Service Manual - U2724DE

Version: 01

Date: 2023/09/11

1. Important Safety Notice

Product Announcement:

This product is certificated to meet RoHS Directive and Lead-Free produced definition. Using approved critical components only is recommended when the situation to replace defective parts. Vender assumes no liability express or implied, arising out of any unauthorized modification of design or replacing non-RoHS parts. Service providers assume all liability.

Qualified Repairability:

Proper service and repair is important to the safe, reliable operation of all series products. The service providers recommended by vender should be aware of notices listed in this service manual in order to minimize the risk of personal injury when perform service procedures. Furthermore, the possible existed improper repairing method may damage equipment or products. It is recommended that service engineers should have repairing knowledge, experience, as well as appropriate product training per new model before performing the service procedures.

NOTICE:

! To avoid electrical shocks, the products should be connected to an authorized power cord, and turn off the master power switch each time before removing the AC power cord.

! To prevent the product away from water or expose in extremely high humility environment.

! To ensure the continued reliability of this product, use only original manufacturer's specified parts.

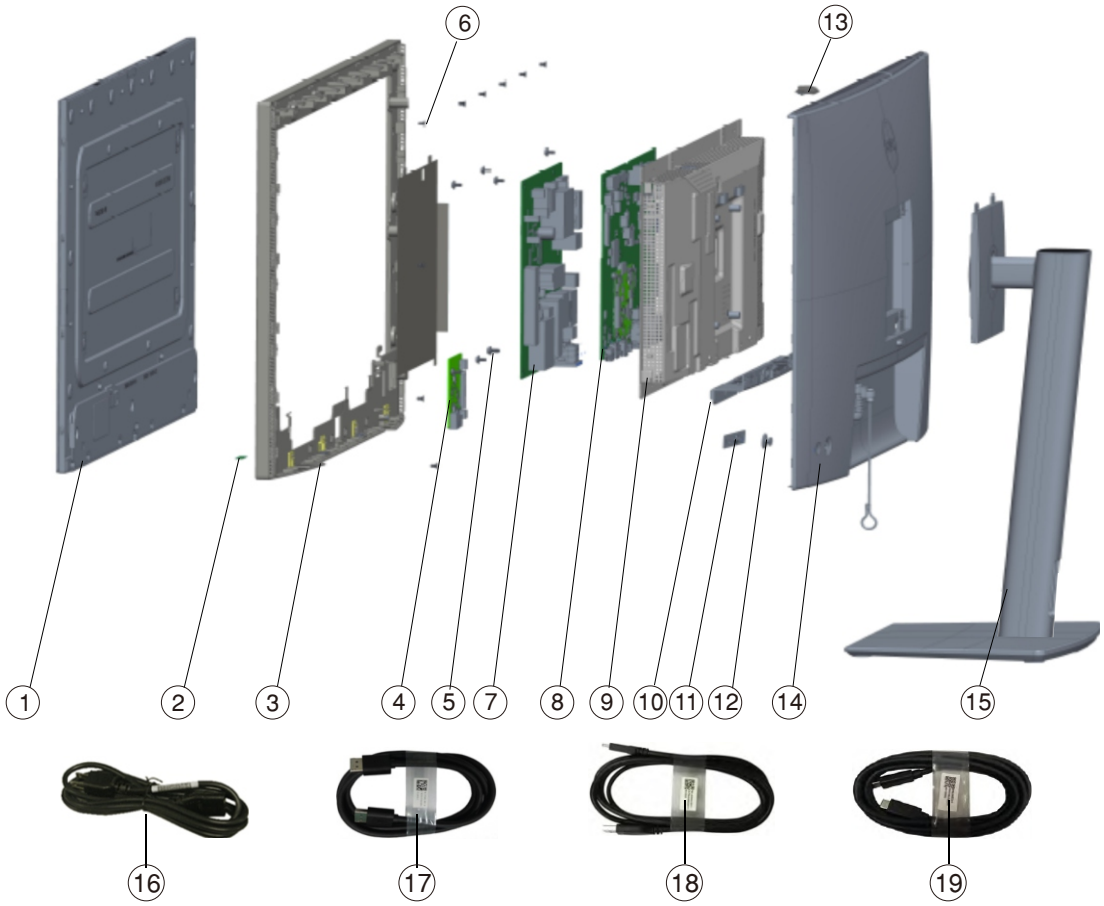
! To ensure following safety repairing behavior, put the replaced part on the components side of PWBA, not solder side.

! To ensure using a proper screwdriver, follow the torque and force listed in assembly and disassembly procedures to unscrew screws.

! Using Lead-Free solder to well mounted the parts.

! The fusion point of Lead-Free solder requested in the degree of 220°C.

2. Exploded view diagram with list of items



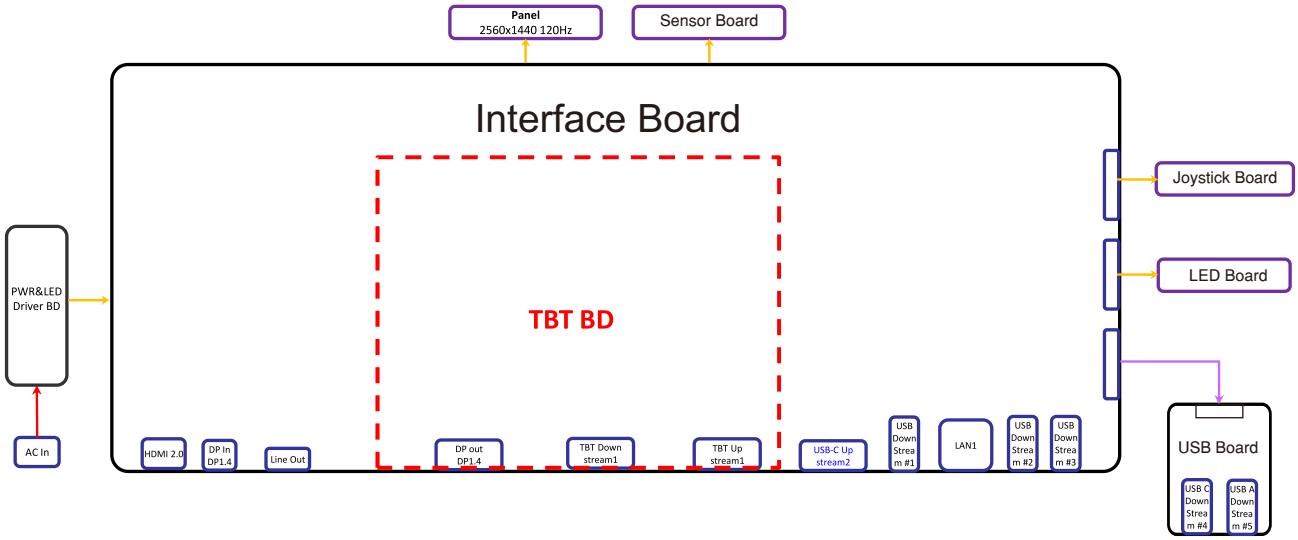
Item	Description	Q'ty	Remark
1	Panel	1	For EMEA Only, not for other regions
2	LED Board	1	
3	Middle Frame	1	
4	USB Board	1	
5	Board Screws	9	
6	Panel Screws	11	
7	Power Board	1	
8	Interface BD with TBT board	1	
9	Main Chassis	1	
10	IO Back Cover	1	
11	Joystick Board	1	
12	Joystick	1	
13	Light Sensor	1	
14	Rear Cover	1	
15	Stand Base	1	
16	Power cable	1	See “NOTE”
17	DisplayPort 1.8 M cable	1	See “NOTE”
18	USB-C 1.0 M cable	1	See “NOTE”
19	Thunderbolt™ 4 cable	1	See “NOTE”

NOTE:

For replacement of power cord, connectivity cable and external power supply (if applicable), contact Dell:

