

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.

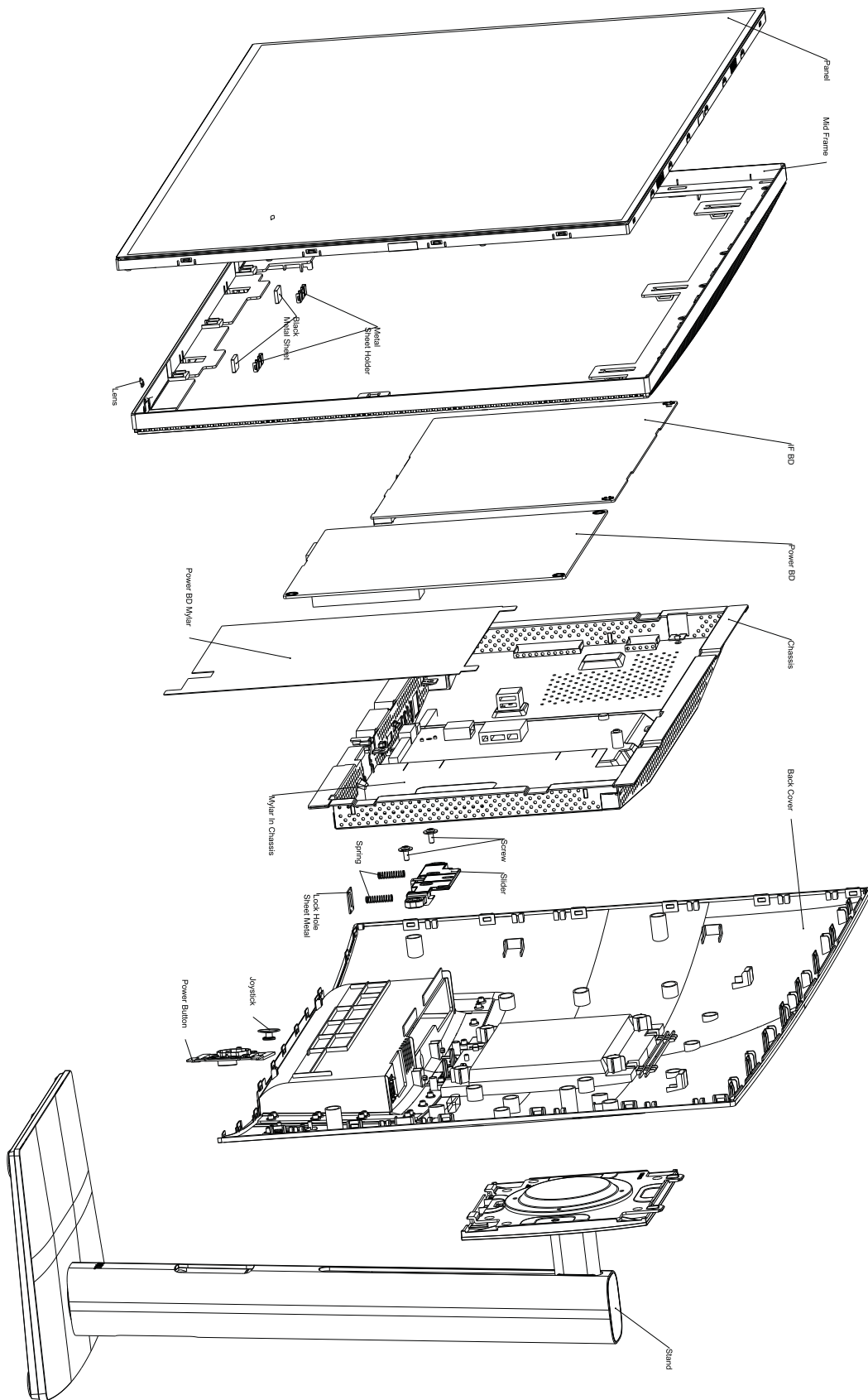
! To prevent the product away from water or expose in extremely high humidity environment.

