

190TS2
220TS2



www.philips.com/welcome

(Ref model: 190TS2LB)

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PHILIPS

Welcome

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***Congratulations on your purchase,
and welcome to the “family!”***

Dear PHILIPS product owner:

Thank you for your confidence in PHILIPS. You've selected one of the best-built, best-backed products available today. We'll do everything in our power to keep you happy with your purchase for many years to come.

Know these
safety symbols



This “bolt of lightning” indicates uninsulated material within your unit may cause an electrical shock. For the safety of everyone in your household, please do not remove product covering.



The “exclamation point” calls attention to features for which you should read the enclosed literature closely to prevent operating and maintenance problems.

WARNING: To reduce the risk of fire or electric shock, this apparatus should not be exposed to rain or moisture and objects filled with liquids, such as vases, should not be placed on this apparatus.

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

For Customer Use

Enter below the Serial No. which is located on the rear of the cabinet. Retain this information for future reference.

Model No. _____

Serial No. _____

Register your product and get support at
www.philips.com/welcome

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1. Important safety instructions

Read before operating equipment

1. Read and keep these instructions.
2. Heed all warnings.
3. Follow all instructions.
4. Do not insert any strange object into the ventilation slots. This might lead to damage of the Monitor.
5. Do not use this apparatus near water.
6. Clean only with a dry cloth.
7. Do not block any of the ventilation openings. Install in accordance with the manufacturers instructions.
8. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
9. 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 third grounding prong. The wide blade or third prong are provided for your safety. When the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
10. Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
11. Only use attachments/accessories specified by the manufacturer.
12.  Use only with a 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.
13. Unplug this apparatus during lightning storms or when unused for long periods of time.
14. 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 apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.
15. This product may contain lead or 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.eiae.org.
16. Damage Requiring Service - The appliance should be serviced by qualified service personnel when:
 - The power supply cord or the plug has been damaged;
 - Objects have fallen, or liquid has been spilled into the appliance;
 - The appliance has been exposed to rain;
 - The appliance does not appear to operate normally or exhibits a marked change in performance;
 - The appliance has been dropped, or the enclosure damaged.
17. Tilt/Stability - All televisions must comply with recommended international global safety standards for tilt and stability properties of its cabinet design.
 - Do not compromise these design standards by applying excessive pull force to the front, or top, of the cabinet which could ultimately overturn the product.
 - Also, do not endanger yourself, or children, by placing electronic equipment/toys on the top of the cabinet. Such items could unsuspectingly fall from the top of the set and cause product damage and/or personal injury.
18. Wall or Ceiling Mounting - The appliance should be mounted to a wall or ceiling only as recommended by the manufacturer.
19. Power Lines - An outdoor antenna should be located away from power lines.
20. Outdoor Antenna Grounding - If an outside antenna is connected to the receiver, be sure the antenna system is grounded so as to provide some protection against voltage surges and built up static charges.
21. Object and Liquid Entry - Care should be taken so that objects do not fall and liquids are not spilled into the enclosure through openings.
22. Battery Usage CAUTION - To prevent battery leakage that may result in bodily injury, property damage, or damage to the unit:
 - Install all batteries correctly, with + and - aligned as marked on the unit.
 - Do not mix batteries (old and new or carbon and alkaline, etc.).
 - Remove batteries when the unit is not used for a long time.
23. For ventilation, leave at least 4" to 6" free all around the Monitor. Do not place the Monitor on a carpet.
24. The equipment shall not be exposed to dripping or splashing.
25. The equipment shall not be exposed to rain or moisture and objects filled with liquids, such as vases, shall be placed on the apparatus.
26. The apparatus must be connected to a mains socket outlet with a protected earthed connection.
27. The appliance coupler is used as the disconnect device of this apparatus, the disconnect device shall remain readily operable.

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Specifications are subject to change without notice.

Philips reserves the right to change products at any time without being obliged to adjust earlier supplies accordingly.

The material in this manual is believed adequate for the intended use of the system. If the product, or its individual modules or procedures, are used for purposes other than those specified herein, confirmation of their validity and suitability must be obtained. Philips warrants that the material itself does not infringe any United States patents. No further warranty is expressed or implied.

Philips can't be held responsible neither for any errors in the content of this document nor for any problems as a result of the content in this document. Errors reported to Philips will be adapted and published on the Philips support website as soon as possible.

Pixel characteristics

The LCD panel has a high number of colour pixels. Although it has effective pixels of 99.999% or more. Black dots or bright points of light (red, green or blue) may appear constantly on the screen. This is a structural property of display (within common industrial standard) and is not a malfunction. This does not affect the performance of the product.

Safety symbols

Know these safety symbols:



This "bolt of lightning" indicates uninsulated material within your unit may cause an electrical shock. For the safety of everyone in your household, please do not remove product covering.



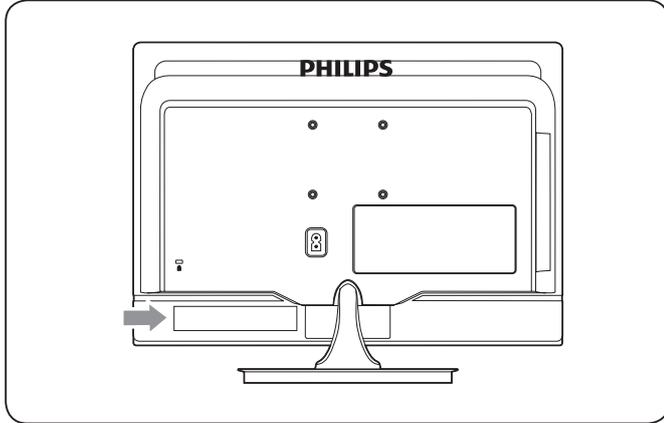
The "exclamation point" calls attention to features for which you should read the enclosed literature closely to prevent operating and maintenance problems.

If the Monitor is mounted on a swivel base or swivel arm, ensure no strain is placed on the power cord when the Monitor is swivelled. Strain on the power cord can loosen connections. This may cause arcing and result in fire.

2. Important

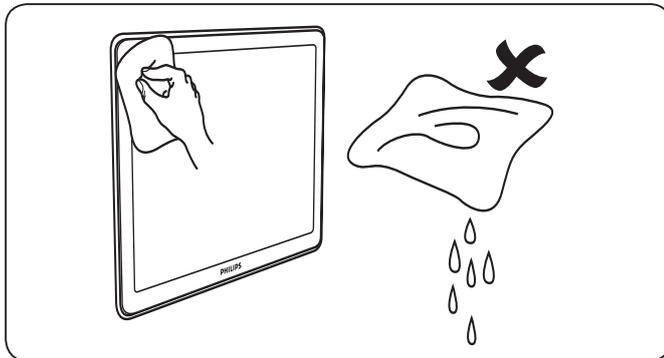
2.1 Product information

The model and serial number are on the rear of the Monitor and on the packaging.



This Monitor consumes minimal energy in standby mode to minimise environmental impact. The active power consumption is given on the type plate at the rear of the Monitor.

2.2 Screen care



- Turn off and unplug the AC power cord before cleaning the screen.
- Clean the screen with a soft, dry cloth. Do not use substances such as household cleaning agents as these may damage the screen.
- To avoid deformations or color fading, wipe off water droplets as soon as possible.
- Do not touch, push, rub or strike the screen with hard objects as this may damage the screen permanently.
- Where possible, avoid stationary images that remain on-screen for extended periods of time. If you must use stationary images, reduce the screen contrast and brightness to avoid screen damage.

2.3 Environmental care



End of life directives - Recycling

Philips has paid a lot of attention to producing an environmentally friendly product. Your new Monitor contains several materials that can be recycled for new uses. At the end of its life, specialized companies can dismantle and recycle this set. This will minimize the amount of materials being disposed of. Please be sure to dispose of this set in accordance with all state and local regulations.

Recycling your packaging

The packaging of this product is intended to be recycled. Contact your local authorities for information on how to recycle the packaging.

Disposing used batteries

The supplied batteries do not contain mercury or cadmium. Dispose supplied and all other used batteries according to your local regulations.

Power consumption

The Monitor consumes minimal energy in standby mode to minimise environmental impact. Active power consumption is displayed at the back of the Monitor.

2.4 Regulatory notices



WARNING

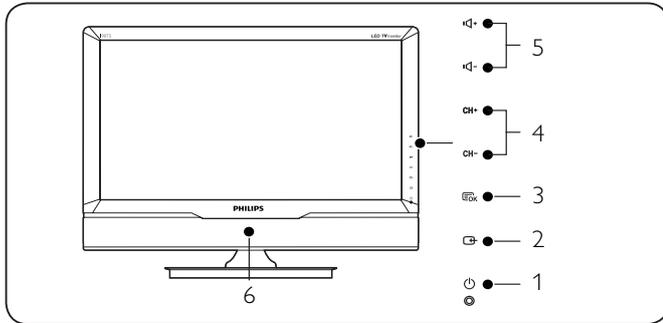
To reduce the risk of fire or electric shock, this apparatus should not be exposed to rain or moisture. Objects filled with liquids, such as vases, should not be placed on this apparatus.

3. Your Monitor

This section gives you an overview of commonly-used Monitor controls and functions.

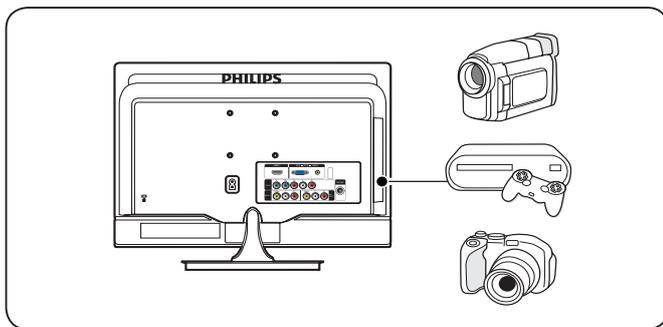
3.1 Monitor overview

Front controls and indicators



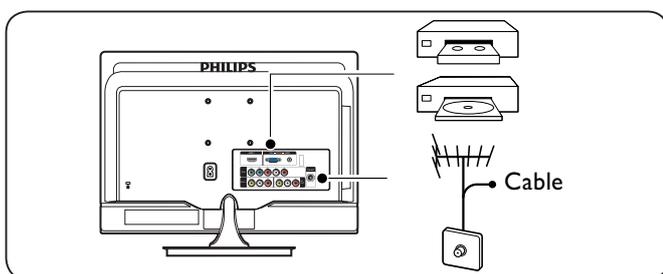
1. POWER/Power indicator
2. SOURCE
3. MENU
4. CHANNEL +/-
5. VOLUME +/-
6. Remote control sensor

Side connectors



Use the Monitor side connectors to connect to mobile devices such as a camera or game console. You can also connect to the headphone.

