

**E654**

**E554**

**E464**

**E424**

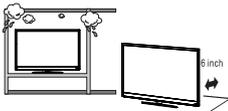
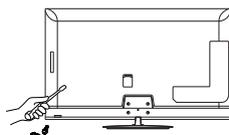
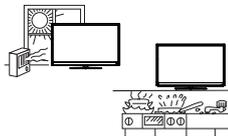
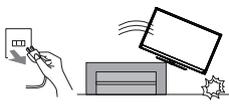
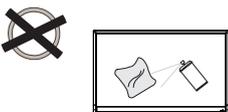
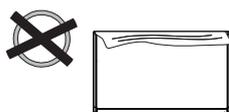
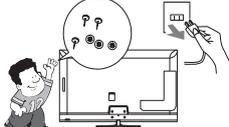
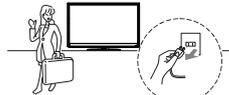
**E324**

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# Precautions And Reminders

<p>Do not place the display in confined spaces or in a box when in use. Maintain ample ventilation for the display when in use.</p> 	<p>Do not open the display cabinet.</p> 	<p>Call a NEC certified service personnel for any internal service needed for your display.</p> 
<p>Keep the display away from direct sunlight, dust, humidity, and smoke.</p> 	<p>Unplug immediately if the display falls.</p> 	<p>Unplug immediately if there is a display malfunction such as a loss of audio/video, the presence of smoke, or a bad odor coming from the display.</p> 
<p>Unplug the AC cord from the AC outlet before cleaning. Do not use liquid cleaners or aerosol cleaners to clean the display.</p> 	<p>Do not place the display near water such as a bathtub, washbasin, sink, laundry tub, swimming pool, or a damp basement. Unplug immediately if the display has been exposed to rain or water.</p> 	<p>Do not cover or block any vents or openings. Inadequate ventilation may shorten the life of the display and cause overheating.</p> 
<p>Place the unit on a sturdy, even surface.</p> 	<p>Do not insert any foreign objects into the display cabinet. Unplug immediately if objects have fallen into the monitor.</p> 	<p>Unplug the power cord from the outlet when the display is not in use for long periods of time (days).</p> 



## Notice for Remote Controller

<p>Avoid Liquids</p> 	<p>Avoid Aerosol Cleaners</p> 	<p>Avoid Dropping</p> 
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# Important Safety Instructions

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## Read before operating equipment

Follow all warnings and instructions marked on this display.

1. Read these instructions.
2. Keep these instructions.
3. Heed all warnings.
4. Follow all instructions.
5. Do not use this apparatus near water.
6. Clean only with dry cloth.
7. Do not block any ventilation openings. Install in accordance with the manufacturer's 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 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.
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 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.



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 the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped. Unplug immediately if the monitor faces above condition.

15. The display complies with the recommended safety standards for stability. Do not put excessive force on the front or top of the cabinet. This could cause the product to tip over and cause damage and/or personal injury.
16. If monitor or glass is broken, do not come in contact with the liquid crystal and handle with care.
17. Follow instructions for wall, shelf or ceiling mounting as recommended by the manufacturer.
18. Rest your eyes periodically by focusing on an object at least 5 feet away. Blink often.
19. Do not place any heavy objects on the power cord. Damage to the cord may cause shock or fire.
20. Do not use monitor in high temperature, humid, dusty, or oily areas.
21. Do not bend, crimp or otherwise damage the power cord.
22. Apparatus shall not be exposed to dripping or splashing and no objects filled with liquids, such as vases, shall be placed on the apparatus



**WARNING:** To prevent the spread of fire, keep candles or other open flames away from this product at all times.

### IMPORTANT INFORMATION

If a display is not positioned in a sufficiently stable location, it can be potentially hazardous due to falling. Many injuries, particularly to children, can be avoided by taking simple precautions such as:

- Using cabinets or stands recommended by the manufacturer of the display.
- Only using furniture that can safely support the display.
- Ensuring the display is not overhanging the edge of the supporting furniture.
- Not placing the display on tall furniture (for example, cupboards or bookcases) without anchoring both the furniture and the display to a suitable support.
- Not standing the displays on cloth or other materials placed between the display and supporting furniture.
- Educating children about the dangers of climbing on furniture to reach the display or its controls.

# Important Information



## WARNING



TO PREVENT FIRE OR SHOCK HAZARDS, DO NOT EXPOSE THIS UNIT TO RAIN OR MOISTURE. ALSO, DO NOT USE THIS UNIT'S POLARIZED PLUG WITH AN EXTENSION CORD RECEPTACLE OR OTHER OUTLETS UNLESS THE PRONGS CAN BE FULLY INSERTED.

REFRAIN FROM OPENING THE CABINET AS THERE ARE HIGH VOLTAGE COMPONENTS INSIDE.

REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.



## CAUTION



**CAUTION:** TO REDUCE THE RISK OF ELECTRIC SHOCK, MAKE SURE POWER CORD IS UNPLUGGED FROM WALL SOCKET. TO FULLY DISENGAGE THE POWER TO THE UNIT, PLEASE DISCONNECT THE POWER CORD FROM THE AC OUTLET. DO NOT REMOVE COVER (OR BACK). NO USER SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.



This symbol warns user that uninsulated voltage within the unit may have sufficient magnitude to cause electric shock. Therefore, it is dangerous to make any kind of contact with any part inside this unit.



This symbol alerts the user that important literature concerning the operation and maintenance of this unit has been included. Therefore, it should be read carefully in order to avoid any problems.

### CAUTION:

Please use the power cord provided with this monitor in accordance with the table below. If a power cord is not supplied with this equipment, please contact your supplier. For all other cases, please use a power cord that matches the AC voltage of the power outlet and has been approved by and complies with the safety standard of your particular country.

Plug Type	European Continental	U.K.	Japanese	North America
Plug Shape				
Region	EU (except U.K.)	U.K.	Japan	U.S.A./Canada
Voltage	230	230	100	120

This LCD display operates on 100-240 volts 50-60 Hz, AC current. Insert the power cord into a 100-240 volts 50-60 Hz outlet. The mains plug is used as the disconnect device and shall remain readily operable.

To prevent electric shock from the display, do not use with an extension cord, receptacle, or other outlet unless the blades and ground terminal can be fully inserted to prevent blade exposure.

Never connect the LCD display to other than the specified voltage.

**CAUTION:**

Never remove the back cover of the LCD display as this can expose you to very high voltages and other hazards. If the display does not operate properly, unplug the LCD display and call your authorized dealer or service center.

Adjust only those controls that are covered in the instructions, as improper changes or modifications not expressly approved by NEC could void the user's warranty.

**Batteries installed warning**

Incorrect usage of batteries can result in leaks or bursting.

NEC recommends the following battery use:

- Do not mix battery brands.
- Danger of explosion if battery is incorrectly replaced. Replace only with the same or equivalent type.
- Do not combine new and old batteries. This can shorten the battery life or cause liquid leakage of the batteries.
- Remove dead batteries immediately to prevent battery acid from leaking into the battery compartment.
- Do not touch exposed battery acid as it may injure skin.
- Remove the batteries if you do not intend to use the remote control for a long period of time.
- The batteries shall not be exposed to excessive heat such as sunshine, fire or the like.

**Image persistence**

Please be aware that LCD Technology may experience a phenomenon known as Image Persistence. Image Persistence occurs when a residual or "ghost" image of a previous image remains visible on the screen. Unlike CRT monitors, LCD monitors' image persistence is not permanent, but constant images being displayed for a long period of time should be avoided. To alleviate image persistence, turn off the monitor for as long as the previous image was displayed. For example, if an image was on the monitor for one hour and a residual image remains, the monitor should be turned off for one hour to erase the image.

**NOTE:**

As with all personal display devices, NEC DISPLAY SOLUTIONS recommends displaying moving images and using a moving screen saver at regular intervals whenever the screen is idle or turning off the monitor when not in use.

**CAUTION:**

These servicing instructions are for use by qualified service personnel only. To reduce the risk of electric shock, do not perform any servicing other than that contained in the operating instructions unless you are qualified to do so.