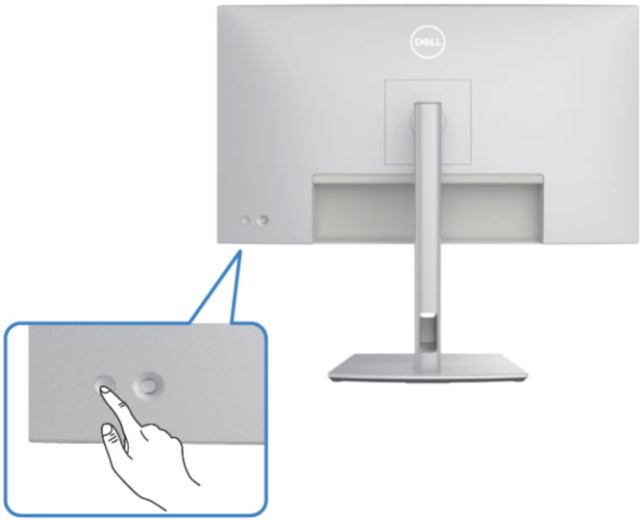
1. Go to https://www.dell.com/support.
2. Verify your country or region in the Choose A Country/Region drop-down menu at the bottom-right corner of the page.
3. Click Contact Us next to the country dropdown.
4. Select the appropriate service or support link based on your need.
5. Choose the method of contacting Dell that is convenient for you.

3. Wiring Connectivity Diagram



4. How to connect and disconnect power cable/ connectivity cable

WARNING: To change power cable/ connectivity cable, switch off power before unplugging the cable and replugging in required cable.

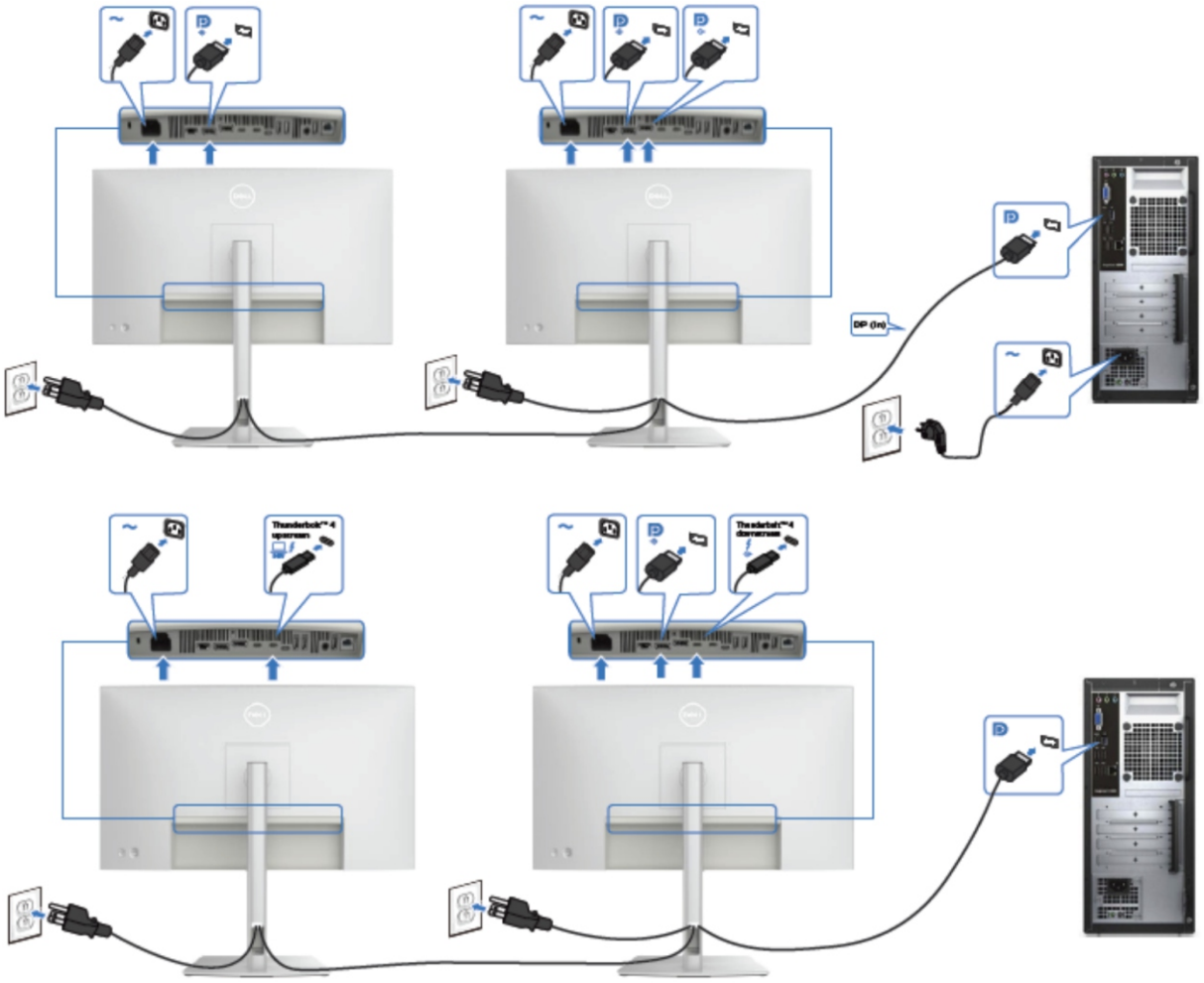


Connecting the HDMI Cable

Connecting the DP Cable

4. How to connect and disconnect power cable/ connectivity cable

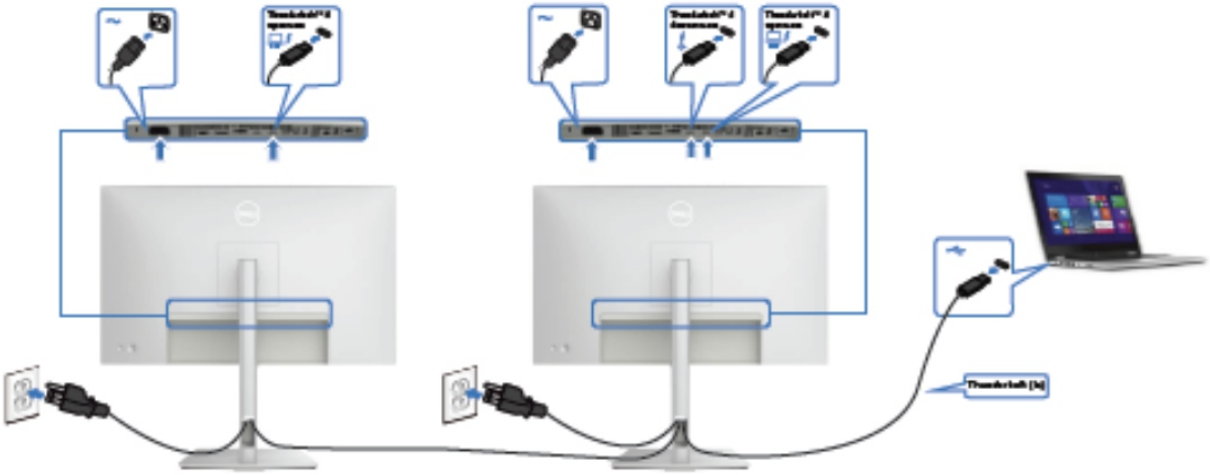
Connecting the Monitor for DP Multi-Stream Transport(MST) Function