Rear connectors



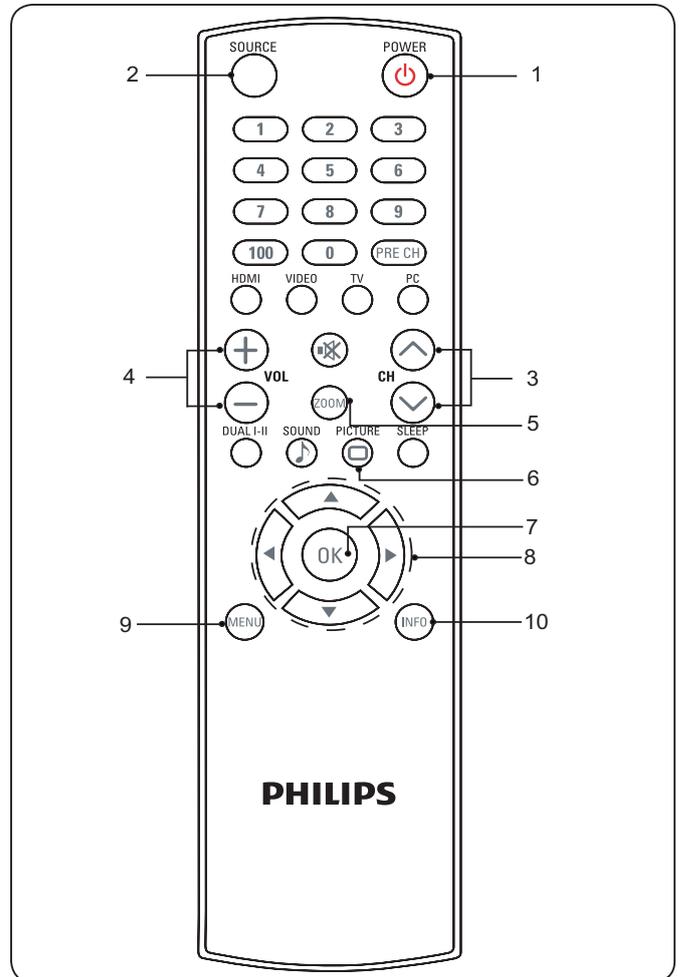
Use the Monitor rear connectors to connect to the antenna and permanent devices such as a high-definition disc player or DVD player.



Note

For more information about connections, see *Section 7 Connect devices.*

3.2 Remote control



1. Standby / ON
2. Source selection
3. Channel selection
4. Volume selection
5. Zoom buttons
6. Picture button
7. OK button
8. Cursor button
9. Menu button
10. Information button

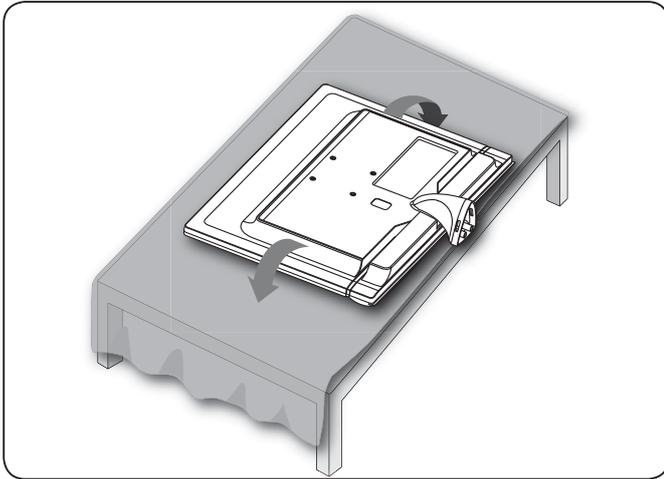
For more information about the remote control, See *Remote control overview section.*

4. Get started

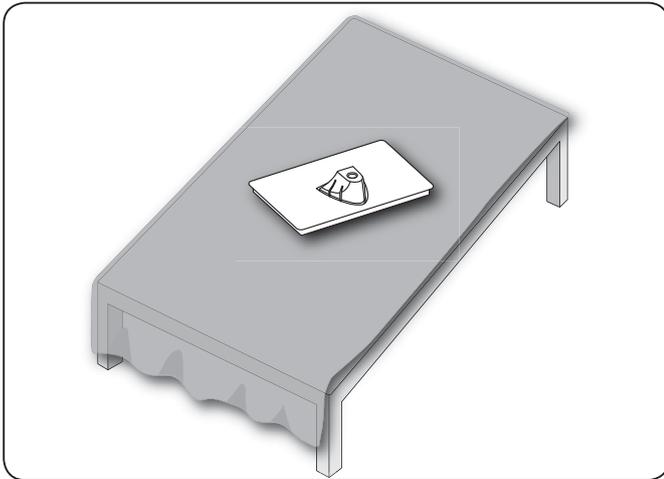
This section describes how to position and connect your Monitor, and how to perform your first-time installation.

4.1 Mounting the stand

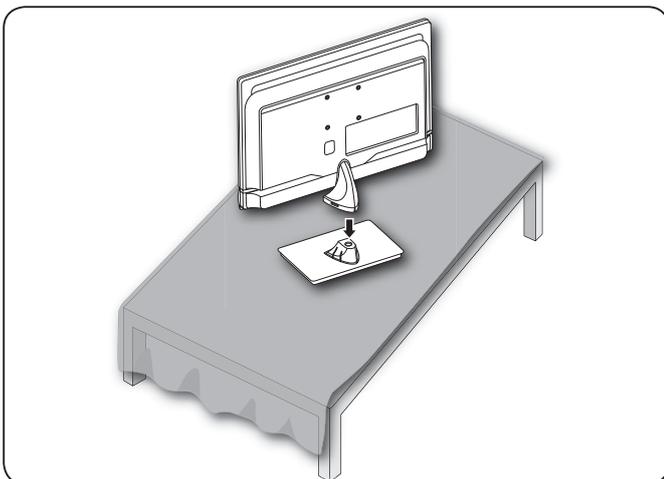
Step 1 Place on a soft flat surface



Step 2 Put the base on a table



Step 3 Insert base into column



4.2 Position the Monitor

⚠ WARNING

- Do not insert the power plug into the wall socket before all the connections are done.
- Large screen Monitors are heavy. Two people are required to carry and handle the Monitor.

Wherever you decide to position your Monitor, ensure that you always have easy access to the AC power cord or plug to disconnect the Monitor from the power.

If the Monitor is mounted on a swivel base or swivel arm, ensure no strain is placed on the AC power cord when the Monitor is swivelled. Strain on the AC power cord can loosen connections. This may cause arcing and result in fire.

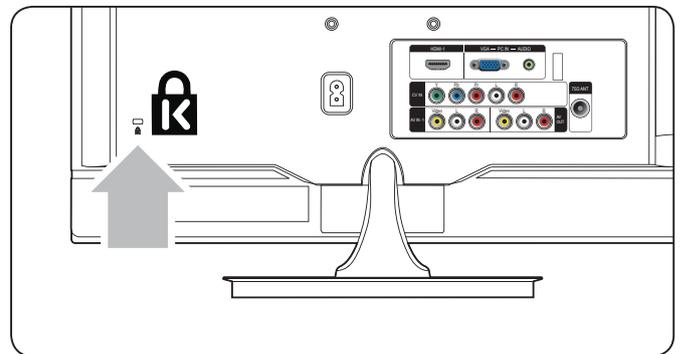
For ideal viewing conditions, position the Monitor where light does not fall directly on the screen.

The ideal viewing distance for watching Monitor is three times its screen size.

Kensington security slot

Your Monitor is equipped with a Kensington Security Slot at the back of the Monitor.

If you connect an anti-theft Kensington lock (not supplied), position the Monitor within reach of a permanent object that can be attached to the lock.



4.3 Wall mount the Monitor

⚠ Warning

Wall mounting of the Monitor should only be performed by qualified installers. Koninklijke Philips Electronics N.V. bears no responsibility for improper mounting that results in accident or injury.

Step 1 Purchase a VESA-compatible wall bracket

According to the size of your Monitor screen, purchase one of the following wall brackets:

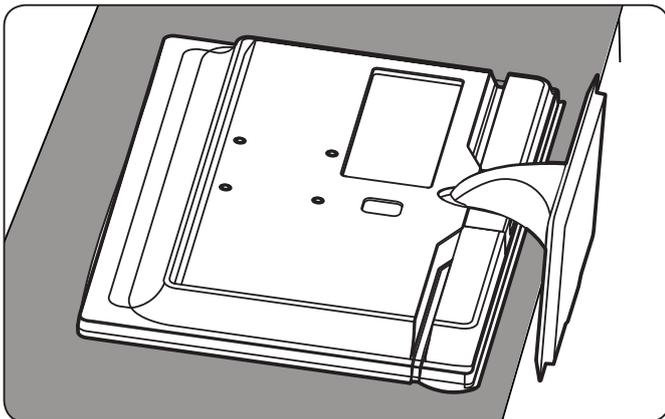
Monitor screen size (inches)	VESA-compatible wall bracket type (millimeters)	Screw type
19" / 22"	75 x 75mm	Metric 4 x 10mm

Step 2 Remove the Monitor stand

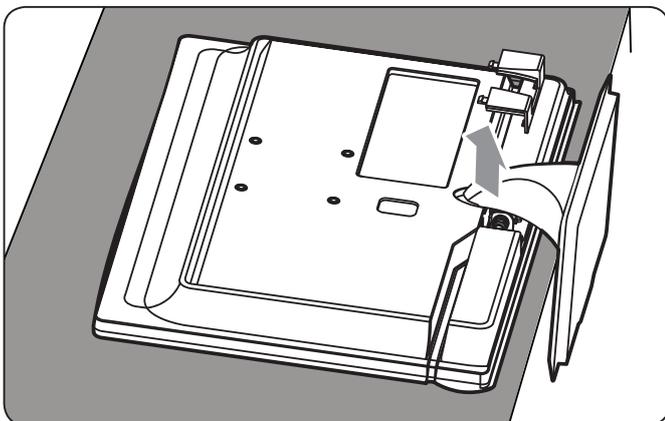
Note

These instructions are only applicable to Monitor with TV tuner models with mounted stands. If your Monitor stand is not mounted, skip to *Step 3 Connect cables*.