**Ventilation**

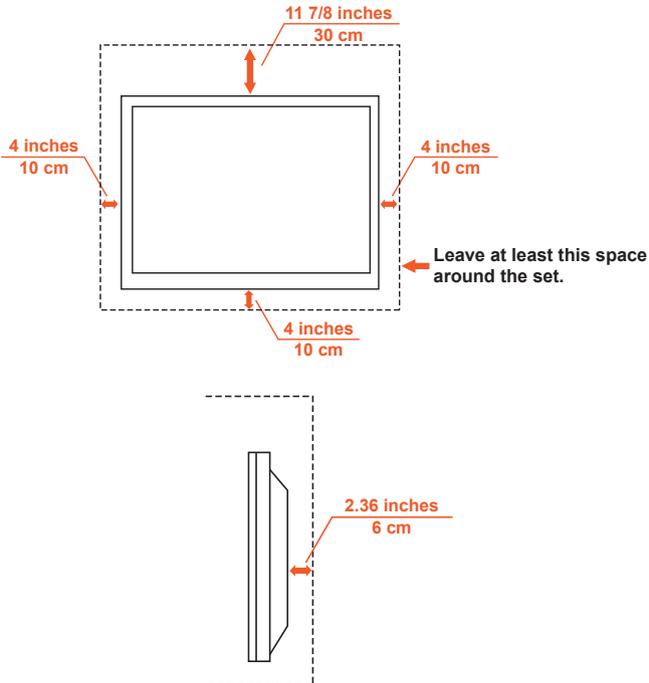
The slots and openings in the display are provided for necessary ventilation. To ensure reliable operation of the display and to protect it from overheating, these slots and openings must never be blocked or covered.

Unless proper ventilation is provided, the display may gather dust and get dirty. For proper ventilation, observe the following:

- Do not install the display face up, down or sideways.
- Do not install the display turned over or upside down.
- Never cover the slots and openings with a cloth or other materials.
- Never block the slots and openings by placing the display on a bed, sofa, rug or other similar surface.
- Never place the display in a confined space, such as a bookcase or built-in cabinet, unless proper ventilation is provided.

Leave some space around the display set as shown below. Otherwise, air-circulation may be inadequate and will cause overheating, which may cause a fire or damage to the display set.

**Install on the wall**

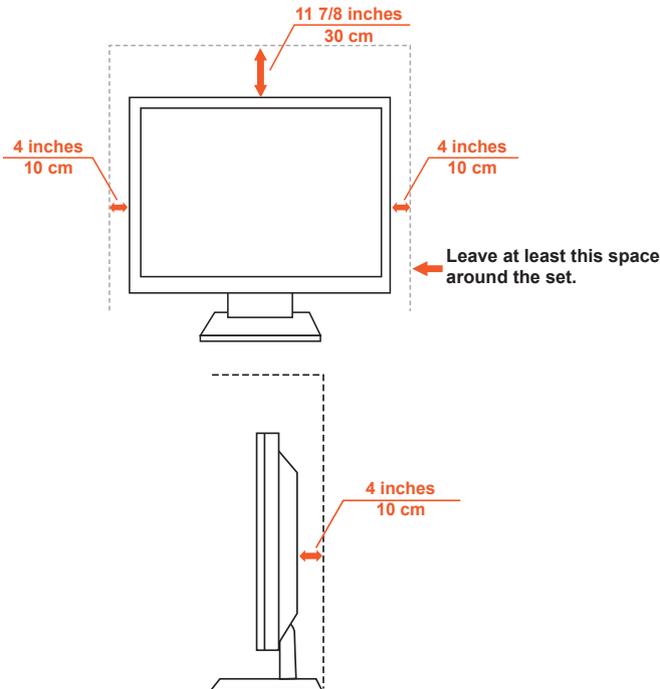


For use only with UL Listed Wall Mount Bracket with minimum weight/load:  
Please refer to the Specification on page 30.

Unit without base weight: The equipment and its associated mounting means still remain secure during the test.

Used wall mounting kit, VESA-compatible wall bracket distance, diameter of Screw dimension: Please refer to the Specification on page 30.

### Installed with stand



Never install the display set where air-circulation is blocked.

### Objects and ventilation holes

Never push objects of any kind into the display through the cabinet slots as they may touch dangerous voltage points or short out parts that could result in a fire or an electric shock. Do not place any objects on the display.

# License Notice and Trademark Acknowledgement

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Windows is a registered trademark of Microsoft Corporation.  
NEC is a registered trademark of NEC Corporation.  
All other brands and product names are trademarks or registered trademarks of their respective owners.

**HDMI**<sup>®</sup>

HIGH-DEFINITION MULTIMEDIA INTERFACE

HDMI, the HDMI logo and High-Definition Multimedia Interface are trademarks or registered trademarks of HDMI Licensing LLC in the United States and other countries.

# Declaration Of Conformity

This device complies with Part 15 of FCC Rules. Operation is subject to the following two conditions. (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

<b>U.S. Responsible Party:</b>	<b>NEC Display Solutions of America, Inc.</b>	
<b>Address:</b>	<b>500 Park Boulevard, Suite 1100</b>	
	<b>Itasca, Illinois 60143</b>	
<b>Tel. No.:</b>	<b>(630) 467-3000</b>	

Type of Product:	Display Monitor	
Equipment Classification:	Class B Peripheral	
Model:	E654	E424
	E554	E324
	E463	



*We hereby declare that the equipment specified above conforms to the technical standards as specified in the FCC Rules.*

## Canadian Department of Communications Compliance Statement

- DOC: This Class B digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations.
- C-UL: Bears the C-UL Mark and is in compliance with Canadian Safety Regulations according to CAN/CSA C22.2 No. 60065-03.

## FCC information

- Use the attached specified cables with the E654/E554/E464/E424/E324 color monitor so as not to interfere with radio and television reception.
  - Please use the supplied power cord or equivalent to ensure FCC compliance.
  - Please use the supplied shielded video signal cable, DVI-D to DVI-D cable.
- This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. 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:
  - Reorient or relocate the receiving antenna.
  - Increase the separation between the equipment and receiver.
  - Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
  - Consult the dealer or an experienced radio/TV technician for help.

## Canadian notice

CAN ICES-3 (B) / NMB-3(B)

# Contents

Your new NEC monitor box\*1 should contain the following:

- Display
- Power cord\*2
- D-sub Cable
- Stand Base
- Remote Control
- 1.5V AAA Size Batteries x2
- Stand Screws x4
- Neck Screw x4 (only E324)
- Stand Neck x1 (only E324)
- Setup Manual x1
- User Manual x1 (for Russia, Kazakhstan, Belarus)



(Only E324)  
Stand Neck

E654



(EU)  
Power Cord\*2

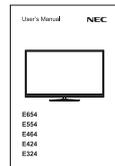


Video Signal Cable  
(Mini D-SUB 15 pin to  
Mini D-SUB 15 pin)

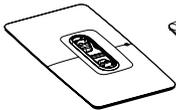
E554 / E464 / E424 / E324



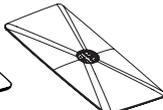
Wireless Remote Control  
and AAA Batteries



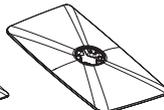
User Manual  
(for Russia,  
Kazakhstan, Belarus)



(E654)



(E554)  
Stand Base



(E464/E424/E324)

Only E324: M4 (12 mm)  
Neck Screw x 4

E654: M6 (16 mm)  
E554/E464/E424: M4 (10 mm)  
E324: M4 (8 mm)  
Stand Screw x 4



Setup Manual

## NOTE:

\*1: Remember to save your original box and packing material to transport or ship the monitor.

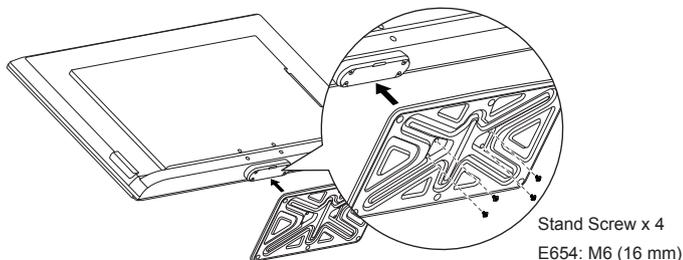
\*2: Type and number of power cords included will depend on the where the monitor is to be shipped. When more than one power cord is included, please use a power cord that matches the AC voltage of the power outlet and has been approved by and complies with the safety standard of your particular country.

