Service Manual - U4025QW

Version: 01

Date: 2023/12/26

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.

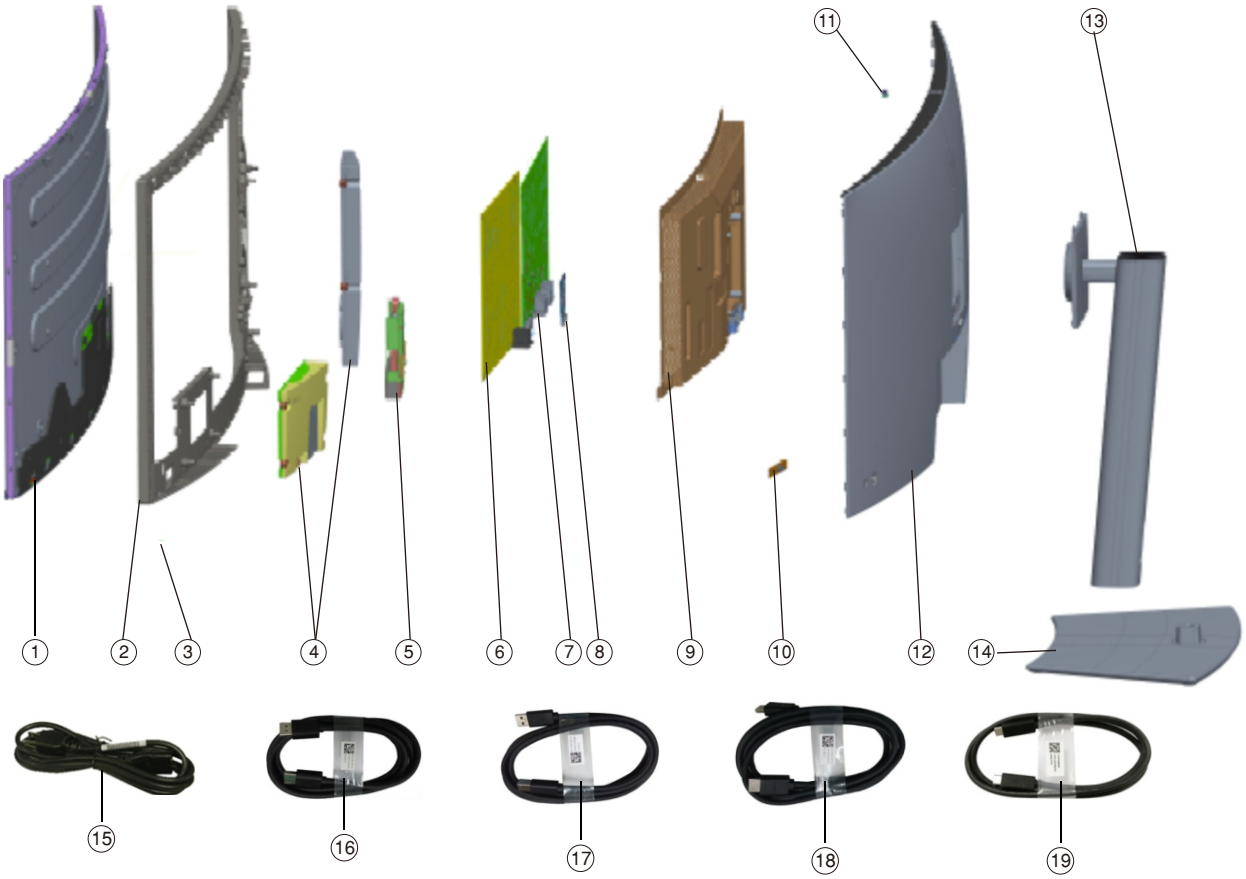
! To ensure following safety repairing behavior, put the replaced part on the components side of PWBA, not solder side.

! 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



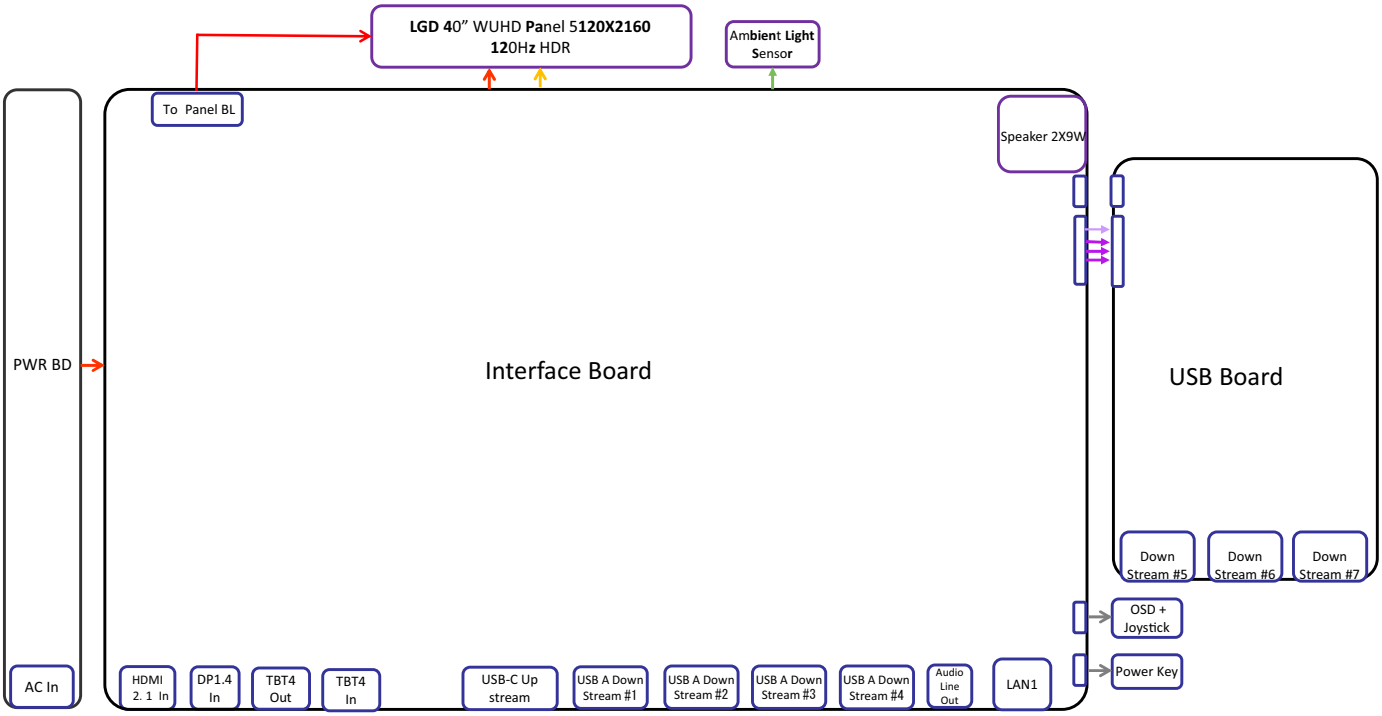
Item	Description	Q'ty	Remark
1	Panel	1	For EMEA Only, not for other regions
2	ASSY Middle Frame	1	
3	LED BD	1	
4	Speaker ASSY	1	
5	USB ASSY	1	
6	Power BD	1	
7	Interface BD	1	
8	TPT TYPC BD	1	
9	Main bracket ASSY	1	
10	Key BD	1	
11	Lighter Sensor BD	1	
12	Rear Cover	1	
13	ASSY RISSER	1	
14	ASSY BASE	1	
15	Power cable (varies by country or region)	1	See “NOTE”
16	DisplayPort 1.4 cable (DisplayPort to DisplayPort)	1	See “NOTE”
17	USB Type-A to USB Type-C Gen2 cable	1	See “NOTE”
18	HDMI 2.1 cable	1	See “NOTE”
19	Thunderbolt™ 4 Active 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