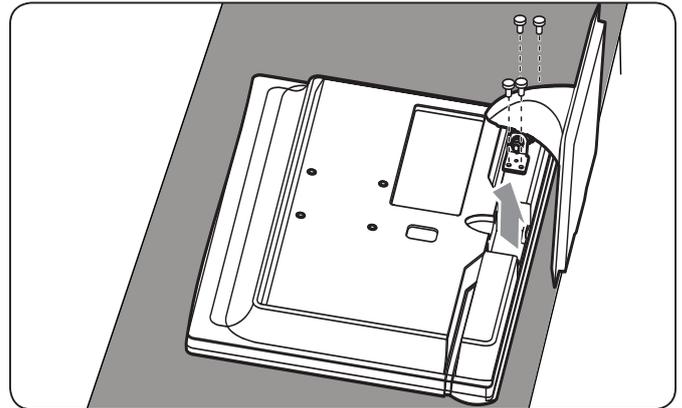
- Carefully place the Monitor face down on a flat, stable surface that is covered by soft cloth. The cloth should be thick enough to protect your screen.



- Pull up the lid that cover the Monitor stand.



- Using a cross-head (Phillips Screw) screwdriver (not supplied) to unscrew the four bolts that secure the Monitor stand.



- Firmly pull the stand from the bottom of the Monitor. Keep both the stand and bolts in a secure location for future reinstallation.

Step 3 Connect cables

Connect the antenna cable, AC power cord, and all other devices to the back of the Monitor as described in the following sections and in *Section 7 Connect devices*.

Step 4 Secure the VESA-compatible wall bracket to the Monitor



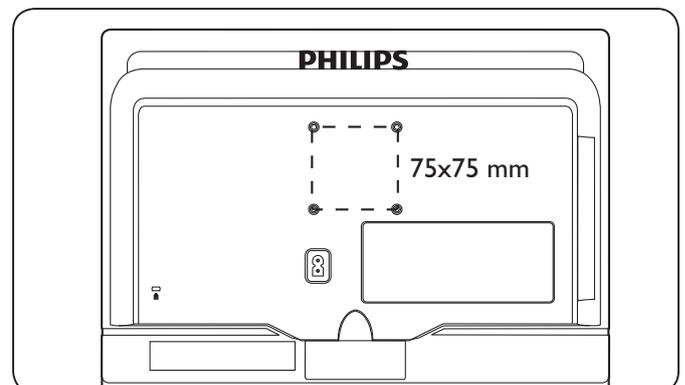
Warning

Only use the specified bolts (M4 x 10mm) to secure the VESA-compatible wall bracket to your Monitor. The specified bolts are designed to match the weight of your Monitor.

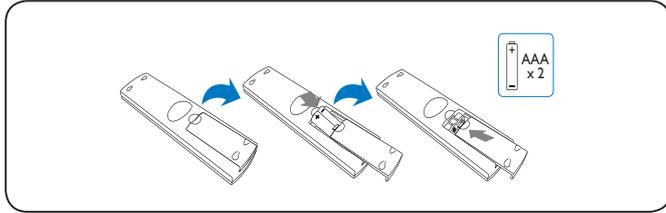


Note

Depending on your VESA-compatible wall bracket, you may need to separate the mounting plate from the wall bracket for easier installation. Refer to your VESA-compatible wall bracket documentation for instructions.



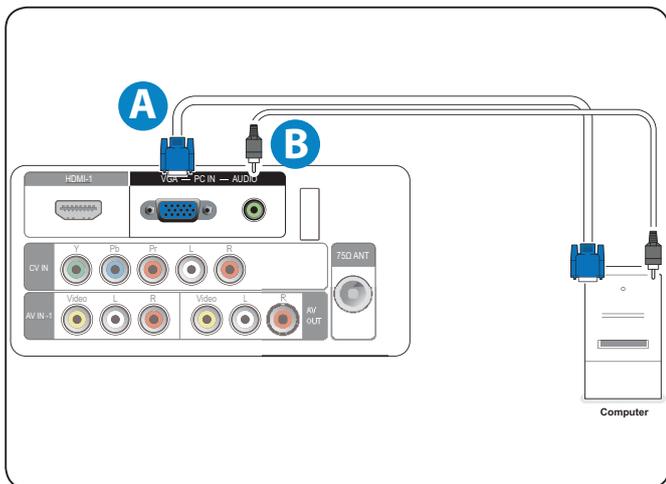
4.4 Install the remote control batteries



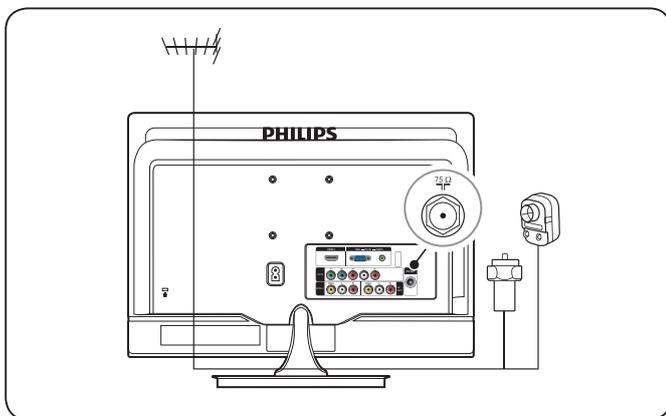
1. Open the battery cover on the back of the remote control.
2. Insert the 2 batteries supplied. Make sure the + and - battery ends line up correctly (the polarity is marked inside the compartment).
3. Close the cover.

4.5 Connect the PC, antenna or cable

Connect to PC



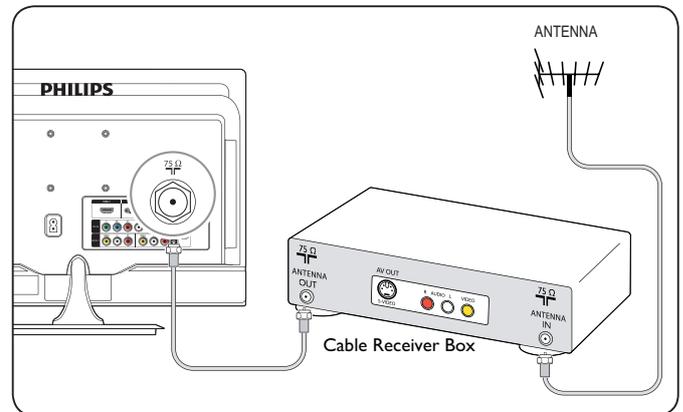
Connect to an antenna



1. Locate the TV ANTENNA connector on the back of the Monitor.
2. Connect one end of an antenna cable (not supplied) to the TV ANTENNA connectors. Use an adaptor if the antenna cable does not fit.

3. Connect the other end of the antenna cable to your antenna outlet, ensuring that the cable is tightly secured at both ends.

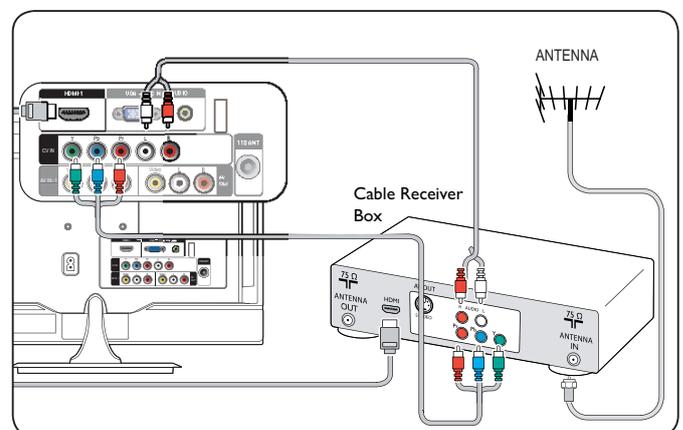
Connect to a cable receiver box



A cable receiver box can be connected to the Monitor through the following connections:

- ANTENNA (75Ω)
- A/V (Composite Video and Audio)
- S-Video and Audio

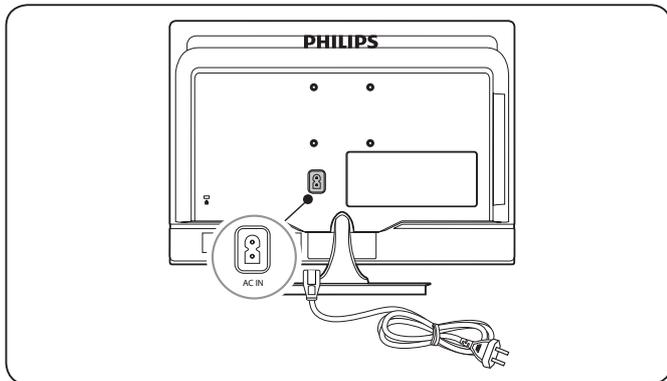
Connect a cable receiver box through component video input or HDMI



4.6 Connect the AC power cord

- Warning**
Verify that your voltage corresponds with the voltage printed at the back of the Monitor. Do not insert the AC power cord if the voltage is different.

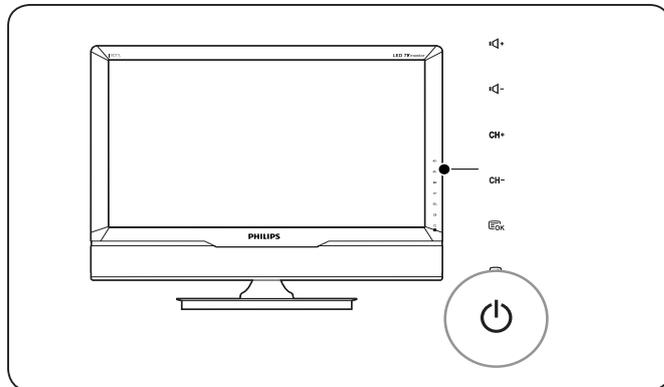
To connect the AC power cord



1. Locate the power connector at the back of the Monitor.
 The location of the power connector varies according to Monitor model.
2. Insert the AC power cord fully into the Monitor power connector.
3. Connect the AC power cord plug to the power outlet. Ensuring that the cord is tightly secured at both ends.

