	S-Video x1 and Composite Video x1, L/R Audio Inputs x1
Video Component	YCbCr/YPbPr x2 and audio L/R channels x2
PC	15-pin D-sub VGA plus Stereo Audio
RS232 Serial	Full-featured command set with discrete on/off, input select and volume control
Discrete IR Control	Codes for Power On/Off and Input Select
Input Power	100-240 VAC, 50-60 Hz 2.5A Max
Audio	8-watt x 2 channels, water-resistant speaker module (detachable), SPDIF Audio output connector inside rear cover
Operating Temp.	-24° to 122° F. (-31° to 50° C.)
Non-op. Temp. (Off-mode with power applied)	-24° to 140° F. (-31° to 60° C.)
Accessories Included	Water-resistant remote control with lithium battery R
TV Dimensions	32.07 in. W x 23.20 in. H x 6.29 in. D
Weight	37.5 lbs., 41.6 lbs w/speakers
Shipping Dimensions	37.0 in. W x 31.0 in. H x 11.7 in. D
Shipping Weight	54 lbs.
Warranty	1 year in-factory parts and labor

Temperature range is for operation in shaded location

Under all conditions, the LCD TV should be installed in a shaded area where the screen is not facing direct sunlight (or placed/mounted where the TV can easily be turned away from direct sunlight).

PC Timing Codes

1360*768@60Hz(NATIVE)

1280*768@60Hz

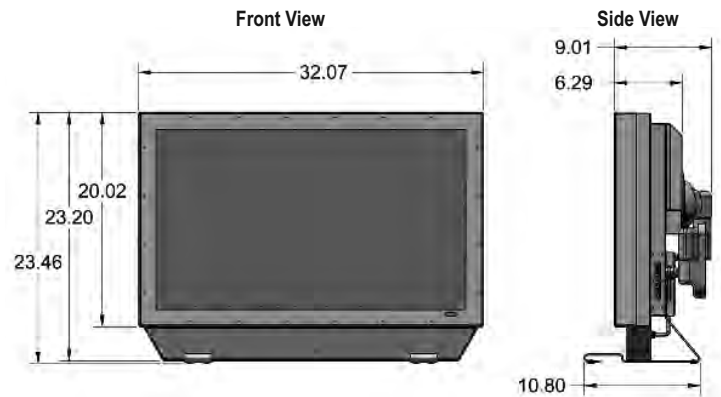
1024*768@60Hz, 75Hz

800*600@60Hz, 75Hz

640*480@60Hz, 75Hz

SunBriteTV Model 3220HD

(All dimensions are in inches)



TV Dimensions are:
32.066 in. W x 23.204 in. H x 6.287 in. D
Height dimension with table top stand is 23.458 in.

Features Information and Instructions

Internal Thermostatically-Controlled Heater

The Internal Thermostatically-Controlled Heater keeps the unit warm in freezing temperatures and activates automatically when the SunBriteTV internal temperature sensor reads a temperature inside the unit of 32° F. or lower. The heater remains on until the internal temperature rises to at least 42° F. The heater provides a 20° F. temperature rise, allowing the TV to safely remain in temperatures as low as -24° F. The ventilation fans are not activated when the heater is running and will automatically activate when required.

If temperatures below -24° F. are expected, we recommend that you bring your SunBriteTV inside to prevent damage to the LCD screen.

Note: *In order for the automatic heater to work properly, your SunBriteTV must have power applied at all times.*

Programming Other Manufacturers' Universal Remote Control Devices

When programming a DirectTV, local cable universal remote control or Control system, you may find that SunBriteTV may not be on the list of TV manufacturers. If that is the case, Model 4610HD supports SONY's universal remote code.

SunBriteTV Pixel Quality Policy

SunBriteTV's Pixel Quality Policy

(Applicable to LCD TVs sold within USA and Canada only.)

SunBriteTV™ LCD screens are manufactured with rigorous standards to maintain optimal viewing. However, the LCD screen may have minor defects that appear as a small bright or dark pixel. This is common to all LCD screens used in display and television products, and is not specific to SunBriteTV.

Bright dots are dots that appear bright and unchanged in size when a LCD TV screen displays a black pattern.