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

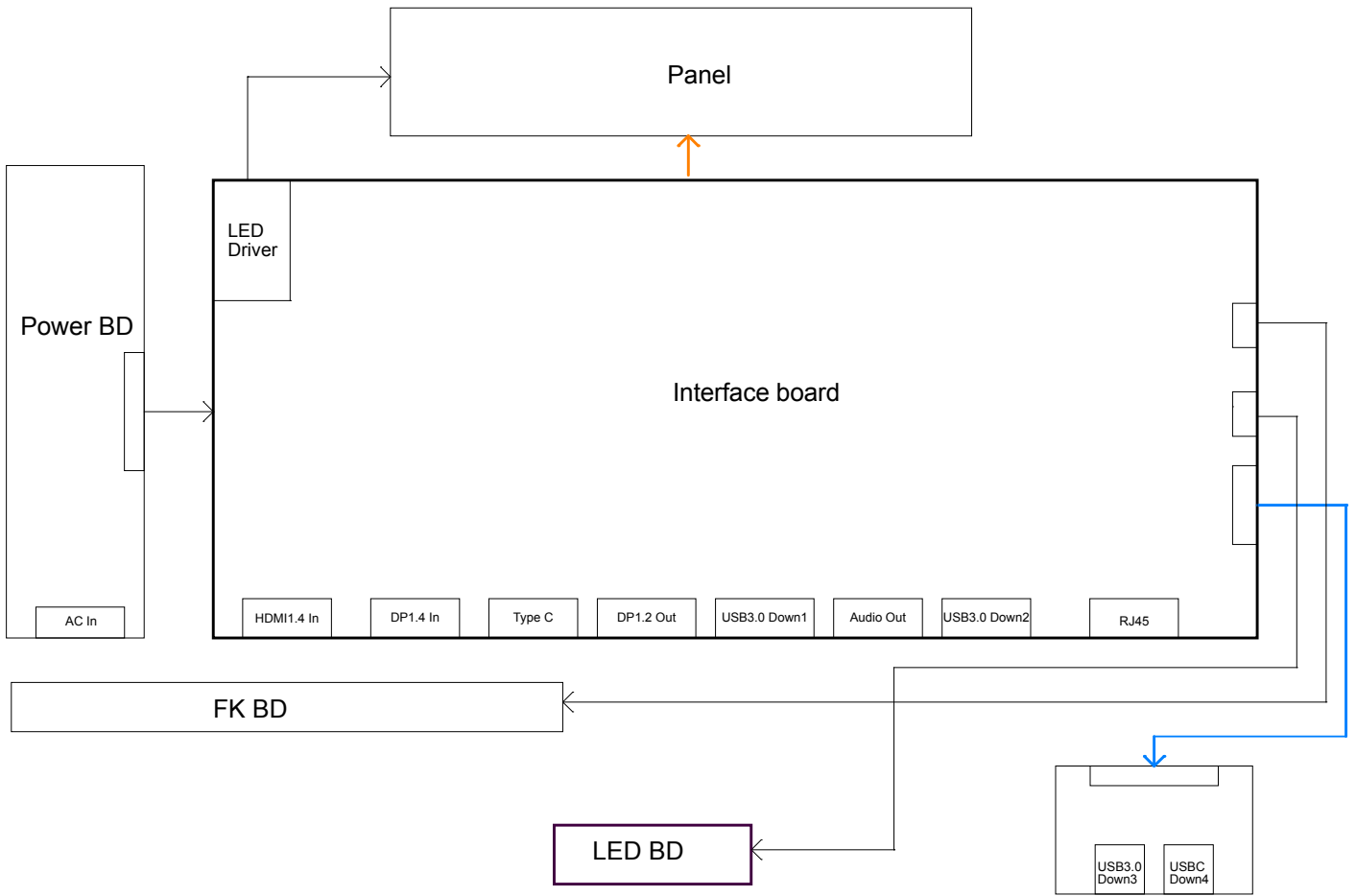
! To ensure following safety repairing behavior, put the replaced part on the components side of PWBA, not solder side.

- ! 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



3. Wiring Connectivity Diagram



4. Disassembly and Assembly Procedures

Necessary repair and test equipment:

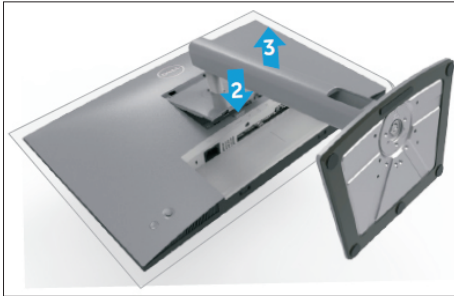
1. Philips-head screwdriver

4.1 Disassembly Procedures:

Remove the monitor stand base:

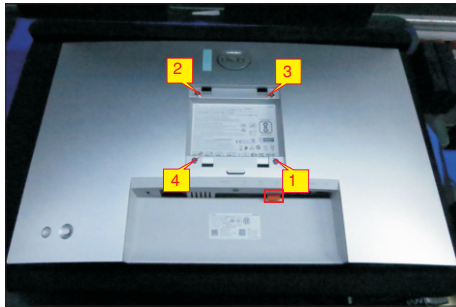
S1

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.



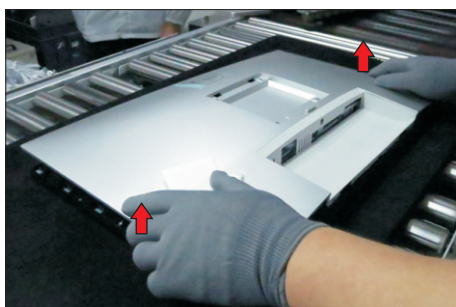
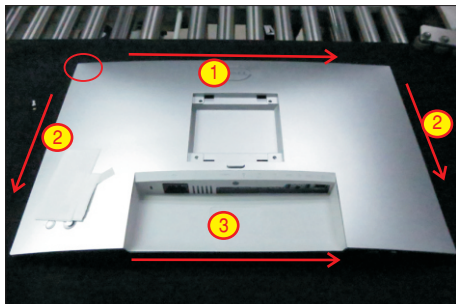
S2

Use a Philips-head screwdriver to remove 4pcs screws for unlocking mechanisms. Remove DP cap. (No.1~4 screw size=M4x11; Torque=1.1±1kgfxcM)



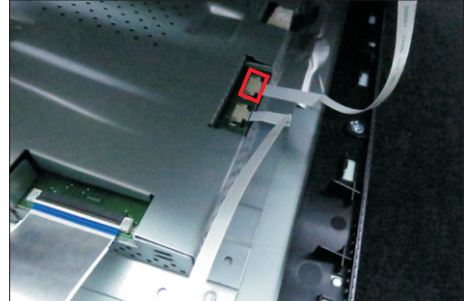
S3

Wedge your fingers between the rear cover and the middle bezel on the corner 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

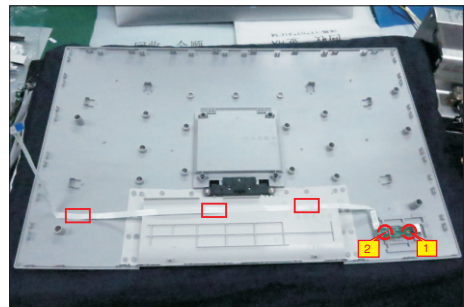
Lift the rear cover up carefully. Disconnect the joystick key cable from the connector of the interface board, and then remove the rear cover and put it aside for later disassembling.