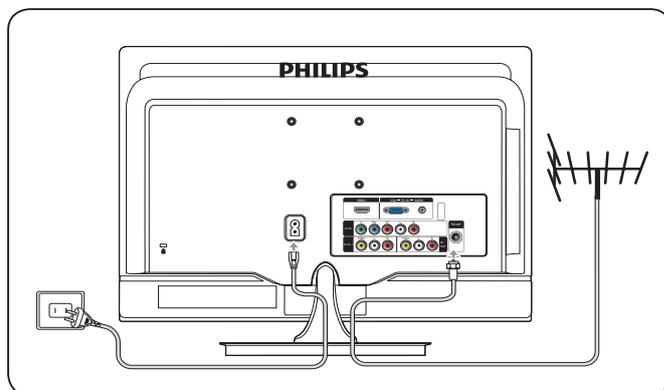
4.7 Switch on the Monitor

Before you switch on the Monitor, check that the mains cord is properly connected. Touch **POWER** button at the front of the Monitor, or press **POWER** button on the remote control. The Monitor normally takes 5-7 seconds to start up.



4.8 Manage cable

Route your AC power cord, antenna cable and all other device cables through the cable holder at the back of the Monitor. The holder helps keep your cables tidy and easily manageable.



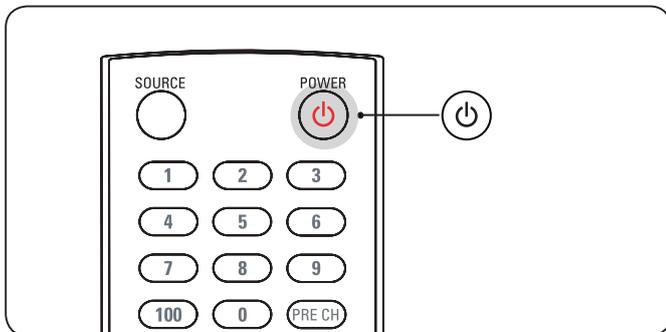
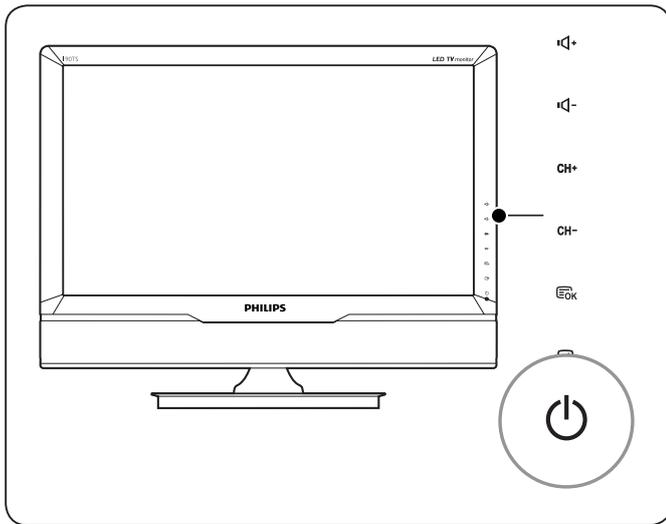
5. Use your Monitor

This section helps you perform basic Monitor operations.

5.1 Switch your Monitor on/off or to standby

To Switch the Monitor on

- If the standby indicator is off, touch **POWER** at the front of the Monitor.
- If the standby indicator is on, press **POWER** on the remote control.



To Switch to standby

- Press **POWER** on the remote control.

To switch on from standby without the remote control.

- Touch **POWER** at the front of the Monitor to switch the Monitor off.
- Touch **POWER** again to switch the Monitor on.

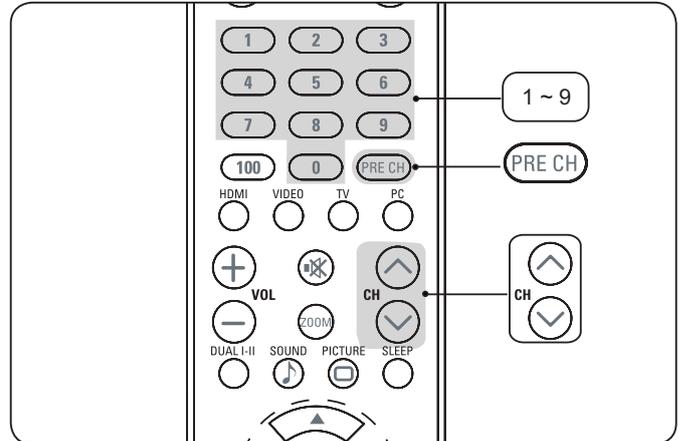
To switch off

- Touch **POWER** at the front of the Monitor.

5.2 Watch TV

Switch channels

- Press a number (1 to 9) or press **CH +/-** on your remote control.
- Press **PRE CH** to return to the previously viewed TV channel.

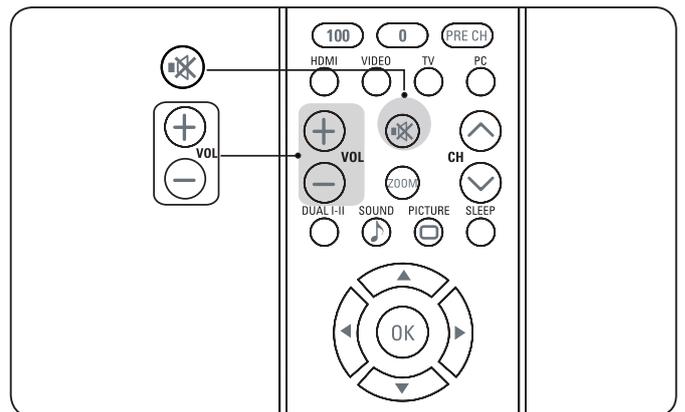


Note

You can also switch channels by touching **CHANNEL +/-** at the front of the Monitor.

Adjust volume

- Press **VOL +/-** on your remote control.
- Press **MUTE** on your remote control to mute the sound. Press **MUTE** again or press **VOL +/-** to restore the sound.



Note

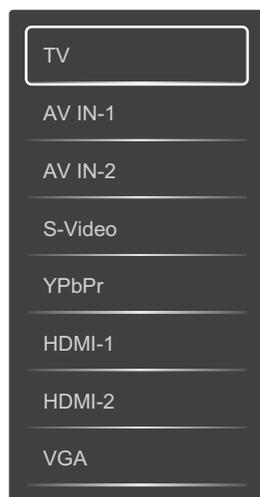
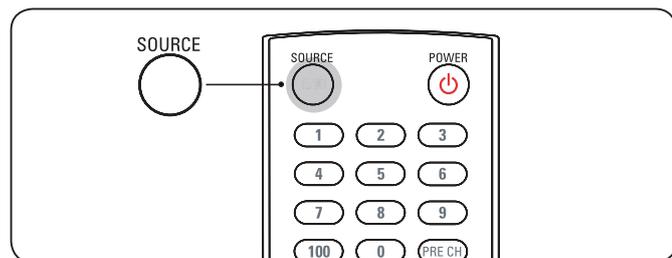
You can also switch volume by touching **VOLUME +/-** at the front of the Monitor.

5.3 Watch channels from a cable receiver box

- Switch on the cable receiver box.
The picture from your cable receiver box might appear automatically on your screen.
- Use the remote control of your cable receiver box to select channels.

If the picture does not appear

- Press **SOURCE** to select the correct source.



- Press **OK** and wait a few seconds for the picture to appear.
- Use the remote control of your cable receiver box to select channels.

5.4 Watch a DVD

- Insert a DVD disc in your player.
- Press **Play** > on the remote control of your player.
The picture from the player might appear automatically on your screen.

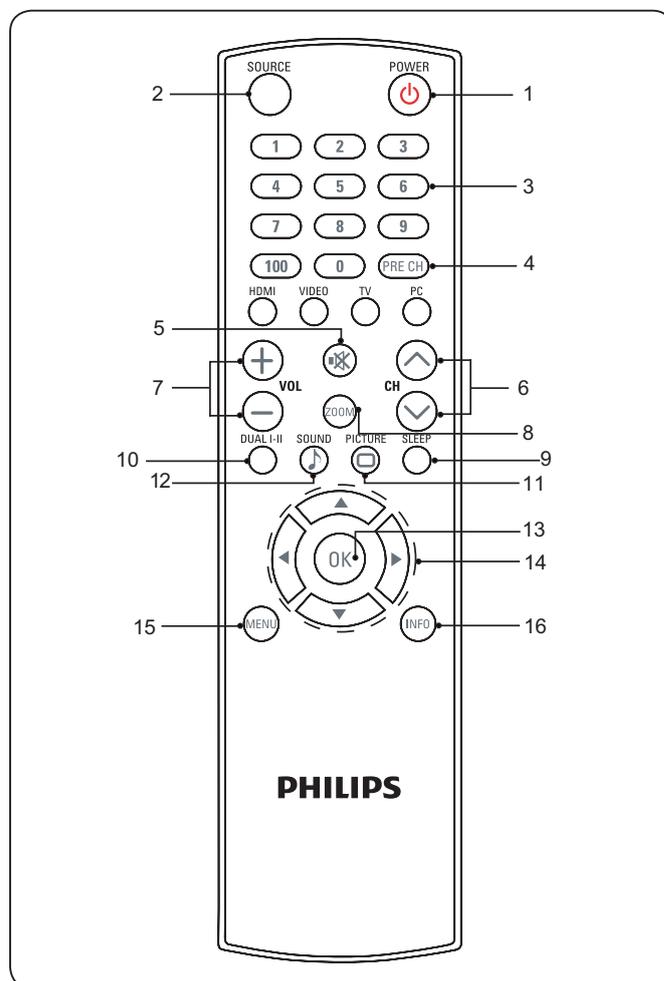
If the picture does not appear

- Press **SOURCE** to select the correct source.
- Press **OK** and wait a few seconds for the picture to appear.

6. Use more of your Monitor

This section describes the advanced features of your Monitor.

6.1 Remote control overview



- POWER**
Switches the Monitor on from standby or back to standby.
- SOURCE**
Selects connected devices.
- NUMBER BUTTONS**
Selects a channel, page or setting.
- PRE CH**
Returns to the previously-viewed channel.
- MUTE**
Mutes or restores sound.
- CH \wedge / \vee**
Switches to the next or previous channel.
- VOL +/-**
Increases or decreases volume.

8. ZOOM

Selects a picture format. See *Change Picture format* section.

9. SLEEP

Sets the Monitor to turn itself off within a certain time.

10. DUALI-II

Selects Mono, Stereo, Dual I, Dual II, Nicam Mono, Nicam Stereo, Nicam Dual I, Nicam Dual II.

Note

The sound mode selections depend on TV program and broadcast TV channel of that region.

11. PICTURE

Selects a picture setting.

12. SOUND

Adds greater depth and dimension to the TV sound.

13. OK

Press to activate a setting.