Dark dots are dots that appear dark and unchanged in size when a LCD TV screen displays a pure red, green, or blue pattern.

Adjacent dots are pixels located directly next to each other.

Your SunBriteTV will be replaced under warranty if it meets one of the following criteria:

—A total of 7 defective pixels, including both bright dots and dark dots are present. (Model 4610HD LCD TV screen has over a million pixels.)

—2 or more pairs of adjacent bright dots are present.

—3 adjacent bright dots are present.

—3 adjacent dark dots are present.

To locate defective pixels, the LCD panel should be examined under normal operating conditions, in its native display resolution, with a 90 degree viewing angle, from a distance of approximately 20 inches.

To qualify for replacement, a defective LCD screen must be reported to SunBriteTV within 14 days from the day the customer receives the TV.

For questions, please call our toll-free service number at 866.357.8688.

Appendix - RS232 Control Codes

RS 232 Control Codes for SunBriteTV Models SB-3220HD and SB-4610HD

Function	ASCII	HEX	Command Received from TV to control system	Response from TV to control system
Firmware Version Number	[ESC]7	1B 3F	[B3220AHD-X.XX] or [B4610AHD-X.XX]	na
Power Status	[ESC]I	1B 21	[PWON] [PWROFF]	na
Power Toggle	[ESC]S	1B 24	[S]	[PWR]
Power ON	[ESC]A	1B 41	[A]	[PWON]
Power OFF	[ESC]B	1B 42	[B]	[PWROFF]
Tuner Input	[ESC]C	1B 43	[C]	[TN1]
Composite Video Input 1	[ESC]D	1B 44	[D]	[AV1(CVBS)]
S-Video Input 1	[ESC]E	1B 45	[E]	[AV1(S-VIDEO)]
Composite Video Input 2	[ESC]F	1B 46	[F]	[AV2(CVBS)]
S-Video Input 2	[ESC]G	1B 47	[G]	[AV2(S-VIDEO)]
Component1 Input	[ESC]H	1B 48	[H]	[YpbPr1]
Component2 Input	[ESC]I	1B 49	[I]	[YpbPr2]
HDMI Input 1	[ESC]J	1B 4A	[J]	[HDM1]
VGA Input	[ESC]K	1B 4B	[K]	[VGA]
HDMI Input 2	[ESC]L	1B 4C	[L]	[HDM2]
Mute	[ESC]X	1B 58	[X]	[MUTE]
Vol Up	[ESC]Y	1B 59	[Y]	[VOL+]
Vol Down	[ESC]Z	1B 5A	[Z]	[VOL-]
Channel Up	[ESC]V	1B 56	[V]	[CH+]
Channel Down	[ESC]W	1B 57	[W]	[CH-]
1	[ESC]1	1B 31	[1]	na
2	[ESC]2	1B 32	[2]	na
3	[ESC]3	1B 33	[3]	na
4	[ESC]4	1B 34	[4]	na
5	[ESC]5	1B 35	[5]	na
6	[ESC]6	1B 36	[6]	na
7	[ESC]7	1B 37	[7]	na
8	[ESC]8	1B 38	[8]	na
9	[ESC]9	1B 39	[9]	na
0	[ESC]0	1B 30	[0]	na
-	[ESC]-	1B 2D	[]	na
Channel Return(Previous Channel)	[ESC]r	1B 72	[r]	na
Source Toggle	[ESC]b	1B 62	[SRC]	na
Aspect	[ESC]a	1B 61	[ASPECT]	na
Enter	[ESC]e	1B 65	[ENTER]	na
Info	[ESC]i	1B 69	[INFO]	na
CC	[ESC]c	1B 63	[CC]	na
Sleep	[ESC]z	1B 7A	[SLEEP]	na
Picture	[ESC]p	1B 70	[PICT]	na
Sound	[ESC]s	1B 73	[SND]	na
(4610 only) PIP On	[ESC]P	1B 50	[PIP]	na
(4610 only) PIP Source	[ESC]Q	1B 51	[PSC]	na
(4610 only) PIP Swap Video	[ESC]R	1B 52	[PSV]	na
(4610 only) PIP Swap Audio	[ESC]S	1B 53	[PSA]	na
(4610 only) PIP Size	[ESC]T	1B 54	[PSZ]	na



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