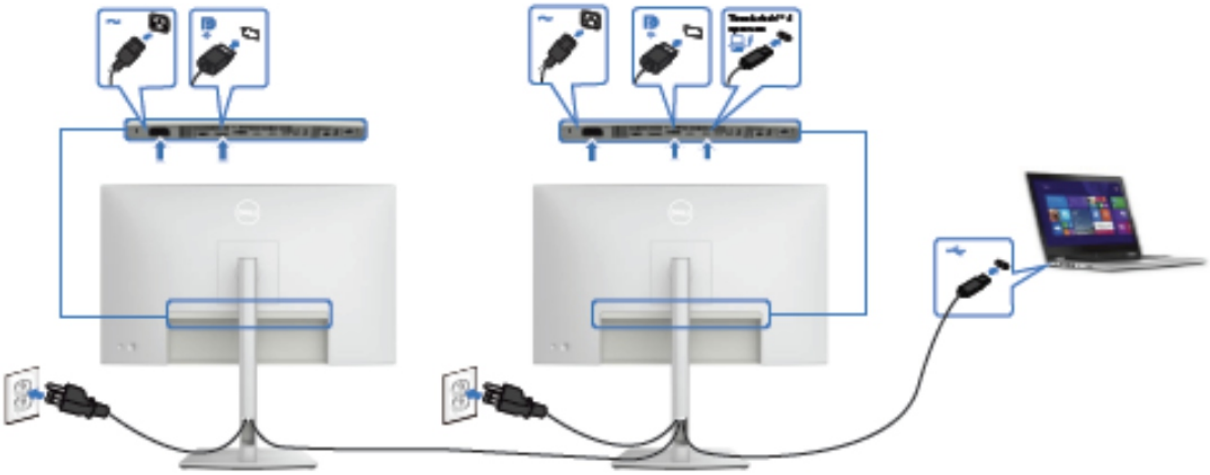


Connecting the Thunderbolt™ 4 Cable

4. How to connect and disconnect power cable/ connectivity cable

Connecting the Monitor for Thunderbolt™ 4 display chain function

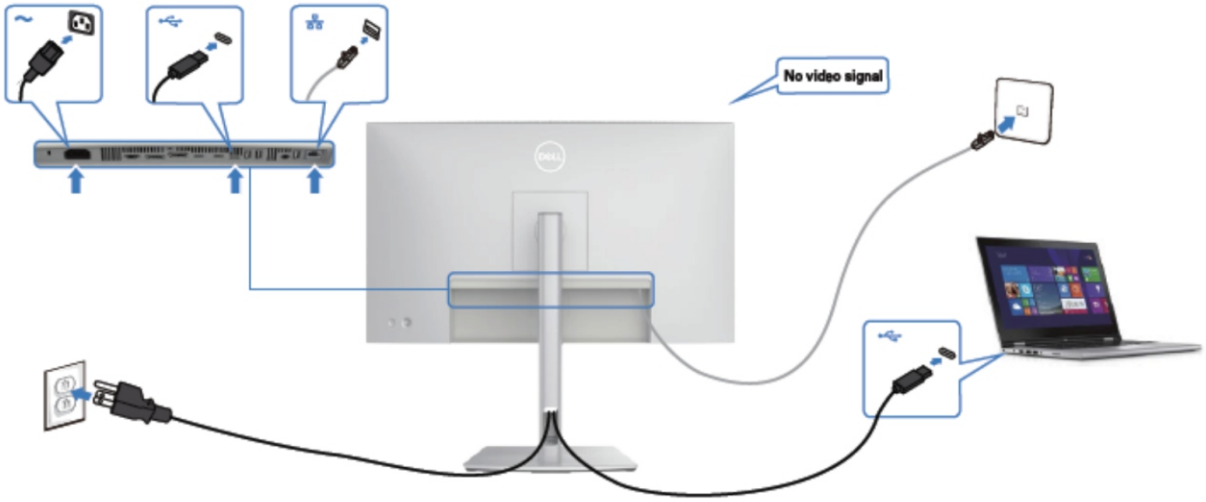


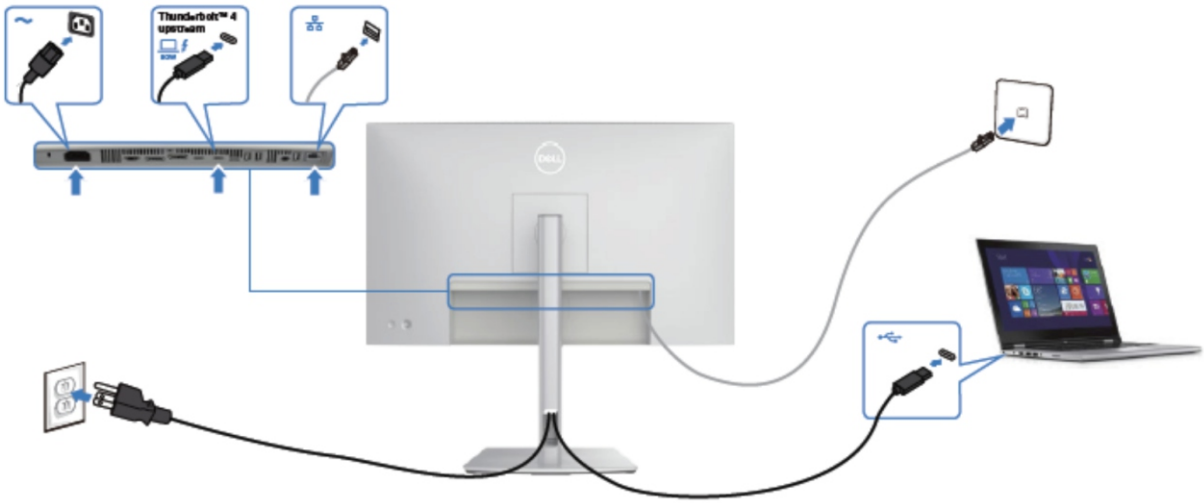


Connecting the USB-C Cable (A to C)

4. How to connect and disconnect power cable/ connectivity cable

Connecting the monitor for RJ45





5. Disassembly and Assembly Procedures

NOTE:
This "Disassembly and Assembly Procedures" is for EMEA only, not for other regions. Please note that Dell will deem warranty void if any disassembly is done on the monitors.

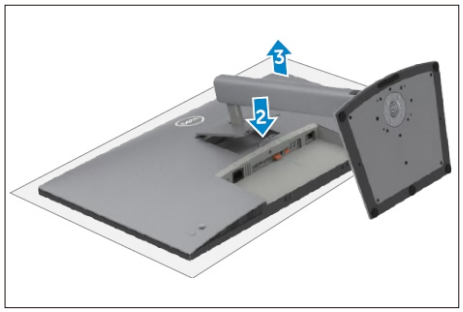
Tool Required:
List the type and size of the tools that would typically can be used to disassemble the product to a point where components and materials requiring selective treatment can be removed.

Tool Description:
- Screwdriver(Phillip head) #1
- Screwdriver(Phillip head) #2
- Penknife
- Soldering iron and absorber

5.1 Disassembly Procedures:

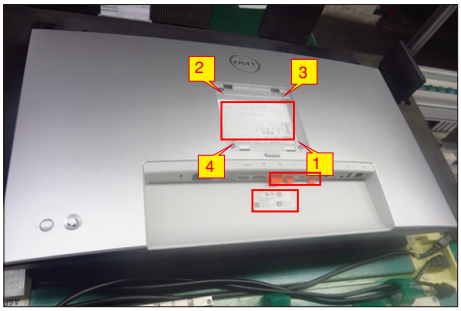
S1

Remove the monitor stand base:
1. Place the monitor on a soft cloth or cushion.
2. Press and hold the stand-release button.
3. Lift the stand up and away from the monitor.