14. CURSOR BUTTONS ▲ ▼ ◀ ▶

To navigate through the menus.

15. MENU

Toggles the menu on or off.

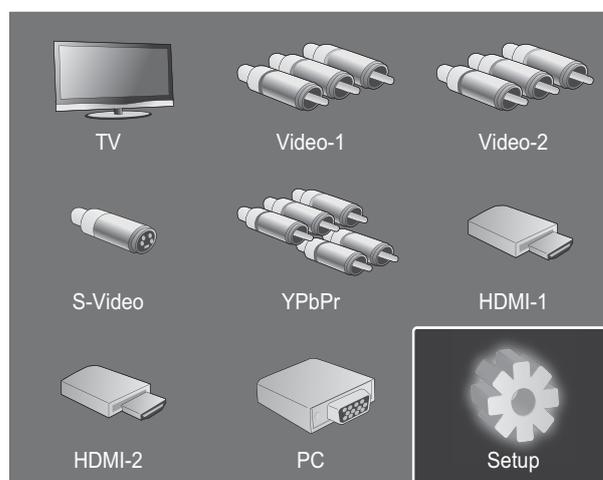
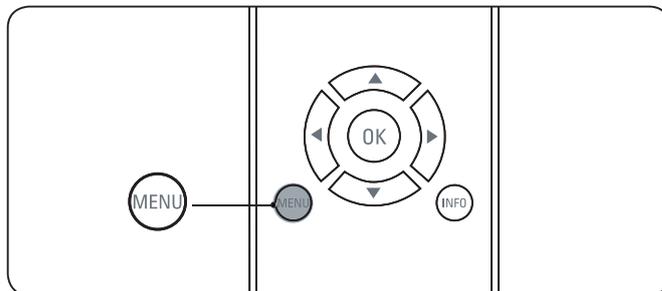
16. INFO

Displays programme information, if available.

6.2 Enter setup menu

This section describes how to enter the **Setup** menu.

1. Press **MENU** on the remote control to display the **Setup** menu.

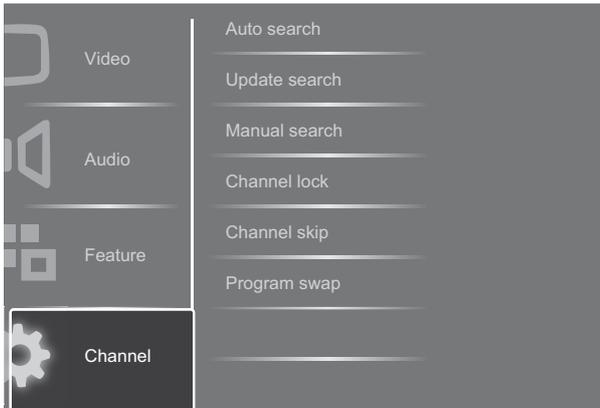


2. Press ▲ or ▼ to highlight the item you want to adjust. Press ▶ or **OK** button to enter.
3. Press **MENU** to exit.

6.3 Set the channel menu

This section describes how to set the channel menu.

1. Enter **Setup** menu.
2. Press **▼** to select **Channel** menu, then press **▶** or **OK** to enter.



⊞ Note

The **Channel** menu is available for TV input only.

Summary of channel settings

- **Auto search** - Automatically sets up the TV for the broadcast or cable channels available in your area.

⊞ Note

Immediately after unpacking and plugging in your new monitor, run the auto search function to set up the TV for the broadcast or cable channels available in your area. If you do not run the auto search function to set up the channels, your TV programs may not operate properly.

After you have run auto search, check out the results. Press **CH ▲ / V** on the remote control and see which channels you can select.

Remember, an antenna or cable TV signal must first be connected to your Monitor.

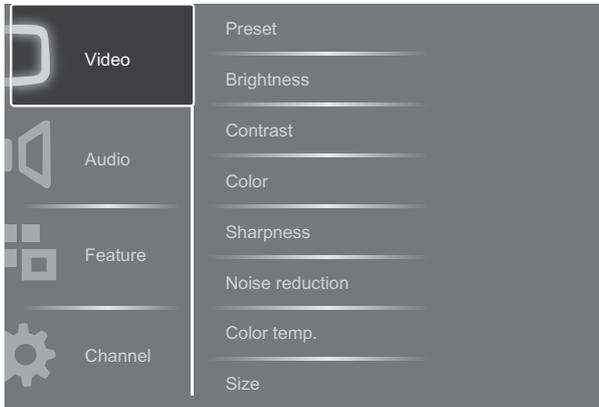
- **Update search** - Automatically updates the Monitor for the broadcast or cable channels available in your area.
- **Manual search** -
 - **Program No.** - Press **◀** or **▶** to select channel number.
 - **Program Name** - Press **▲** or **▼** to select alphabet and numeric numbers. Press **◀** or **▶** to move position. Press **OK** to confirm.
 - **Frequency** - Press **◀** or **▶** to select frequency. Also possible by pressing number keys.

- **Color system** - Press **◀** or **▶** to select color system from **PAL**, **NTSC**, **SECAM**, **NTSC443**, or **Auto**.
- **Sound system** - Press **◀** or **▶** to select sound system from **DK**, **I**, **BG**, **M**, or **Auto**.
- **AFC** - Auto Frequency Control. Press **◀** or **▶** to select **On** or **Off**.
- **Channel lock**: Selects the channels for setting lock function.
- **Channel skip** - Skips the selected channels.
- **Program swap** - Exchanges the appearing order of two selected channels.

6.4 Adjust video settings

This section describes how to adjust your video settings.

1. Enter **Setup** menu.
2. Press **▼** to select **Video** menu, then press **▶** or **OK** to enter.



3. Press **▲** or **▼** to select the one of the video settings, and press **▶** or **OK** to enter the setting.
4. Press **◀** or **▶** to adjust the setting, and press **OK** to confirm the change.
5. Press **MENU** to exit.

Summary of video settings

The following picture settings can be configured. Depending on the format of the video source, some video settings might not be available.

- **Preset** - Changes the format of the picture.
- **Brightness** - Sets the brightness of the picture.
- **Contrast** - Sets the level of white in the picture.
- **Color** - Sets the level of saturation.
- **Sharpness** - Sets the sharpness of fine details.
- **Noise reduction** - Sets the noise removal mode.
- **Color temp.** - Sets the color temperature.
- **Size** - Sets the displaying size of the picture.

Note

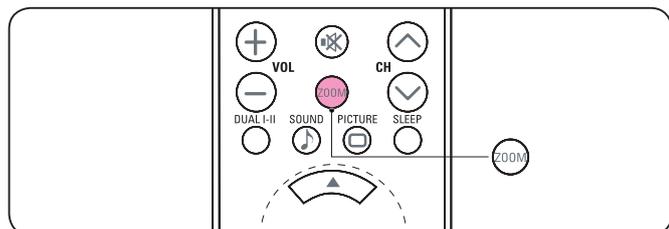
Any adjustment of brightness, color, contrast, or sharpness will be stored into **Personal** at preset picture mode section.

6.5 Use preset picture mode

1. Press **PICTURE** on the remote control to set your Monitor to a pre-defined picture setting.
2. Press **PICTURE** again to select one of the following settings:
 - **Personal** - The customized settings you defined by using the **Picture** menu.
 - **Vivid** - Vivid picture settings and clear sound for high action.
 - **Standard** - For normal viewing.
 - **Movie** - Brilliant picture settings for a cinematic experience.
 - **ECO mode** - Economically and friendly settings for lower power consumption.

6.6 Change picture format

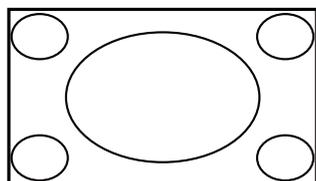
1. Press **ZOOM** button on remote control to select the format best fit in with your contents.



2. Press ▲ or ▼ to select a picture format.

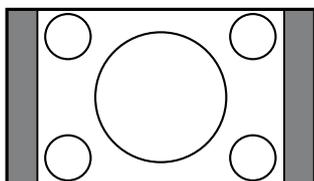
- **Wide screen**

Stretches the classic 4:3 format to 16:9.



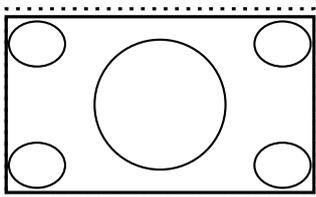
- **4:3**

Displays the classic 4:3 format.



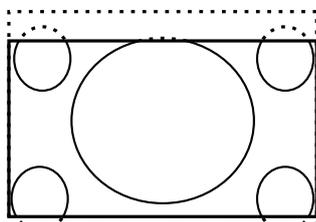
- **Super zoom**

Removes the black bars on the side of 4:3 broadcasts with minimal distortion.



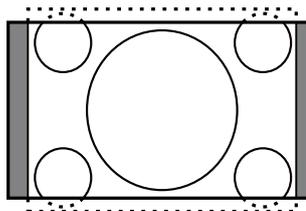
- **Subtitle zoom**

Display 4:3 pictures using the full surface of the screen leaving the subtitles visible.



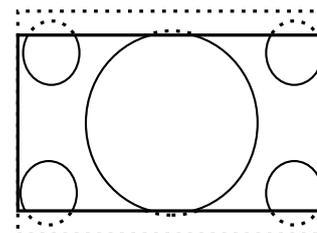
- **Movie expand 14:9**

Scales the classic 4:3 format to 14:9.



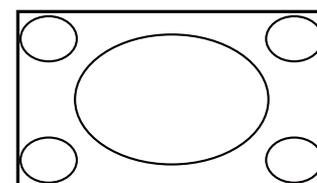
- **Movie expand 16:9**

Scales the classic 4:3 format to 16:9.



- **Unscale (HDMI only)**

Displays the full screen.



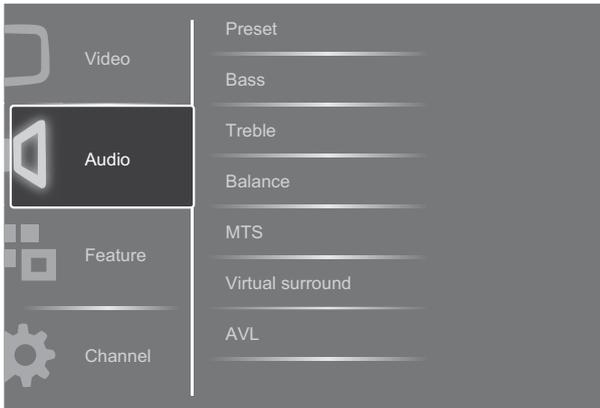
- **Note**

- Any adjustment of brightness, color, contrast of sharpness will be stored into personal at *preset picture mode* section.
- For PC mode, the default picture format will be Standard screen and picture format function can be accessible 4:3 and Wide screen.

