


# Dell E2225H Monitor

## Service Manual

## Notes, cautions, and warnings

 **NOTE:** A NOTE indicates important information that helps you make better use of your product.

 **CAUTION:** A CAUTION indicates either potential damage to hardware or loss of data and tells you how to avoid the problem.

 **WARNING:** A WARNING indicates a potential for property damage, personal injury, or death.

<b>Chapter 1: Safety Instructions</b> .....	<b>4</b>
Before working inside your monitor .....	4
After working inside your monitor .....	4
<b>Chapter 2: Views of E2225H monitor</b> .....	<b>5</b>
Side view .....	5
Front view .....	6
Bottom view.....	6
<b>Chapter 3: Major components of E2225H monitor</b> .....	<b>7</b>
<b>Chapter 4: Wiring connectivity diagram</b> .....	<b>8</b>
<b>Chapter 5: Connecting the cables</b> .....	<b>9</b>
Connecting VGA cable .....	9
Connecting DP cable .....	9
<b>Chapter 6: Disassembly and reassembly</b> .....	<b>10</b>
Recommended tools .....	10
Screw list.....	10
Stand.....	11
Removing the stand.....	11
Installing the stand .....	12
VESA cover .....	13
Removing the VESA cover.....	13
Installing the VESA cover .....	13
Back cover .....	14
Removing the back cover .....	14
Installing the back cover.....	16
Keypad board.....	17
Removing the keypad board.....	17
Installing the keypad board .....	18
Chassis assembly.....	19
Removing the chassis assembly .....	19
Installing the chassis assembly .....	21
Interface board .....	22
Removing the interface board.....	22
Installing the interface board .....	25
Power board .....	27
Removing the power board .....	27
Installing the power board.....	28
<b>Chapter 7: Troubleshooting Instructions</b> .....	<b>29</b>
Self-test.....	29
Built-in diagnostics .....	30
Common problems.....	31
Product-specific problems.....	32
<b>Chapter 8: Contacting Dell</b> .....	<b>33</b>

# Safety Instructions

Use the following safety guidelines to protect your monitor from potential damage and to ensure your personal safety. Unless otherwise noted, each procedure included in this document assumes that you have read the safety information that shipped with your monitor.

**NOTE:** Before using the monitor, read the safety information that is shipped with your monitor and printed on the product. Keep the documentation at a secure location for future reference.

**WARNING:** Use of controls, adjustments, or procedures other than those specified in this documentation may result in exposure to shock, electrical hazards and/or mechanical hazards.

**CAUTION:** The possible long-term effect of listening to audio at high volume through the headphones (on monitor that support it) may damage your hearing ability.

- Place the monitor on a solid surface and handle it carefully. The screen is fragile and can be damaged if dropped or hit with a sharp object.
- Ensure that your monitor is electrically rated to operate with the AC power available in your location.
- Keep the monitor in room temperature. Excessive cold or hot conditions can have an adverse effect on the liquid crystal of the display.
- Connect the power cable from the monitor to a wall outlet that is near and accessible. See [Connecting the cables](#).
- Do not place and use the monitor on a wet surface or near water.
- Do not subject the monitor to severe vibration or high impact conditions. For example, do not place the monitor inside a car trunk.
- Unplug the monitor when it is going to be left unused for an extended period.
- To avoid electric shock, do not attempt to remove any cover or touch the inside of the monitor.
- Read these instructions carefully. Keep this document for future reference. Follow all warnings and instructions that are marked on the product.
- Certain monitors can be wall mounted using the VESA mount that is sold separately. Ensure to use the correct VESA specifications as mentioned in the wall mounting section of the User's Guide.

For information about safety instructions, see the *Safety, Environmental and Regulatory Information (SERI)* document that is shipped with your monitor.

## Before working inside your monitor

### Steps

1. Save and close all open files and exit all open applications.
2. Turn off your monitor.
3. Disconnect your monitor and all attached devices from their electrical outlets.
4. Disconnect all attached network devices and peripherals, such as keyboard, mouse, and dock from your monitor.

**CAUTION:** To disconnect a network cable, first unplug the cable from your monitor and then unplug the cable from the network device.

5. Remove any media card and optical disc from your monitor, if applicable.

## After working inside your monitor

**CAUTION:** Leaving any loose or misplaced screws inside your monitor may severely damage it.

### Steps

1. Replace all screws and ensure that no stray screws remain inside your monitor.
2. Connect any external devices, peripherals, or cables you removed before working on your monitor.
3. Replace any media cards, discs, or any other parts that you removed before working on your monitor.
4. Connect your monitor and all attached devices to their electrical outlets.
5. Turn on your monitor.

## Views of E2225H monitor

### Side view



**Figure 1.** Side view of the monitor

## Front view



**Figure 2.** Front view of the monitor

1. **Display panel**  
Provides visual output to the user.

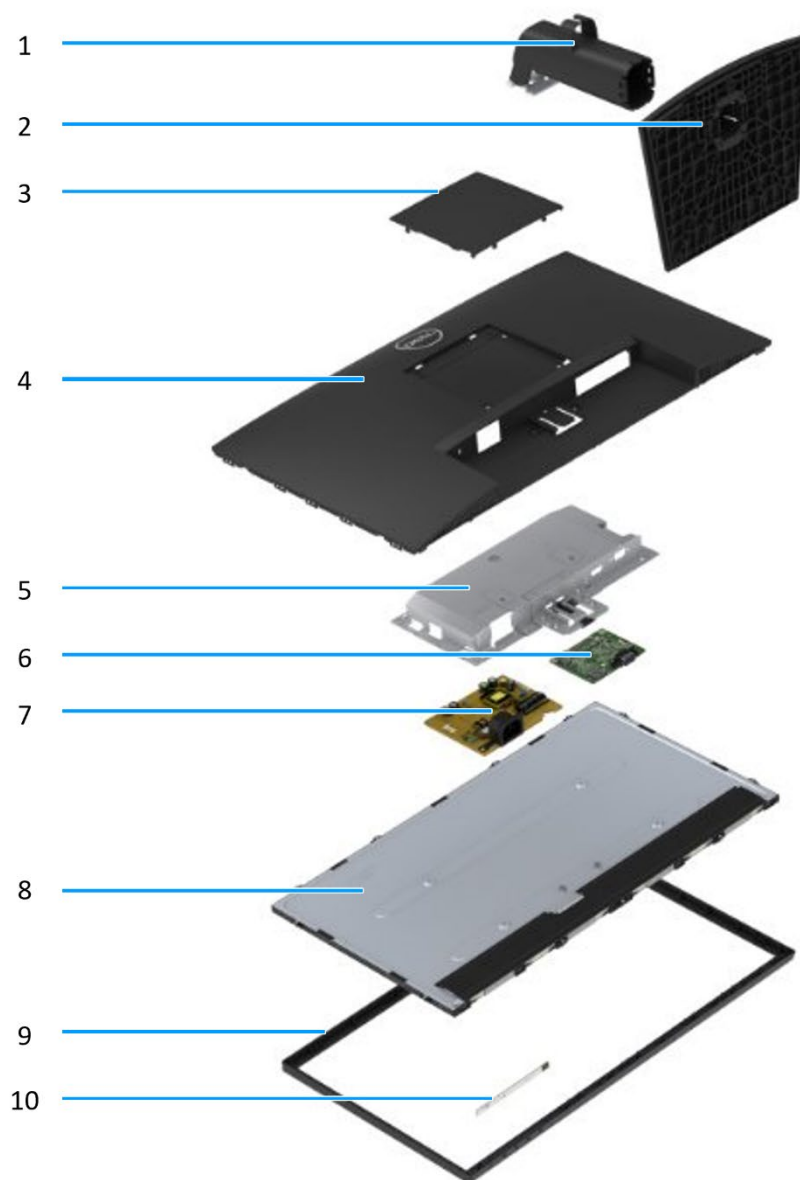
## Bottom view



**Figure 3.** Bottom view of the monitor

1. **Power port**  
To connect the monitor power cable.
2. **DisplayPort 1.2 port**  
Connect to your computer with the DisplayPort cable.
3. **VGA port**  
Connect to your computer with the VGA cable.