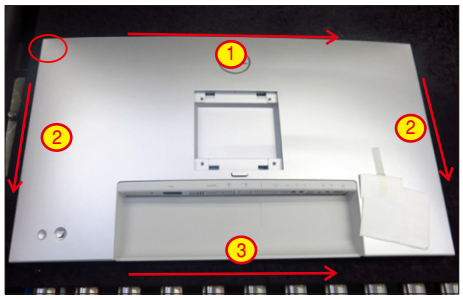
S2

Use a Philips-head screwdriver to remove 4pcs screws for unlocking mechanisms. Remove DP caps.
(No.1~4 screw size=M4x11; Torque=11±1kgfxcm)



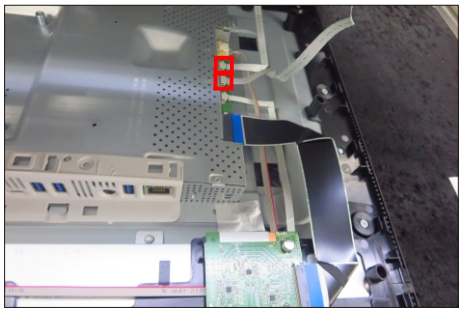
S3

Wedge your fingers between rear cover and the middle bezel on the corners of the top side of the monitor to release the rear cover, then use one hand to press the middle bezel, the other hand to pull up carefully the rear cover in order of arrow preference for unlocking mechanisms of rear cover.



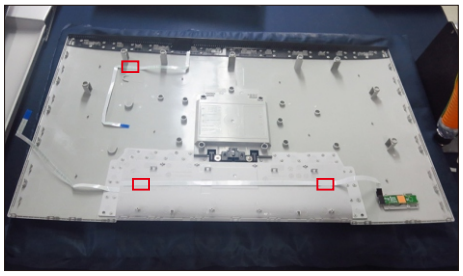
S4

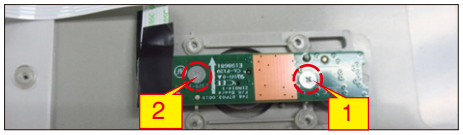
Lift the rear cover up carefully. Disconnect the joystick key cable from the connector of the interface board, and then remove the rear cover and put it aside for later disassembling.

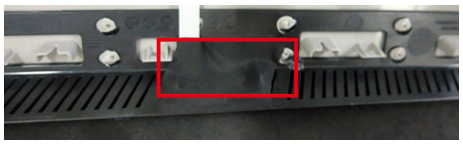


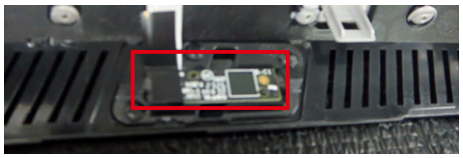
S5

Tear off all tape to release the cables and release sensor board from the hook of the rear cover. Use a Philips-head screwdriver to remove 2pcs screw for unlocking the key board.
(No.1~2 screw size=M2x2.4, Torque=0.8~1kgfxcm)



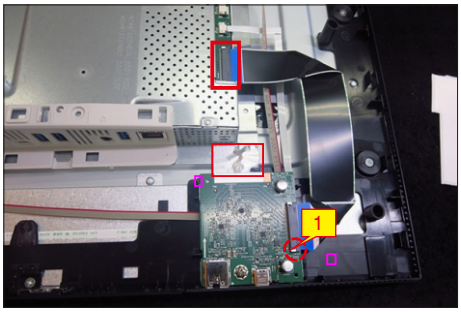






S6

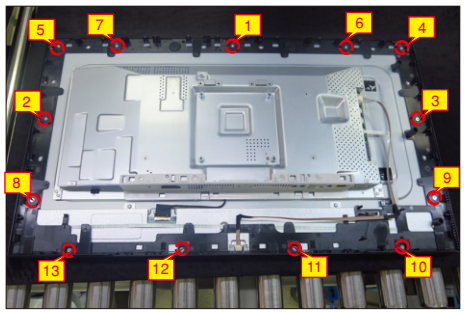
Tear off 1pcs aluminum foil, then 1se a Philips-head screwdriver to release 1pcs screw for unlocking the USB board, then release the USB board from the hooks of the middle bezel.
(No.1screw size=M3x6, Torque=4±1kgfxcm)



5. Disassembly and Assembly Procedures

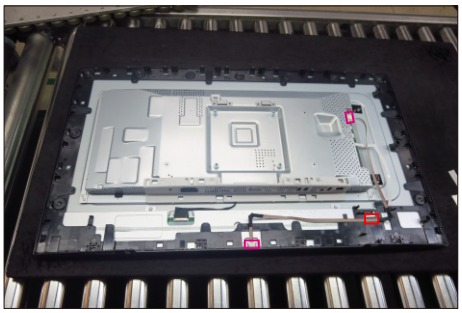
S7

Use a Philips-head screwdriver to remove 13pcs screws for unlocking the middle bezel with the panel.
(No.1~13 screw size=M3x5, Torque=5±0.5kgfxcm)



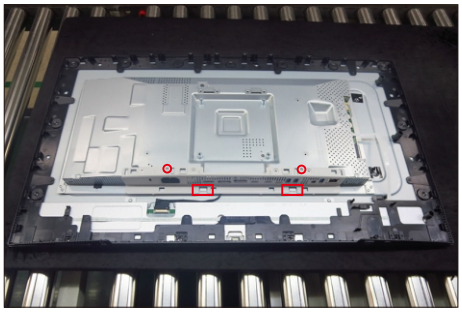
S8

Disconnect the panel lamp and LED cable from the connectors, then release the panel lamp cable from the hook of the middle bezel.



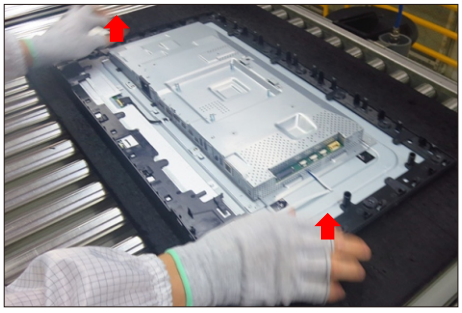
S9

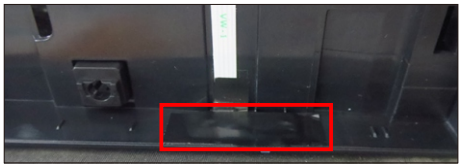
Take 1pcs IO cover to locate the hooks of the bracket chassis module as the picture below shown.

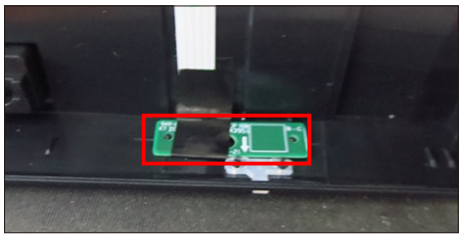


S10

Lift up and take away the middle bezel, and put it on a cushion foam, and then tear off the mylar tape and adhesive tape on cable for releasing the LED board from the hook of the middle bezel.

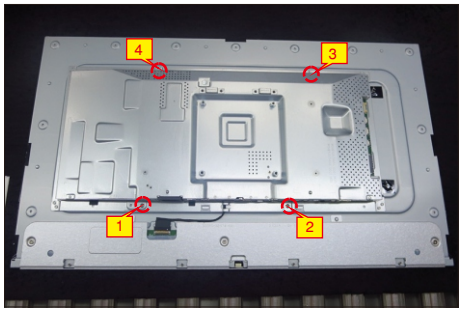






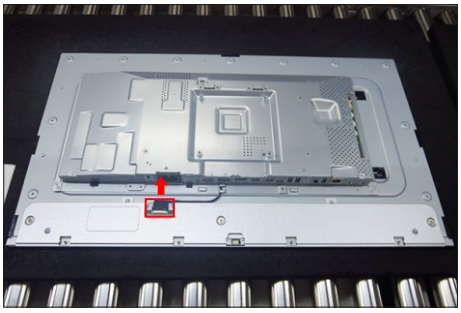
S11

Use a Philips-head screwdriver to remove 4pcs screws for unlocking the bracket chassis with the panel.
(No.1~4 Screw size= M3x5, Torque=5±0.5kgfxcm)



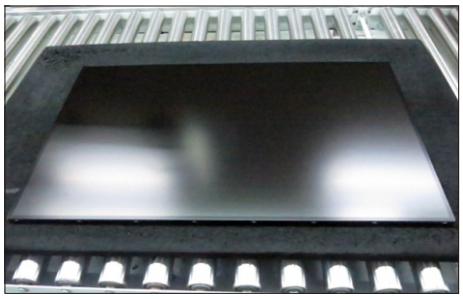
S12

Move up the bracket, then push the earing-lock and disconnect the EDP cable away from the connectors of the panel module.