6.7 Adjust audio settings

This section describes how to adjust audio settings.

1. Enter **Setup** menu.
2. Press ▼ to select **Audio** menu, then press ► or **OK** to enter.



3. Press ▲ or ▼ to select one of the audio settings, and press ► or **OK** to enter the setting.
4. Press ◀ or ▶ to adjust the setting, and press **OK** to confirm the change.
5. Press **Menu** to exit

Summary of audio settings

The following audio settings can be configured. Depending on the format of the input source, some audio settings might not be available.

- **Preset** - Changes the format of the audio.
- **Bass** - Adjust low frequency sound.
- **Treble** - Adjust high frequency sound.
- **Balance** - Adjusts the sound between the left and right speakers.
- **MTS** - Multichannel Television Sound. If the stereo or dual language broadcasts are transmitted, you can select the sound mode.
- **Virtual surround** - Allows you to select the modes for more spatial or surround sound reproduction dependent on the broadcasted signals or signals from external inputs received.
- **AVL (Automatic volume leveling)** - Reduces sudden volume changes, for example, during commercials or when switching from one channel to another.

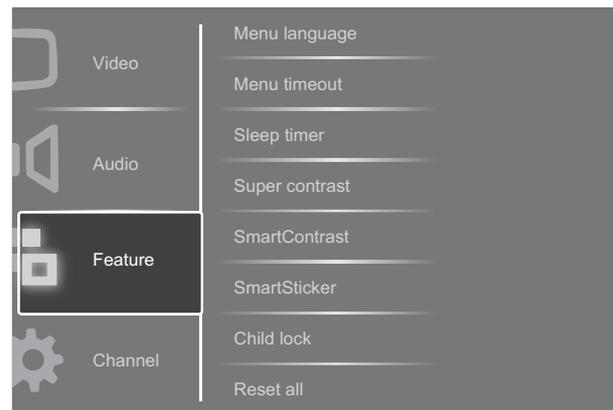
6.8 Use preset sound mode

1. Press **SOUND** on the remote control to set your Monitor to a pre-defined audio setting.
2. Press **SOUND** again to select one of the following settings:
 - **Personal** - Applies the settings that were customized in the **Audio** menu.
 - **Standard** - Adjusts audio settings to suit most environments and types of audio.
 - **Music** - Applies audio settings ideally suited for music.

6.9 Set the feature menu

This section describes how to set the feature menu.

1. Enter **Setup** menu.
2. Press ▼ to select **Feature** menu, then press ► or **OK** to enter.



3. Press ▲ or ▼ to select the one of the feature menus, and press ► or **OK** to enter the setting.
4. Press ▲ or ▼ to adjust the setting, and press **OK** to confirm the change.
5. Press **MENU** to exit.

Summary of feature menu

The following feature menus can be configured. Depending on the format of the input source, some feature menus might not be available.

- **Menu language** - Selects a language for your on-screen interface.
- **Menu timeout** - Sets the time before the **Setup** menu disappears.
- **Sleep timer** - Switches the Monitor to standby after a defined period of time.
- **Super contrast** - Further enhances the contrast of the Monitor picture.
- **SmartContrast** - Enhances the contrast of dynamic Monitor picture and give the picture more feel of layering.
- **SmartSticker** - For shop demo only.
- **Child lock** - Sets the selected TV channels from being watched by children. A four-digit password will be needed.
- **Reset all** - Resets all the video and audio settings to their default factory levels.

6.9.1. Use your Monitor as a PC monitor

Using a VGA cable connects a PC to your Monitor as a PC monitor.

Caution

Before you connect your PC, set the PC monitor refresh rate to 60Hz.

6.9.2. Supported screen resolutions

The following screen resolutions are supported in PC mode:

Model: 190TS2

Resolution	Refresh rate
640 x 350	70Hz
720 x 400	70Hz
640 x 480	60Hz, 67Hz, 72Hz, 75Hz
800 x 600	56Hz, 60Hz, 72Hz, 75Hz
832 x 624	75Hz
1024 x 768	60Hz, 70Hz, 75Hz
1280 x 720	60Hz, 75Hz
1280 x 768	60Hz, 75Hz
1280 x 800	60Hz, 75Hz
1366 x 768	60Hz

 1366 x 768 is recommended resolution.

Model: 220TS2

Resolution	Refresh rate
640 x 350	70Hz
720 x 400	70Hz
640 x 480	60Hz, 67Hz, 72Hz, 75Hz
800 x 600	56Hz, 60Hz, 72Hz, 75Hz
832 x 624	75Hz
1024 x 768	60Hz, 70Hz, 75Hz
1152 x 864	75Hz
1152 x 870	75Hz
1152 x 900	66Hz, 76Hz
1280 x 720	60Hz, 75Hz
1280 x 768	60Hz, 75Hz
1280 x 800	60Hz, 75Hz
1280 x 960	60Hz
1280 x 1024	60Hz, 66Hz, 75Hz, 76Hz
1360 x 768	60Hz, 75Hz
1440 x 900	60Hz, 75Hz
1680 x 1050	60Hz
1920 x 1080	60Hz

 1920 x 1080 is recommended resolution.

6.10 Select your Monitor in PC mode

1. Press **SOURCE** on the remote control to enter the **Source list**.
2. Select **VGA** and press **OK** to confirm your choice.
3. If necessary, adjust the picture settings as described in *Change picture settings* section.
4. Press **SOURCE** to exit.

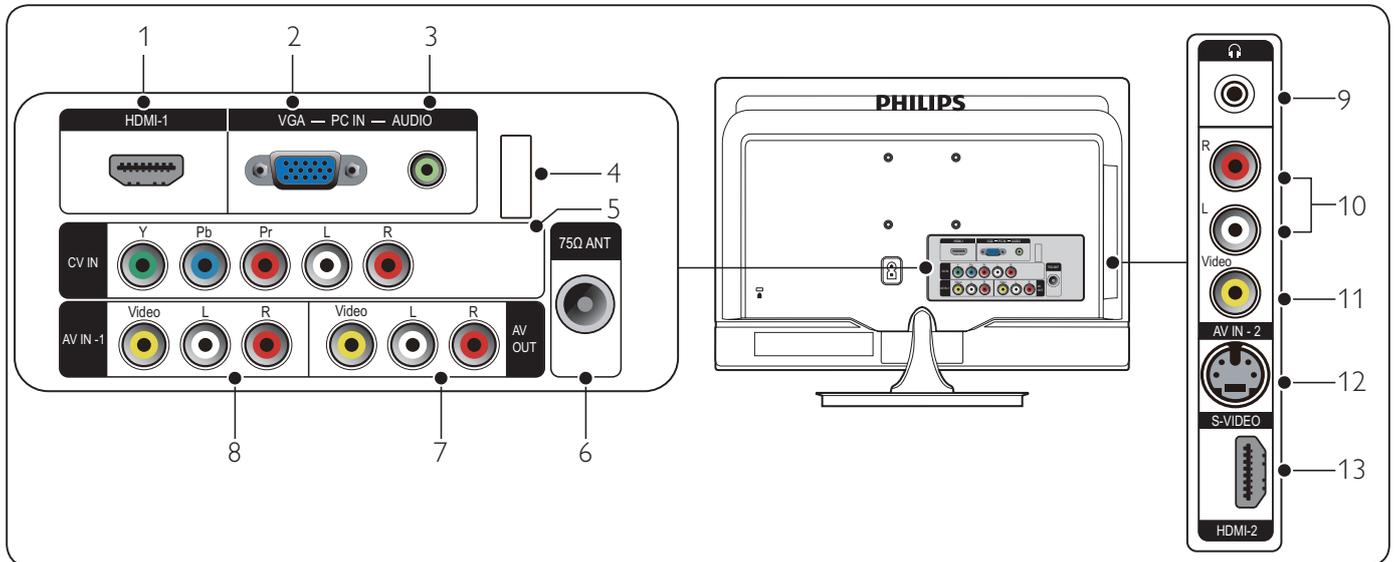
Tip

Set the picture format to wide screen or 4:3 in PC mode.

7. Connect devices

This section presents a clear illustration about how to connect your Monitor with peripherals.

7.1 Connection overview



Rear connectors

1. **HDMI-1**
HDMI input connectors for DVD players, digital receivers, game consoles and other high-definition devices.
2. **PC IN (VGA)**
VGA connector for PC.
3. **PC IN (AUDIO)**
Audio connector for PC.
4. **SERVICE PORT**
For service only.
5. **CV IN**
Component video input (Y Pb Pr) and Audio L/R connectors for DVD, digital receiver or game console, etc..
6. **TV ANTENNA**
Antenna input. 75Ω.
7. **AV OUT**
Video and audio output connectors for the AV source from AV IN-2 or TV ANTENNA input.
8. **AV IN-1**
Video and Audio L/R input connectors for composite devices.

Side connectors

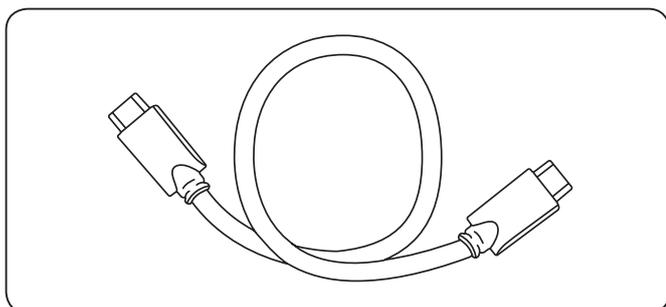
9. **Headphones**
Stereo mini jack for headphone.
10. **AV IN-2 (AUDIO L/R)**
Audio L/R input connectors for composite and S-Video devices.
11. **AV IN-2 (VIDEO IN)**
Video input cinch connector for composite devices.
12. **S-VIDEO**
S-Video input connector for S-Video devices.
13. **HDMI-2**
HDMI input connectors for DVD players, digital receivers, game consoles and other high-definition devices.

7.2 Select connection quality

This section describes how you can enhance your audio visual experience by connecting your devices with the best possible connectors.