## Major components of E2225H monitor



**Figure 4. Major components**

**Table 1** Components

Item	Description	Item	Description
1	Stand riser	6	Interface board
2	Stand base	7	Power board
3	VESA cover	8	Display panel
4	Back cover	9	Front bezel
5	Chassis	10	Keypad board

## Wiring connectivity diagram

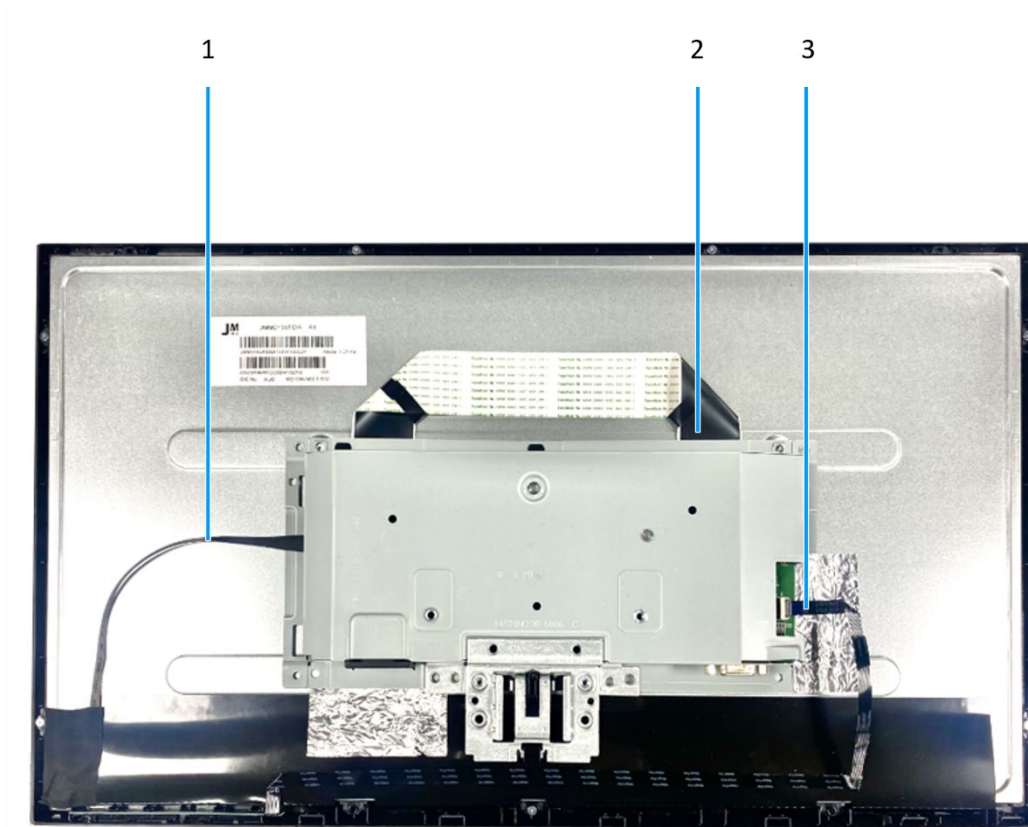


Figure 5. Wiring connectivity diagram

Table 2 Cables

Item	Description
1	Lightbar cable
2	LVDS cable
3	Keypad cable



## Connecting the cables

**⚠ WARNING:** Before you begin any of the following procedures, follow the [Safety Instructions](#).

**⚠ WARNING:** Ensure that the grounded power outlet for the power cable is accessible to the operator and located close to the equipment.

To disconnect power from the equipment, unplug the power cord from the power outlet by grasping the plug firmly. Never pull on the cord.

**⚠ WARNING:** A certified power supply cord has to be used with this equipment. The relevant national installation and/or equipment regulations shall be considered. Use a certified power supply cord meeting IEC 60227 standards (H05VV-F 3G 0.75 mm<sup>2</sup> or H05VVH2-F2 3G 0.75 mm<sup>2</sup>). Alternatively, you can consider a synthetic rubber flexible cord.

**ⓘ NOTE:** Do not connect all cables to the computer simultaneously. It is recommended to route the cables through the cable-management slot before you connect them to the monitor.

**ⓘ NOTE:** Dell monitors are designed to work optimally with Dell-supplied inbox cables. Dell does not guarantee the video quality and performance if non-Dell cables are used.

To connect your monitor to the computer:

1. Turn off your computer and disconnect the power cable.
2. Connect VGA or DP cable from your monitor to the computer.

### Connecting VGA cable



Figure 6. Connecting VGA cable

### Connecting DP cable



Figure 7. Connecting DP cable

# Disassembly and reassembly

**NOTE:** The images in this document may differ from your computer depending on the configuration you ordered.

## Recommended tools

- Phillips screwdriver #0
- Phillips screwdriver #2
- Nut driver 5 mm
- Plastic scribe








## Screw list

**NOTE:** When removing screws from a component, it is recommended to note the screw type, the quantity of screws, and then place them in a screw storage box. This is to ensure that the correct number of screws and correct screw type is restored when the component is replaced.

**NOTE:** Some computers have magnetic surfaces. Ensure that the screws are not left attached to such surfaces when replacing a component.

**NOTE:** Screw color may vary with the configuration ordered.

**Table 3** Screw list

Component	Screw type	Quantity	Screw image
Back cover VESA	M4x10	4	
Back cover hinge	M4x4.5	2	
Hinge bracket	M3x4	2	
Interface board	M3x6	2	
Power board	M3x6	2	
Power-board grounding	M4x9	1	
VGA port	#4-40x11.8	2	

# Stand

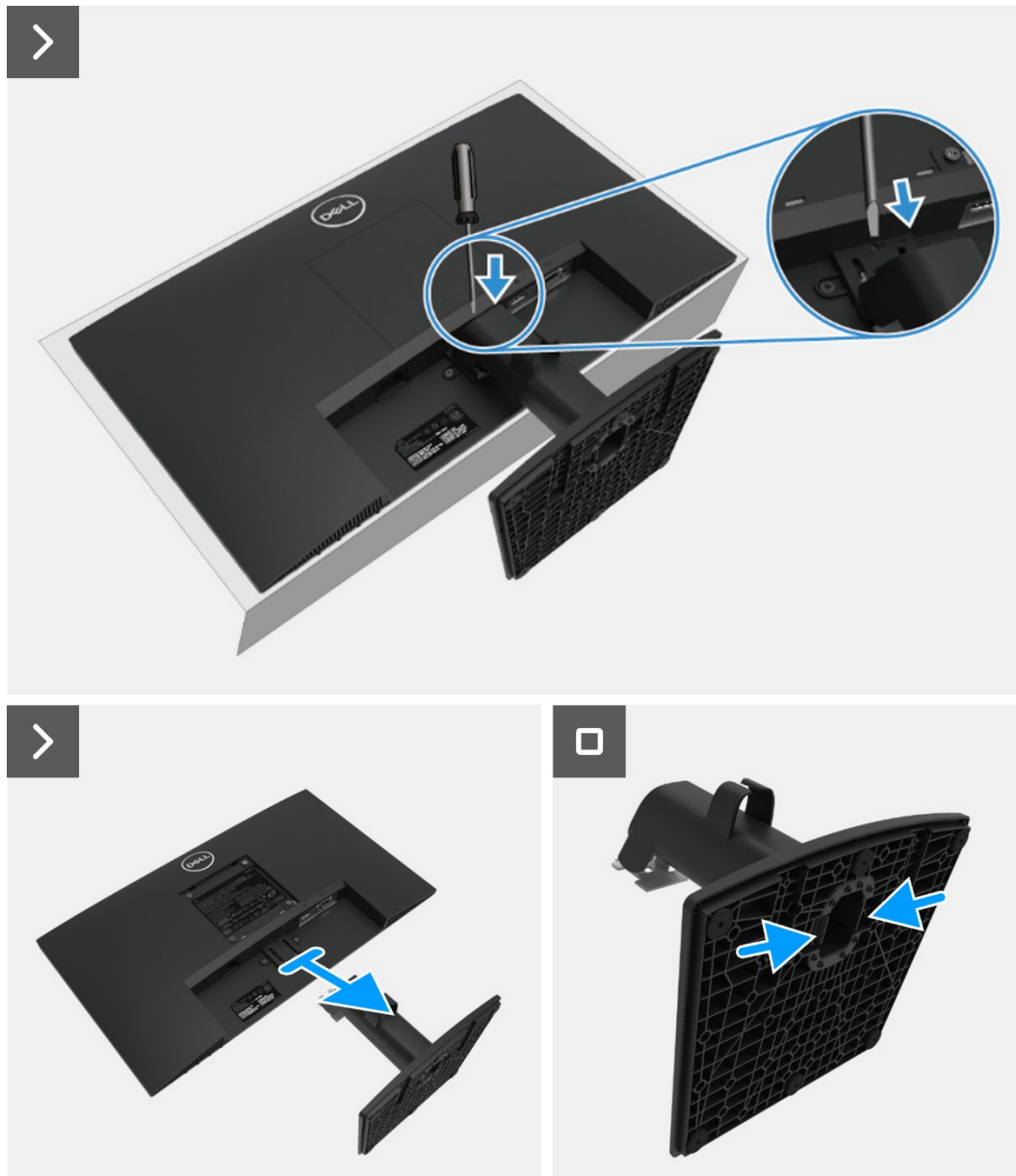
## Removing the stand

### Prerequisites

Follow the procedure in [Before working inside your monitor](#).

### Steps

1. Tilt the stand downwards to access the release button.
2. Using a screwdriver, press the release button to pull the stand from the monitor.
3. Press the release tab on the bottom of the base to separate the stand base from the stand riser.