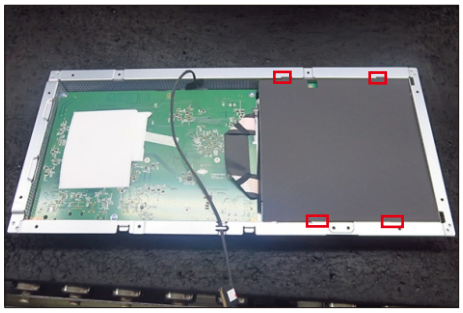


S13

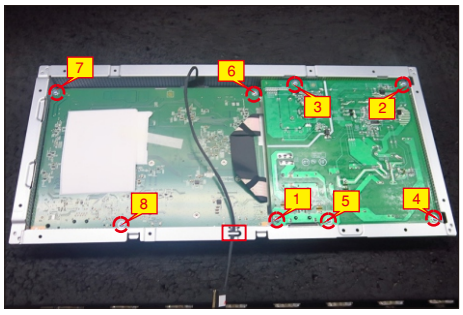
Take away the bracket chassis module and then put the bracket chassis module on a protective cushion.



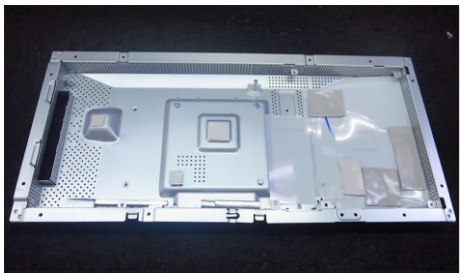
S14 Remove the Mylar tape from the hooks of the bracket.



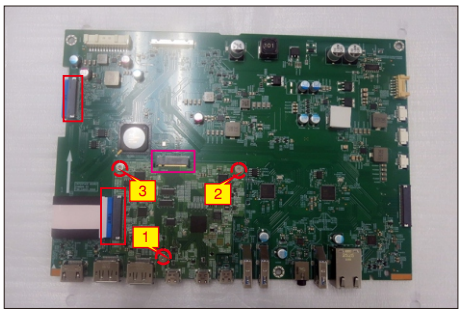
S15 Use a Philips-head screwdriver to remove 8pcs screws for interface board and power board, then release the EDP cable from the hook of the bracket.
(No.1 screw size=M4x8, Torque=6±1kgfxcm;
No.2~8 screw size=M3x6, Torque=6±1kgfxcm)



S16 Remove the power board and interface board with TBT Board from the bracket chassis carefully, and then disconnect all of the cables.



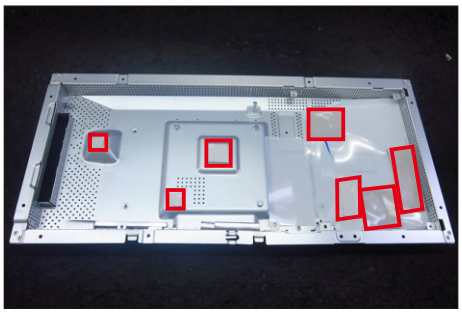
S17 Use a Philips-head screwdriver to remove 4pcs screws for unlocking TBT board, then unplug the TBT board away from the interface board.
(No.1~3 screw size=M2.5x2.8, Torque=1±0.2kgfxcm)



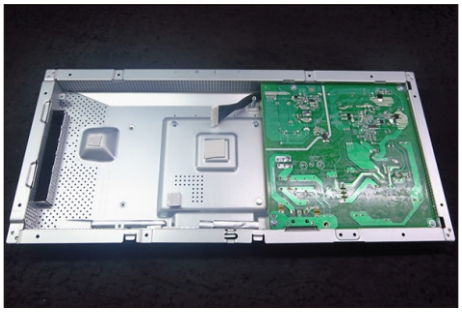
5. Disassembly and Assembly Procedures

5.2 Assembly Procedures:

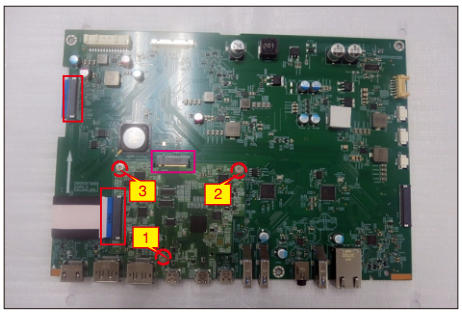
S1 Place a bracket chassis base on a protective cushion, then stick 7pcs Silicon sheets on the positions as the picture below shown.



S2 Put 1pcs power board power board into the bracket chassis.

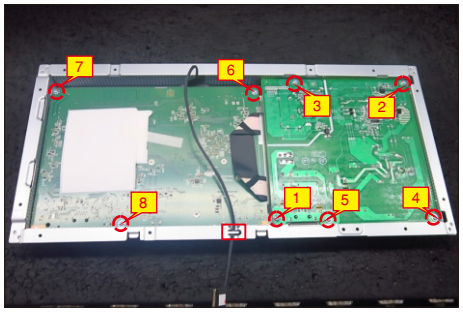


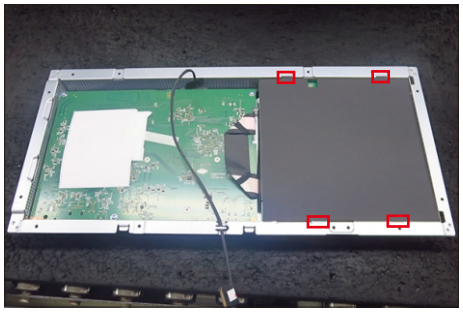
S3 Take 1pcs interface board and 1pcs TBT board, then put plug the TBT board to the connector of the interface board. Take 1pcs MCU cable to connect the interface board with the TBT board. Use a Philips-head screwdriver to tighten 3pcs screws for locking the TBT board with interface board.
(No.1~3 screw size=M2.5x2.8, Torque=1±0.2kgfxcm)



S4 Take 1pcs EDP cable to connect with the interface board, and then connect the cable of power board to the connector of interface board.

S5 Turn over the interface board and locate the circuit boards and EDP cable into the bracket chassis. Use a Philips-head screwdriver to tighten 8pcs screws for locking the interface board and power board, then take 1pcs mylar sheet to insert the hooks of the bracket.
(No.1 screw size=M4x8, Torque=6±1kgfxcm;
No.2~8 screw size=M3x6, Torque=6±1kgfxcm)

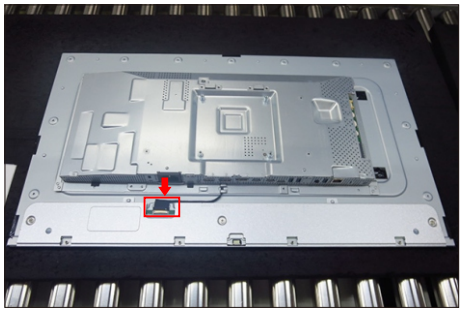




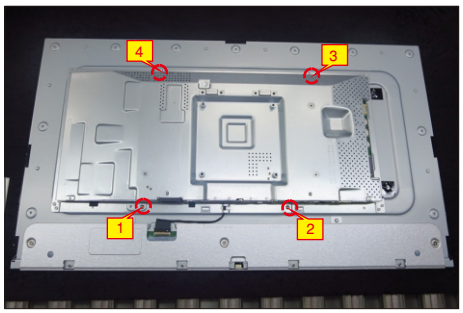
S6 Panel preparation: Take out 1pcs panel from the carton, remove the protective film by tearing off the tapes, then examine the panel surface according to inspection criteria of the panel. Turn over the panel to place the screen faced down for later assembling.