7.2.1. HDMI - Highest quality ★★★★★

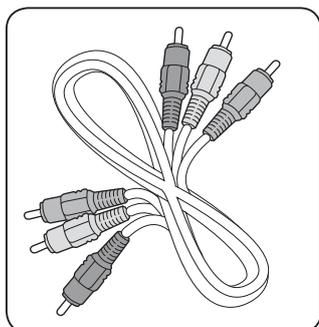
HDMI produces the best audio visual quality possible. Both audio and video signals are combined in one HDMI cable, providing an uncompressed, digital interface between your Monitor and HDMI devices. You must use HDMI to experience full high-definition video.



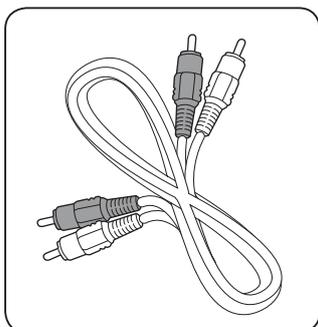
Tip
If your device only equipped with a DVI connector, use a DVI-HDMI adaptor to connect to the HDMI connector at the back of the Monitor.

7.2.2. Component (Y Pb Pr) - Higher quality ★★★

Component (Y Pb Pr) video provides better picture quality than S-Video or composite video connection does. Though component video supports high-definition signals, picture quality is lower than HDMI and is analogue. Also, connect an Audio L/R cable to the red and white Audio L/R connectors at COMPONENT for audio input..



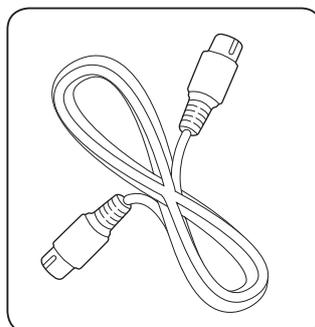
Component video cable
-Red, Green, Blue



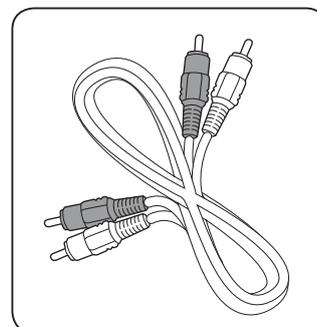
Audio L/R cable
-Red, White

7.2.3. S-Video - Good quality ★★

For analogue connection, the S-Video provides better picture quality than composite video does. When connecting your device with S-Video, plug the S-Video cable to the S-Video connector on the side of the Monitor. You must connect a separate Audio L/R cable from your device to the red and white Audio L/R connectors on the side of the Monitor.



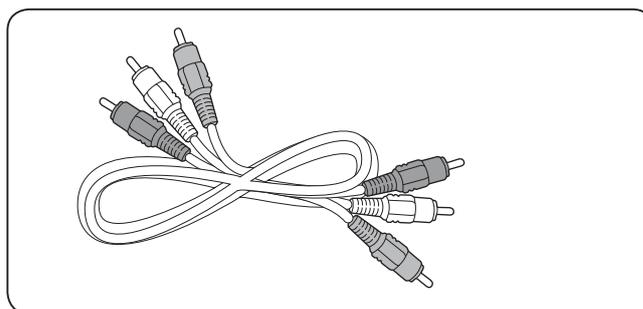
S-Video



Audio L/R cable
-Red, White

7.2.4. Composite - Basic quality ★

Composite video provides basic analogue connectivity, usually combining a (yellow) video cinch cable with (red and white) Audio L/R cinch cable. Match the cable colors when connecting to the composite Video and Audio L/R input connectors on the side of the Monitor.



Composite audio/video cable
-Yellow, Red, White

7.3 Connect devices

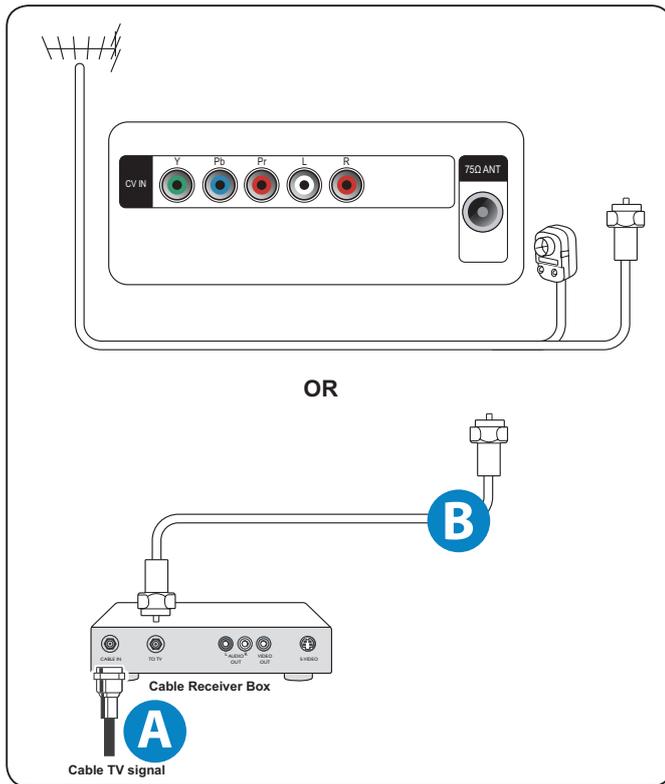
This section describes how to connect a selection of devices with different connectors. Note that different types of connectors may be used to connect a device to your Monitor. The following sections describe examples only, other configurations are possible.

When connecting composite or component cables, match the cable colors to the connectors on the Monitor.

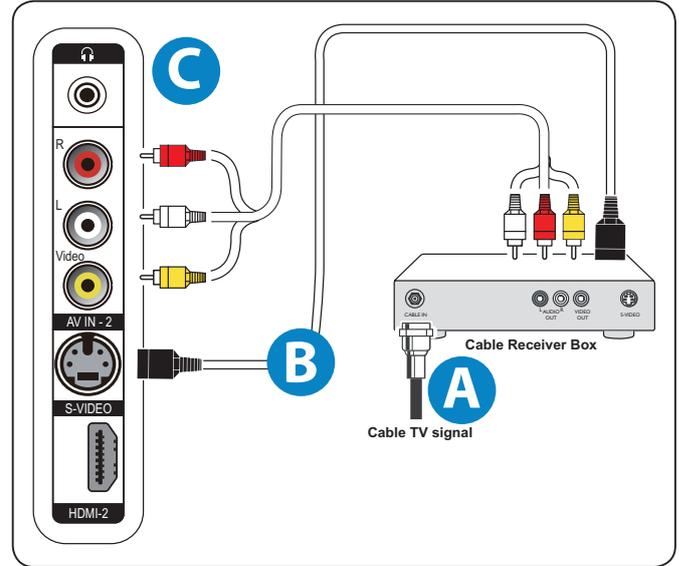
Caution
Disconnect the AC power cord before connecting devices.

Note
Different types of connectors may be used to connect a device to your Monitor depending on availability and your needs.

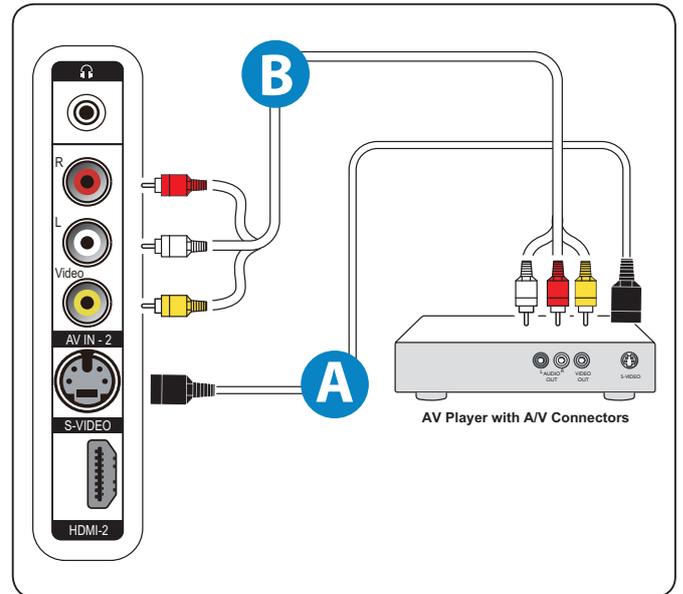
Connect a cable receiver box with RF In/ Outputs antenna TV



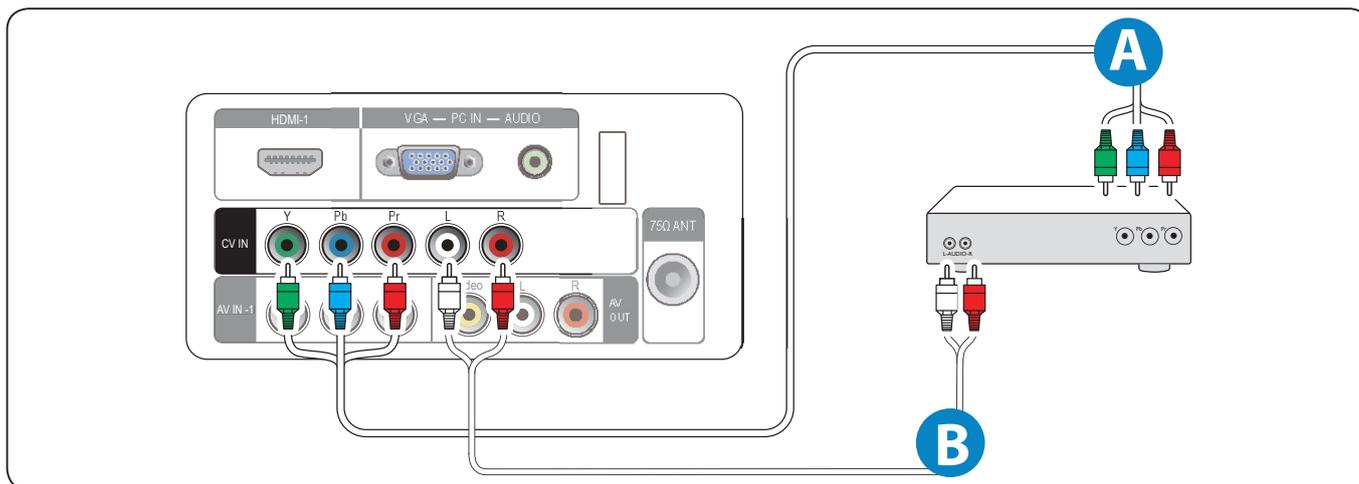
Connect a cable receiver box with Audio/Video output