**Figure 8.** Removing the stand

## Installing the stand

### Steps

1. Attach the stand riser to the stand base.
2. Slide the stand into the slot on the back cover.



**Figure 9.** Installing the stand

### Next steps

1. Follow the procedure in [After working inside your monitor.](#)

## VESA cover

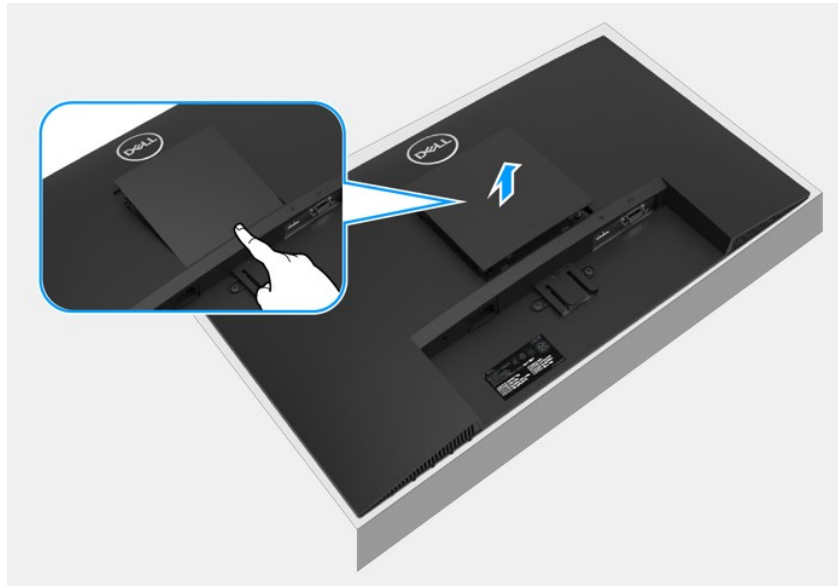
### Removing the VESA cover

#### Prerequisites

1. Follow the procedure in [Before working inside your monitor](#).

#### Steps

1. Press the rift on the VESA cover to release it from the back of the monitor.
2. Lift the VESA cover away from the monitor.



**Figure 10.** Removing the VESA cover

### Installing the VESA cover

#### Steps

1. Attach the VESA cover onto the back cover.



**Figure 11.** Installing the VESA cover

**Next steps**

1. Install the [stand](#).
2. Follow the procedure in [After working inside your monitor](#).

## Back cover

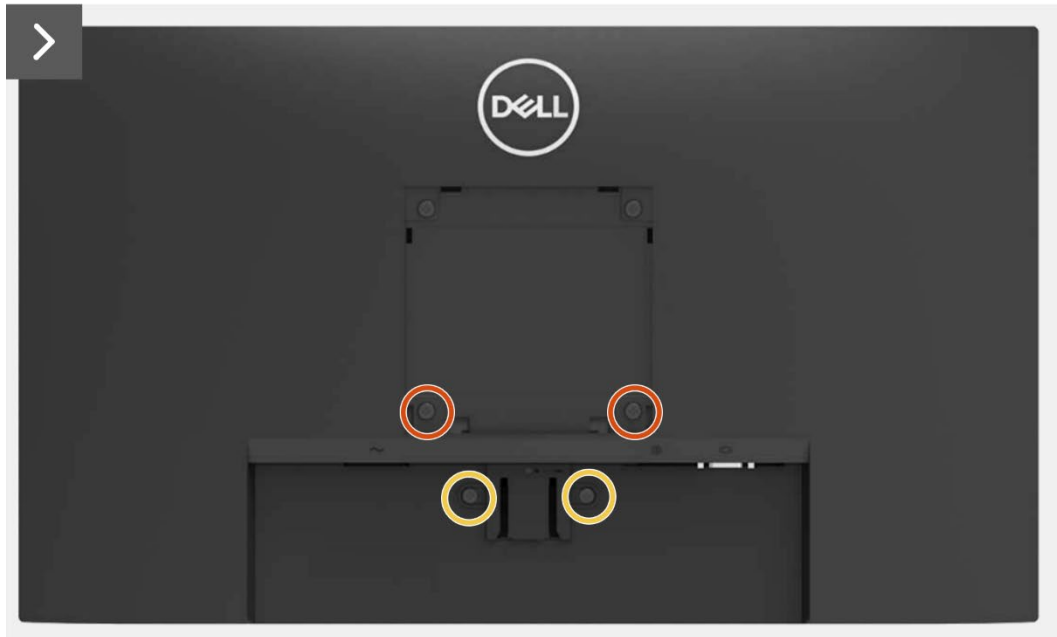
### Removing the back cover

**Prerequisites**

1. Follow the procedure in [Before working inside your monitor](#).
2. Remove the [stand](#).
3. Remove the [VESA cover](#).

**Steps**

1. Remove the two screws (M4x10) that secure the back cover to the chassis assembly.
2. Remove the two screws (M4x4.5) that secure the back cover to the chassis assembly.
3. Using the plastic scribe, pry the back cover starting from the bottom edge of the monitor.
4. Lift and remove the back cover away from the monitor.



**Figure 12.** Removing the back cover

## Installing the back cover

### Steps

1. Place and snap the back cover into place on the chassis assembly.
  - NOTE:** Align the screw holes on the back cover with the screw holes on the chassis assembly before applying slight pressure to the back cover.
2. Replace the four screws (M4x10) to secure the back cover to the monitor.
3. Replace the two screws (M4x4.5) to secure the back cover to the monitor.

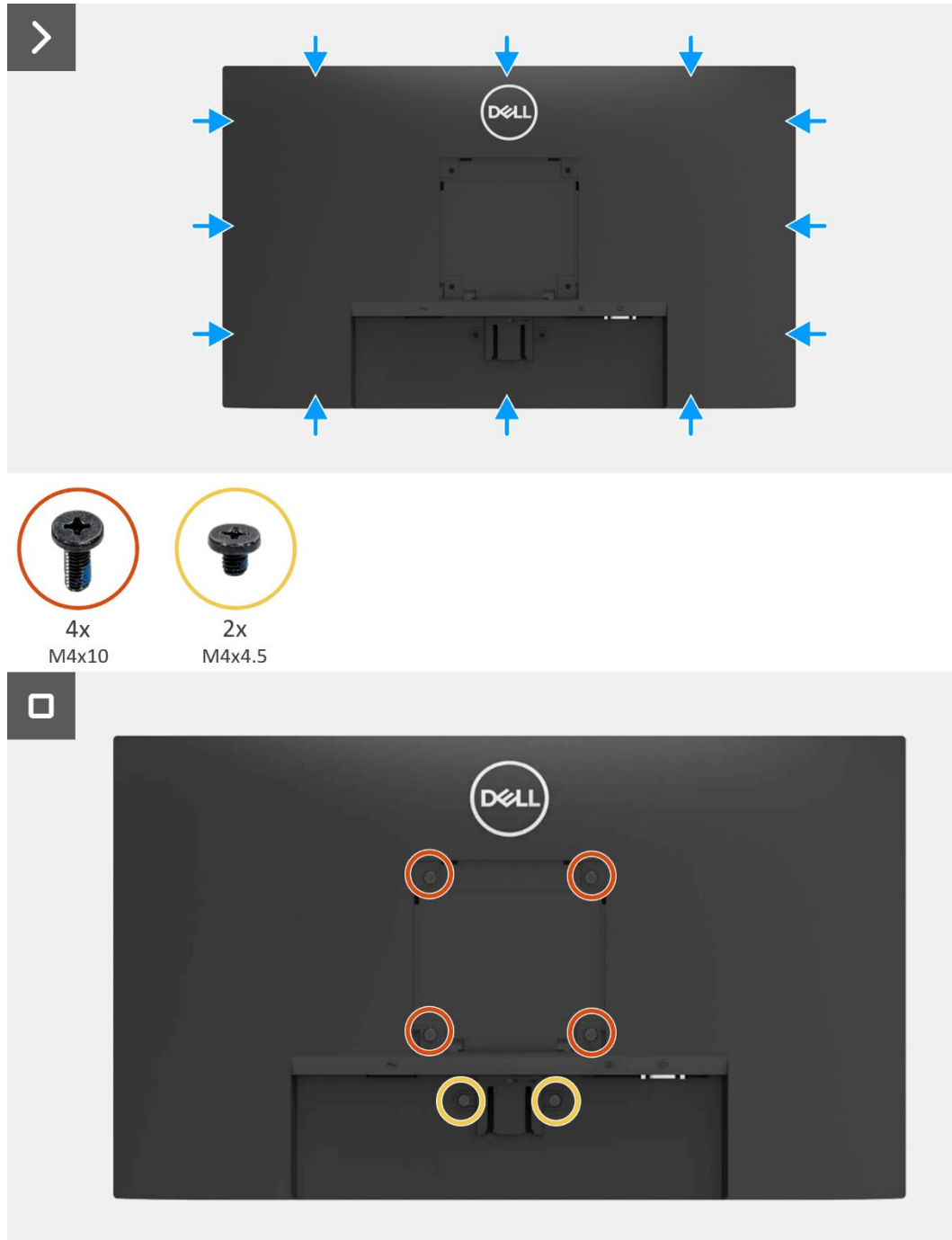


Figure 13. Installing the back cover



### Next steps

1. Install the [VESA cover](#).
2. Install the [stand](#).
3. Follow the procedure in [After working inside your monitor](#).

## Keypad board

### Removing the keypad board

#### Prerequisites

1. Follow the procedure in [Before working inside your monitor](#).
2. Remove the [stand](#).
3. Remove the [VESA cover](#).
4. Remove the [back cover](#).

#### Steps

1. Open the latch and disconnect the keypad cable from the connector on the interface board.
2. Remove the keypad board from the slot on the front bezel.
3. Peel the keypad cable off from the panel shielding.

