

Service
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Simplified

Service Manual

Important Safety Notice

Proper service and repair is important to the safe, reliable operation of all DELL Company Equipment. The service procedures recommended by DELL and described in this service manual are effective methods of performing service operations. Some of these service operations require the use of tools specially designed for the purpose. The special tools should be used when and as recommended.

It is important to note that this manual contains various CAUTIONS and NOTICES which should be carefully read in order to minimize the risk of personal injury to service personnel. The possibility exists that improper service methods may damage the equipment. It is also important to understand that these CAUTIONS and NOTICES ARE NOT EXHAUSTIVE. DELL could not possibly know, evaluate and advise the service trade of all conceivable ways in which service might be done or of the possible hazardous consequences of each way. Consequently, DELL has not undertaken any such broad evaluation. Accordingly, a servicer who uses a service procedure or tool which is not recommended by DELL must first satisfy himself thoroughly that neither his safety nor the safe operation of the equipment will be jeopardized by the service method selected.

Hereafter throughout this manual, DELL Company will be referred to as DELL.

WARNING

Use of substitute replacement parts, which do not have the same, specified safety characteristics may create shock, fire, or other hazards.

Under no circumstances should the original design be modified or altered without written permission from DELL. DELL assumes no liability, express or implied, arising out of any unauthorized modification of design.

Servicer assumes all liability.

FOR PRODUCTS CONTAINING LASER:

DANGER-Invisible laser radiation when open. AVOID DIRECT EXPOSURE TO BEAM.

CAUTION-Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

CAUTION -The use of optical instruments with this product will increase eye hazard.

TO ENSURE THE CONTINUED RELIABILITY OF THIS PRODUCT, USE ONLY ORIGINAL MANUFACTURER'S REPLACEMENT PARTS, WHICH ARE LISTED WITH THEIR PART NUMBERS IN THE PARTS LIST SECTION OF THIS SERVICE MANUAL.

Take care during handling the LCD module with backlight unit

-Must mount the module using mounting holes arranged in four corners.

-Do not press on the panel, edge of the frame strongly or electric shock as this will result in damage to the screen.

-Do not scratch or press on the panel with any sharp objects, such as pencil or pen as this may result in damage to the panel.

-Protect the module from the ESD as it may damage the electronic circuit (C-MOS).

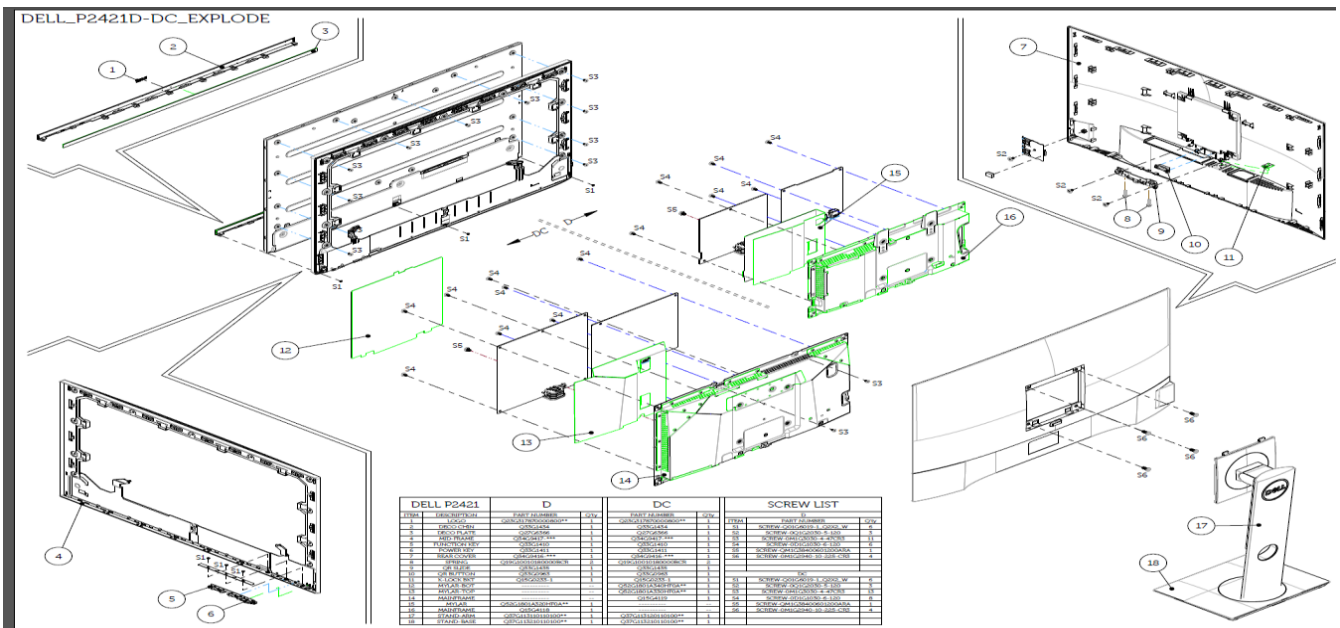
-Make certain that treatment person's body is grounded through wristband.