## Preparation

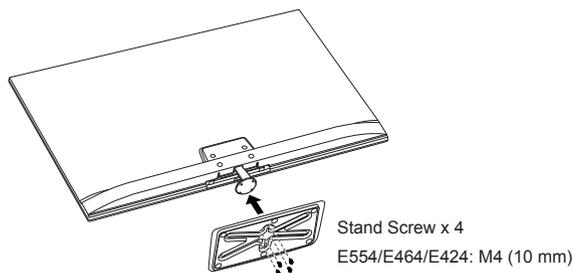
**IMPORTANT:** Do not apply pressure to the screen display area which may compromise the integrity of the display. The manufacturer's warranty does not cover user abuse or improper installations.

### Attaching the Base

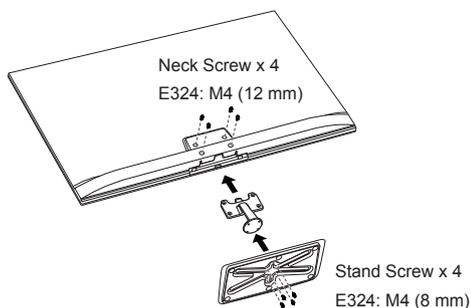
#### E654



#### E554/E464/E424



#### E324



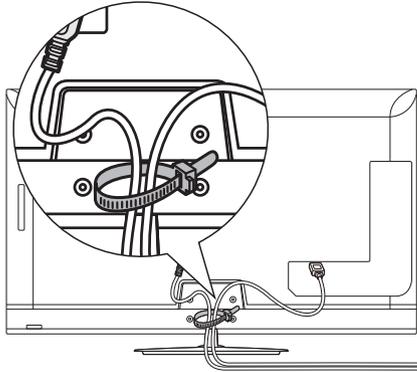
1. Place the display face down on a soft and flat surface to prevent scratching and damage.
2. Carefully align the base to the stand and fasten the screws with a cross-head screwdriver.

#### CAUTION:

The base of the stand is very heavy. Install with care to avoid injury such as dropping the base onto one's foot.

## Using Cable Clamper

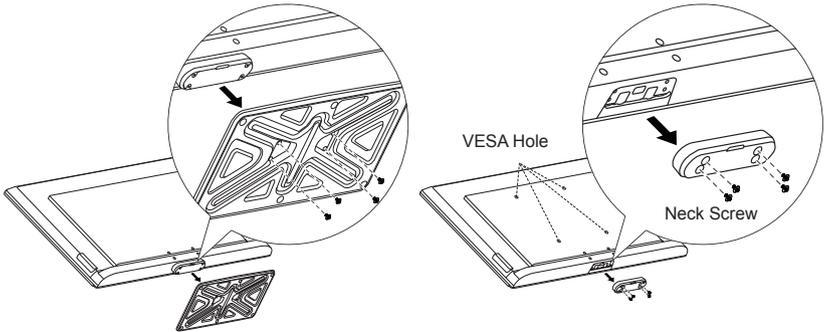
Tie the cables together using the cable clamper.



## Preparing Your LCD Display For Wall Mounting (optional)

We suggest that you keep your display at least 2.36 inches (60 mm) from the wall to prevent cable interference. Before mounting your display on the wall, you need to remove the base. For your safety, only mount with a UL listed wall mount bracket that supports the weight of the display. (Please see page 30.) To attach a wall mount bracket to your display:

### E654



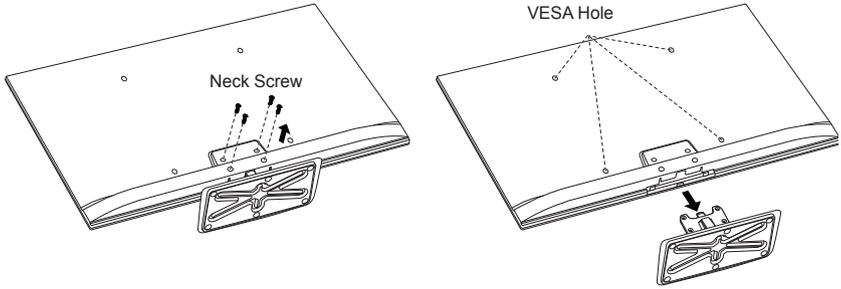
1. Loosen the screws at the bottom of the base to remove the base.
2. Loosen the screws at the bottom of the stand to remove the stand.
3. Secure the wall mount bracket to the back of your display using four M6 screws.

screen size (inches)	required pitch (mm)	VESA Hole depth
65	400 x 400	4 x M6 (30 mm)

### CAUTION:

If you skip the step 1 and loosen the screws for stand directly, please be sure to hold the base tightly to avoid dropping the base.

**E554/E464/E424/E324**



1. Loosen the screws on the back of the stand-base, and remove it.
2. Secure the wall mount bracket to the back of your display using four M4 screws (for 32" only) or M6 screws (for 42"/46"/55" only).

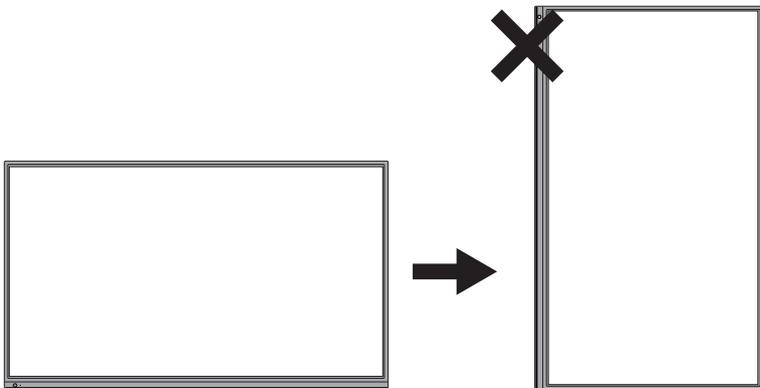
screen size (inches)	required pitch (mm)	VESA hole depth
55	400 x 400	4 x M6 (24 mm)
46	400 x 400	4 x M6 (19 mm)
42	400 x 400	4 x M6 (21 mm)
32	100 x 100	4 x M4 (22 mm)

**NOTE:**

Wall mounting solution is not included with the unit and is sold separately. Contact your NEC representative for details.

It is necessary to provide screw of appropriate length (Wall mount bracket thickness + VESA hole depth).

**Prohibit portrait condition use**

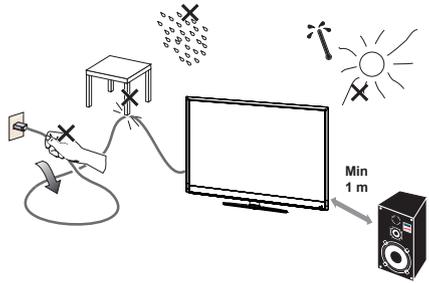


**CAUTION:**

Do not rotate the display from landscape to portrait.

## Place The Display On A Solid Surface

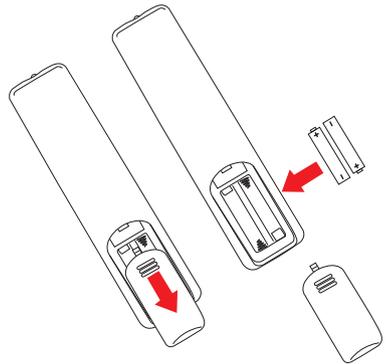
Ensure that the LCD display is placed in a position to allow free flow of air. Do not cover the ventilation openings on the back cover. Do not place the display near any open flames. Do not allow the display to be placed in an environment where it can be exposed to heat, direct sunlight, or rain and water. Do not expose the equipment to any liquid.