S5

Use a Philips-head screwdriver to remove 2pcs screw for unlocking the key board, then tear off the tapes and release the key board.

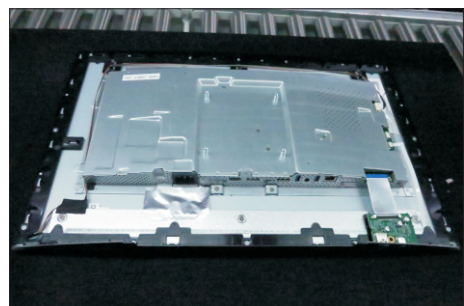
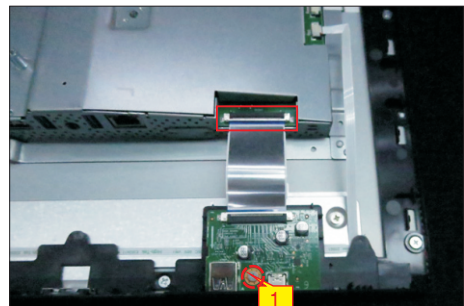
(No.1~2 screw size=M2x2.4, Torque=0.8~1kgfxcM)



S6

Use a Philips-head screwdriver to release 1 screws for unlocking the USB board, then disconnect the USB FFC cable away from the connector of the interface board and remove the USB board unit.

(No.1 screw size=M3x6, Torque=4±0.5kgfxcM)

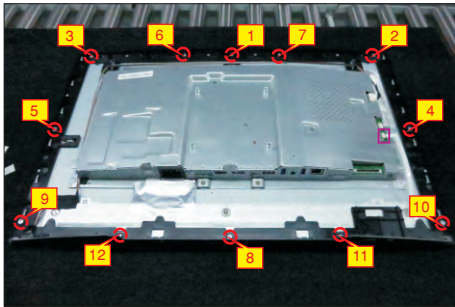


4. Disassembly and Assembly Procedures

S7

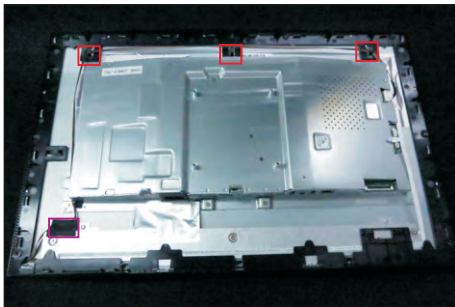
Disconnect the LED cable from the connector of the interface board. Use a Philips-head screwdriver to remove 12pcs screws for unlocking the middle bezel with front bezel.

(No.1~4 screw size=M3x5, Torque=5±0.5kgfxcM)



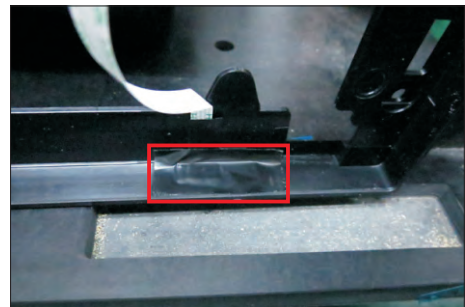
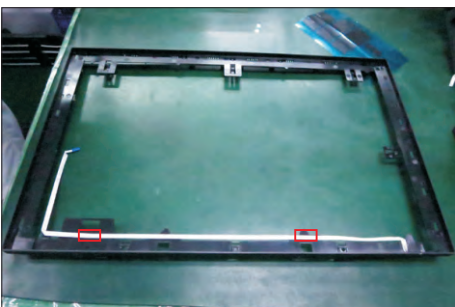
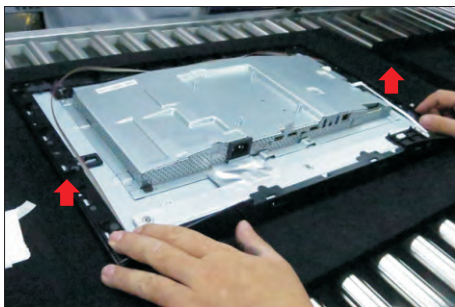
S8

Tear off 1pcs mylar tape for unfixing the panel lamp cable, then release the panel lamp cable from the hooks of the middle bezel.