-Do not leave the module in high temperature and in areas of high humidity for a long time.

-Avoid contact with water as it may a short circuit within the module.

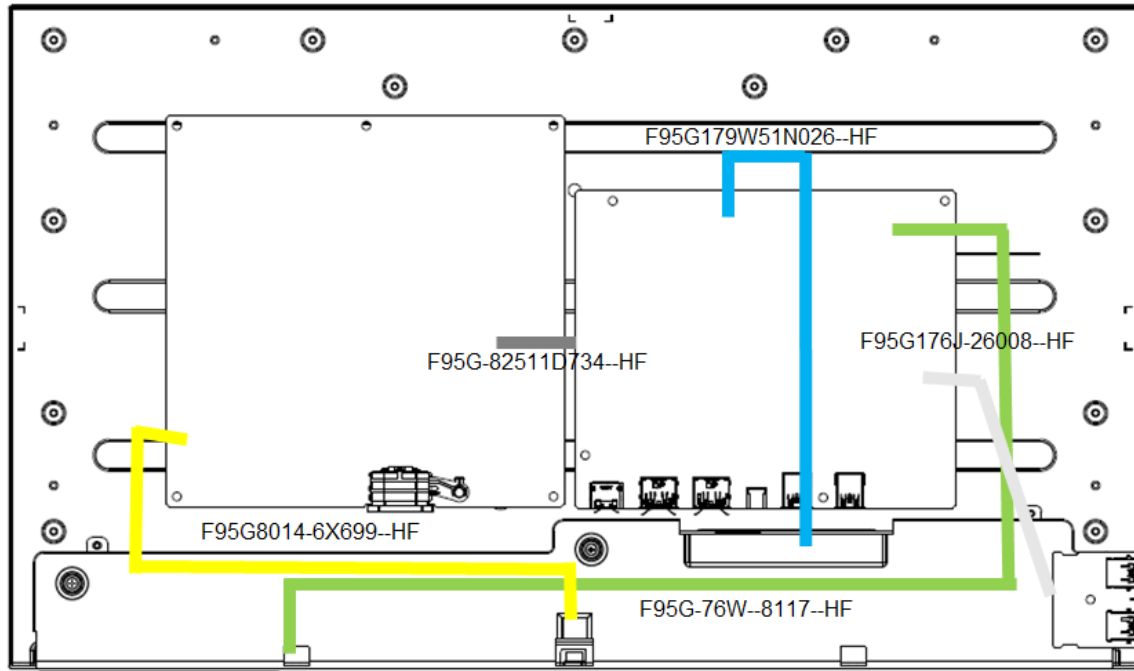
-If the surface of panel becomes dirty, please wipe it off with a soft material. (Cleaning with a dirty or rough cloth may damage the panel.)