S7 Move the bracket chassis module close to the panel, then connect the EDP cable to the connector of the panel, then turn over the bracket chassis and put it on the back of the bracket chassis.

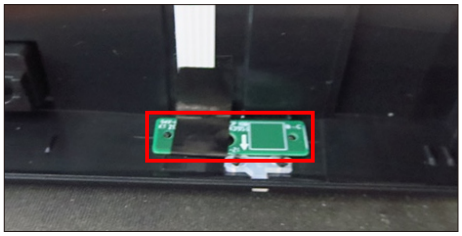
5. Disassembly and Assembly Procedures

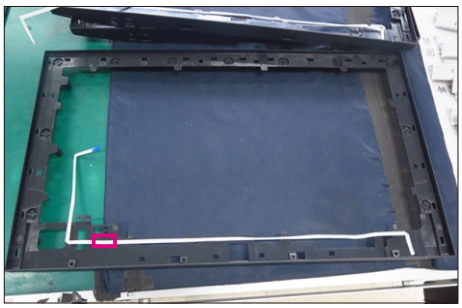


S8 Adjust the bracket chassis, and then use a Philips-head screwdriver to tighten 4pcs screws for locking the bracket chassis with the panel.
(No.1~4 Screw size= M3x5, Torque=5±1kgfxcm)

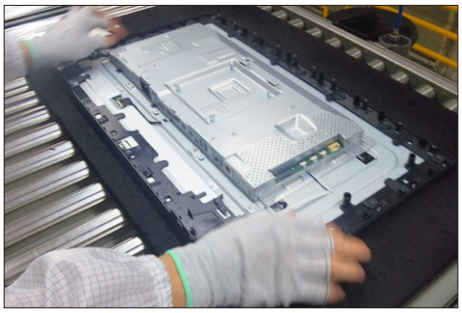


S9 Take 1pcs LED key board and 1pcs middle bezel, then put the middle bezel into a fixture jip. Tear off the gum on the back of the board, and then paste the it on the correct position of the middle bezel, then paste 1pcs mylar tape to cover the LED board and fix the cable on the middle frame with tape.

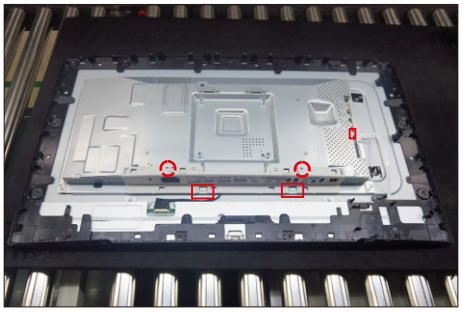




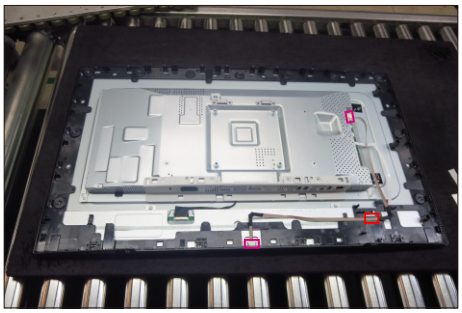
S10 Move the middle bezel with the LED board close to the panel unit, then assemble the middle bezel with the front bezel and panel module.



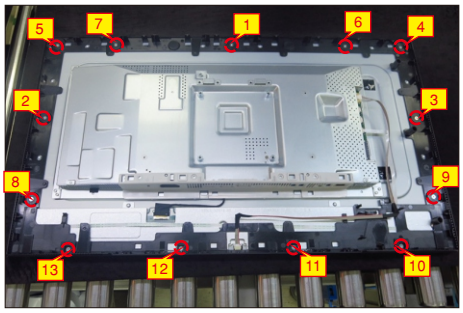
S11 Connect the LED cable to the connectors of the board. Take 1pcs I/O cover to assemble with the bracket chassis.



S12 Take 1pcs panel lamp cable to connect the panel with the interface bard, then locate the panel lamp cable into the hooks of the middle bezel.



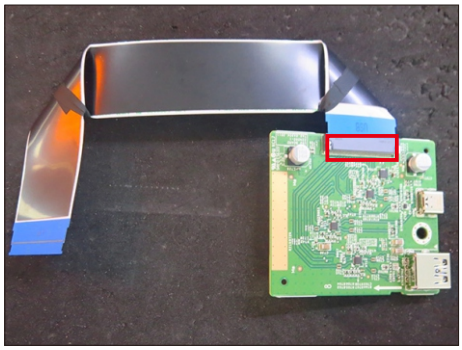
S13 Use a Philips-head screwdriver to tighten 13pcs screws for locking the middle bezel with the panel module.
(No.1~13 screw size=M3x5, Torque=5±0.5kgfxcm)

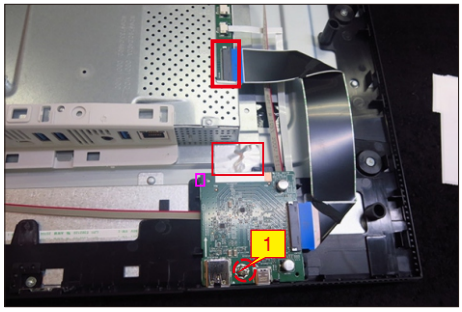


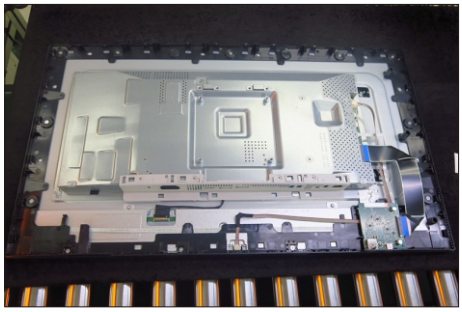
S14

Take 1pcs USB board and 1pcs conductive foam. Paste the conductive foam on the back of the USB board, and then locate the USB board into the the middle bezel. Use a Philips-head screwdriver to tighten 1pcs screw for locking the USB unit with the middle bezel, and then connect the cable to board and paste 1pcs aluminum foil to fix the cable.

(No.1 screw size=M3x6, Torque=4±1kgfxcm)



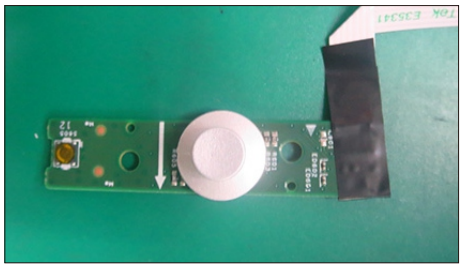


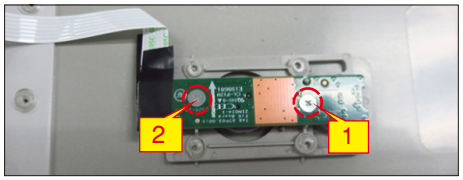


S15

Assemble 1pcs joystick key with 1pcs OSD board. Locate the OSD key board to the correct position of the rear cover, then use a Philips-head screwdriver to tighten 2pcs screws for locking the board with rear cover. Tear off the tape papers on the back of the cable, and then fix the key cable with tapes.