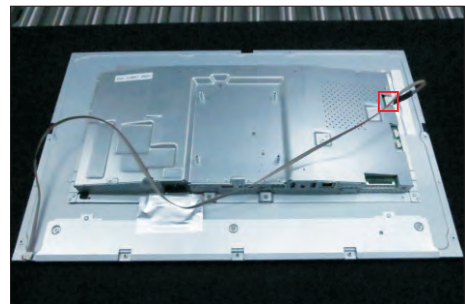
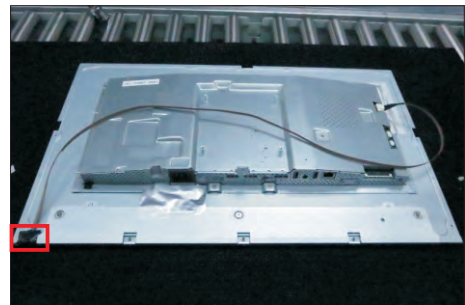
S9

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



S10

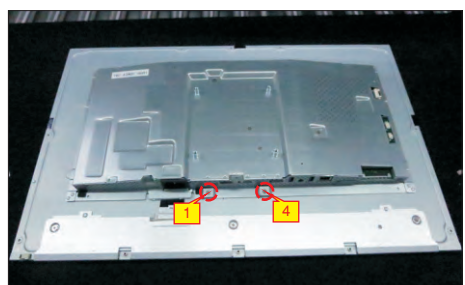
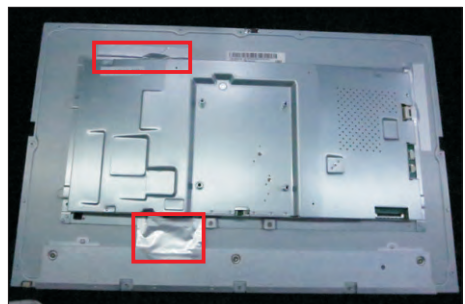
Tear off 1pcs conductive tape for uncovering the panel lamp connector, then disconnect the panel lamp cable from the panel and board.



S11

Tear off 2pcs aluminum foil, and then use a Philips-head screwdriver to remove 2pcs screws for unlocking the bracket with panel module.

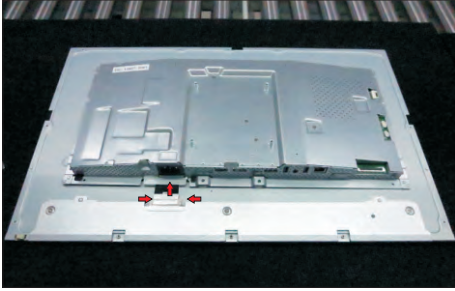
(No.1~2 screw size=M3x4, Torque=5±0.5kgfxcM)



4. Disassembly and Assembly Procedures

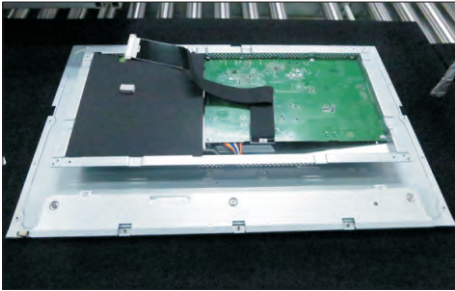
S12

Move up the bracket, then push the earing-lock and disconnect the LVDS cable away from the panel.



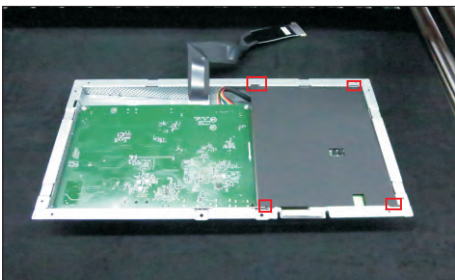
S13

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



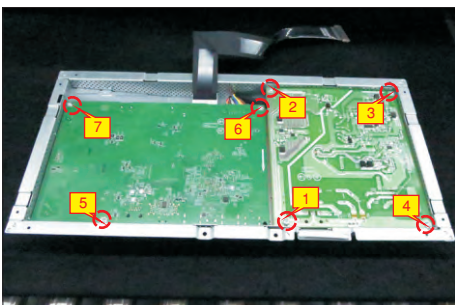
S14

Remove the Mylar tape from the hooks of the bracket.



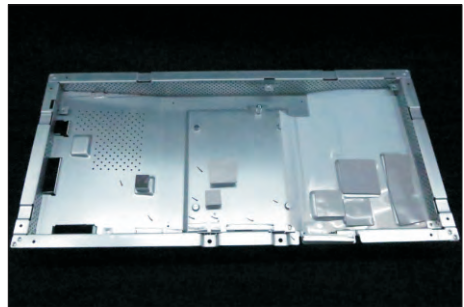
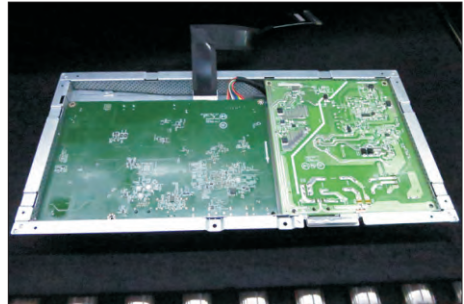
S15

Use a Philips-head screwdriver to remove 7pcs screws for interface board and power board.
(No.1 screw size=M4x8, Torque=7±1kgfxcM;
No.2~7 screw size=M3x7.5, Torque=7±1kgfxcM)



S16

Remove the power board board and interface board from the bracket chassis module carefully, and then disconnect all of the cables.