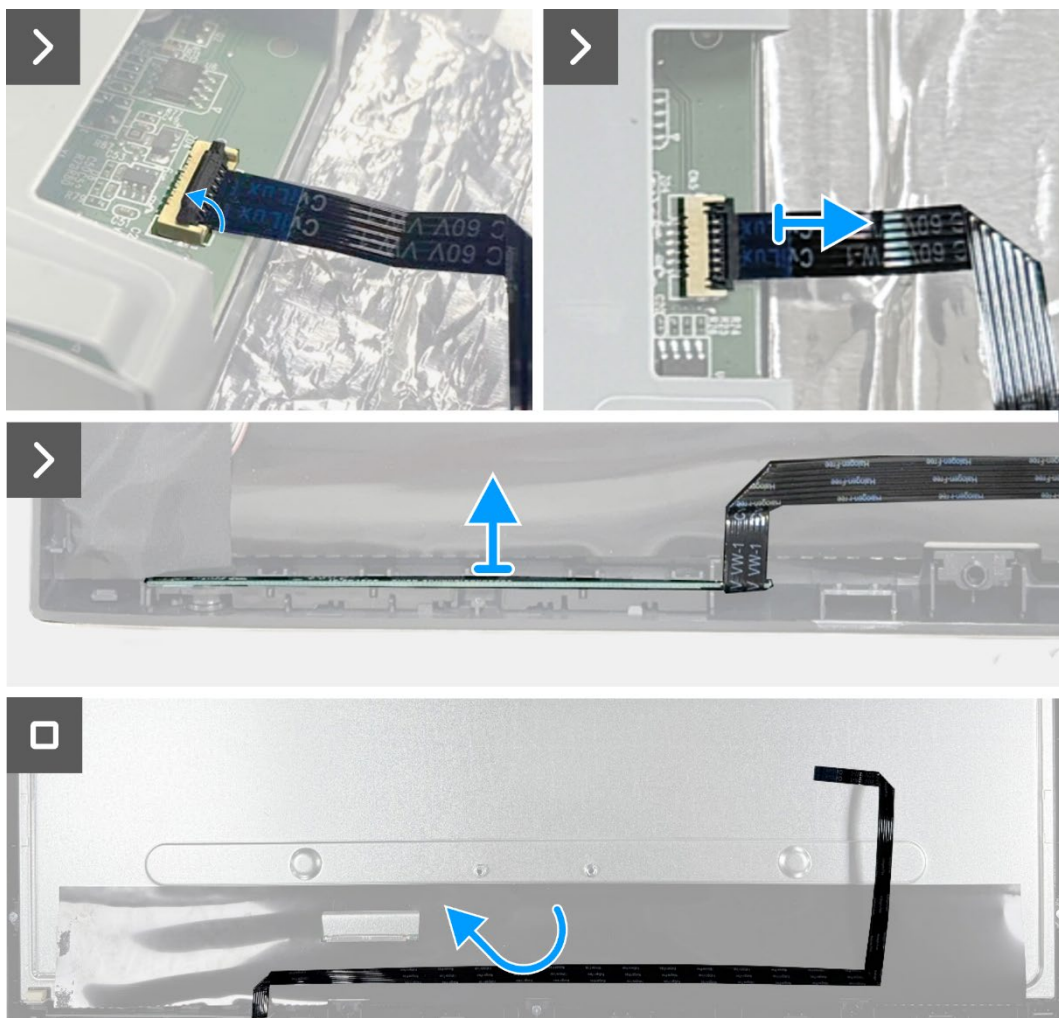
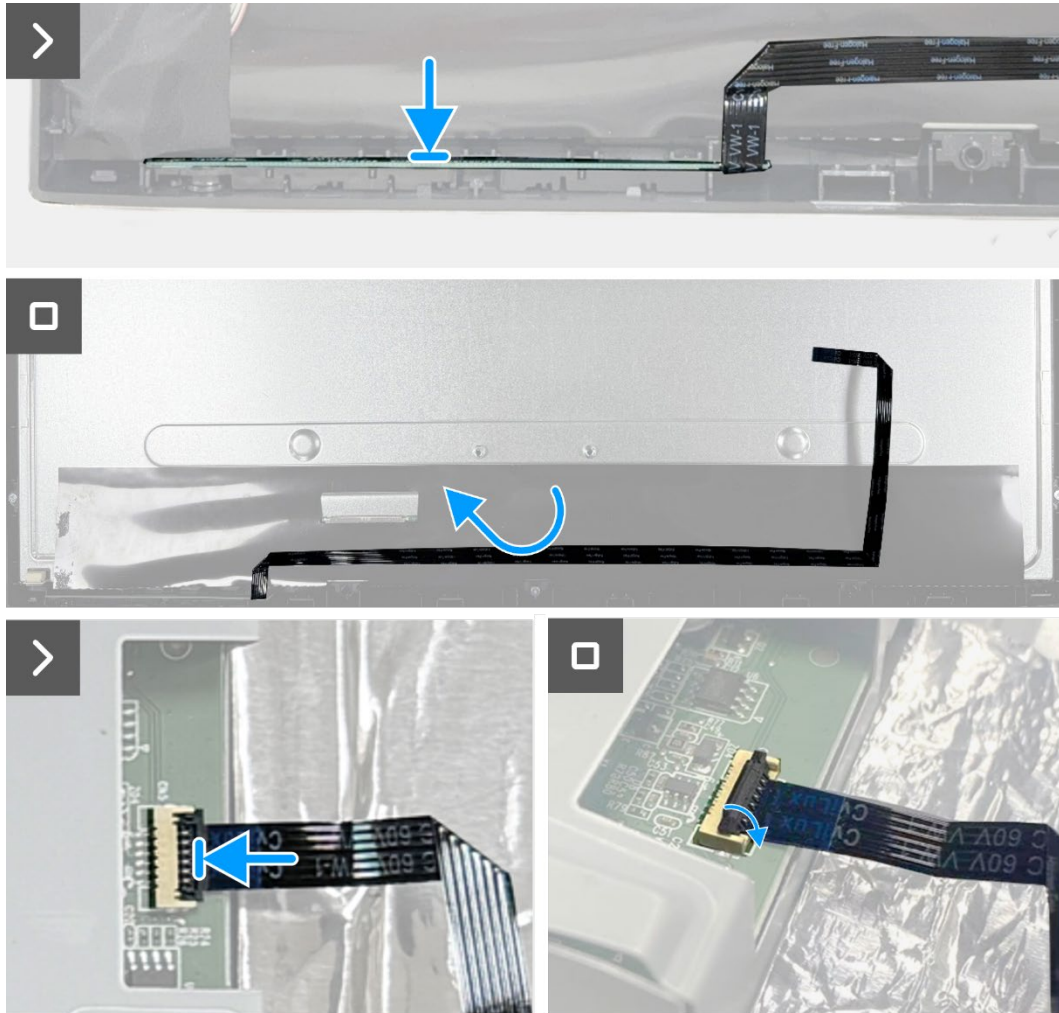


Figure 14. Removing the keypad board

## Installing the keypad board

### Steps

1. Align and place the keypad board onto the front bezel.
2. Adhere the keypad cable on the panel shielding.
3. Connect the keypad cable to the connector on the interface board. Close the latch after connecting the keypad cable to the connector.



**Figure 15.** Installing the keypad board

### Next steps

1. Install the [back cover](#).
2. Install the [VESA cover](#).
3. Install the [stand](#).
4. Follow the procedure in [After working inside your monitor](#).