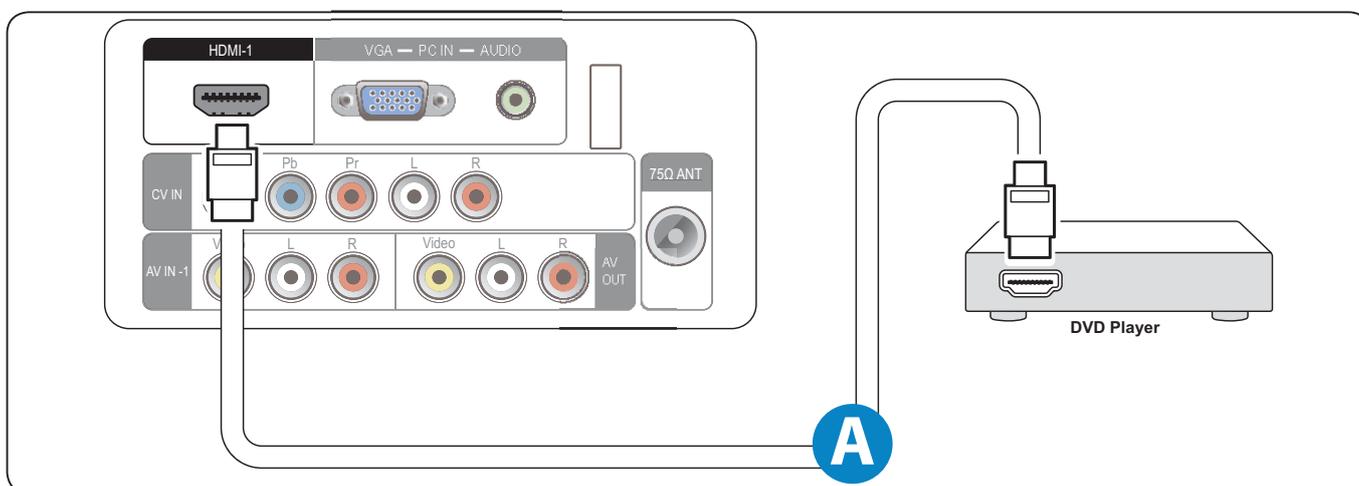
Connect VCR, DVD player, or other devices with RCA connectors



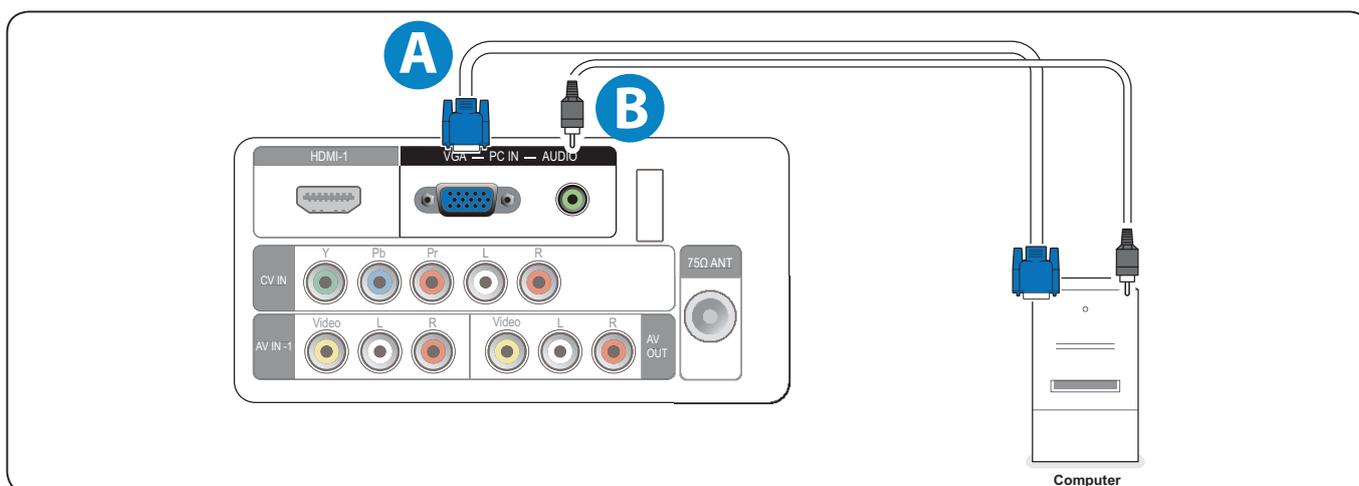
Connect DVD player or other video devices with component video connectors



Connect DVD player with an HDMI connector



Connect PC (monitor) with a VGA connector



8. Pixel policy

BRIGHT DOT DEFECTS	ACCEPTABLE LEVEL
MODEL	190TS2 / 220TS2
1 lit subpixel	3
2 adjacent lit subpixels	1
3 adjacent lit subpixels (one white pixel)	0
Distance between two bright dot defects*	>15mm
Total bright dot defects of all types	3

BLACK DOT DEFECTS	ACCEPTABLE LEVEL
MODEL	190TS2 / 220TS2
1 dark subpixel	5 or fewer
2 adjacent dark subpixels	2 or fewer
3 adjacent dark subpixels	0
Distance between two black dot defects*	>15mm
Total black dot defects of all types	5 or fewer

TOTAL DOT DEFECTS	ACCEPTABLE LEVEL
MODEL	190TS2 / 220TS2
Total bright or black dot defects of all types	5 or fewer

-  **Note**
1 or 2 adjacent sub pixel defects = 1 dot defect

9. Glossary

Aspect Ratio	The ratio between the width and height of the TV picture on the screen. In a normal TV set the aspect ratio is 4 to 3 (4:3). The new aspect ratio in HDTV is 16:9 which resembles the aspect ratio in a movie theatre (Widescreen). New TV systems support both 4:3 and 16:9 aspect ratio and can automatically switch between them.
Audio Video (A/V)	A term often used when discussing a channel on a TV receiver or on video equipment, which has been especially designed to accept VCR audio-video signals. This channel automatically activates special circuitry within the TV set to prevent picture distortion and skewing. It is also used for audio-video processors, which handle both types of signals.
CVBS	Composite Video Baseband Signal. In broadcast television this refers to the video signal, including the color information and syncs.
Component Video Input (Y Pb Pr)	Component Video Input is a type of connection that uses a cinch-type connector to allow cable receiver boxes or analog DVD players to connect a signal to the TV. By offering the cinch-type input (YPbPr) the primary colors, red, green and blue are connected from a cable receiver box directly into the TV allowing for the signal to display on the screen.
HDTV	The generally agreed upon definition of HDTV is approximately twice the vertical and horizontal picture resolution of today's NTSC TV, which essentially makes the picture twice as sharp. HDTV also has a screen ratio of 16:9 as compared with most of today's TV screens, which have a screen ratio of 4:3. HDTV offers reduced motion artifacts (i.e. ghosting, dot crawl), and offers 5.1 independent channels of CD-quality stereo surround sound, (also referred to as AC-3).
Progressive Scan	In Progressive Scanning all the horizontal scan lines are scanned on to the screen at one time. The Digital TV and HDTV Standards accept both Interlaced Scan and Progressive Scan broadcast and display methods.
Resolution	Resolution: A measurement of the finest (smallest) detail that is visible in a video image. TV Resolutions may be expressed as number of pixels in an image; or more commonly, as Total Number of (horizontally scanned) Lines used to create the image. Standard Digital TV Resolutions: SDTV: 576i - The picture is 704x576 pixels, 576p - The picture is 720x576 pixels. HDTV: 720p - The picture is 1280x720 pixels, 1080i - The picture is 1920x1080 pixels. 1080p - The picture is 1920 x 1080 pixels.

10. Troubleshooting

Symptoms	Possible cause	What should you do
No power or indicator light.	The Monitor is not connected to the power.	1. Touch POWER at the front of the Monitor, or press  on the remote control.
		2. Ensure the AC power cord is connected tightly to the Monitor power connector and to the power socket outlet.
		3. Remove the AC power cord from the power socket outlet, wait 60 seconds and reconnect the AC power cord.
		4. Connect the Monitor to a different power socket outlet.
Blue screen with HDMI connection.	HDCP authentication fail.	1. Ensure that your HDMI cable is certified.
		2. Press SOURCE button on the remote control to switch to another source and then switch back to the HDMI source.
		3. Reset the accessory device and the Monitor. Turn on the Monitor Select the HDMI channel Turn on the accessory device
		4. While the Monitor and the accessory device are powered on, unplug either end of the HDMI cable and then reinsert the cable.
No sound is detected from the PC.	Audio cable is not connected.	1. Connect an audio cable to the PC AUDIO IN port on the Monitor.
		2. Press SOURCE button on the remote control, and select the PC source.
Monitor does not respond to the remote control.	Batteries are installed incorrectly, or low battery power.	1. Ensure the indicator light on the Monitor blinks when the remote control buttons are pressed.
		2. Ensure that you are using the remote control supplied with the Monitor.
		3. Ensure that the batteries of the remote control are inserted according to the illustration on the remote control and that the batteries do not need to be replaced.
		4. Remove the AC power cord from the power socket outlet, wait 60 seconds and reconnect the AC power cord.
The picture is distorted. It is stretched out, has short, fat, black bars on the side or top.	Broadcast video format.	1. Press the ZOOM button on the remote control to select the best picture format.
		2. For some accessory devices, the picture format has to be set in the accessory device.
The picture is mostly red and green, or the picture is missing red when the Monitor is connected to an accessory device via component cables.	Insecure/incorrect connection.	1. Ensure all the connections are made according to the color code.
		2. Push the component cables all the way into the YPbPr sockets on the Monitor.
No sound on the Monitor loudspeaker.	Volume level is set to zero.	1. Increase the volume.
	Sound is muted.	2. Press MUTE button on the remote control.
	Headphones are connected.	3. Ensure the headphones are not plugged into the Monitor.
	Audio cable is not connected.	4. For AV connection, ensure that the Audio L/R cable is connected as described in <i>Connect devices</i> section. If you are using a component cable, ensure that you have not crossed the red audio cable with the red video cable.
	Accessory device audio output setting is incorrect.	5. For HDMI connections, some accessory devices have an HDMI audio output setting that must be turned on for HDMI to HDMI connections.
Bad picture quality with a coaxial connection.	Standard definition channels are not as clear as high definition channels.	1. Connect the devices via component or HDMI cables.
No picture or sound.	Incorrect channel	1. Ensure you have selected the correct channel.
	Incomplete channel installation.	1. If the Monitor receives channels via an AV connection, set the Monitor to the correct source input. 2. If the Monitor is connected directly to the wall via a coaxial connection, perform the Auto search again.

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