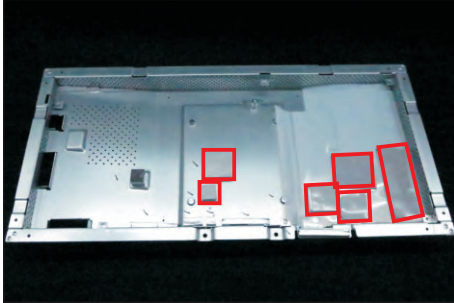


4. Disassembly and Assembly Procedures

4.2 Assembly Procedures:

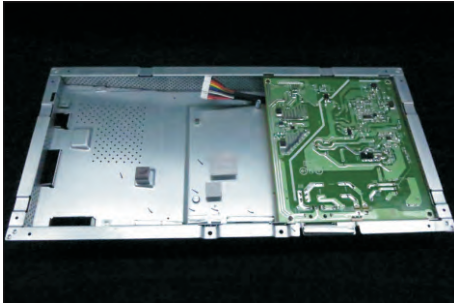
S1

Place a bracket chassis base on a protective cushion, then stick 6pcs Silicon sheets on the positions as the picture below shown.



S2

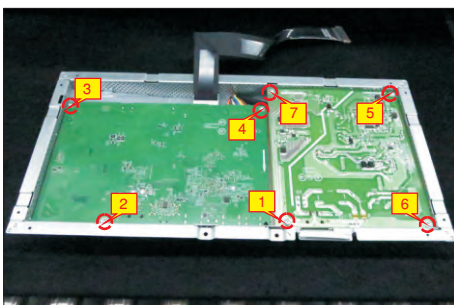
Turn over a power board and put the power board into the bracket chassis, settle the panel power cable to the correct position.



S3

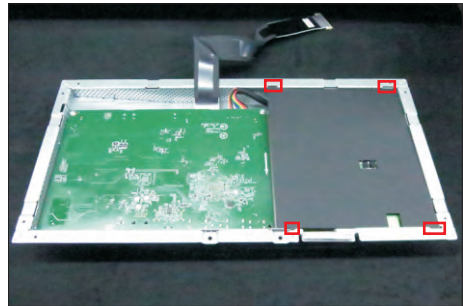
Take a interface board, connect 1pcs LVDS cable to the connector of the interface board, then connect the cable of the power board to the connector of the interface board. Turn over the interface board and locate it into the bracket. Use a Philips-head screwdriver to tighten 6pcs screws for locking the interface board and power board.

(No.1 screw size=M4x8, Torque=7.5±0.5kgfxcm;
No.2~7 screw size=M4x8, Torque=7.5±0.5kgfxcm)



S4

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



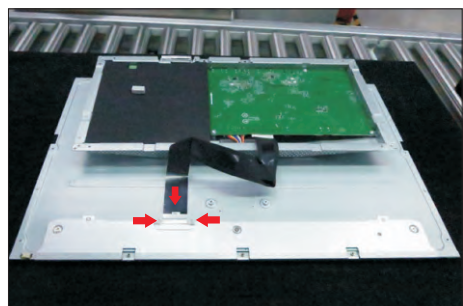
S5

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

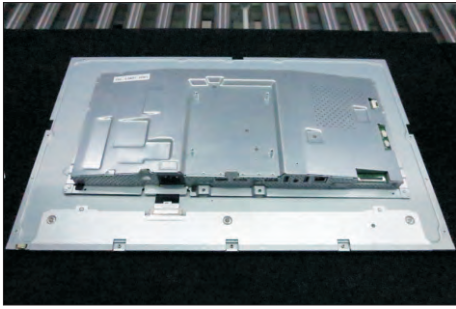


S6

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

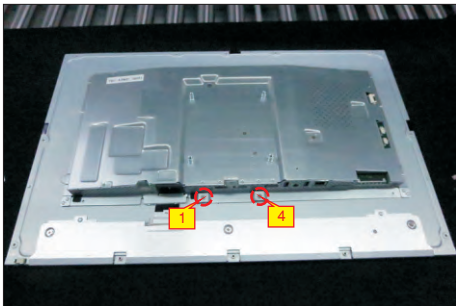


4. Disassembly and Assembly Procedures



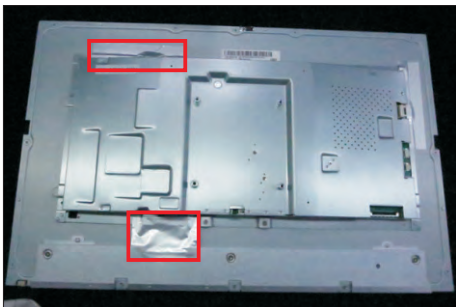
S7

Adjust the bracket chassis module, and then use a Philips-head screwdriver to tighten 2pcs screws for locking the bracket chassis module with the panel.
(No.1~2 Screw size= M3x5, Torque=5±0.5kgfxcm)



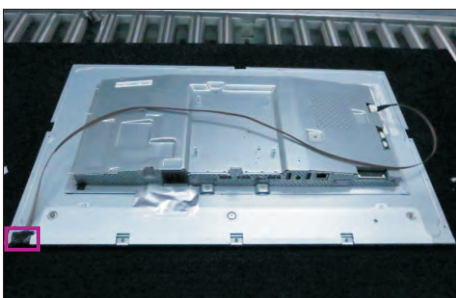
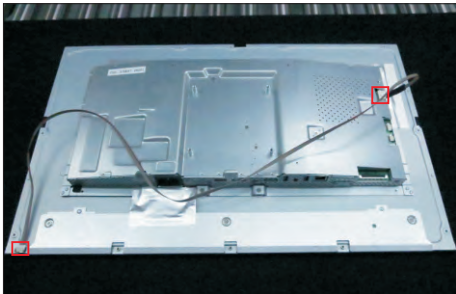
S8

Paste 2pcs aluminum foil on the specific positions for fixing the bracket with the panel.