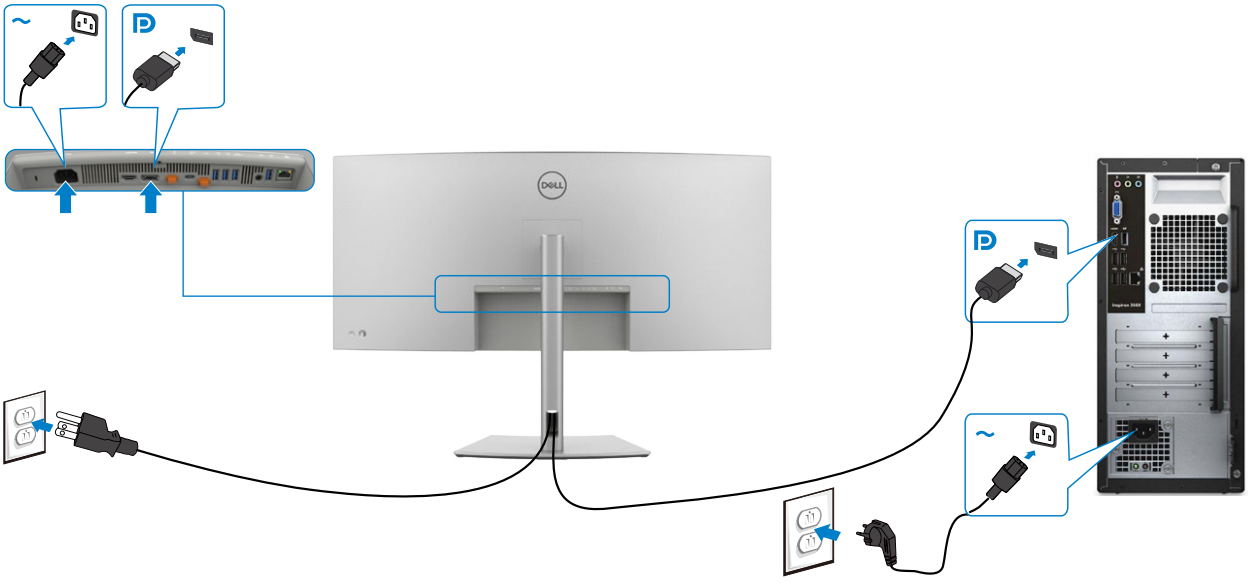


4. How to connect and disconnect power cable/ connectivity cable

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

Connecting the HDMI cable

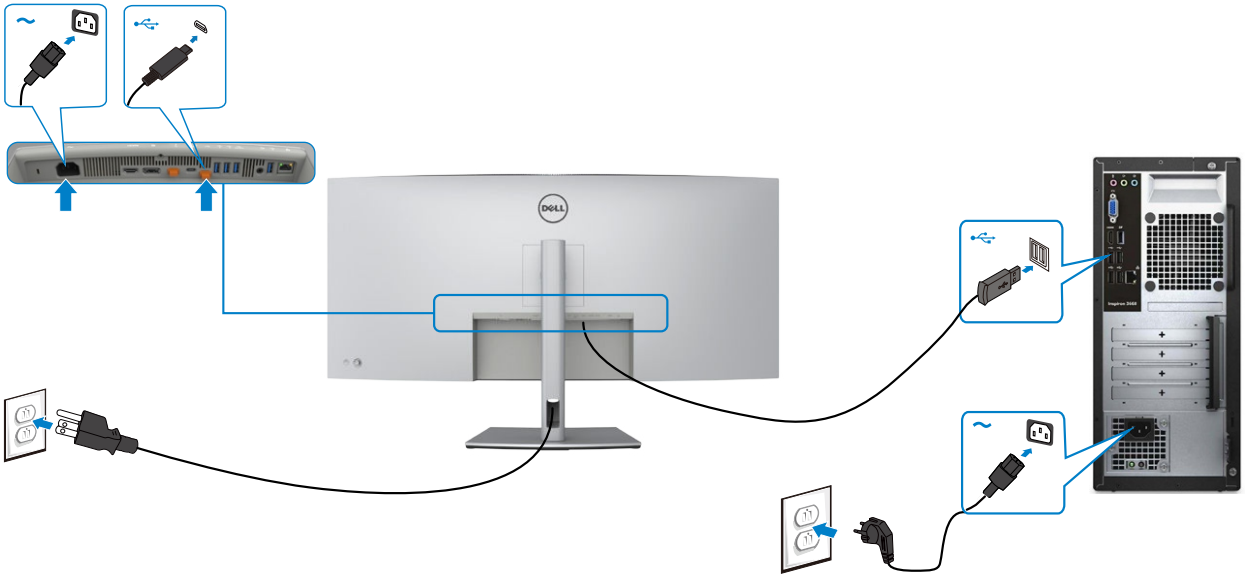
Connecting the DP cable



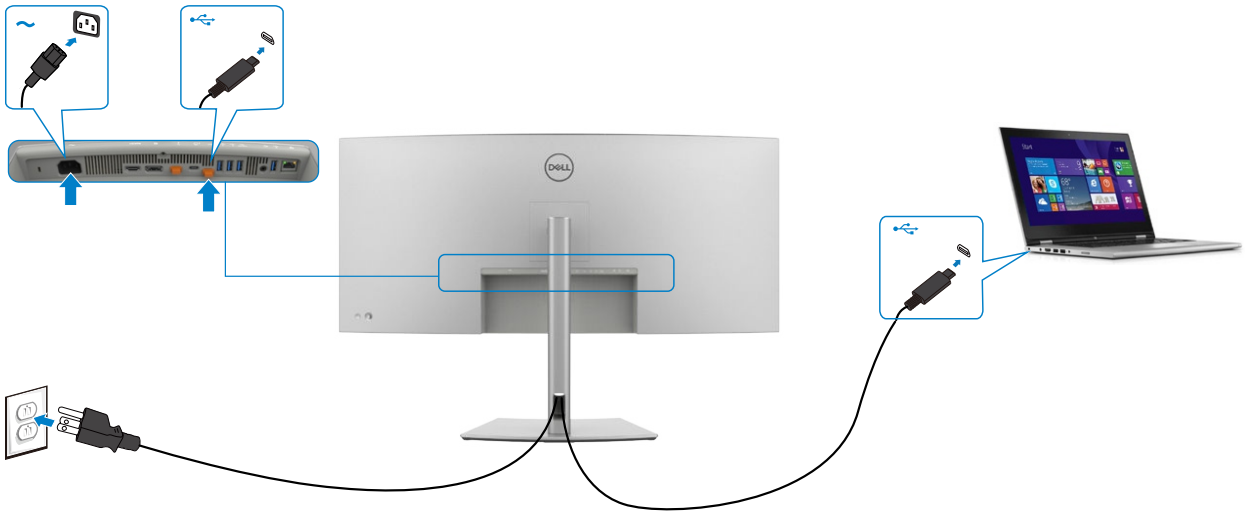
4. How to connect and disconnect power cable/ connectivity cable

Connecting the Thunderbolt™ 4 cable

Connecting the USB-C® Cable (A to C)