# Chassis assembly

## Removing the chassis assembly

### Prerequisites

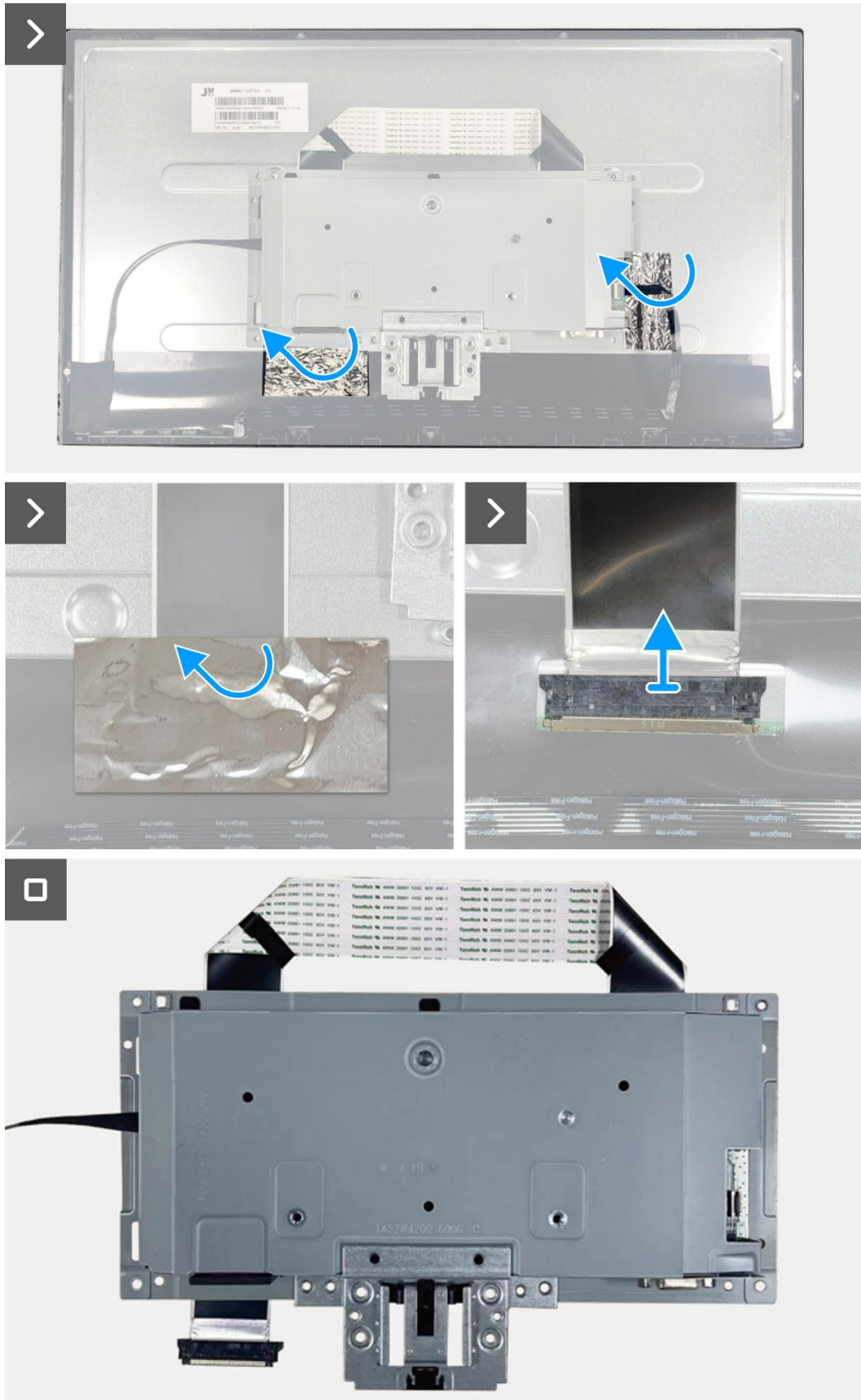
1. Follow the procedure in [Before working inside your monitor](#).
2. Remove the [stand](#).
3. Remove the [VESA cover](#).
4. Remove the [back cover](#).
5. Remove the [keypad board](#).

### Steps

1. Remove the two screws (M3x4) that secure the chassis to the display panel.
2. Peel the tape at the bottom left corner of the monitor.
3. Disconnect the lightbar cable from the connector on the display panel.
4. Peel the two aluminum foils on the chassis assembly.
5. Disconnect the LVDS cable from the connector on the display panel.
6. Remove the chassis assembly from the display panel.



**Figure 16.** Removing the chassis assembly



**Figure 17. Removing the chassis assembly**



## Installing the chassis assembly

### Steps

1. Connect the LVDS cable to the connector on the display panel. And adhere the aluminum foil on the LVDS connector.
2. Replace two screws (M3x4) to secure chassis assembly to display panel.
3. Connect the lightbar cable to the panel and adhere the tape to cover the connector.

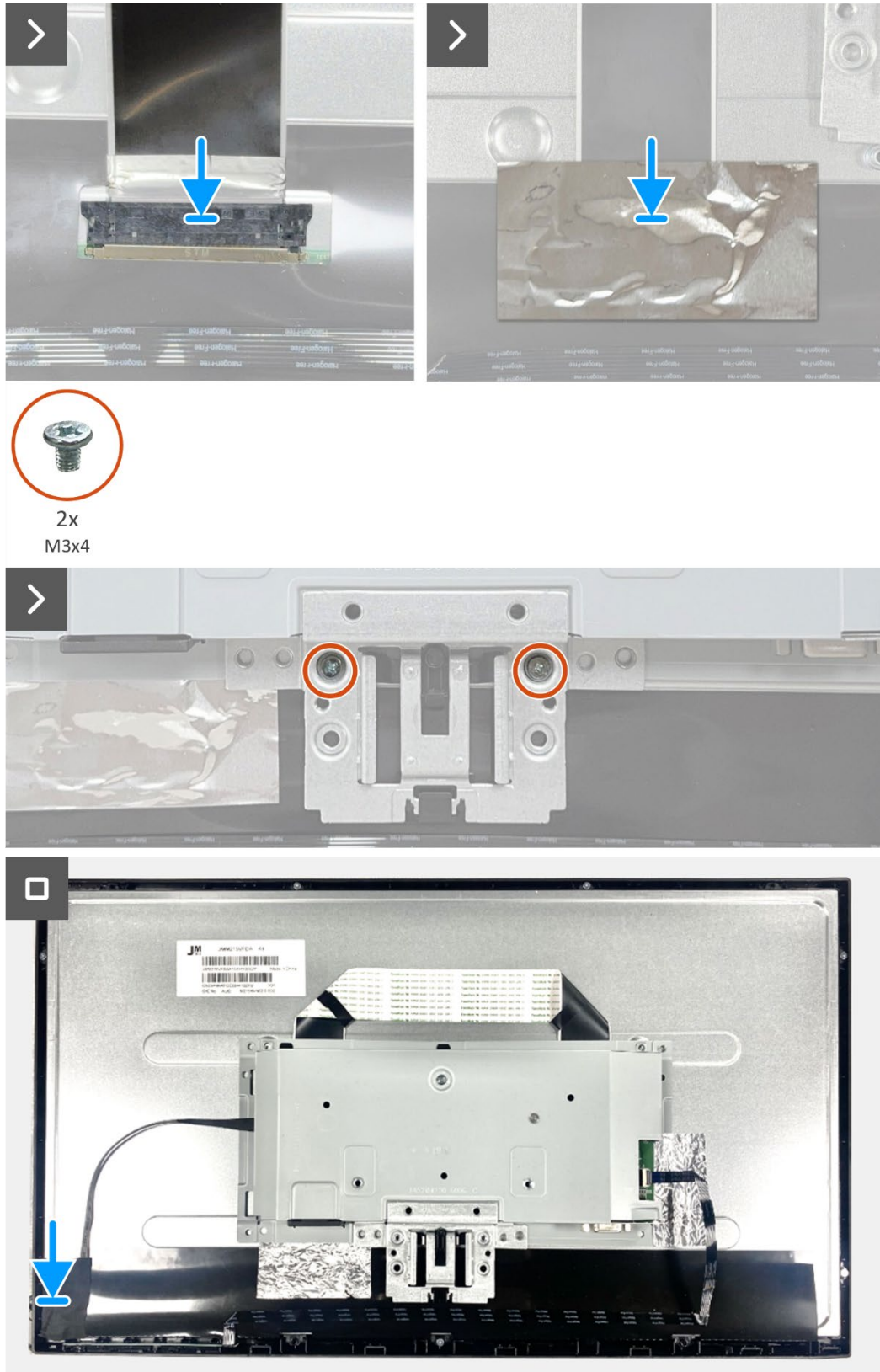


Figure 18. Installing the chassis assembly

### Next steps

1. Install the [keypad board](#).
2. Install the [back cover](#).
3. Install the [VESA cover](#).
4. Install the [stand](#).
5. Follow the procedure in [After working inside your monitor](#).

## Interface board

### Removing the interface board

#### Prerequisites

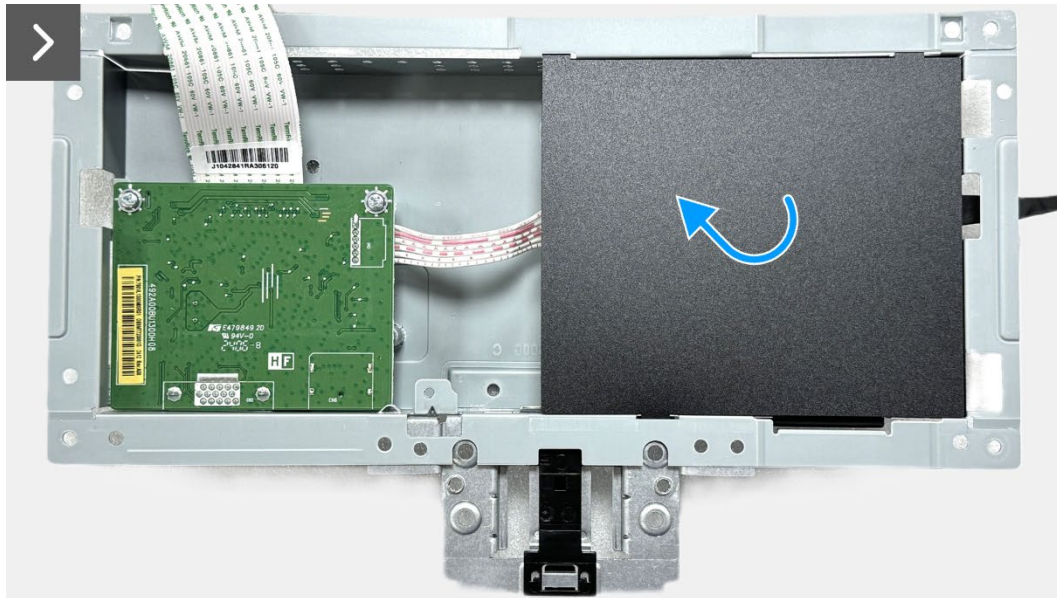
1. Follow the procedure in [Before working inside your monitor](#).
2. Remove the [stand](#).
3. Remove the [VESA cover](#).
4. Remove the [back cover](#).
5. Remove the [keypad board](#).
6. Remove the [chassis assembly](#).