## Battery Installation and Replacement

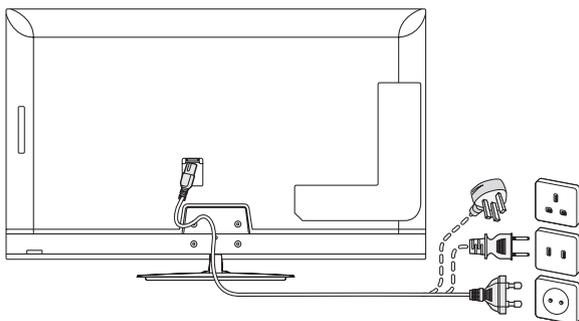
The remote control is powered by two 1.5V AAA batteries. To install or replace batteries:

1. Open the battery cover of the remote control by pushing and pulling it in the direction of the arrow.
2. Insert two new "AAA" size batteries for the remote control. When replacing old batteries, push them towards the springs and lift them out.
3. Match the batteries to the (+) and (-) marks in the battery compartment.
4. Insert the bottom of the battery, the (-) side, into the battery compartment first, push towards the springs and insert the top of the battery, the (+) side, into place. Do not force the battery into the battery compartment.
5. Close the battery cover making sure the tabs rest in the corresponding holes and push down the cover until it clicks shut.



## Connect To The Power Source

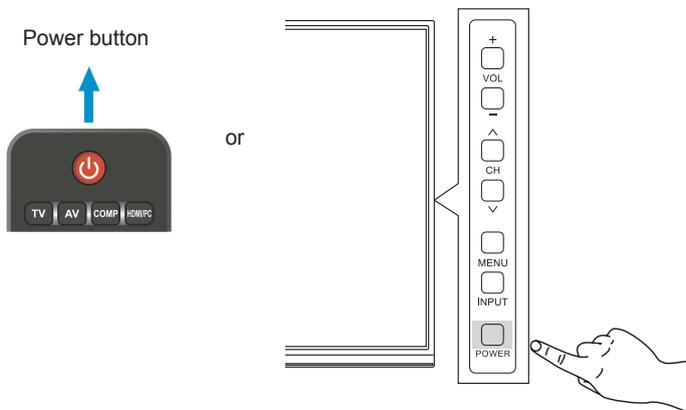
The display should be installed close to an easily accessible power outlet. Fully insert the prongs into the power outlet socket. A loose connection may cause image degradation.



If there is power to the display, the front LED at the bottom of the display will be either none or red. A red LED means the display is in standby mode.

## Power On/Off Your New LCD Display

Press the power button on the remote control or press the power button located on the side of the display. The display will power on.



## Power Mode Status

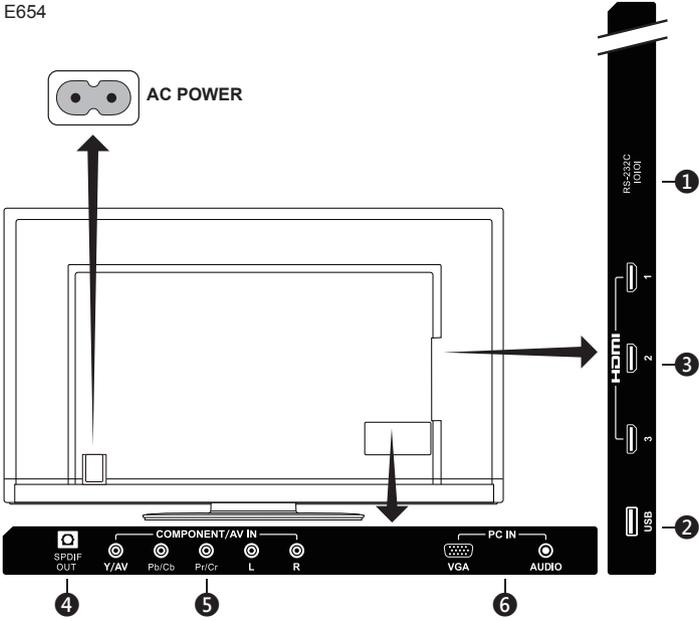
Mode	On	Standby	Warming up
LED Status	None	Red	Blinking Red

Warming up mode can automatically turn the display power on when signal appears.

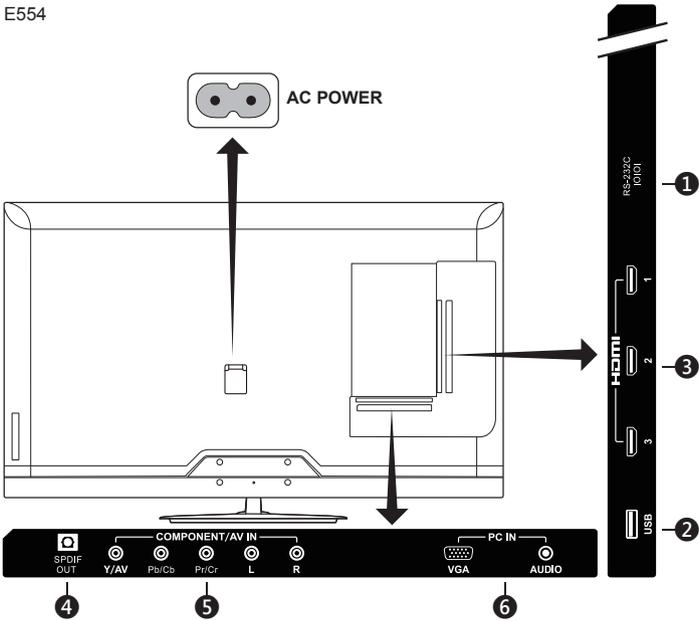
Press the power button on remote control or on side keypad can power on the display in standby mode

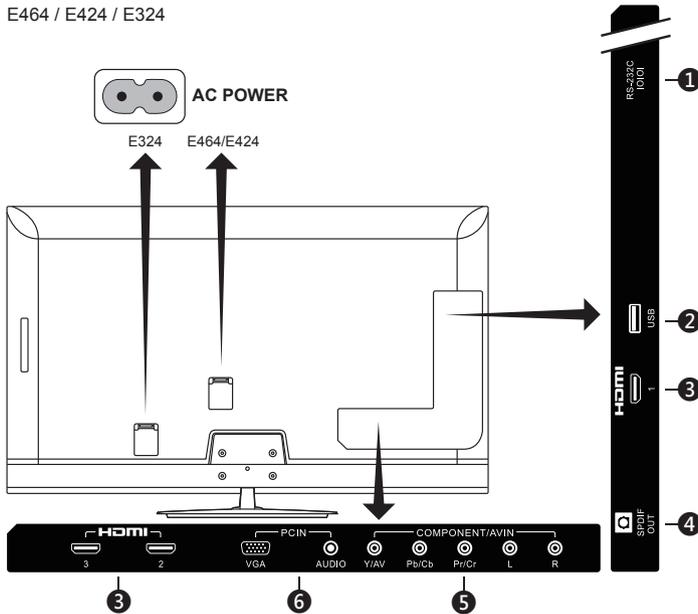
# Source Connection Guide

E654



E554





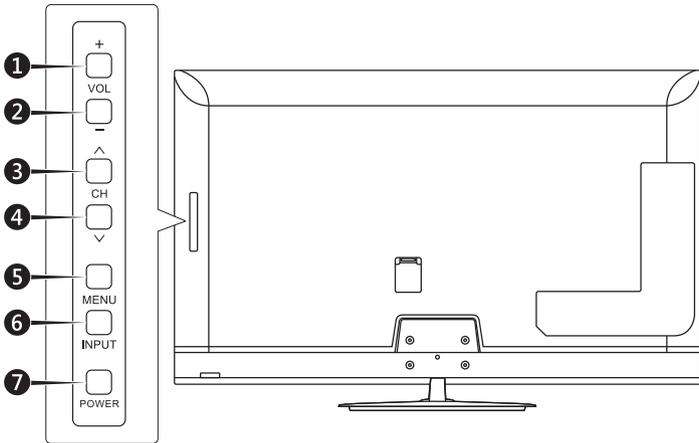
1. **RS-232C** – Input from external equipment such as a PC in order to control RS-232C functions.
2. **USB PORT** – Used for accessing JPEG photo files.
3. **HDMI (HDMI1, HDMI2, HDMI3)** – Connect your HDMI devices.
4. **SPDIF OUT** - Use a digital audio cable to connect stereo home theater system.
5. **COMPONENT/AV IN** –
  - Component: Connect digital video equipment to the Video Green (Y), Blue (Pb), Red (Pr) jacks, and matching Audio White (L) and Red (R) jacks.
  - Composite: Connect digital video equipment to the Video Green (AV), jacks, and matching Audio White (L) and Red (R) jacks.
6. **PC IN (VGA / AUDIO)** – Connect your PC video and audio.