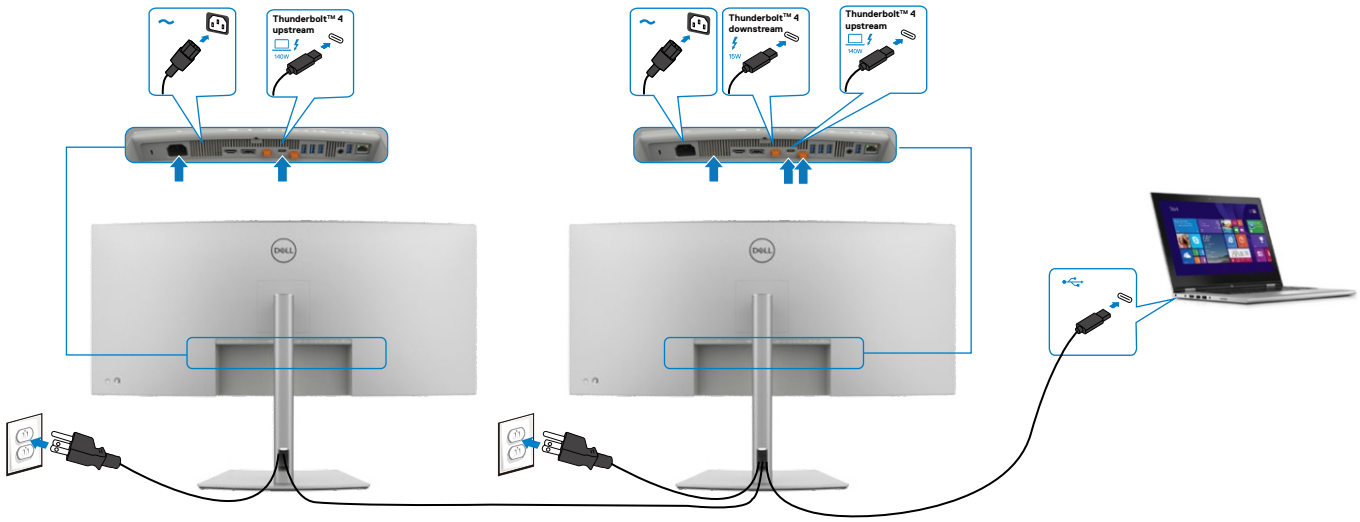


Connecting the USB Type-C® cable (C to C) (Optional)



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

Connecting the monitor for Thunderbolt™ 4 daisy chain function



Connecting the monitor for RJ45 Cable (Optional)

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.

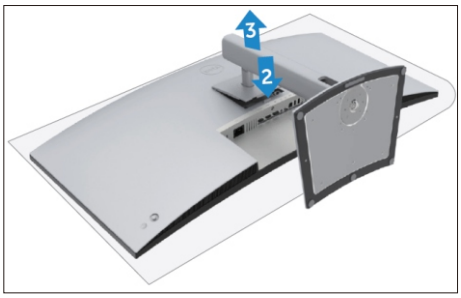
Tool Required:
List the type and size of the tools that would typically can be used to disassemble the product to a point where components and materials requiring selective treatment can be removed.

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

5.1 Disassembly Procedures:

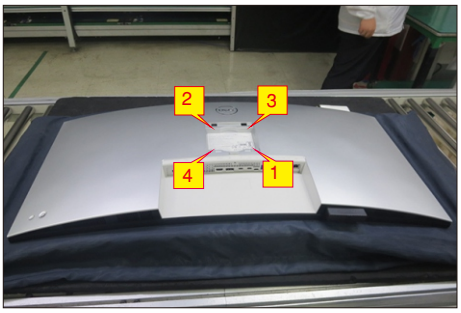
S1

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.



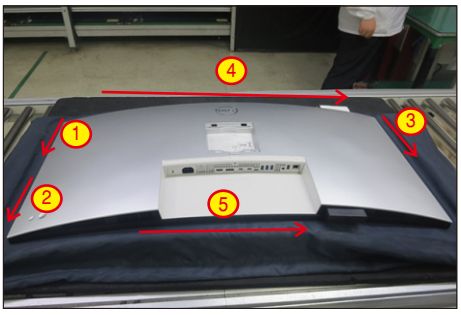
S2

Use a Philips-head screwdriver to remove 4pcs screws for unlocking mechanisms.
(No.1~4 screw size=M4x11; Torque=10±1kgfxcm)



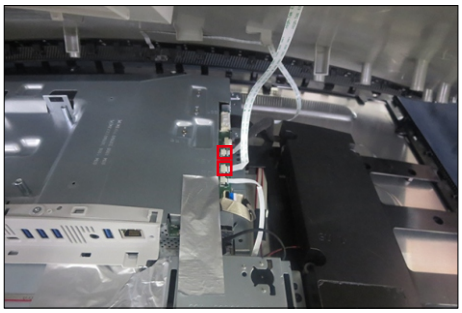
S3

Wedge your fingers between the 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.



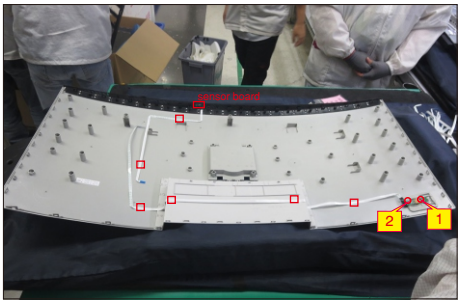
S4

Lift up the rear cover, and disconnect the joystick cable and sensor cable away from the connectors, and then remove the rear cover and put it aside.



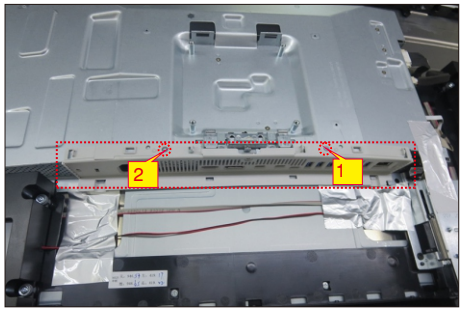
S5

Release the cables by tearing off all the tapes. Use a Philips-head screwdriver to remove 2pcs screw for unlocking the joystick board, then release the joystick board sensor board from the hooks of the rear cover.
(No.1~2 screw size=M2x2.4, Torque=1±0.2kgfxcm)



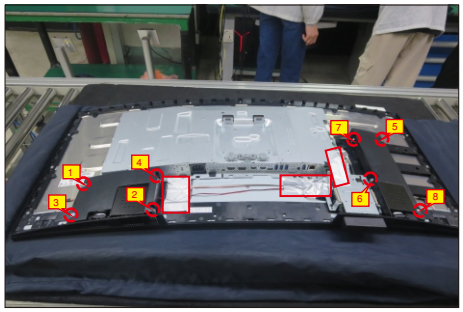
S6

Use a Philips-head screwdriver to remove 2pcs screws for unlocking the IO cover with bracket, then release the IO cover away from the main bracket chassis.
(No.1~2 screw size=M3x4,Torque=5±1kgfxcm)



S7

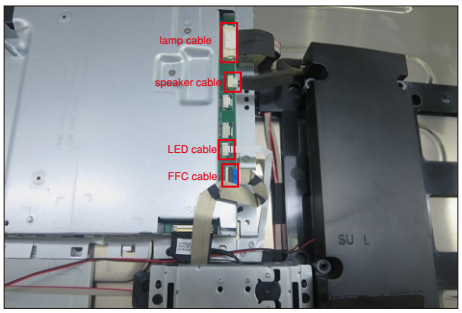
Tear off 3pcs aluminum foil for releasing the cables and bracket. Use a Philips-head screwdriver to remove 8pcs screws for unlocking the two speakers with middle frame.
(No.1~8 screw size=M3x6, Torque=6±1kgfxcm)

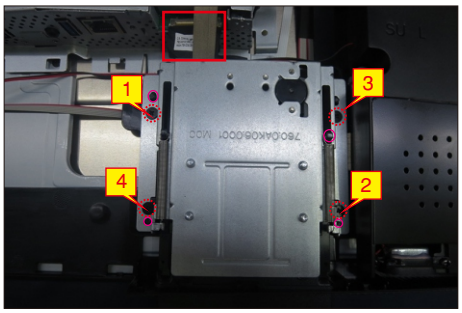


S8

Disconnect the lamp cable, speakers' cable, LED cable, FFC cable from the connectors of the board. Use a Philips-head screwdriver to remove 4pcs screw for unlocking the USB unit, then disconnect the eDP cable away from board and release the USB unit from the hooks of the middle frame.