1. Exploded view diagram with list of items



DELL P2421		D		DC		SCREW LIST		
ITEM	DESCRIPTION	PART NUMBER	Q'ty	PART NUMBER	Q'ty	ITEM	PART NUMBER	Q'ty
1	LOGO	Q23G317870000800**	1	Q23G317870000800**	1	S1	SCREW-Q01G6019-1_Q2X2_W	6
2	DECO CHIN	Q33G1434	1	Q33G1434	1	S2	SCREW-OQ1G2030-5-120	3
3	DECO PLATE	Q27G6366	1	Q27G6366	1	S3	SCREW-OM1G3030-4-47CR3	11
4	MID-FRAME	Q34G9417-***	1	Q34G9417-***	1	S4	SCREW-OD1G1030-6-120	6
5	FUNCTION KEY	Q33G1410	1	Q33G1410	1	S5	SCREW-QM1G38400601200ARA	1
6	POWER KEY	Q33G1411	1	Q33G1411	1	S6	SCREW-OM1G2940-10-225-CR3	4
7	REAR COVER	Q34G9416-***	1	Q34G9416-***	1			
8	SPRING	Q19G10010180000BCR	2	Q19G10010180000BCR	2			
9	QR SLIDE	Q33G1435	1	Q33G1435	1			
10	QR BUTTON	Q33G0963	1	Q33G0963	1			
11	K-LOCK BKT	Q15G0233-1	1	Q15G0233-1	1			
12	MYLAR-BOT	-----	---	Q52G1801A340HF0A**	1	S1	SCREW-Q01G6019-1_Q2X2_W	6
13	MYLAR-TOP	-----	---	Q52G1801A330HF0A**	1	S2	SCREW-OQ1G2030-5-120	3
14	MAINFRAME	-----	---	Q15G411	1	S3	SCREW-OM1G3030-4-47CR3	13
15	MYLAR	Q52G1801A320HF0A**	1	-----	---	S4	SCREW-OD1G1030-6-120	6
16	MAINFRAME	Q15G4118	1	-----	---	S5	SCREW-QM1G38400601200ARA	1
17	STAND-ARM	Q37G113110110100**	1	Q37G113110110100**	1	S6	SCREW-OM1G2940-10-225-CR3	4
18	STAND-BASE	Q37G113210110100**	1	Q37G113210110100**	1			

2. Wiring connectivity diagram



3. Tools Required

1.3 Tools 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:

- i. Screwdriver (Phillip head) #1
- ii. Screwdriver (Phillip head) #2
- iii. Penknife

3.1 Disassembly Procedures

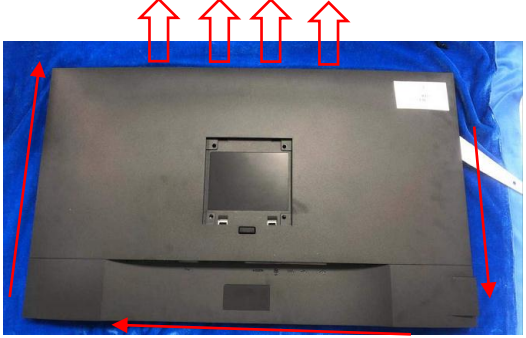
1.1 Disassembly Procedures

S1 Turn off power

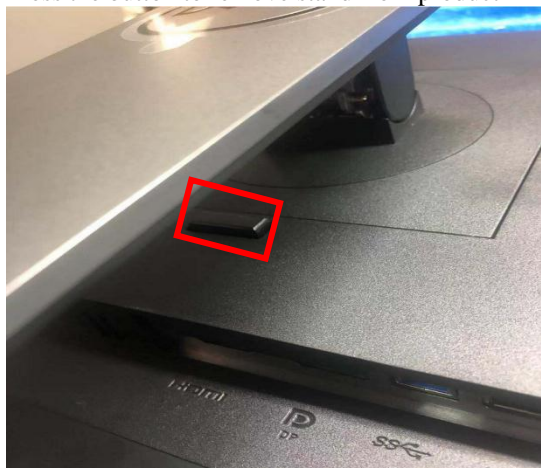
S2 Unplug external cables from product



S5 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 Scraper to separate the rear cover in the below 3 direction of the arrow.

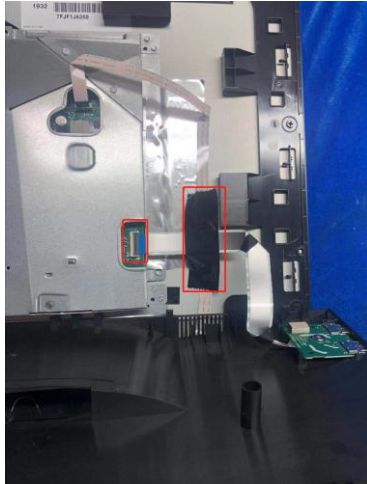


S3 Press the button to remove stand from product



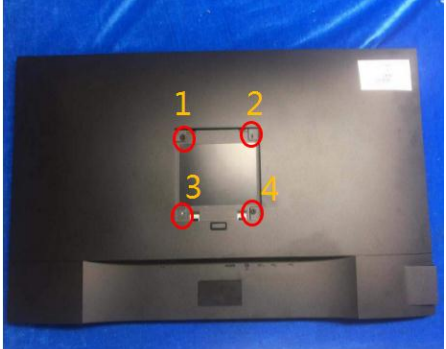
S6 Tear off the tape and cable to separate the rear cover.