Once your AV device is connected, press the **Source** button on the remote control to select the relevant source to view. (ex: Press **COMP** button to select “Component” if you have connected a source to the Component input.)



# Operating Instructions

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## Using The Side Panel Controls

1.	VOL +	Press to increase the volume. Press this button to shift Right in the OSD menu.
2.	VOL -	Press to decrease the volume. Press this button to shift Left in the OSD menu.
3.	CH ^	Press this button to shift up in the OSD menu.
4.	CH v	Press this button to shift down in the OSD menu.
5.	MENU	Press to open or exit the OSD (On-Screen Display) menu.
6.	INPUT	Press to select the input source.
7.	POWER 	Press to turn on / off (standby) the display.

# Using The Remote Control

## Power

Press to turn On/Off (standby) the power. (NOTE: To completely turn off the power, unplug the power cord from the power outlet.)

## TV

No function.

## AV

Press to choose Composite source mode.

## COMP

Press to choose Component source mode.

## HDMI/PC

Press repeatedly to choose PC IN or HDMI source mode.

## 0 – 9 / -

No function.

## PRE CH

No function.

## Source

Press repeatedly to choose the various input sources.

## Mute

Switch the sound On/Off.

## VOL + / VOL –

Press + or – to adjust the volume.

## CH + / CH –

No function.

## Exit

Press to exit the OSD menu.

## Display

Press to show the information.

## FAV

Press to display the Favorite List at Photos Menu.

## Menu

Press to open the OSD menu.

## ▲, ▼, ◀, ▶, OK

Press to select or confirm the various function items on the menu.



## Color buttons

No function.

## MTS

No function.

## Wide

Press to choose the display aspect ratio: Normal / Zoom / Wide / Cinema / Auto (Ratio availability varies by video inputs.)

**Picture**

Press to choose the picture mode:  
Dynamic / Standard / Energy Savings  
/ Theater / Custom.

**CH-List**

No function.

**C C**

No function.

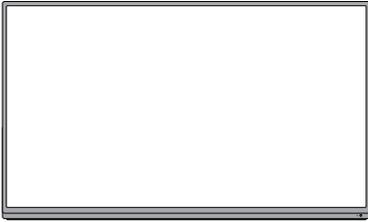
**Audio**

Press to choose sound mode:  
Standard / Movie / Music / News /  
Custom.

## Operating Range for the Remote Control

Point the top of the remote control toward the LCD monitor's remote sensor during button operation.

Use the remote control within a distance of about 7 m (23 ft.) from remote control sensor or at a horizontal and vertical angle of within 30° within a distance of about 3.5 m (10 ft.).

**E654****E554 / E464 / E424 / E324****CAUTION:**

Important, the remote control system may not function when direct sunlight or strong illumination strikes the remote control sensor or when there is an object in the path.

## Timing Table

Resolution	E324		E424/E464/ E554/E654		Horizontal		Vertical		Nominal Pixel Clock (MHz)
	VGA	DVI	VGA	DVI	Nominal Freq. (KHz)	Sync Polarity	Nominal Freq. (Hz)	Sync Polarity	
640x480@60Hz	•	•	•	•	31.469	–	59.940	–	25.175
720x400@70Hz	•	•	•	•	31.469	–	70.087	+	28.322
800x600@60Hz	•	•	•	•	37.879	+	60.317	+	40.000
1024x768@60Hz	•	•	•	•	48.363	–	60.004	–	65.000
1280x720@60Hz	•	•	•	•	45.000	–	60.000	+	74.250
1280x800 @60Hz	▲	▲	•	•	49.702	–	59.810	+	83.500
1366x768@60Hz	• (Native)	• (Native)	Not support	•	47.712	+	59.790	+	85.500
1920x1080@60Hz	▲	▲	• (Native)	• (Native)	67.500	+	60.000	+	148.500

Resolution	E324		E424/E464/E554/E654	
	HDMI	Component	HDMI	Component
480i 60Hz	•	•	•	•
480P 60Hz	•	•	•	•
720P 60Hz	•	•	•	•
1080i 60Hz	▲	▲	•	•
1080P 24Hz	▲	Not support	•	Not support
1080P 30Hz	▲	Not support	•	Not support
1080P 60Hz	▲	Not support	•	Not support

### NOTE:

▲: Use Down-scaling function. Image quality is limited.

# Navigating The On-Screen Menu

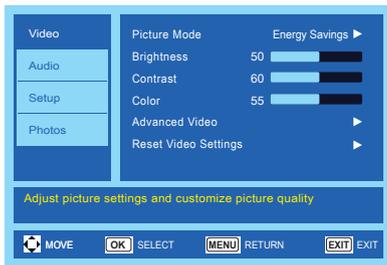
Press the **Menu** button to display and **Exit** to close the main menu.

Use the Navigation Ring to navigate, select, adjust or confirm an item on the OSD (On Screen Display) menu.

NOTE: Some features may only be available in a particular source mode.

## Video Menu

This menu adjusts video items.



### 1. Picture Mode

Enter this menu to select from preset picture settings to optimize your display's performance: **Dynamic / Standard / Energy Savings / Theater / Custom**.

### 2. Brightness

Adjust picture brightness from 0 — 100.

### 3. Contrast

Adjust picture contrast from 0 — 100.

### 4. Color

Adjust picture color from 0 — 100.

### 5. Advanced Video

Select advanced video settings.

#### [Dynamic Backlight]

Enhance the contrasts between darkness and brightness to optimization the picture.

#### [Color Temperature]

Select a choice from **Cool**, **Normal**, or **Warm**.

#### [Noise Reduction]

Set to reduce the video noise.

#### [Tint]

Adjust the hue (Red, Green, Blue) of the picture from R50 — G50.

#### [Sharpness]

Adjust object edges to optimize picture detail from 0 — 100.

#### [Adaptive Contrast]

Set to automatically adjust the picture detail and brightness.

#### [Aspect Ratio]

Adjust how the picture fills the screen. **Normal / Zoom / Wide / Cinema**

#### [Overscan (On/Off)]

**ON:** Image size is larger than what can be displayed. The image edge will appear cropped. Approximately 95% of the image will be shown on the screen.

**OFF:** Image size stays within the display area. The whole image is displayed on the screen.

**NOTE:** When you use a computer with HDMI out, please set "OFF".

#### [Backlight]

Set the backlight brightness.

#### [Motion 120Hz] (Only for E654/ E554 model)

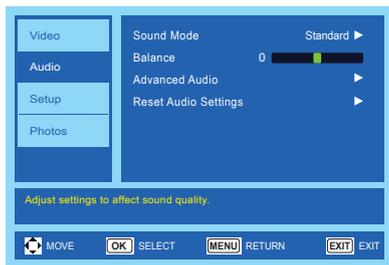
Eliminate motion blur with clear detail and smooth motion.

### 6. Reset Video Settings

Reset Video settings to factory default settings.

## Audio Menu

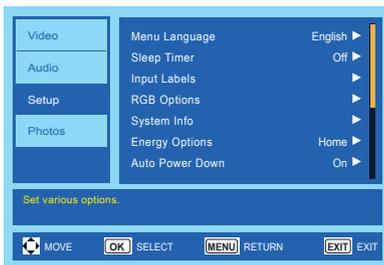
The Audio menu provides an audio adjustment for user to modify the audio setting.



- 1. Sound Mode**  
 Select preset audio modes. The options are: **Standard / Movie / Music / News / Custom**.
- 2. Balance**  
 Adjust the audio balance for the display's internal left and right speakers from L50 – R50.
- 3. Advanced Audio**  
 Select advanced audio settings.
  - [Bass]**  
Enhance the low frequencies.
  - [Treble]**  
Enhance the high frequencies.
  - [Internal Speakers]**  
Select "Off" if you don't need the internal speakers.
  - [Digital Output]**  
Select optical output options: **RAW** or **PCM** (available for HDMI).
- 4. Reset Audio Settings**  
 Reset Audio settings to factory default settings.