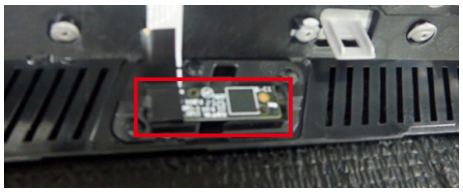
(No.1~2 screw size=M2x2.4, Torque=0.9±0.1kgfxcm)

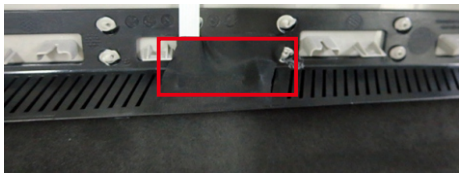


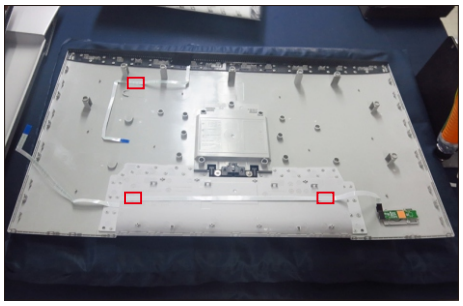


S16

Take 1pcs sensor board, then locate the sensor board to the correct position of the rear cover, then paste 1pcs mylar tape to cover the sensor board. Tear off the tape papers on the back of the cable, and then fix the sensor cable with tapes.

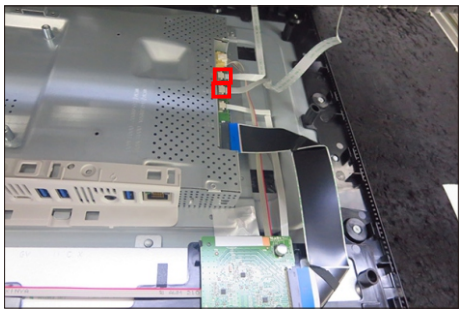






S17

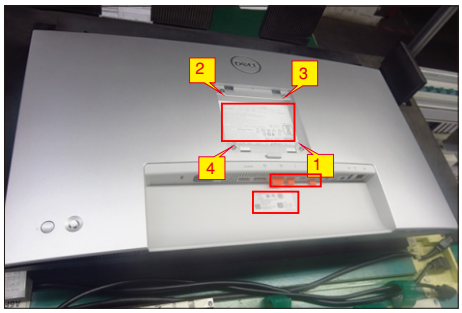
Move the assembled rear cover close to the panel unit, then connect the joystick key cable and sensor cable to the connectors of interface board. Put down the rear cover and push the rear cover on the positions marked for mechanisms engagement.



S18

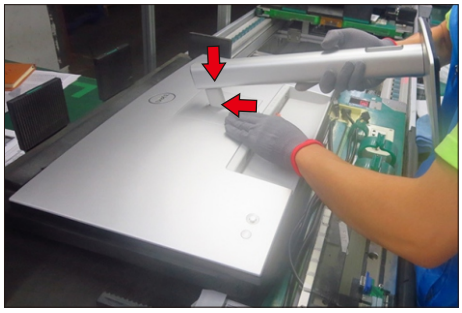
Use a Philips-head screwdriver to tighten 4pcs screws for locking the rear cover with the unit. Stick 2pcs label on the specific positions, then insert 3pcs DP Caps into the DP out connectors.

(No.1~4 screw size=M4x11; Torque=11±1kgfxcm)



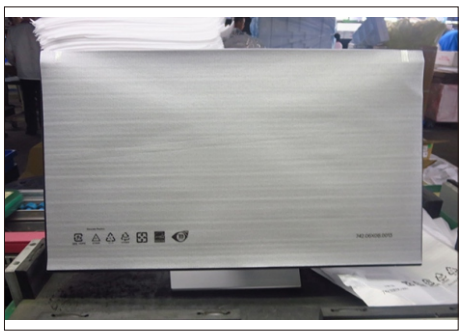
S19

Take a stand base close to the monitor. Fit the two tabs on the upper part of the stand into the grooves, and then lower the stand so that the monitor mounting area snaps onto the stand.



S20

Lift up the monitor to check the gap between the front bezel and the panel, then provide power supply and a video signal to the monitor, then turn on the monitor for functionality check. Paste 1pcs screen protector by 2pcs tapes.



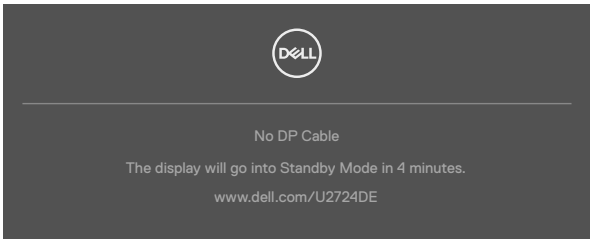
⚠ **WARNING: Before you begin any of the procedures in this section, follow the Safety instructions.**

Self-test

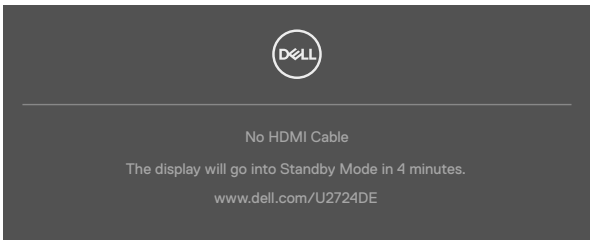
Your monitor provides a self-test feature that allows you to check whether your monitor is functioning properly. If your monitor and computer are properly connected but the monitor screen remains dark, run the monitor self-test by performing the following steps:

1. Turn off both your computer and the monitor.
2. Unplug the video cable from the back of the computer. To ensure proper Self-Test operation, remove all digital and the analog cables from the back of computer.
3. Turn on the monitor.

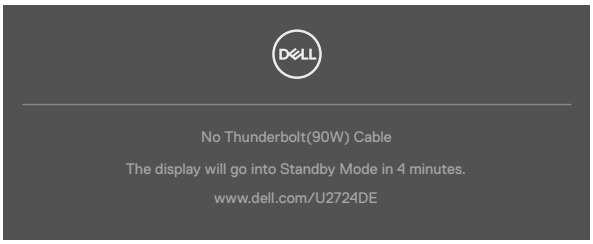
The floating dialog box should appear on-screen (against a black background), if the monitor cannot sense a video signal and is working correctly. While in self-test mode, the power LED remains white. Also, depending upon the selected input, one of the dialogs shown below will continuously scroll through the screen.



or



or



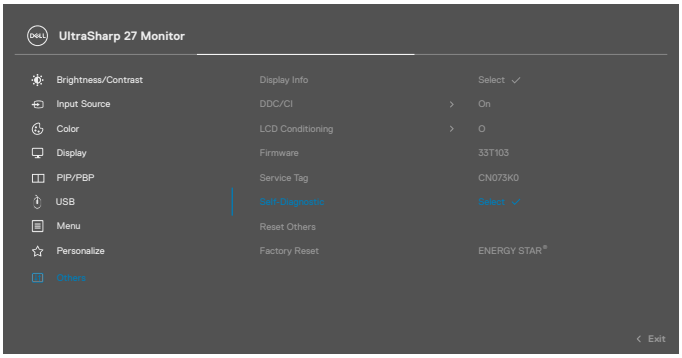
NOTE: This dialog box also appears during normal operation, if the video cable is disconnected or damaged.

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

If your monitor screen remains blank after you use 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 the screen abnormality you are experiencing is an inherent problem with your monitor, or with your computer and video card.



To run the built-in diagnostics:

1. Ensure that the screen is clean (no dust particles on the surface of the screen).
2. Select OSD items of **Self-Diagnostics** in **Others** feature.
3. Press the Joystick button to start the diagnostics. A gray screen is displayed.
4. Observe if the screen has any defects or abnormalities.
5. Toggle the Joystick once again until a red screen is displayed.
6. Observe if the screen has any defects or abnormalities.
7. Repeat steps 5 and 6 until the screen displays green, blue, black, and white colors. Note any abnormalities or defects.

The test is complete when a text screen is displayed. To exit, toggle the Joystick control again.