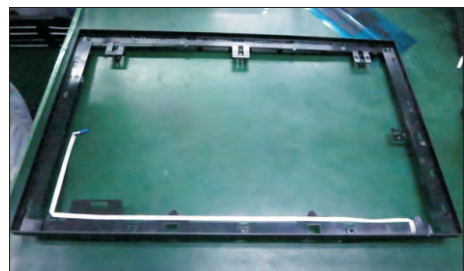
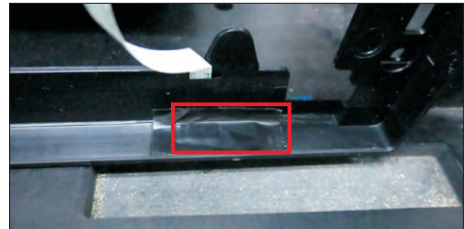
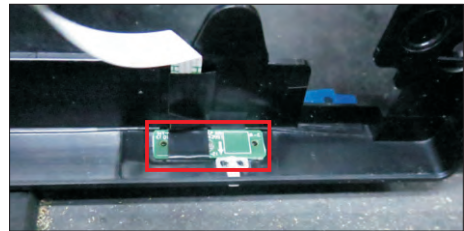
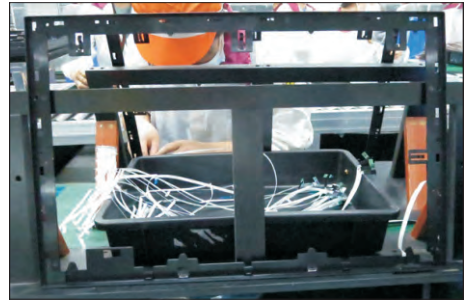
S9

Take 1pcs panel lamp cable to connect the panel with the board, then cover the panel connector with 1pcs acetate tape as the following picture.



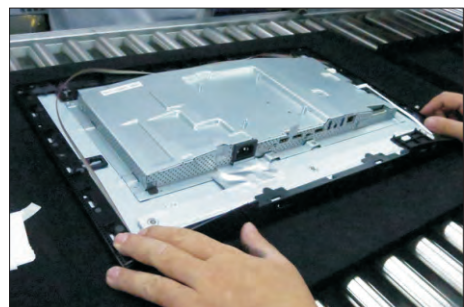
S10

Take 1pcs LED board and 1pcs middle bezel, then put the middle bezel into a fixture jig to fix the middle bezel. Tear off the release paper on the back of the board, and then paste the LED board on the correct position of the middle bezel, then paste 1pcs mylar tape to cover the LED board. Tear off the release paper of the adhesive tape on the back of the cable, then fix the LED cable on the middle bezel with 2pcs tapes.



S11

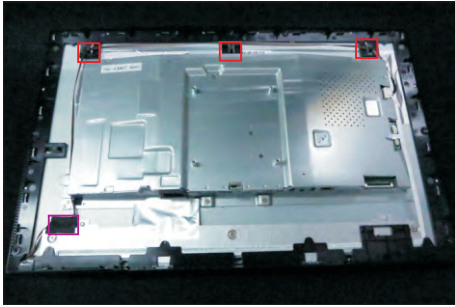
Move the middle bezel with the LED board close to the panel unit, then assemble the middle bezel with the front bezel and panel module.



4. Disassembly and Assembly Procedures

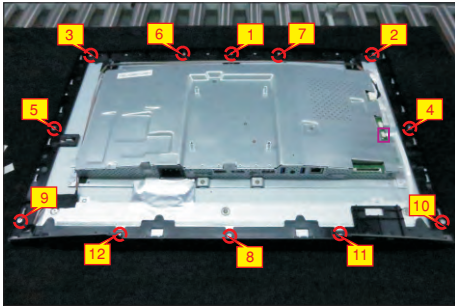
S12

Locate the panel lamp cable into the hooks of the middle bezel, then fix the cable with 1pcs mylar tape on the correct position as the picture below shown.



S13

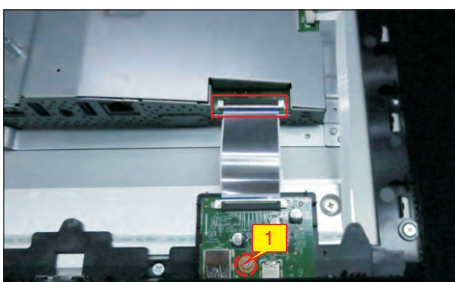
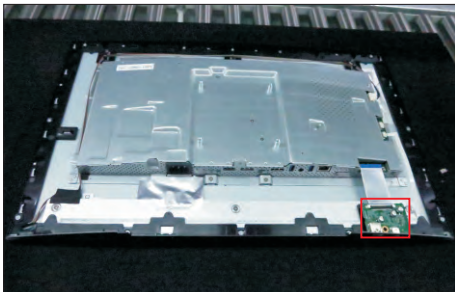
Use a Philips-head screwdriver to tighten 12pcs screws for locking the middle bezel with the panel module, then connect the LED cable to the board.
(No.1~12 screw size=M3x5, Torque=5±0.5kgfxcM)