(No.1~2 Screw size=M3x4, Torque: 3±0.5kgf.cm)



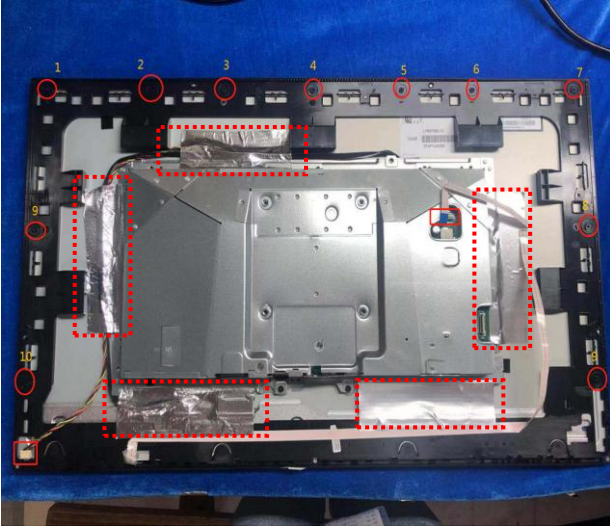
S4 Use a Philips-head screwdriver to remove four screws for unlocking mechanisms.

(No.1~4 screw size=M4x10; Torque: 12±2kgf.cm)



S7

Tear out all the cable to remove the rear cover and put it on a protective cushion. Use a Philips-head screwdriver to remove 10 screws for unlocking the middle plastic bezel with the whole unit, and then remove the middle plastic bezel carefully.
(No.1~20 screw size=M3x4, Torque=3±0.5kgfxcm)



Remove the mylar by hand and Use a Philips-head screwdriver to remove 9 screws for unlocking the main board and the adapter board

S8

(No.1~9 screw size=D3x6, Torque: 6±1kgf.cm)



S9

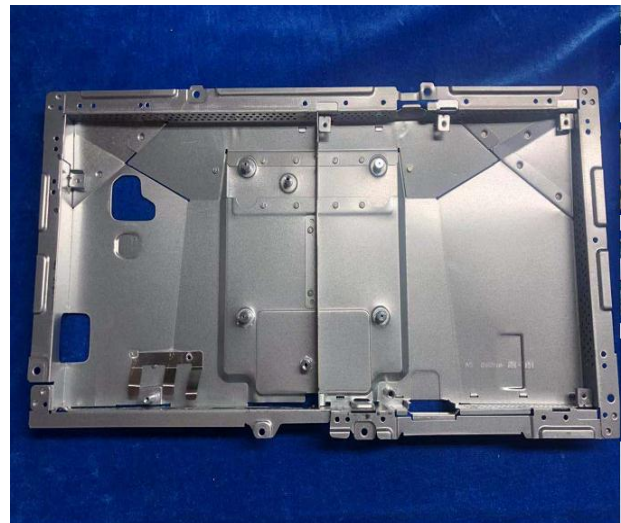
Disconnect all of the cables to separate the power board and main board.



The main board



The Mainframe



Use a Philips-head screwdriver to remove 3 screws for unlocking the bezel and the middle frame.

S10

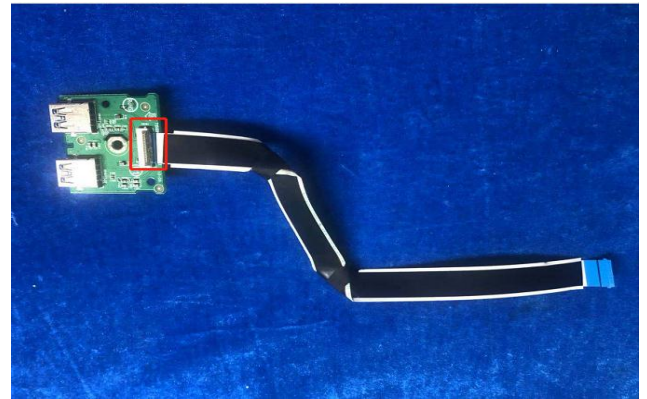
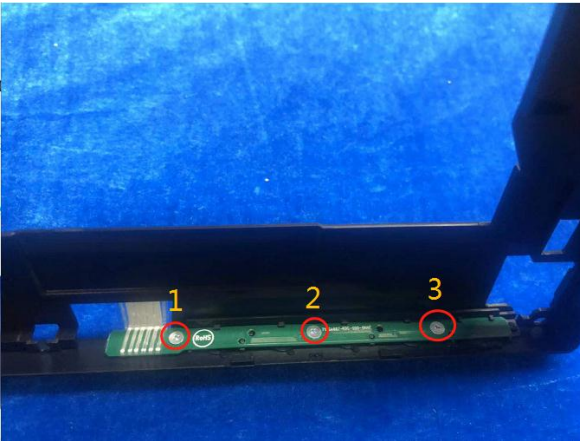
(No.1~3 screw size=M2X2.5, Torque: 6 ± 1 kgf.cm)