(No.1~4 screw size=M3x4, Torque=4±1kgfxcm)

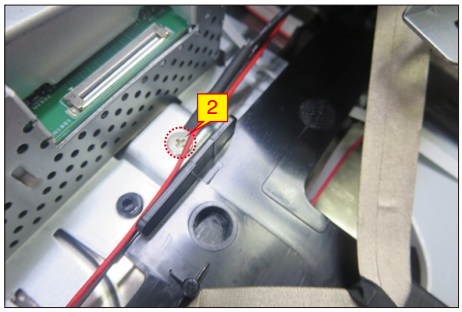


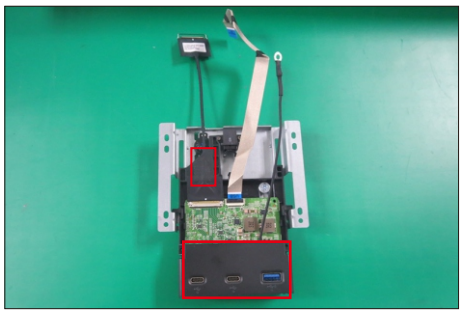


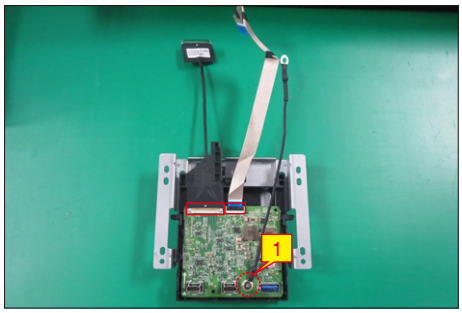
S9

Use a Philips-head screwdriver to remove 1pcs screw for releasing the USB unit, then remove the USB cover, then use a Philips-head screwdriver to remove 1pcs screw for locking the USB board. Disconnect the USB connective cable.

(No.1~2 screw size=M3x3, Torque=4±1kgfxcm)



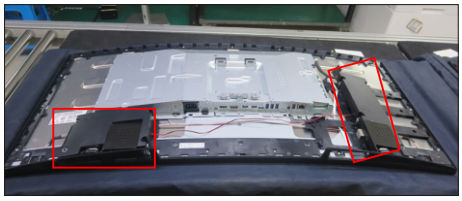


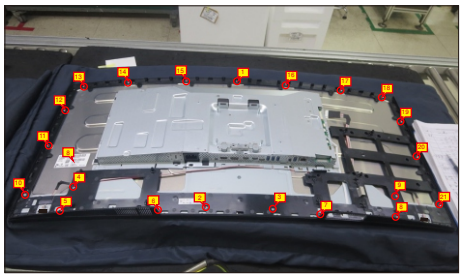


S10

Release the two speakers from the probers of the middle frame and put it aside. Use a Philips-head screwdriver to remove 21pcs screws for unlocking the middle frame with the panel module.

(No.1~21 Screw size= M3x0.5x4, Torque=5±0.5kgfxcm)

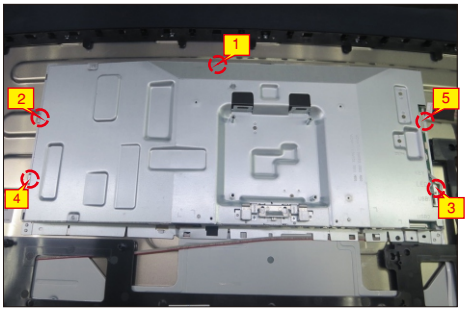




S11

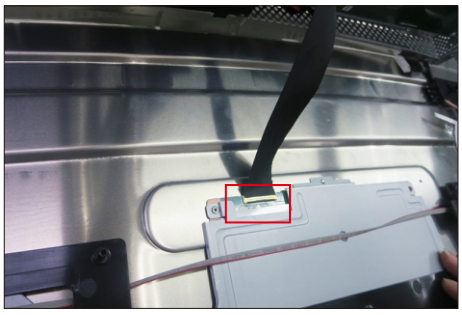
Tear off 3pcs aluminum foil, then use a Philips-head screwdriver to remove 4pcs screws for locking the bracket chassis module with the panel.

(No.1~4 Screw size= M3x4, Torque=5±1kgfxcm)



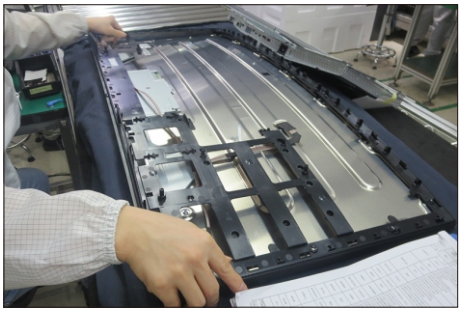
S12

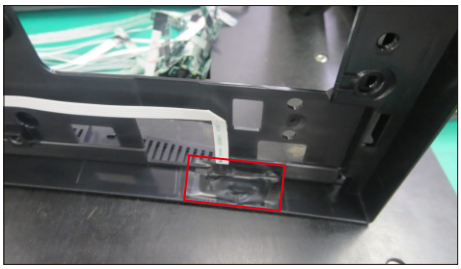
Lift up the bracket chassis, and disconnect the eDP cable from the connector of panel module, then put the bracket chassis on a protective cushion.



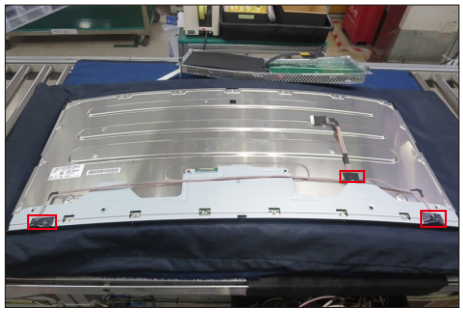
5. Disassembly and Assembly Procedures

S13 Lift up the middle frame and put it into a fixture, tear off all the cable tape and the mylar tape for releasing the LED key board away from the middle frame.

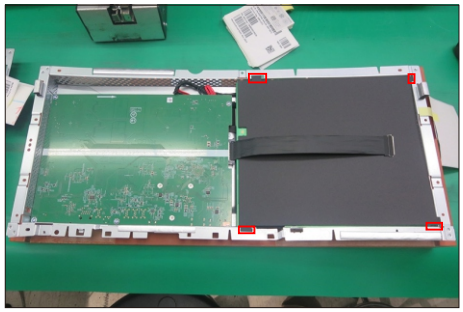




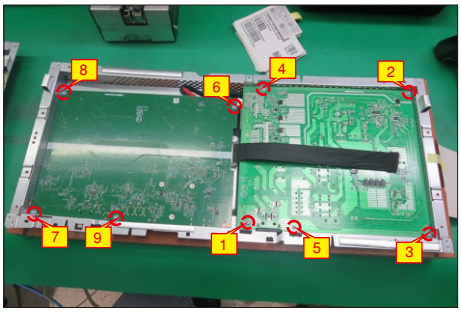
S14 Tear off 2pcs shading tapes and 1pcs acetate tape, and then disconnect the panel lamp cable from the two connectors of the panel module.