If you do not detect any screen abnormalities upon using the built-in diagnostic tool, the monitor is functioning properly. Check the video card and computer.

might encounter and the possible solutions:

Common symptoms	What you experience	Possible solutions
No video/ Power LED off	No picture	·Ensure that the video cable connecting the monitor and the computer is properly connected and secure. ·Verify that the power outlet is functioning properly using any other electrical equipment. ·Ensure that you have pressed the power button properly. ·Ensure that the correct input source is selected in the **Input Source** menu.
No video/ Power LED on	No picture or no brightness	·Increase brightness and contrast controls through OSD. ·Perform monitor self-test feature check. ·Check for bent or broken pins in the video cable connector. ·Run the built-in diagnostics, For more information, see **Self-Diagnostic** ·Ensure that the correct input source is selected in the **Input Source** menu.
Missing pixels	LCD screen has spots	·Cyclepoweron-off. ·Pixel that is permanently offisa natural defect that can occur in LCD technology. ·For more information on Dell Monitor Quality and Pixel Policy, see **www.dell.com/pixelguidelines**
Stuck-on pixels	LCD screen has bright spots	·Cyclepower On-Off. ·Pixel that is permanently offisa natural defect that can occur in LCD technology. ·For more information on Dell Monitor Quality and Pixel Policy, see **www.dell.com/pixelguidelines**
Brightness problems	Picture too dim or too bright	·Reset the monitor to factory settings. ·Adjust brightness and contrast controls through OSD.
Safety related issues	Visible signs of smoke or sparks	·Do not perform any troubleshooting steps. ·Contact Dell immediately.

6. Trouble Shooting Instructions

Common symptoms	What you experience	Possible solutions
Intermittent problems	Monitor malfunctions on and off	• Ensure that the video cable connecting the monitor to the computer is connected properly and is secure. • Reset the monitor to factory settings. • Perform monitor self-test feature check to determine if the intermittent problem occurs in self-test mode.
Missing color	Picture missing color	• Perform monitor self-test. • Ensure that the video cable connecting the monitor to the computer is connected properly and is secure. • Check for bent or broken pins in the video cable connector.
Wrong color	Picture color not good	• Try different Preset Modes in Color settings OSD. • Adjust R/G/B value under Custom Color in Color menu OSD. • Change the Input Color Format to RGB or YCbCr in the Color settings OSD. • Run the built-in diagnostics.
Image retention from a static image left on the monitor for a long period of time	Faint shadow from the static image displayed appears on the screen	• Set the screen to turn off after a few minutes of screen idle time. These can be adjusted in Windows Power Options or Mac Energy Saver setting. • Alternatively, use a dynamically changing screensaver.

Product specific problems

Problem	What you experience	Possible solutions
Screen image is too small	Image is centered on screen, but does not fill entire viewing area	• Check the **Aspect Ratio** setting in the Display menu OSD. • Reset the monitor to factory settings.
Cannot adjust the monitor with the buttons on the front panel	OSD does not appear on the screen	• Turn off the monitor, unplug the monitor power cable, plug it back, and then turn on the monitor. • Check whether the OSD menu is locked. If yes, move and hold the joystick forward/back/left/right for 4 seconds to unlock.
No input signal when user controls are pressed	No picture, the LED light is white	• Check the signal source. Ensure that the computer is not in the power saving mode by moving the mouse or pressing any key on the keyboard. • Check whether the signal cable is plugged in properly. Connect the signal cable again, if necessary. • Reset the computer or video player.
The picture does not fill the entire screen	The picture cannot fill the height or width of the screen	• Due to different video formats (aspect ratio) of DVDs, the monitor may display in full screen. • Run the built-in diagnostics.
No image when using DP connection to the PC	Black screen	• Verify which DP standard (DP 1.1a or DP 1.4) is your Graphics Card certified to. Download and install the latest graphics card driver. • Some DP 1.1a graphics card cannot support DP 1.4 monitors.
No image when using Thunderbolt™ 4 connection to computer, laptop, and so on	Black screen	• Verify if the Thunderbolt™ 4 interface of the device can support DP alternate mode. • Verify if the device required more than 90 W power charging. • Thunderbolt™ 4 interface of device cannot support DP alternate mode. • Set Windows to Projection mode. • Ensure that the Thunderbolt™ 4 cable is not damaged.

6. Trouble Shooting Instructions

Problem	What you experience	Possible solutions
No charging when using Thunderbolt™ 4 connection to computer, laptop, and so on	No charging	• Verify if the device can support one of 5 V / 9 V / 15 V / 20 V charging profiles. • Verify if the Notebook requires a >90 W power adaptor. • If the Notebook requires a >90 W power adaptor, it may not charge with the Thunderbolt™ 4 connection. • Ensure that you use only Dell approved adapter or the adapter that comes with the product. • Ensure that the Thunderbolt™ 4 cable is not damaged.
Intermittent charging when using Thunderbolt™ 4 connection to computer, laptop, and so on	Intermittent charging	• Check if the maximum power consumption of device is over 90 W. • Ensure that you use only Dell approved adapter or the adapter that comes with the product. • Ensure that the Thunderbolt™ 4 cable is not damaged.
Thunderbolt™ 4 source MST connect two monitors, there is no signal on one of the monitors.	One of the monitors no signal	• Please use the original Thunderbolt™ 4 cable in the box to connect two monitors.
Thunderbolt™ 4 source MST connect two monitors, the two monitors cannot be selected to 2560 x 1440 120 Hz at the same time.	Resolution can't select 2560 x 1440 120 Hz	• Ensure your cable is original Thunderbolt™ 4 cable in the box. • Open monitor menu, select to Display, confirm MST is On or Off? If on, please help confirm the monitor MST is Off.

6. Trouble Shooting Instructions

Problem	What you experience	Possible solutions
Ethernet port (RJ45) cannot connect to internet	Ethernet port (RJ45) cannot connect to internet on Win 10 / Win 11	Change the LAN Controller Power Saving from Enable to Disable
The LAN port is not functioning	OS setting or cable connection issue	• Ensure that the latest BIOS and drivers for your computer are installed on your computer. • Ensure that the RealTek 2.5 G Ethernet Controller is installed in the Windows Device Manager. • If your BIOS Setup has a LAN/GBE Enabled/ Disabled option, make sure it is set to Enabled. • Ensure that the Ethernet cable is connected securely on the monitor and the hub/router/ firewall. • Check the status LED of the Ethernet cable to confirm connectivity. Re-connect both ends of the Ethernet cable if the LED is not lit. • First power off the Computer and unplug the Thunderbolt™ 4 cable and power cord of the monitor. Then, power on the computer, plug in the monitor power cord and Thunderbolt™ 4 cable.
Ambient light detection anomaly	When Auto Brightness is on, the detected ambient light drops significantly	• Check whether an object is obstructing the sensor area. • Ensure a webcam is not mounted over the sensor area. • Wipe clean any dust that may be covering the sensor area. • Ensure the display is not pivoted and placed to another monitor side-by-side.

Universal Serial Bus (USB) specific problems

Specific symptoms	What you experience	Possible solutions
USB interface is not working	USB peripherals are not working	• Check that your display is turned on. • Reconnect the upstream cable to your computer. • Reconnect the USB peripherals (downstream connector). • Turn off the monitor and turn it on again. • Reboot the computer. • Certain USB devices such as portable hard drives require higher power source; connect the drive to the computer directly.
Super speed USB 3.2 Gen2 interface is slow.	Super speed USB 3.2 Gen2 peripherals working slowly or not working at all	• Check that your computer is USB 3.0-capable. • Some computers have USB 3.0, USB 2.0, and USB 1.1 ports. Ensure that the correct USB port is used. • Reconnect the upstream cable to your computer. • Reconnect the USB peripherals (downstream connector). • Reboot the computer.
Wireless USB peripherals stop working when a USB 3.0 device is plugged in	Wireless USB peripherals responding slowly or only working as the distance between itself and its receiver decreases	• Increase the distance between the USB 3.0 peripherals and the wireless USB receiver. • Position your wireless USB receiver as close as possible to the wireless USB peripherals. • Use a USB-extender cable to position the wireless USB receiver as far away as possible from the USB 3.0 port.