#### Steps

1. Remove the two hex screws from the VGA port.
2. Peel the mylar from the chassis assembly.
3. Remove the four screws (M3x6) from the interface board and power board.
4. Remove the screw (M4x9) from the power board.
5. Remove the interface board and power board from the chassis.
6. Disconnect the power cable from the connector on the interface board.
7. Disconnect the LVDS cable from the connector on the interface board.



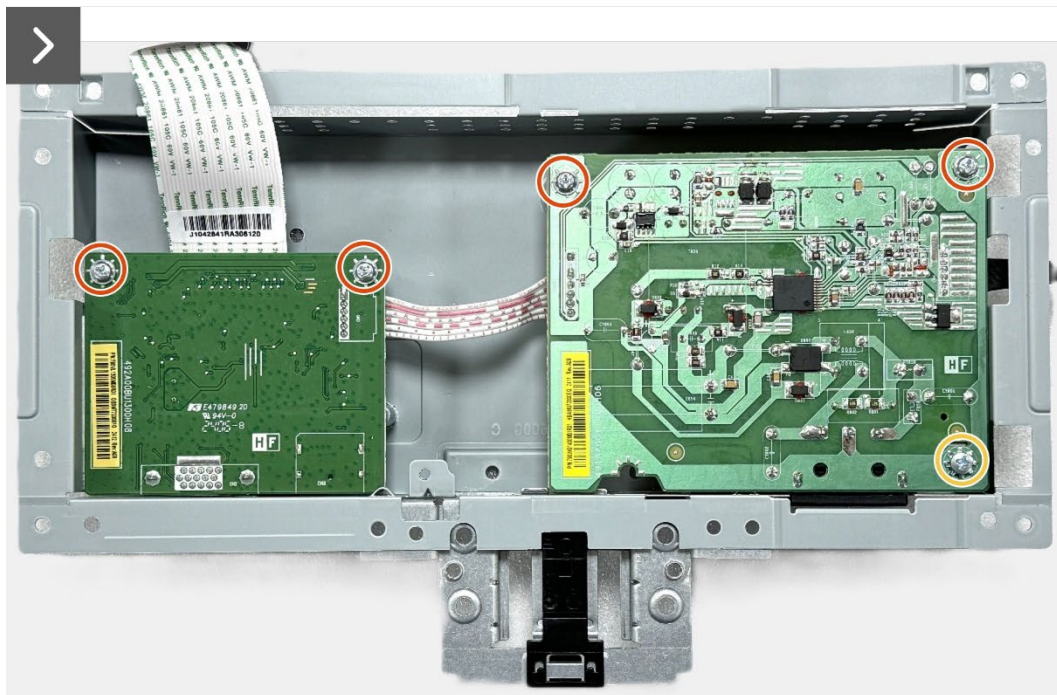
**Figure 19.** Removing the interface board



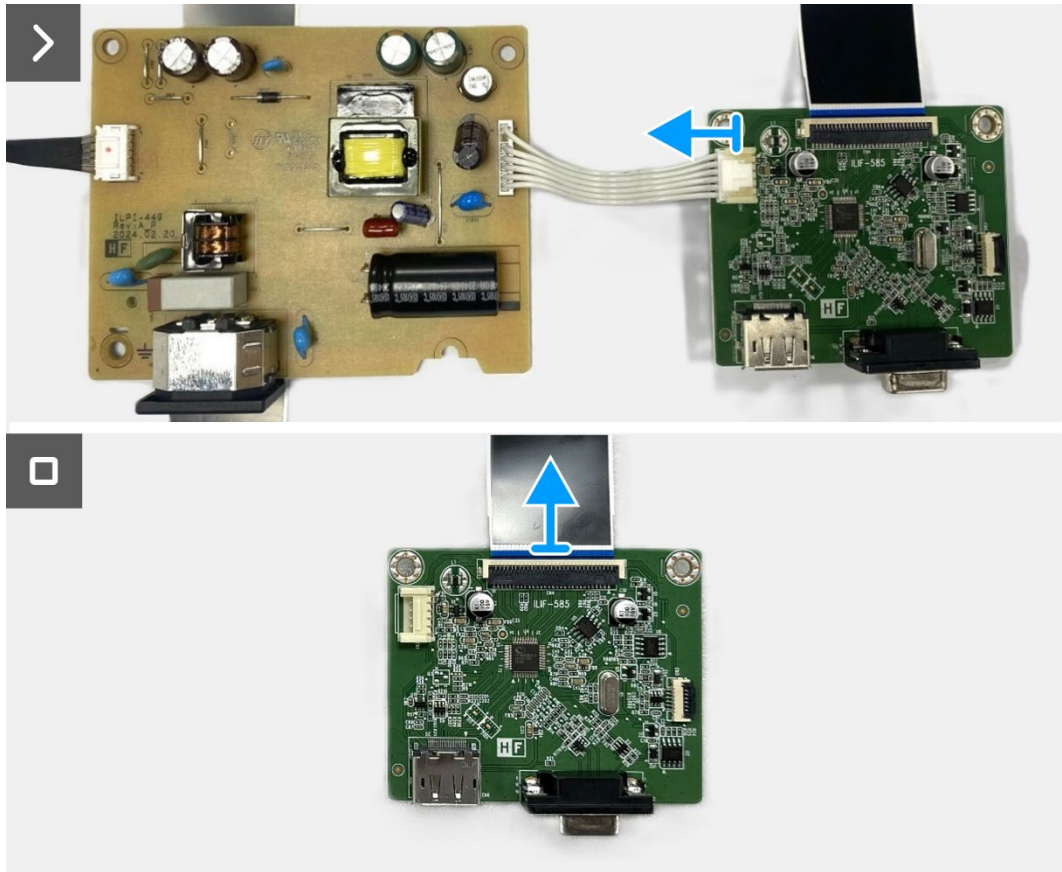
4x  
M3x6



1x  
M4x9



**Figure 20.** Removing the interface board



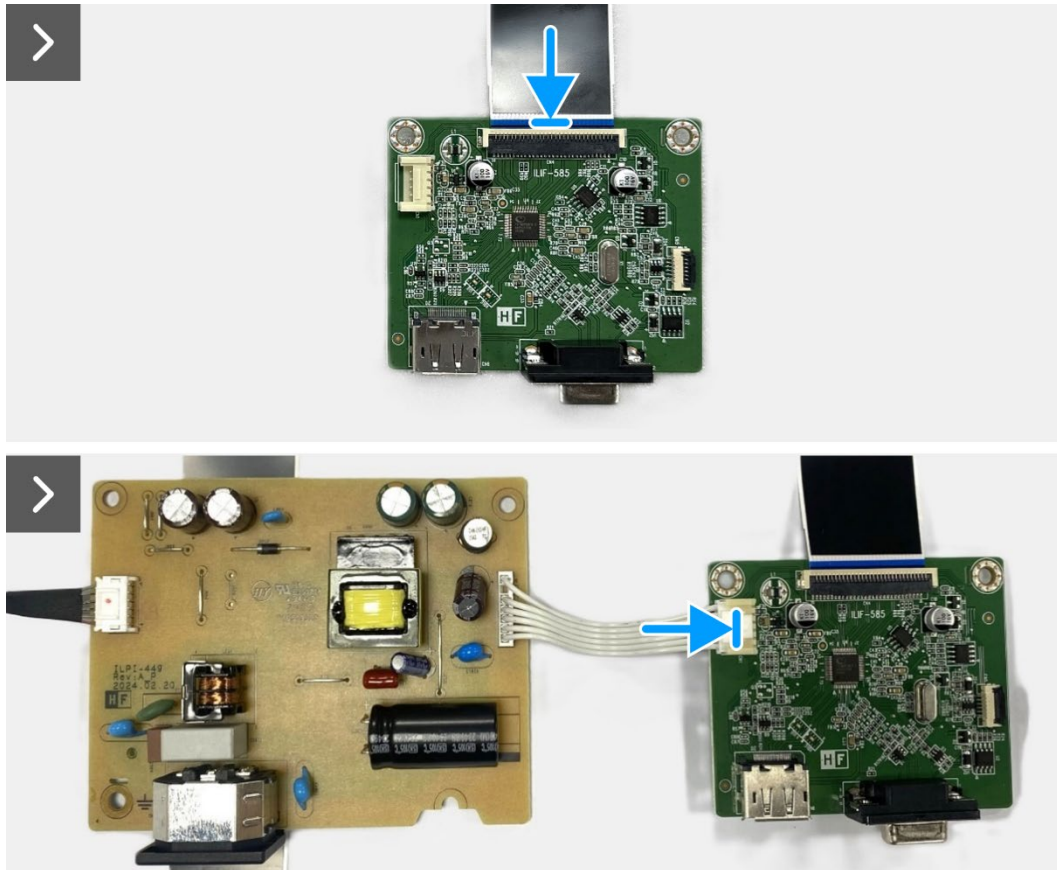
**Figure 21.** Removing the interface board



## Installing the interface board

### Steps

1. Connect the LVDS cable to the connector on the interface board.
2. Connect the power cable to the connector on the interface board.
3. Assemble the interface board and power board to the chassis.
4. Replace the four screws (M3x6) to secure the interface board and power board with the chassis.
5. Replace the screws (M4x9) to secure the power board with the chassis.
6. Replace the two hex screws (#4-40x11.8) to secure the VGA port.