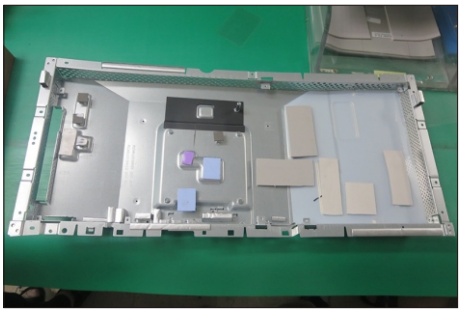


S15 Remove the mylar sheet from the hooks of the main bracket chassis.

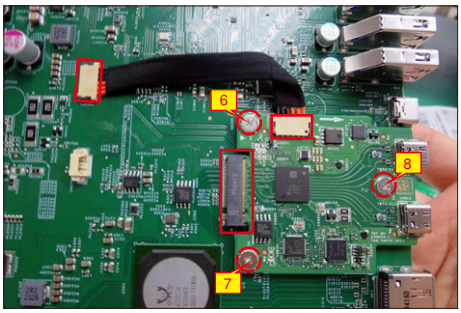


S20 Use a Philips-head screwdriver to remove 9pcs screws for unlocking power board and interface board with the bracket.
(No.1 screw size=M4x8, Torque=5±1kgfxcm;
No.2~9 screw size=M3x6, Torque=5±1kgfxcm)





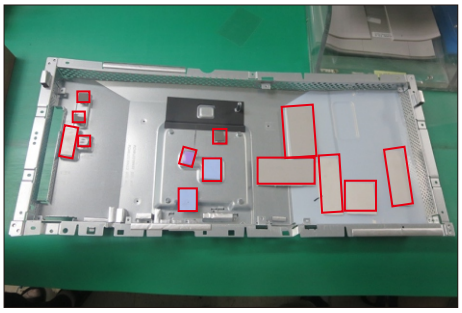
S21 Remove the circuit boards from the bracket chassis module, and then disconnect all of the cables. Use a Philips-head screwdriver to remove 3pcs screws for unlocking TBT board with interface board.
(No.1~3 screw size=M3x6, Torque=5±1kgfxcm)



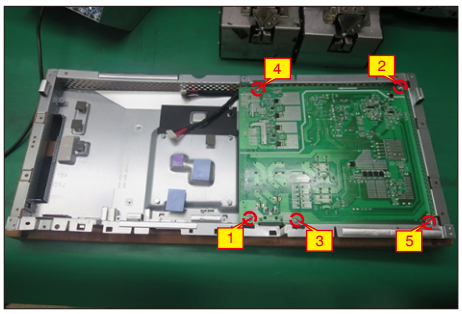
5. Disassembly and Assembly Procedures

5.2 Assembly Procedures:

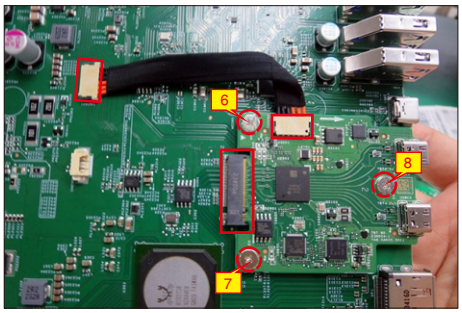
S1 Place a bracket chassis base on a protective cushion, then stick 13pcs Silicon sheets on the position as the picture below shown.

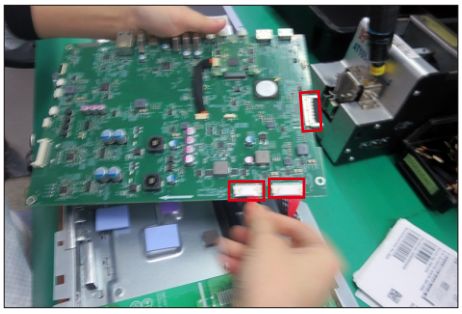


S2 Put 1pcs power board into the bracket, then use a Philips-head screwdriver to tighten 5pcs screws for locking the power board.
(No.1 screw size=M4x8, Torque=5±1kgfxcm;
No.2~5 screw size=M3x6, Torque=5±1kgfxcm)

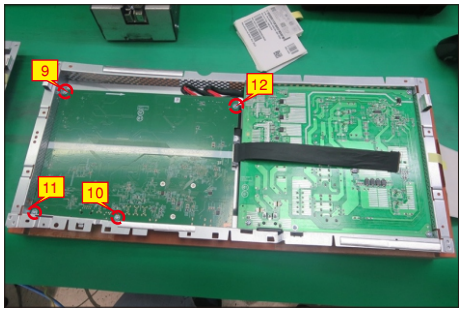


S3 Take 1pcs TBT board to insert the connector of the interface board, then use 1pcs cable to connect the TBT board with interface board. Use a Philips-head screwdriver to tighten 3pcs screws for locking the TBT board. Connect 1pcs eDP cable and two power connective cables to the interface board.
(No.6~8 screw size=M3x6, Torque=5±1kgfxcm)

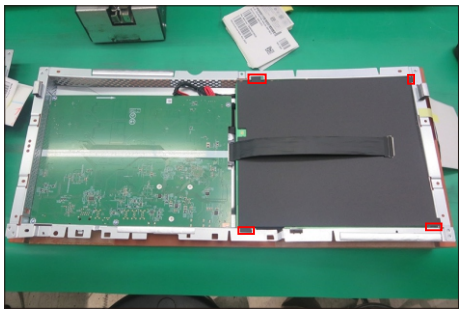




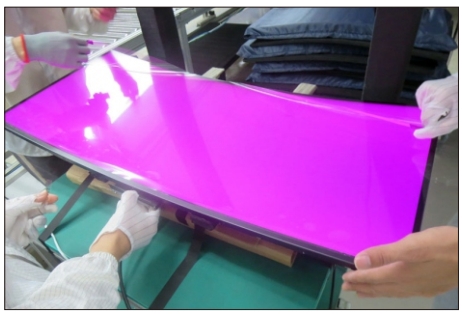
S4 Turn over the interface board and locate it into the bracket, then use a Philips-head screwdriver to tighten 4pcs screws for locking the interface board.
(No.9~12 screw size=M3x6, Torque=5±1kgfxcm)



S5 Take a black mylar to insert the hooks of the bracket to cover the power board.

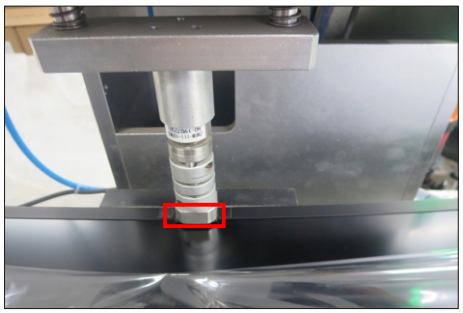


S6 Panel preparation: Take out 1pcs panel module from the carton, remove the protective film by tearing off all the tapes of screen, then examine the panel surface according to inspection criteria carefully.

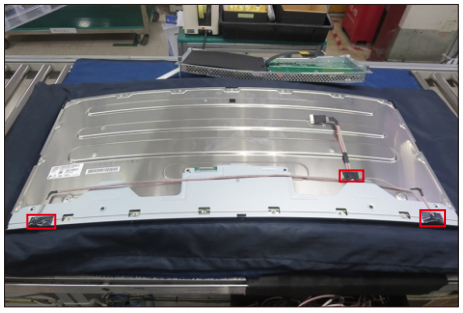


S7 Take 1pcs Dell nameplate, then use a locating fixture to fix the nameplate to the bezel of the module, and then move the whole unit into a laminating fixture, use the machine to press the nameplate with the bezel firmly attachment.