## Setup Menu

According to various requirements in different source modes, certain features could be hidden (disabled) on the menu.



- 1. Menu Language**  
 Select the menu display language.
- 2. Sleep Timer**  
 Select how long the display will take to automatically turn itself off. The options are: Off, 5, 10, 15, 30, 60, 90, 120, 180, and 240 minutes.
- 3. Input Labels**  
 Create labels for the devices connected to your display.
- 4. RGB Options**  
 Only available for VGA input, and when there is VGA signal input.
  - [Auto Adjust]**  
Automatically adjust the image settings such as position.
  - [H-Position]**  
Adjust horizontal position.
  - [V-Position]**  
Adjust vertical position.
  - [Clock]**  
Set to the minimum level if noise occurs.
  - [Phase]**  
Eliminate flicker and distortion.
  - [Reset RGB Options]**  
Reset RGB Options to factory default settings.

## 5. System Info

Indicate the display information.

## 6. Energy Options

Select the power saving modes. **Home** mode is intended for home use, and will save much energy.

**Retail** mode sets the display to a more energy consuming mode.

## 7. Auto Power Down

The monitor will be turned off automatically if no operations are performed in 4 hours.

## 8. Monitor ID

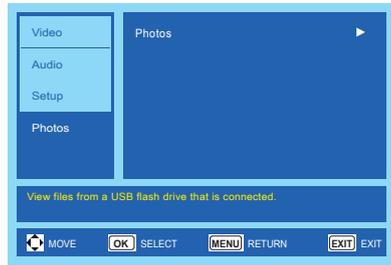
Set the monitor ID number from **1-100, All, or A-J**.

## 9. Reset AV & Setup

Reset all **Audio, Video, and Setup** settings to factory default settings.

## Photos Menu

You could easily browse images from USB device.



If no USB device is detected, the message displayed: "Please Insert USB flash driver."

### 1. Browse Photos

Find photos on the USB drive.

### 2. Favorite Photos

Select only your favorite photos to show.

### 3. View Slideshow

View your photos in a slideshow manner.

### 4. Settings

Change the slidwshow settings. The options are: **Repeat / Shuffle / Speed / Transition**.

### To control while in photo folder:

- Press **▲ / ▼ / ◀ / ▶** to browse the photo files.
- Press **OK** to open a folder or a photo file which will be viewed on the full screen.
- Press **Menu** to return to USB Main Menu.
- Press **FAV** to add a photo file to favorite list or delete from favorite list.

### To control while in full-screen photo show:

- Press **▶** to go to the next image. Press **◀** to go to the previous image.
- Press **OK** to rotate the image clockwise.
- Press **Wide** to zoom the image. The zoom function will switch between the 4 styles by cycle and "x1" "x2" "x4" "Fill" info bar will appear on the right / down corner of screen (If the image resolution size is over panel native resolution size, you cannot select aspect "x1").
- Press **Menu** to return to the Folder / Photo List View.

### To control while in photo slideshow:

- Press **OK** to play or pause slideshow.
- Press **Menu** to stop the slideshow and return to photo browser.

### Data Format for USB Photo Viewer

<b>Data format</b>	JPEG, JPG, JPE
<b>Max. folder layer</b>	9
<b>Max. number of photos</b>	700
<b>Max. number of favorite photos</b>	200
<b>Min. image resolution</b>	75 x 75 pixels
<b>Max. image resolution</b> (Progressive DCT)	1,024 x 768 pixels
<b>Max. image resolution</b> (Baseline Sequential DCT)	15,360 x 8,640 pixels
<b>Supported file system</b>	FAT32

### CAUTION:

- USB photo viewer only supports USB Mass storage class devices.
- A JPEG image modified with PC may not be displayed.
- Partly degraded files might be displayed at a reduced resolution.
- Not guaranteed to support all USB devices.
- Do not use a USB Hub.
- Do not support multi-partition USB.

### NOTES:

- The folder and file names may be different depending on the digital camera used.
- Support USB 2.0 Type A connector (DC5V, max. 500mA). For USB device over 500mA, we suggest to use adaptor or external power.

# Maintenance and Recycling

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## Care Of The Screen

Do not rub or strike the screen with anything hard as this may scratch, mar, or even damage the screen permanently. Unplug the power cord before cleaning the screen. Dust the display by wiping the screen and the cabinet with a soft, clean cloth. If the screen requires additional cleaning, use a clean, damp cloth. Do not use liquid cleaners, aerosol cleaners, or solvents of any kind.

## Mobile Telephone Warning

Keep your mobile telephone away from your display to avoid disturbances in the picture or sound, possibly causing permanent damage to your display.

## End Of Life Directives

In an effort to produce environmentally friendly products, your new display contains materials that can be recycled and reused. At the end of your displays life, specialized companies can minimize display waste by separating the reusable materials from non-reusable materials. Please ensure you dispose of your display according to local regulations.

## Italian Homologation declaration

Questo apparecchio è fabbricato nella Comunità Economica Europea nel rispetto delle disposizioni di cui al D. M. 26/03/92 ed in particolare è conforme alle prescrizioni dell'art. 1 dello stesso D.M. Si dichiara che l'apparecchi.

# Manufacturer's Recycling and Energy Information

NEC DISPLAY SOLUTIONS is strongly committed to environmental protection and sees recycling as one of the company's top priorities in trying to minimize the burden placed on the environment. We are engaged in developing environmentally-friendly products, and always strive to help define and comply with the latest independent standards from agencies such as ISO (International Organisation for Standardization) and TCO (Swedish Trades Union).

## Disposing of your old NEC product

The aim of recycling is to gain an environmental benefit by means of re-use, upgrading, reconditioning or reclamation of material. Dedicated recycling sites ensure that environmentally harmful components are properly handled and securely disposed. To ensure the best recycling of our products, **NEC DISPLAY SOLUTIONS offers a variety of recycling procedures** and gives advice on how to handle the product in an environmentally sensitive way, once it has reached the end of its life.

All required information concerning the disposal of the product and country-specific information on recycling facilities can be found on our following websites:

<http://www.nec-display-solutions.com/greencompany/> (in Europe),

<http://www.nec-display.com> (in Japan) or

<http://www.necdisplay.com> (in USA).

## Energy Saving

This monitor features an advanced energy saving capability. When a VESA Display Power Management Signalling (DPMS) Standard signal is sent to the monitor, the Energy Saving mode is activated. The monitor enters a single Energy Saving mode.

Mode	Power consumption	LED color
On mode (with USB , with Audio)	Approx. 260 W (E654) Approx. 122 W (E554) Approx. 100 W (E464) Approx. 86 W (E424) Approx. 55 W (E324)	None
Standby Mode	Less than 0.5 W	Red

## WEEE Mark (European Directive 2002/96/EC)



### **Within the European Union**

EU-wide legislation, as implemented in each Member State, requires that waste electrical and electronic products carrying the mark (left) must be disposed of separately from normal household waste. This includes monitors and electrical accessories, such as signal cables or power cords. When you need to dispose of your NEC display products, please follow the guidance of your local authority, or ask the shop where you purchased the product, or if applicable, follow any agreements made between yourself and NEC.

The mark on electrical and electronic products only applies to the current European Union Member States.

### **Outside the European Union**

If you wish to dispose of used electrical and electronic products outside the European Union, please contact your local authority so as to comply with the correct disposal method.