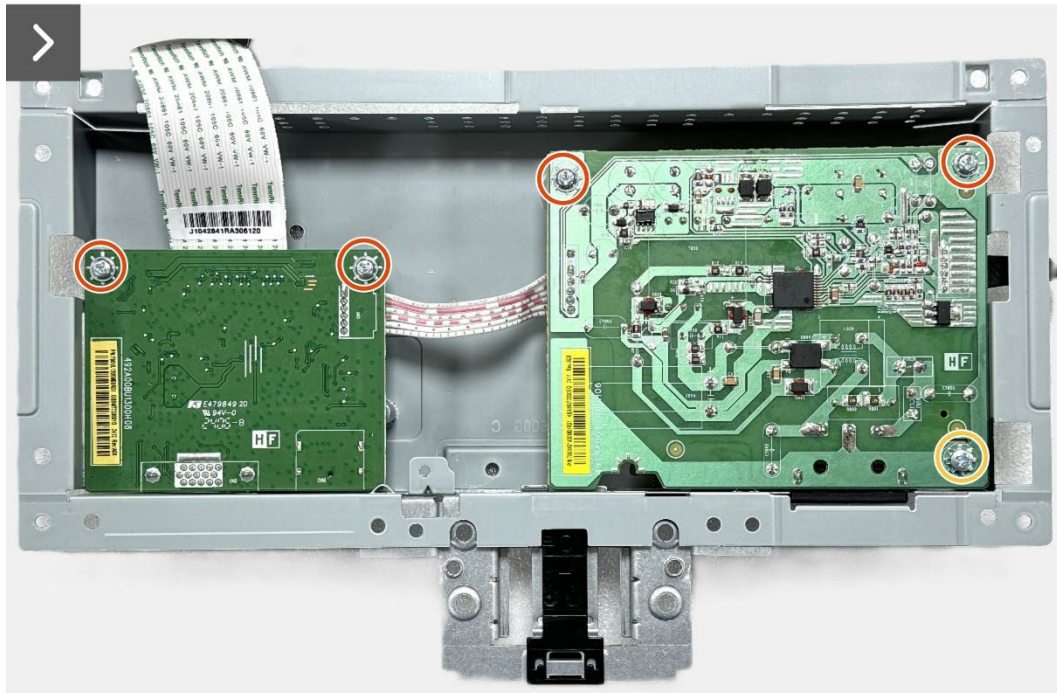


**Figure 22.** Installing the interface board

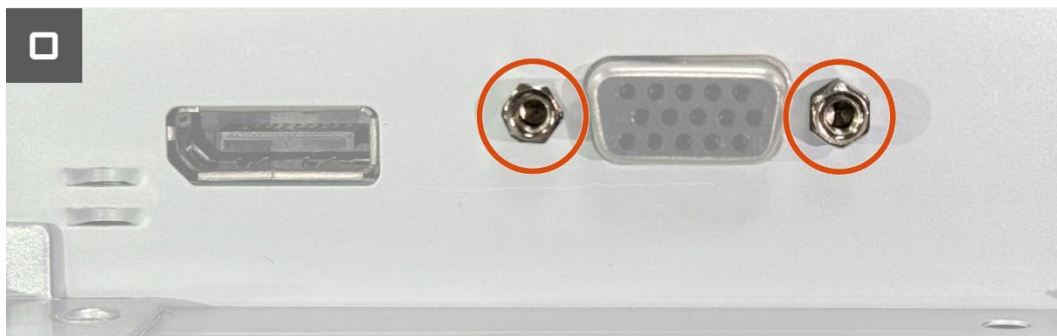


4x  
M3x6

1x  
M4x9



2x  
#4-40x11.8



**Figure 23.** Installing the interface board

**Next steps**

1. Install the [chassis assembly](#).
2. Install the [keypad board](#).
3. Install the [back cover](#).
4. Install the [VESA cover](#).
5. Install the [stand](#).
6. Follow the procedure in [After working inside your monitor](#).

# Power board

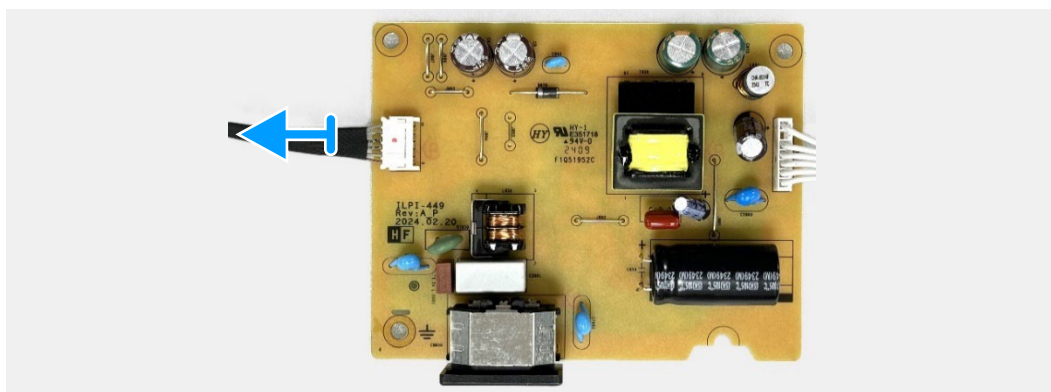
## Removing the power board

### Prerequisites

1. Follow the procedure in [Before working inside your monitor](#).
2. Remove the [stand](#).
3. Remove the [VESA cover](#).
4. Remove the [back cover](#).
5. Remove the [keypad board](#).
6. Remove the [chassis assembly](#).
7. Remove the [interface board](#).

### Steps

1. Disconnect the lightbar cable from the connector on the power board.

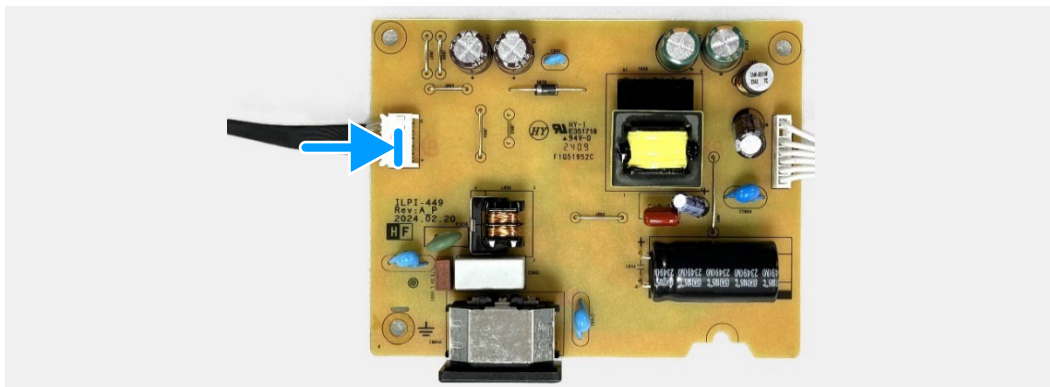


**Figure 24.** Removing the power board

## Installing the power board

### Steps

1. Connect the lightbar cable to the connector on the power board.



**Figure 25.** Installing the power board

### Next steps

1. Install the [interface board](#).
2. Install the [chassis assembly](#).
3. Install the [keypad board](#).
4. Install the [back cover](#).
5. Install the [VESA cover](#).
6. Install the [stand](#).
7. Follow the procedure in [After working inside your monitor](#).

# Troubleshooting Instructions

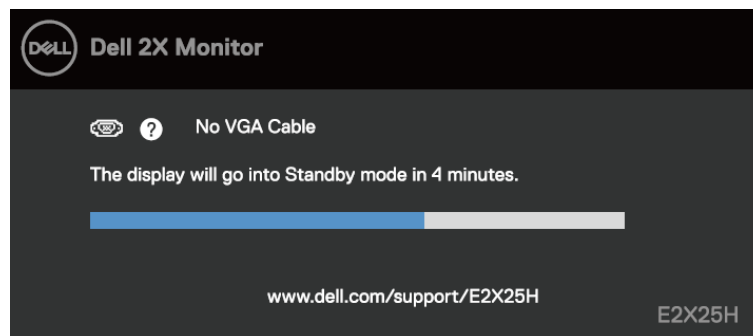
**⚠ WARNING:** Before you begin any of the procedures in this section, follow the [Safety Instructions](#).

## Self-test

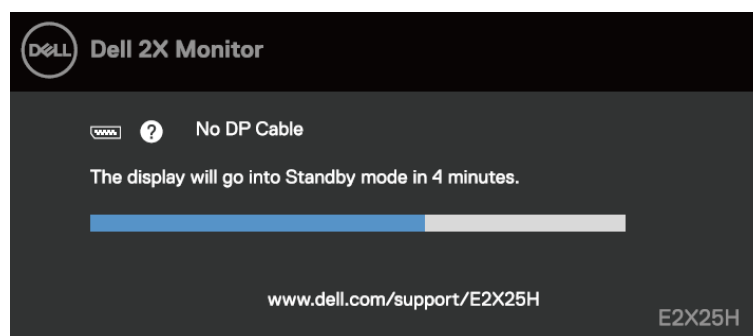
Your monitor provides a self-test feature that allows you to check if your monitor is functioning properly. If your monitor and computer are properly connected but the monitor screen remains dark, run the monitor self-test by performing the following steps:

1. Turn off both your computer and the monitor.
2. Disconnect all video cables from the monitor. To ensure proper self-test operation, remove all digital cables from the back of the computer.
3. Turn on the monitor.