5. Disassembly and Assembly Procedures

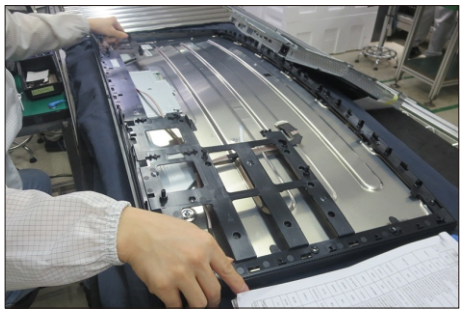


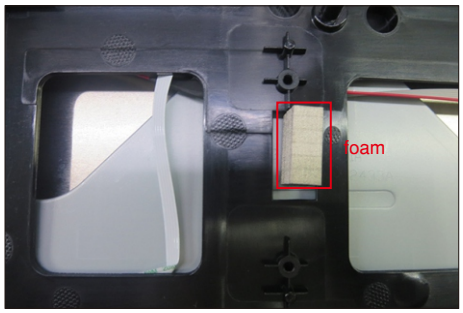
S8 Turn over the panel module to place screen faced down. Take 1pcs panel lamp to plug the two connectors of the panel module, then cover the two connectors with shading tapes, then fix the lamp cable on the back of the panel with 1pcs acetate tape.



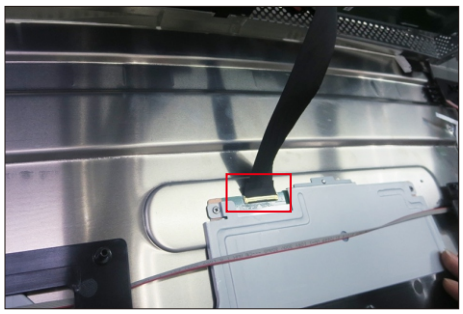
S9 Take 1pcs LED board and 1pcs middle frame, and then locate the LED board into the specific position of the middle frame. Paste 1pcs mylar tape to fix the LED board, then fix the LED cable on the middle frame by the double-faced tape on the back of the cable.

S10 Assemble the middle frame with the panel unit, then adjust the middle frame and settle the cables to the correct position, and then paste 1pcs conduct foam on the specific position of the middle frame as the picture below shown.

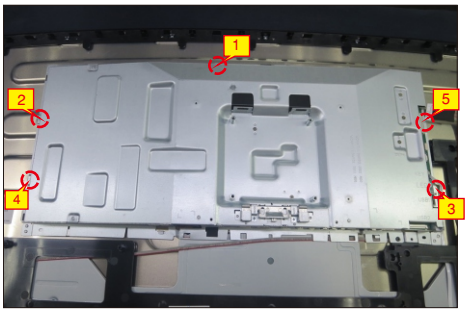




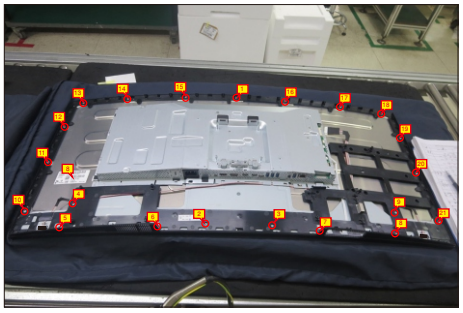
S11 Move the bracket chassis module close to the panel module, then connect the eDP cable to the connector of the panel, then put the bracket on the back of the panel module.

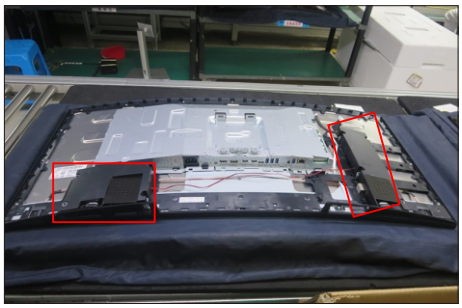


S12 Adjust the bracket chassis module for two parts firmly attached, and then use a Philips-head screwdriver to tighten 5pcs screws for locking the bracket chassis module with the panel module.
(No.1~5 Screw size= M3x5, Torque=5±0.5kgfxcm)



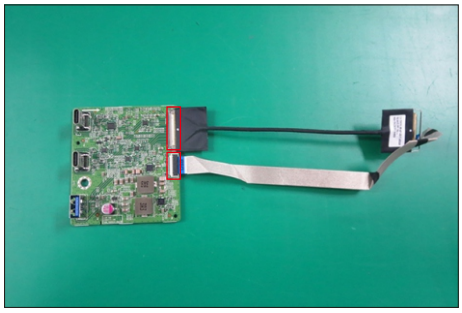
S13 Use a Philips-head screwdriver to tighten 21pcs screws for locking the middle frame with the panel module. Take a pair of speakers to locate the probers of the middle frame.
(No.1~21 Screw size= M3x0.5x4, Torque=5±0.5kgfxcm)

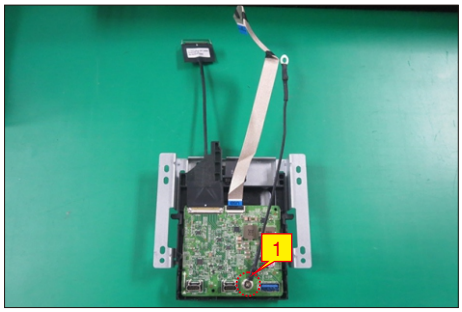


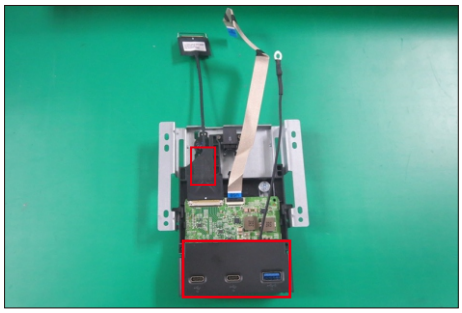


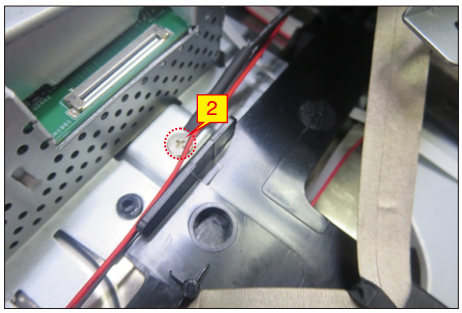
S14

Take 1pcs USB board, 1pcs eDP cable, 1pcs FFC cable and 1pcs USB bracket. Connect the eDP cable and FFC cable to the connectors of the USB board, and then locate the USB board into the USB bracket, then use a Philips-head screwdriver to tighten 1pcs grounding screw and cable for locking the USB board with the bracket. Take 1pcs USB hub cover to assemble with the USB bracket, then fix the eDP cable with 1pcs acetate tape.
Move the USB unit close to the assembled unit, then use a Philips-head screwdriver to tighten 1pcs screw for locking the grounding wire with the main bracket chassis.
(No.1~2 screw size=M3x3, Torque=4±1kgfxcm,