S14

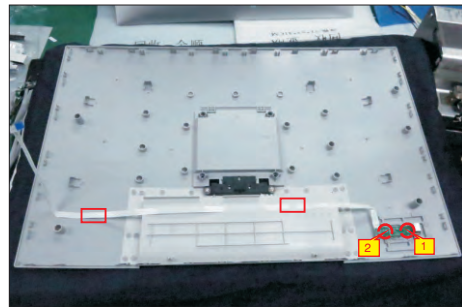
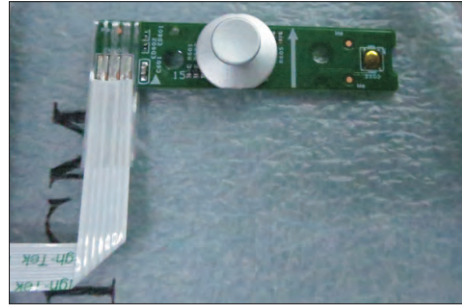
Take 1pcs USB board, 1pcs LVDS cable, 1pcs conductive foam. Connect the LVDS cable to the connector of the USB board, then paste 1pcs conductive foam on the back of the USB board, and then locate the USB board into the correct position of the middle bezel. Use a Philips-head screwdriver to tighten 1pcs screw for locking the USB unit with the middle bezel, then connect the cable with assemble unit.

(No.1 screw size=M3x6, Torque=4±0.5kgfxcM)



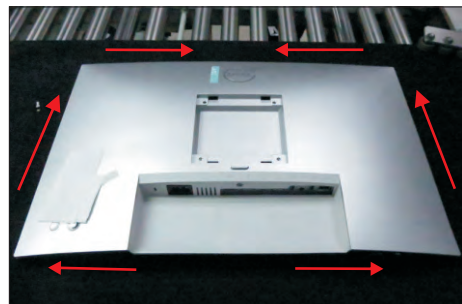
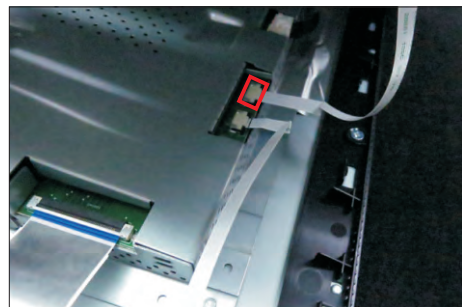
S15

Take 1pcs joystick key and 1pcs OSD board, assemble the joystick key with the OSD board. Locate the 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

Move the assembled rear cover close to the panel unit, then connect the key cable to the connector 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.

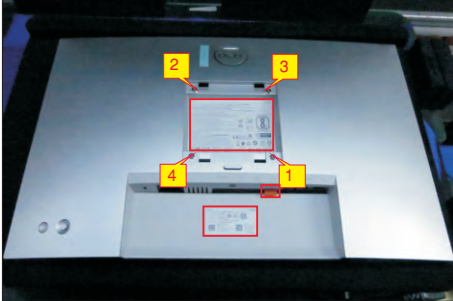


4. Disassembly and Assembly Procedures

S17

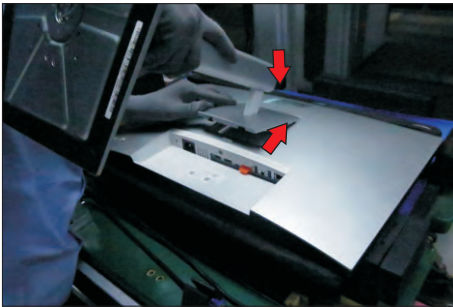
Use a Philips-head screwdriver to tighten 4pcs screws for locking the rear cover with the unit. Stick two pieces of label on the specific positions, then insert a DP out Cap into the DP out connector.

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



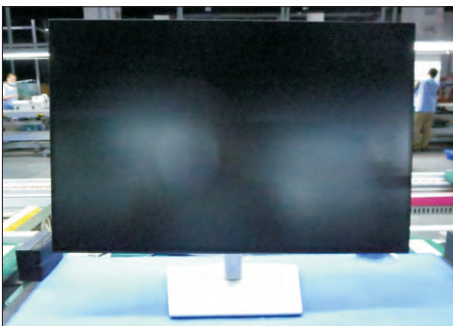
S18

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.



S19

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.



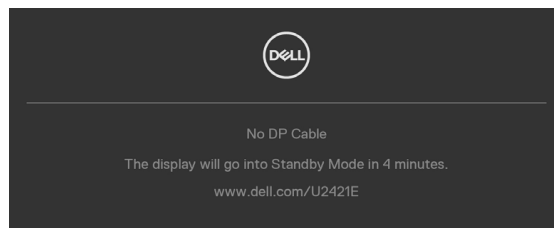
5. Trouble Shooting Instructions

Self-test

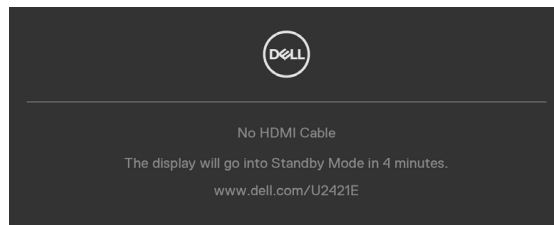
Your monitor provides a self-test feature that allows you to check whether your monitor is functioning properly. If your monitor and computer are properly connected but the monitor screen remains dark, run the monitor self-test by performing the following steps:

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.