# Specification

## Product Specifications

### E654

LCD Module	Resolution: Color:	65" / 1,651 mm diagonal 1,920 x 1,080 Over 16 million colors (depending on video card used)
Frequency	Horizontal: Vertical:	31 – 83KHz (Analog input) 15.625/15.734KHz, 31 – 83KHz (HDMI input) 60Hz – 75Hz (Analog input) 24Hz, 30Hz, 50Hz, 60Hz – 75Hz (HDMI input)
Pixel Clock		25 – 156 MHz
Viewable Size		1428.48 (H) x 803.52 (V) mm
Input Signal		
COMPONENT	Component	RCA Y: 1.0 V p-p / 75ohm, Pb/Pr (Cb/Cr): 0.7 V p-p / 75 ohm
AV IN	Composite	RCA 1.0 V p-p / 75 ohm
VGA	Analog RGB	D-sub 15 pin
HDMI		Type A Connectors
AUDIO		
Audio Input	Analog Audio	Stereo mini jack
Audio Input	AUDIO L / R	RCA 0.5 Vrms / 75 ohm
Audio Output	SPDIF OUT	PCM, Fibre optic
Speaker Output	Internal Speaker:	10 W + 10 W (16 ohm)
Control	RS-232C:	9 Pin D-sub
Power Supply	Standby: Power consumption:	2.64 A – 1.15 A @ 100 – 240V AC, 50/60Hz < 0.5 W 260 W
Operational Environment	Temperature: Humidity: Altitude:	0°C – 40°C / 32°F – 104°F 10% – 80% 0 – 2,000 m
Storage Environment	Temperature: Humidity:	-10°C – 60°C / 14°F – 140°F 5% – 85%
Dimension	with Stand and Base: without Stand and Base:	1467.4 (W) x 924.1 (H) x 359.9 (D) mm 1467.4 (W) x 872.3 (H) x 100 (D) mm
Weight	with Stand and Base: without Stand and Base:	35 kg 30.08 kg
VESA compatible mounting interface		400 mm x 400 mm (M6, VESA hole depth 30 mm)
Power Management		VESA DPM
Plug & Play		VESA DDC2B
Accessories		Stand base (1), Screws for stand base (4) (M6 x 16 mm) Remote control (1), 1.5 V AAA batteries (2) Power cord (1), D-sub cable (1), Setup Manual (1), User Manual (1) (for Russia, Kazakhstan, Belarus)

#### NOTE:

- All specifications, weights, and dimensions are subject to change without prior notice. Please access [www.necdisplay.com](http://www.necdisplay.com) for detailed specifications and dimensions for custom installations.
- This model may not be compatible with features and/or specifications that may be added in the future.
- Neck Screw: M6 x 16 mm

**E554**

LCD Module		Resolution: 55"/ 1,397 mm diagonal Color: 1,920 x 1,080 Over 16 million colors (depending on video card used)
Frequency		Horizontal: 31 – 83KHz (Analog input) 15.625/15.734KHz, 31 – 83KHz (HDMI input) Vertical: 60Hz – 75Hz (Analog input) 24Hz, 30Hz, 50Hz, 60Hz – 75Hz (HDMI input)
Pixel Clock		25 – 156 MHz
Viewable Size		1209.6 (H) x 680.4 (V) mm
Input Signal		
COMPONENT	Component	RCA Y: 1.0 V p-p / 75ohm, Pb/Pr (Cb/Cr): 0.7 V p-p / 75 ohm
AV IN	Composite	RCA 1.0 V p-p / 75 ohm
VGA	Analog RGB	D-sub 15 pin
HDMI		Type A Connectors
AUDIO		
Audio Input	Analog Audio	Stereo mini jack
Audio Input	AUDIO L / R	RCA 0.5 Vrms / 75 ohm
Audio Output	SPDIF OUT	PCM, Fibre optic
Speaker Output	Internal Speaker:	10 W + 10 W (16 ohm)
Control	RS-232C:	9 Pin D-sub
Power Supply		1.3 A – 0.55 A @ AC 100 – 240V, 50/60Hz Standby: < 0.5 W Power consumption: 122 W
Operational Environment		Temperature: 0°C – 40°C / 32°F – 104°F Humidity: 10% – 80% Altitude: 0 – 2,000 m
Storage Environment		Temperature: -10°C – 60°C / 14°F – 140°F Humidity: 5% – 85%
Dimension		with Stand and Base: 1241 (W) x 789.6 (H) x 274.4 (D) mm without Stand and Base: 1241 (W) x 735 (H) x 62.8 (D) mm
Weight		with Stand and Base: 23.3 kg without Stand and Base: 20.2 kg
VESA compatible mounting interface		400 mm x 400 mm (M6, VESA hole depth 24 mm)
Power Management		VESA DPM
Plug & Play		VESA DDC2B
Accessories		Stand base (1), Screws for stand base (4) (M4 x 10 mm) Remote control (1), 1.5 V AAA batteries (2) Power cord (1), D-sub cable (1), Setup Manual (1) User Manual (1) (for Russia, Kazakhstan, Belarus)

**NOTE:**

- All specifications, weights, and dimensions are subject to change without prior notice. Please access [www.necdisplay.com](http://www.necdisplay.com) for detailed specifications and dimensions for custom installations.
- This model may not be compatible with features and/or specifications that may be added in the future.
- Neck Screw: M4 x 14 mm

## E464

LCD Module	Resolution: Color:	46" / 1,168 mm diagonal 1,920 x 1,080 Over 16 million colors (depending on video card used)
Frequency	Horizontal: Vertical:	31 – 83KHz (Analog input) 15.625/15.734KHz, 31 – 83KHz (HDMI input) 60Hz – 75Hz (Analog input) 24Hz, 30Hz, 50Hz, 60Hz – 75Hz (HDMI input)
Pixel Clock		25 – 156 MHz
Viewable Size		1018.08 (H) x 572.6 (V) mm
Input Signal		
COMPONENT	Component	RCA Y: 1.0 V p-p / 75ohm, Pb/Pr (Cb/Cr): 0.7 V p-p / 75 ohm
AV IN	Composite	RCA 1.0 V p-p / 75 ohm
VGA	Analog RGB	D-sub 15 pin
HDMI		Type A Connectors
AUDIO		
Audio Input	Analog Audio	Stereo mini jack
Audio Input	AUDIO L / R	RCA 0.5 Vrms / 75 ohm
Audio Output	SPDIF OUT	PCM, Fibre optic
Speaker Output	Internal Speaker:	10 W + 10 W (16 ohm)
Control	RS-232C:	9 Pin D-sub
Power Supply	Standby: Power consumption:	1.0 A – 0.45 A @ AC 100 – 240V, 50/60Hz < 0.5 W 100 W
Operational Environment	Temperature: Humidity: Altitude:	0°C – 40°C / 32°F – 104°F 10% – 80% 0 – 2,000 m
Storage Environment	Temperature: Humidity:	-10°C – 60°C / 14°F – 140°F 5% – 85%
Dimension	with Stand and Base: without Stand and Base:	1045.9 (W) x 674 (H) x 214.1 (D) mm 1045.9 (W) x 622.9 (H) x 62.8 (D) mm
Weight	with Stand and Base: without Stand and Base:	15.5 kg 13.8 kg
VESA compatible mounting interface		400 mm x 400 mm (M6, VESA hole depth 19 mm)
Power Management		VESA DPM
Plug & Play		VESA DDC2B
Accessories		Stand base (1), Screws for stand base (4) (M4 x 10 mm) Remote control (1), 1.5 V AAA batteries (2) Power cord (1), D-sub cable (1), Setup Manual (1) User Manual (1) (for Russia, Kazakhstan, Belarus)

### NOTE:

- All specifications, weights, and dimensions are subject to change without prior notice. Please access [www.necdisplay.com](http://www.necdisplay.com) for detailed specifications and dimensions for custom installations.
- This model may not be compatible with features and/or specifications that may be added in the future.
- Neck Screw: M4 x 10 mm