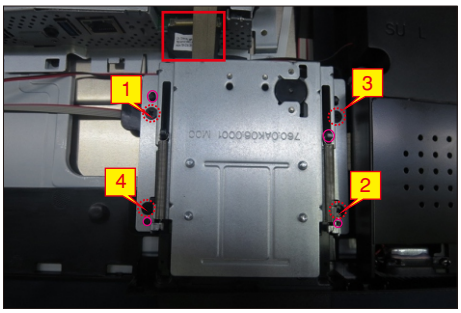


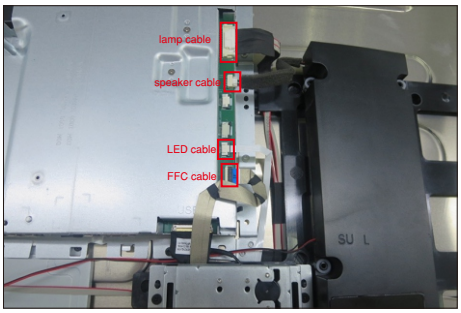




S15

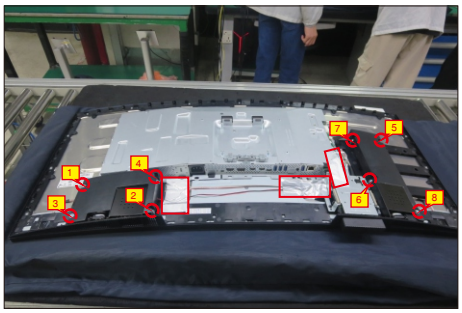
Connect the eDP cable to the interface board, then locate the USB unit to the hooks of middle frame. Use a Philips-head screwdriver to tighten 4pcs screw for locking the USB unit with the middle frame. Connect the FFC cable, LED cable, speakers' cable and panel lamp cable to the connectors of the interface board.
(No.1~4 screw size=M3x4, Torque=4±1kgfxcm)





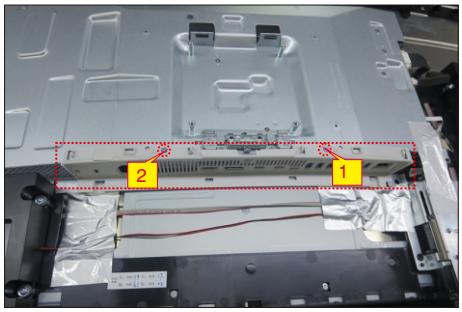
S16

Use a Philips-head screwdriver to tighten 8pcs screws for locking the two speakers with middle frame, then settle all the cables and paste 3pcs aluminum foil on the specific positions for fixing the cables and bracket as th picture below shown.
(No.1~8 screw size=M3x6, Torque=6±1kgfxcm)



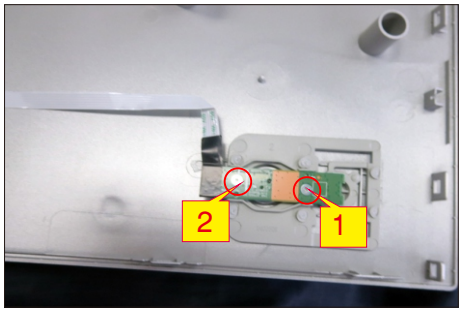
S17

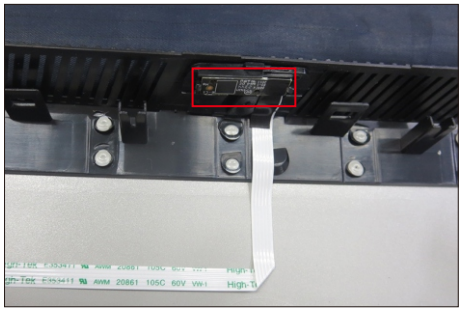
Take 1pcs IO cover to assemble with the main bracket chassis, then use a Philips-head screwdriver to lock 2pcs screws for locking the IO cover with bracket.
(No.1~2 screw size=M3x4,Torque=5±1kgfxcm)

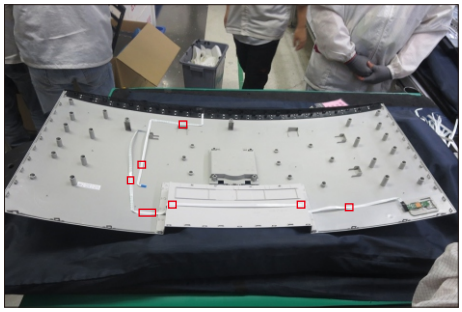


S18

Take 1pcs joystick key, 1pcs joystick board, 1pcs sensor board and 1pcs rear cover, then assemble the joystick key with the board. Locate the joystick board to the correct position of the rear cover, then use a Philips-head screwdriver to lock 2pcs screws for locking the joystick board with rear cover. Locate the sensor board to the hooks of the rear cover, then tear off the papers on the back of the cables, and then fix the joystick cable and sensor cable on the rear cover with tapes.
(No.1~2 screw size=M2x2.4,Torque=1±0.2kgfxcm)

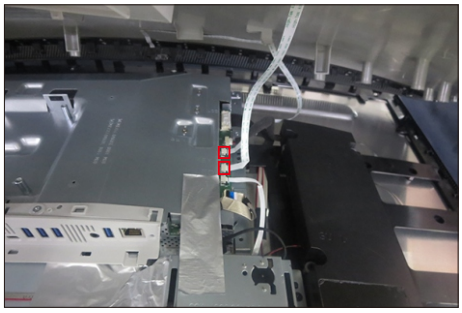


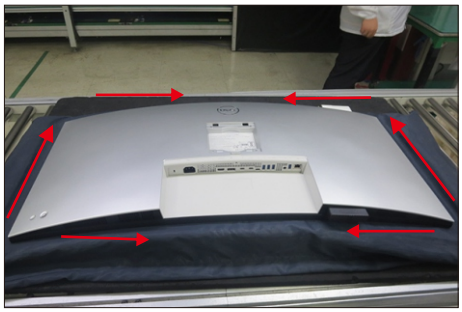




S19

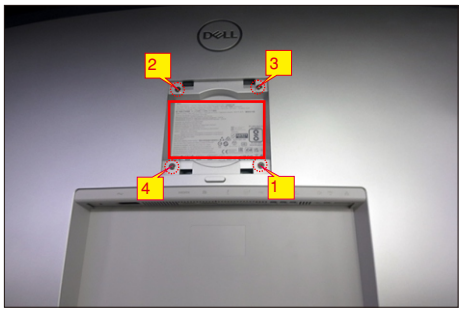
Move the assembled rear cover close to the panel unit, then connect the joystick key cable and sensor cable to the connectors of interface board. Put down the rear cover and push the rear cover on the positions marked as the picture below shown for mechanisms engagement.





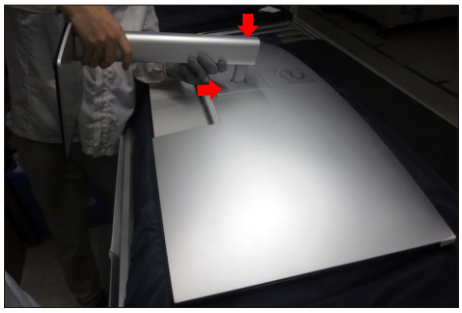
S20

Use a Philips-head screwdriver to tighten four screws for locking mechanisms. Stick 1pcs label on the specific positions as the picture below shown.
(No.1~4 screw size=M4x11; Torque=10±1kgfxcm)



S21

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



S22

Use a protective bag to pack the stand base, then lift up the monitor to checking the gap between the front bezel with panel, then provide power supply and video signal to the monitor, then turn on the monitor for functionality check.