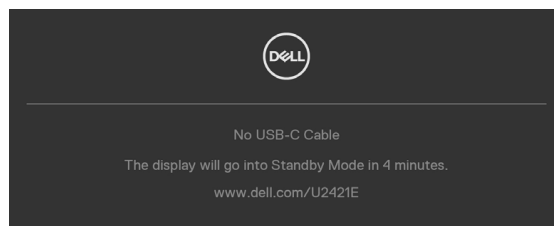
The floating dialog box should appear on-screen (against a black background), if the monitor cannot sense a video signal and is working correctly. While in self-test mode, the power LED remains white. Also, depending upon the selected input, one of the dialogs shown below will continuously scroll through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



or



or



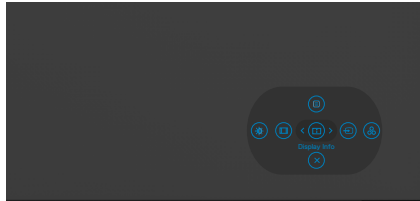
4. This box also appears during normal system operation if the video cable becomes disconnected or damaged.
5. Turn off your monitor and reconnect the video cable; then turn on both your computer and the monitor.

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


5. Trouble Shooting Instructions

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.

5. Trouble Shooting Instructions

Common Problems

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

Common Symptoms	What You Experience	Possible Solutions
No Video/ Power LED off	No picture	<ul style="list-style-type: none">• 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 depressed fully.• Ensure that the correct input source is selected in the Input Source menu.
No Video/ Power LED on	No picture or no brightness	<ul style="list-style-type: none">• Increase brightness and contrast controls via 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	<ul style="list-style-type: none">• Cycle power on-off.• Pixel that is permanently off is a natural defect that can occur in LCD technology.• For more information on Dell Monitor Quality and Pixel Policy, see Dell Support site at: www.dell.com/pixelguidelines.
Stuck-on Pixels	LCD screen has bright spots	<ul style="list-style-type: none">• Cycle power On-Off.• Pixel that is permanently off is a natural defect that can occur in LCD technology.• For more information on Dell Monitor Quality and PixelPolicy, see Dell Support site at: www.dell.com/pixelguidelines.
Brightness Problems	Picture too dim or too bright	<ul style="list-style-type: none">• Reset the monitor to factory settings.• Adjust brightness and contrast controls via OSD.
Safety Related Issues	Visible signs of smoke or sparks	<ul style="list-style-type: none">• Do not perform any troubleshooting steps.• Contact Dell immediately.

5. Trouble Shooting Instructions

Common Symptoms	What You Experience	Possible Solutions
Intermittent Problems	Monitor malfunctions on & off	<ul style="list-style-type: none">• 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	<ul style="list-style-type: none">• 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	<ul style="list-style-type: none">• 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 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	Faint shadow from the static image displayed appears on the screen	<ul style="list-style-type: none">• 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	<ul style="list-style-type: none">• 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	<ul style="list-style-type: none">• Turn off the monitor, unplug the monitor power cable, plug it back, and then turn on the monitor.

5. Trouble Shooting Instructions

Problem	What you experience	Possible solutions
No Input Signal when user controls are pressed	No picture, the LED light is white	<ul style="list-style-type: none">• Check the signal source. Ensure 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	<ul style="list-style-type: none">• 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	<ul style="list-style-type: none">• 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. Go to OSD menu, under Input Source selection, press and hold DP select joystick key for 8 sec to change the monitor setting from DP 1.4 to DP 1.1a.
No image when using USB Type-C connection to computer, laptop, and so on	Black screen	<ul style="list-style-type: none">• Verify if the USB Type-C interface of the device can support DP alternate mode.• Verify if the device required more than 90 W power charging.• USB Type-C interface of device cannot support DP alternate mode.• Set Windows to Projection mode.• Ensure that the USB Type-C cable is not damaged.
No charging when using USB Type-C connection to computer, laptop, and so on	No charging	<ul style="list-style-type: none">• 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 USB Type-C connection.• Ensure that you use only Dell approved adapter or the adapter that comes with the product.• Ensure that the USB Type-C cable is not damaged.

5. Trouble Shooting Instructions

Problem	What you experience	Possible solutions
Intermittent charging when using USB Type-C connection to computer, laptop, and so on	Intermittent charging	<ul style="list-style-type: none">• 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 USB Type-C cable is not damaged.
No image when using DP connection to the PC	Black screen	<ul style="list-style-type: none">• 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. Go to OSD menu, under Input Source selection, press and hold DP select ✓ key for 8 sec to change the monitor setting from DP 1.4 to DP 1.1a.
No image when using USB Type-C MST	Black screen or 2nd DUT is not Prime mode	<ul style="list-style-type: none">• USB Type-C input, Go to OSD menu, under Display Info check the Link Rate is HBR2 or HBR3, if Link Rate is HBR2, suggest to use USB Type-C to DP cable to turn on MST.
No network connection	Network dropped or Intermittent	<ul style="list-style-type: none">• Do not toggle Off/On the power button when network is connected, keeps the power button On.
The LAN port is not functioning	OS setting or cable connection issue	<ul style="list-style-type: none">• Ensure that the latest BIOS and drivers for your computer are installed on your computer.• Ensure that the RealTek Gigabit 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 Type-C cable and power cord of the monitor. Then, power on the computer, plug in the monitor power cord and Type-C cable.

5. Trouble Shooting Instructions

Universal Serial Bus (USB) specific problems

Specific Symptoms	What You Experience	Possible Solutions
USB interface is not working	USB peripherals are not working	<ul style="list-style-type: none">· 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 Gen 1 interface is slow.	SuperSpeed USB 3.2 Gen 1 peripherals working slowly or not working at all	<ul style="list-style-type: none">· 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	<ul style="list-style-type: none">· 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.
USB is not working	No USB functionalities	Refer to input source and USB pairing table.