**E424**

LCD Module	Resolution: Color:	42" / 1,067 mm diagonal 1,920 x 1,080 Over 16 million colors (depending on video card used)
Frequency	Horizontal: Vertical:	31 – 83KHz (Analog input) 15.625/15.734KHz, 31 – 83KHz (HDMI input) 60Hz – 75Hz (Analog input) 24Hz, 30Hz, 50Hz, 60Hz – 75Hz (HDMI input)
Pixel Clock		25 – 156 MHz
Viewable Size		930.24 (H) × 523.26 (V) mm
Input Signal		
COMPONENT	Component	RCA Y: 1.0 V p-p / 75ohm, Pb/Pr (Cb/Cr): 0.7 V p-p / 75 ohm
AV IN	Composite	RCA 1.0 V p-p / 75 ohm
VGA	Analog RGB	D-sub 15 pin
HDMI		Type A Connectors
AUDIO		
Audio Input	Analog Audio	Stereo mini jack
Audio Input	AUDIO L / R	RCA 0.5 Vrms / 75 ohm
Audio Output	SPDIF OUT	PCM, Fibre optic
Speaker Output	Internal Speaker:	10 W + 10 W (16 ohm)
Control	RS-232C:	9 Pin D-sub
Power Supply	Standby: Power consumption:	0.9 A – 0.4 A @ AC 100 – 240V, 50/60Hz < 0.5 W 86 W
Operational Environment	Temperature: Humidity: Altitude:	0°C – 40°C / 32°F – 104°F 10% – 80% 0 – 2,000 m
Storage Environment	Temperature: Humidity:	-10°C – 60°C / 14°F – 140°F 5% – 85%
Dimension	with Stand and Base: without Stand and Base:	957.14 (W) x 627.00 (H) x 214.1 (D) mm 957.14 (W) x 573.02 (H) x 62.8 (D) mm
Weight	with Stand and Base: without Stand and Base:	13.4 kg 11.7 kg
VESA compatible mounting interface		400 mm x 400 mm (M6, VESA hole depth 21 mm)
Power Management		VESA DPM
Plug & Play		VESA DDC2B
Accessories		Stand base (1), Screws for stand base (4) (M4 x 10 mm) Remote control (1), 1.5 V AAA batteries (2) Power cord (1), D-sub cable (1), Setup Manual (1) User Manual (1) (for Russia, Kazakhstan, Belarus)

**NOTE:**

- All specifications, weights, and dimensions are subject to change without prior notice. Please access [www.necdisplay.com](http://www.necdisplay.com) for detailed specifications and dimensions for custom installations.
- This model may not be compatible with features and/or specifications that may be added in the future.
- Neck Screw: M4 x 10 mm

## E324

LCD Module	Resolution: Color:	32" / 813 mm diagonal 1,366 x 7,68 Over 16 million colors (depending on video card used)
Frequency	Horizontal: Vertical:	31 – 83KHz (Analog input) 15.625/15.734KHz, 31 – 83KHz (HDMI input) 60Hz – 75Hz (Analog input) 24Hz, 30Hz, 50Hz, 60Hz – 75Hz (HDMI input)
Pixel Clock		25 – 156 MHz
Viewable Size		697.685 (H) × 392.256(V) mm
Input Signal		
COMPONENT	Component	RCA Y: 1.0 V p-p / 75ohm, Pb/Pr (Cb/Cr): 0.7 V p-p / 75 ohm
AV IN	Composite	RCA 1.0 V p-p / 75 ohm
VGA	Analog RGB	D-sub 15 pin
HDMI		Type A Connectors
AUDIO		
Audio Input	Analog Audio	Stereo mini jack
Audio Input	AUDIO L / R	RCA 0.5 Vrms / 75 ohm
Audio Output	SPDIF OUT	PCM, Fibre optic
Speaker Output	Internal Speaker:	10 W + 10 W (16 ohm)
Control	RS-232C:	9 Pin D-sub
Power Supply	Standby: Power consumption:	0.8 A @ 100 – 240V AC, 50/60Hz < 0.5 W 55 W
Operational Environment	Temperature: Humidity: Altitude:	0°C – 40°C / 32°F – 104°F 10% – 80% 0 – 2,000 m
Storage Environment	Temperature: Humidity:	-10°C – 60°C / 14°F – 140°F 5% – 85%
Dimension	with Stand and Base: without Stand and Base:	725.7 (W) x 496.3 (H) x 214.1 (D) mm 725.7 (W) x 442.8 (H) x 62.8 (D) mm
Weight	with Stand and Base: without Stand and Base:	8.4 kg 6.7 kg
VESA compatible mounting interface		100 mm x 100 mm (M4, VESA hole depth 22 mm)
Power Management		VESA DPM
Plug & Play		VESA DDC2B
Accessories		Stand base (1), Screws for stand base (4) (M4 x 8 mm) Neck screw (4) (M4 x 12 mm), Stand neck (1) Remote control (1), 1.5 V AAA batteries (2) Power cord (1), D-sub cable (1), Setup Manual (1) User Manual (1) (for Russia, Kazakhstan, Belarus)

### NOTE:

- All specifications, weights, and dimensions are subject to change without prior notice. Please access [www.necdisplay.com](http://www.necdisplay.com) for detailed specifications and dimensions for custom installations.
- This model may not be compatible with features and/or specifications that may be added in the future.

## RS-232C Port Specifications

### PC control of the Display

Attach an RS-232C cable cross-type (commercially available) to the supplied RS-232C for the connections.

#### NOTE:

This operation system should be used by a person who is accustomed to using computers.

### Communication procedure

Send the control commands from the PC via the RS- 232C connector.

The display operates according to the received command and sends a response message to the PC.

Do not send multiple commands at the same time. Wait until the PC receives the response before sending the next command.

### Interface

<b>Protocol</b>	RS-232C
<b>Baud rate</b>	9,600 bps
<b>Data length</b>	8 bits
<b>Parity bit</b>	None
<b>Stop bit</b>	1 bit
<b>Communication code</b>	ASCII

This LCD monitor uses RXD, TXD and GND lines for RS-232C control.

The reverse type cable (null modem cable) (not include) should be used for RS-232C control.

### Control command diagram

<b>Function (Monitor ID = 1)</b>	<b>Code Data</b>
Power ON	01 30 41 30 41 30 43 02 43 32 30 33 44 36 30 30 30 31 03 73 0d
Power OFF	01 30 41 30 41 30 43 02 43 32 30 33 44 36 30 30 30 34 03 76 0d
Input Source Select VGA	01 30 41 30 45 30 41 02 30 30 36 30 30 30 31 03 73 0d
Input Source Select HDMI	01 30 41 30 45 30 41 02 30 30 36 30 30 30 31 03 72 0d
Input Source Select Component	01 30 41 30 45 30 41 02 30 30 36 30 30 30 30 43 03 01 0d
Input Source Select Composite	01 30 41 30 45 30 41 02 30 30 36 30 30 30 30 35 03 77 0d
Sound Mute ON	01 30 41 30 45 30 41 02 30 30 38 44 30 30 30 31 03 09 0d
Sound Mute OFF	01 30 41 30 45 30 41 02 30 30 38 44 30 30 30 32 03 0a 0d

## Before Calling Service

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Please make these simple checks before calling service. These tips may save you time and money as charges for receiver installation and adjustments of customer controls are not covered under your warranty.

Symptoms	Items To Check And Actions To Follow
No power	<ul style="list-style-type: none"><li>• Check to see if the display's AC power cord is plugged into the outlet.</li><li>• Unplug the display and after 60 seconds reinsert the plug into the outlet and power on the display.</li></ul>
No picture	<ul style="list-style-type: none"><li>• Adjust the contrast and brightness settings.</li></ul>
Good picture but no sound	<ul style="list-style-type: none"><li>• Increase the volume.</li><li>• Confirm that the display is not muted by pressing the <b>Mute</b> button on the remote control.</li></ul>
Good sound but poor color	<ul style="list-style-type: none"><li>• Adjust the contrast, color and brightness settings.</li></ul>
Poor picture	<ul style="list-style-type: none"><li>• Poor picture quality may occur when an activated S-VHS camera or camcorder is connected to your display and another peripheral at the same time. Switch off one of the peripherals.</li></ul>
Presence of a horizontal dotted line	<ul style="list-style-type: none"><li>• This may be caused by electrical interference (e.g. hair-dryer, nearby neon lights, etc.).</li><li>• Power cycle the equipment by turning off and then turning back on.</li></ul>
Display not responding via the remote control	<ul style="list-style-type: none"><li>• Determine if the batteries are working and replace batteries if necessary.</li><li>• Clean the remote control sensor lens on the display.</li><li>• If necessary, utilize the buttons located on the side of the display.</li></ul>

# Glossary

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## **HDMI Inputs**

High-Definition Multimedia Interface Audio / Video Inputs are located on the receiver. These connectors are used for the input of audio and video signals. Designed to receive higher picture resolution and offer sound connection options.

## **Menu**

An on-screen listing of features shown on the display screen is made available for user adjustments.

## **Sleep Timer**

You can set a time period for which the display will automatically turn off.