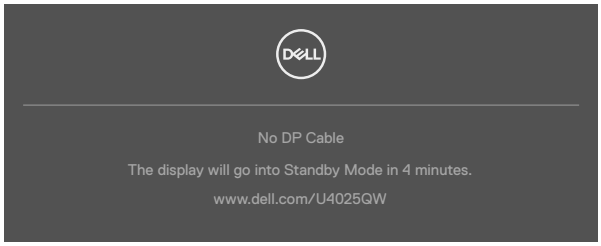
⚠ **WARNING: Before you begin any of the procedures in this section, follow the Safety Instructions.**

Self-test

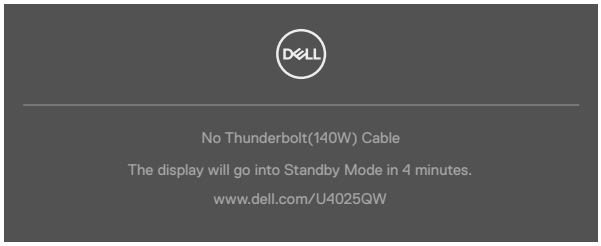
Your monitor provides a self-test feature that allows you to check whether your monitor is functioning properly. If your monitor and computer are properly connected but the monitor screen remains dark, run the monitor self-test by performing the following steps:

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 the 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 that are shown below will continuously scroll through the screen.



or

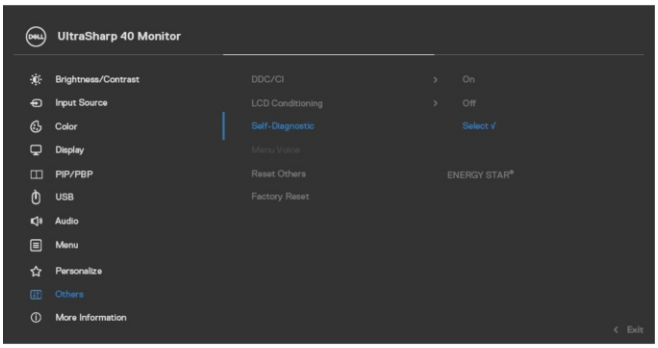


4. This message also appears during normal system operation if the video cable is disconnected or damaged.
5. Turn off your monitor and reconnect the video cable; then turn on both your computer and the monitor.

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. Press and hold Up or Down or Left or Right direction for four seconds until a menu appears on the screen.
3. Using the joystick control, highlight the Diagnostics option and 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.

Common Problems

The following table contains general information about common monitor problems that you 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 the power button is pressed fully. · 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 using OSD. · Perform monitor self-test feature check. · Check for bent or broken pins in the video cable connector. · Run the built-in diagnostics. · Ensure that the correct input source is selected in the **Input Source** menu.
Missing pixels	LCD screen has spots	· Cycle power on-off. · A pixel that is permanently off is a natural defect that can occur in LCD technology. · For more information about Dell Monitor Quality and Pixel Policy, see Dell Support site at: **https://www.dell.com/pixelguidelines**.
Stuck-on pixels	LCD screen has bright spots	· Cycle power on-off. · A pixel that is permanently off is a natural defect that can occur in LCD technology. · For more information about Dell Monitor Quality and Pixel Policy, see Dell Support site at: **https://www.dell.com/pixelguidelines**.
Brightness problems	Picture too dim or too bright	· Reset the monitor to factory settings. · Adjust brightness and contrast controls using OSD.

6. Trouble Shooting Instructions

Common Symptoms	What you experience	Possible solutions
Safety-related issues	Visible signs of smoke or sparks	· Do not perform any troubleshooting steps. · Contact Dell immediately.
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 a 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 is not good	· Change the settings of the Preset Modes in the Color menu OSD depending on the application. · Adjust R/G/B value under Custom Color in the Color menu OSD. · Change the Input Color Format to PC RGB or YPbPr in the Color menu OSD. · Run the built-in diagnostics.
Image retention from a static image left on the monitor for a long period of time	A faint shadow from the static image that is displayed appears on the screen	· 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. · Alternatively, use a dynamically changing screensaver.
TBT out cannot display	TBT out port connect the 2nd Monitor cannot display, but the display setting can recognize 2 monitor	· Make sure the OSD Thunderbolt Daisy Chain is “Optimized”. · Open the display setting in NB/PC, if you can see NB/PC and 1st monitor, select 2nd only, the 2nd monitor should be display.

6. Trouble Shooting Instructions

Common Symptoms	What you experience	Possible solutions
The monitor cannot detect signal connect with dock after AC/DC Off/On, cable uplug/ Plug	Connect the Dock USB-C® cable to the platform. Connect DUT with TBT4 cable to the Dock USB-C® port. The monitor cannot detect the signal after AC Off/On TBT4 cable Unplug/ Plug	· Connect the monitor directly with the platform. · Change the TBT4 cable to a USB-C® cable.
The two monitor maximum resolution cannot reach 5120 x 2160 @ 120 Hz when TBT Daisy Chain	Connect 1st DUT with TBT4 cable to the platform. Connect 2nd DUT to the 1st DUT Thunderbolt™ out port with TBT4 cable. The 2nd monitor or 1st monitor cannot reach 5120 x 2160 @1 20 Hz	· Make sure the OSD Thunderbolt Daisy Chain is “Optimized”.
2nd monitor shows black screen when TBT daisy chain and enable SmartHDR on both OSD and Windows display setting	Connect 1st DUT with TBT4 cable to the platform. Connect 2nd DUT to the 1st DUT Thunderbolt™ out port with TBT4 cable. Set both DUT to the maximum resolution (5120 x 2160). Enable SmartHDR on both OSD and Windows display setting. 2nd monitor shows black screen	· Intel UHD graphic limitation, suggest to use Intel Iris graphic. · Disable SmartHDR on both OSD and Windows display setting.
Auto source cannot automatically switch to DP input source when you connect the DP cable to the platform	When you connect the HDMI cable and DP cable to monitor, connect HDMI cable to platform and display normally, then connect DP cable to platform. The signal cannot automatically to DP signal	· Unplug and plug the DP cable from the monitor side. · Go to the OSD menu and enter input source select DP manually.

Product-specific problems

Problem	What you experience	Possible solutions
Screen image is too small	The image is centered on the screen, but does not fill the 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 joystick control on the rear of the monitor	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.
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	Blank screen	· Verify which DP standard is your Graphics card is certified to. Download and install the latest graphics card driver.
No image when using Thunderbolt™ 4 connection to computer, laptop, and so on	Blank screen	· Verify if the Thunderbolt™ 4 interface of the device can support DP alternate mode. · Verify if the device required more than EPR 140W power charging. · 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 the 5 V/9 V/15 V/20 V/28 V charging profiles. · Verify if the Notebook requires a >EPR 140W power adapter. · If the Notebook requires a >EPR 140W power adaptor, it may not charge with the Thunderbolt™ 4 connection. · Ensure that you use only the 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 the device is over EPR 140 W. · Ensure that you use only the Dell approved adapter or the adapter that comes with the product. · Ensure that the Thunderbolt™ 4 cable is not damaged.
No network connection	Network dropped or Intermittent	· Do not toggle Off/On the power button when the network is connected, keeps the power button On.

Problem	What you experience	Possible solutions
The LAN port is not functioning	Operating system setting or cable connection issue	· Ensure that the latest BIOS and drivers for your computer are installed on your computer. · Ensure that the RealTek 2.5G 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. Reconnect 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.
The detected light level drops significantly	When the Ambient Light Sensor is on, the detected ambient light drops significantly	· Check whether an object is obstructing the sensor area. · Ensure that a webcam is not mounted over the sensor area. · Wipe clean any dust that may be covering the sensor area. · Ensure that 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.
SuperSpeed USB 3.2 Gen2 interface is slow.	SuperSpeed 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.