**① NOTE:** A dialog box should appear on-screen (against a black background), if the monitor cannot sense a video signal and is working correctly. While in self-test mode, the power LED remains white.



**Figure 26.** VGA cable disconnected warning message



**Figure 27.** DP cable disconnected warning message

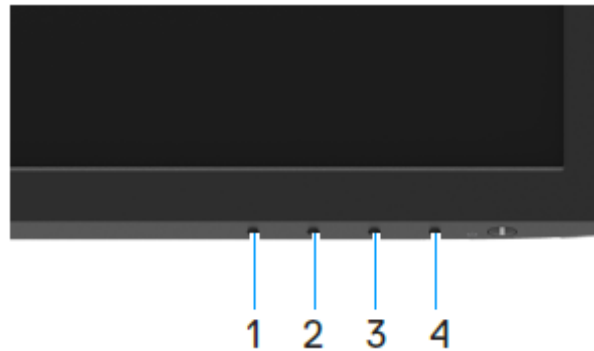
**① NOTE:** This message also appears during normal operation, when the video cable is disconnected or damaged.

4. Turn off your monitor and reconnect the video cable; then turn on your computer and the monitor.

If your monitor screen remains blank after you perform the previous procedure, check your video controller and computer, because your monitor is functioning properly.



## Built-in diagnostics

Your monitor has a built-in diagnostic tool that helps you determine if any screen abnormality you experience is an inherent problem with your monitor, or with your computer and video card.



**Figure 28. Built-in diagnostics function buttons**

To run the built-in diagnostics:

1. Ensure that the screen is clean (no dust particles on the surface of the screen).
2. Press and hold **Button 4** for about 4 seconds and wait for a pop-up menu.
3. Use **Button 1** or **2** to select the  and press  to confirm.  
A gray test pattern appears at the beginning of the diagnostic program.
4. Carefully inspect the screen for abnormalities.
5. Press **Button 1** to change the test patterns.
6. Repeat steps 4 and 5 to inspect the display in red, green, blue, black, white, and text screens.
7. When in a White color test screen, check for white color uniformity and if there white color appears greenish/reddish, so on.
8. Press **Button 1** to end the diagnostic program.

## Common problems

The following table provides general information about common monitor problems that you might encounter and the possible solutions:

**Table 4.** Common problems and solutions.

Common symptoms	Possible solutions
No video/Power LED off	<ul style="list-style-type: none"> <li>• Ensure that the video cable connecting the monitor and the computer is properly connected and secure.</li> <li>• Verify that the power outlet is functioning properly using any other electrical equipment.</li> <li>• Ensure that the power button is pressed.</li> <li>• Ensure that the correct input source is selected using the Input Source menu.</li> </ul>
No video/Power LED on	<ul style="list-style-type: none"> <li>• Increase brightness and contrast controls using the OSD.</li> <li>• Perform a monitor self-test feature check.</li> <li>• Check for bent or broken pins in the video cable connector.</li> <li>• Run the built-in diagnostics.</li> <li>• Ensure that the correct input source is selected using the Input Source menu.</li> </ul>
Poor focus	<ul style="list-style-type: none"> <li>• Eliminate video extension cables.</li> <li>• Reset the monitor to Factory Settings (<b>Factory Reset</b>).</li> <li>• Change the video resolution to the correct aspect ratio.</li> </ul>
Shaky/Jittery video	<ul style="list-style-type: none"> <li>• Reset the monitor to Factory Settings (<b>Factory Reset</b>).</li> <li>• Check environmental factors.</li> <li>• Relocate the monitor and test in another room.</li> </ul>
Missing pixels	<ul style="list-style-type: none"> <li>• Cycle power On-off.</li> <li>• A pixel that is permanently off is a natural defect that can occur in LCD technology.</li> <li>• For more information about Dell Monitor Quality and Pixel Policy, see Dell Support site at: <a href="http://www.dell.com/pixelguidelines">www.dell.com/pixelguidelines</a>.</li> </ul>
Stuck-on pixels	<ul style="list-style-type: none"> <li>• Cycle power On-off.</li> <li>• A pixel that is permanently off is a natural defect that can occur in LCD technology.</li> <li>• For more information about Dell Monitor Quality and Pixel Policy, see Dell Support site at: <a href="http://www.dell.com/pixelguidelines">www.dell.com/pixelguidelines</a>.</li> </ul>
Brightness problems	<ul style="list-style-type: none"> <li>• Reset the monitor to Factory Settings (<b>Factory Reset</b>).</li> <li>• Adjust brightness and contrast controls using OSD.</li> </ul>
Geometric distortion	<ul style="list-style-type: none"> <li>• Reset the monitor to Factory Settings (<b>Factory Reset</b>).</li> <li>• Adjust horizontal and vertical using OSD.</li> </ul>
Horizontal/Vertical lines	<ul style="list-style-type: none"> <li>• Reset the monitor to Factory Settings (<b>Factory Reset</b>).</li> <li>• Perform a monitor self-test feature check and determine if these lines are also in self-test mode.</li> <li>• Check for bent or broken pins in the video cable connector.</li> <li>• Run the built-in diagnostics.</li> </ul>
Synchronization problems	<ul style="list-style-type: none"> <li>• Reset the monitor to Factory Settings (<b>Factory Reset</b>).</li> <li>• Perform a monitor self-test feature check to determine if the scrambled screen appears in self-test mode.</li> <li>• Check for bent or broken pins in the video cable connector.</li> <li>• Restart the computer in safe mode.</li> </ul>
Safety-related issues	<ul style="list-style-type: none"> <li>• Do not perform any troubleshooting step.</li> <li>• Contact Dell immediately.</li> </ul>
Intermittent problems	<ul style="list-style-type: none"> <li>• Try different <b>Preset Modes</b> in <b>Color</b> settings OSD. Adjust <b>R/G/B</b> value in <b>Custom Color</b> in <b>Color</b> settings OSD.</li> <li>• Change the <b>Input Color Format</b> to <b>RGB</b> or <b>YCbCr/YPbPr</b> in the <b>Color</b> settings OSD.</li> <li>• Run the built-in diagnostics.</li> </ul>

Common symptoms	Possible solutions
Missing color	<ul style="list-style-type: none"> <li>• Perform monitor self-test feature check.</li> <li>• Ensure that the video cable connecting the monitor to the computer is connected properly and is secure.</li> <li>• Check for bent or broken pins in the video cable connector.</li> </ul>
Wrong color	<ul style="list-style-type: none"> <li>• Try different <b>Preset Modes</b> in <b>Color</b> settings OSD. Adjust <b>R/G/B</b> value in <b>Custom Color</b> in <b>Color</b> settings OSD.</li> <li>• Change the <b>Input Color Format</b> to <b>RGB</b> or <b>YCbCr/YPbPr</b> in the <b>Color</b> settings OSD.</li> <li>• Run the built-in diagnostics.</li> </ul>
Image retention from a static image left on the monitor for a long time	<ul style="list-style-type: none"> <li>• Set the screen to turn off after a few minutes of screen idle time. These can be adjusted in the Windows Power Options or Mac Energy Saver setting.</li> <li>• Alternatively, use a dynamically changing screensaver.</li> </ul>
Video ghosting or overshooting	<ul style="list-style-type: none"> <li>• Change the <b>Response Time</b> in the <b>Display</b> OSD to <b>Fast</b> or <b>Normal</b> depending on your application and usage.</li> </ul>

## Product-specific problems

**Table 5.** Product-specific problems and solutions.

Specific symptoms	Possible solutions
Screen image is too small	<ul style="list-style-type: none"> <li>• Check the <b>Aspect Ratio</b> setting in the <b>Display</b> settings OSD.</li> <li>• Reset the monitor to Factory Settings (<b>Factory Reset</b>).</li> </ul>
Cannot adjust the monitor with the buttons on the bottom of the panel	<ul style="list-style-type: none"> <li>• Turn off the monitor, unplug the power cord, plug it back, and then turn on the monitor.</li> <li>• Check if the OSD menu is locked. If yes, press and hold the Exit button (button 4) for four seconds to unlock.</li> </ul>
No input signal when user controls are pressed	<ul style="list-style-type: none"> <li>• Check the signal source. Ensure that the computer is not in standby or sleep mode by moving the mouse or pressing any key on the keyboard.</li> <li>• Check if the video cable is plugged in properly. Disconnect and reconnect the video cable if necessary.</li> <li>• Reset the computer or video player.</li> </ul>
The picture does not fill the entire screen	<ul style="list-style-type: none"> <li>• Due to different video formats (aspect ratio) of DVDs, the monitor may display in full screen.</li> <li>• Run the built-in diagnostics.</li> </ul>



## Contacting Dell

To contact Dell for sales, technical support, or customer service issues, see [www.dell.com/contactdell](http://www.dell.com/contactdell).

**NOTE:** Availability varies by country and product, and some services may not be available in your country.

**NOTE:** If you do not have an active internet connection, you can find contact information about your purchase invoice, packing slip, bill, or Dell product catalog.