Use a Philips-head screwdriver to remove 3 screws for unlocking the key board and the middle frame.

S12

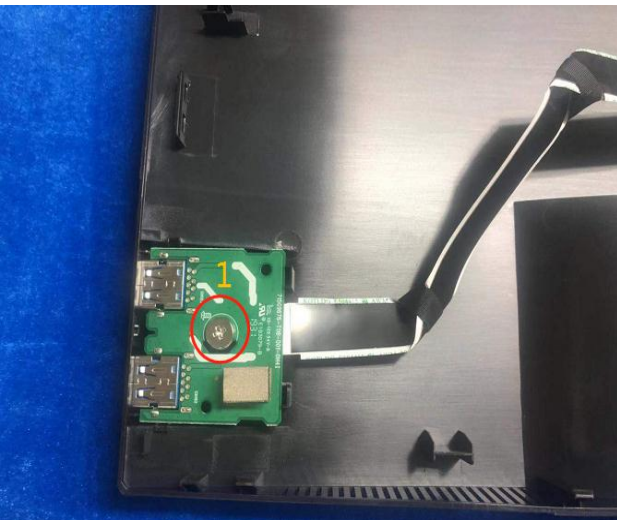
(No.1~3 screw size=M2X2.5, Torque: 6 ± 1 kgf.cm)



Use a Philips-head screwdriver to remove 1 screw to remove the USB board. Disconnect the cables of the USB board

S13

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



The USB Board



3.2 Assembly Procedures

S1

Use a Philips-head screwdriver to lock 1 screw to assemble the USB board. Connect the cables of the USB board

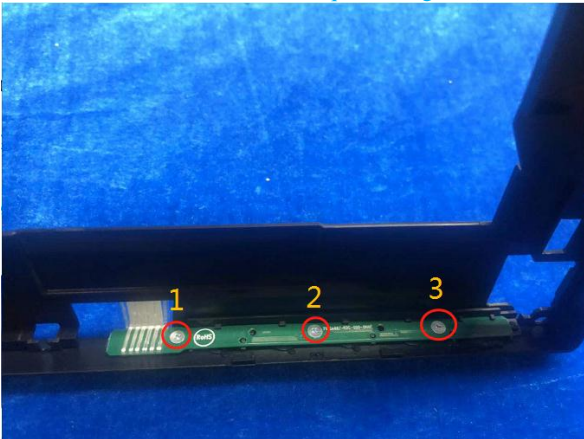
(No.1 screw size=M3x6, Torque=4±1kgf.cm)



S2

Use a Philips-head screwdriver to lock 3 screws for locking the key board and the middle frame.

(No.1~3 screw size=M2X2.5, Torque: 6±1kgf.cm)



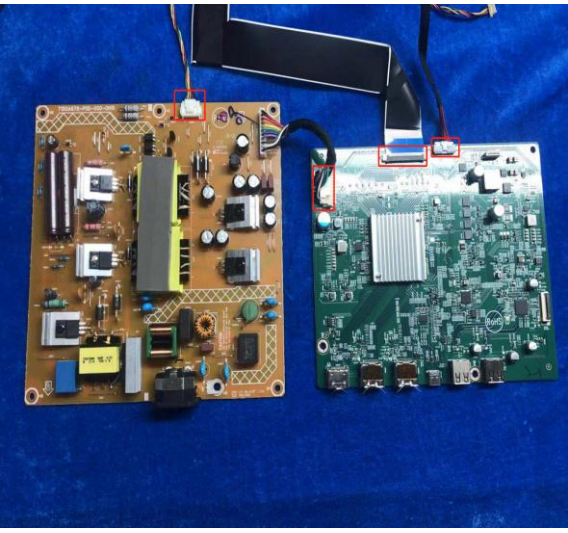
S3

Use a Philips-head screwdriver to lock 3 screws for locking the bezel and the middle frame.

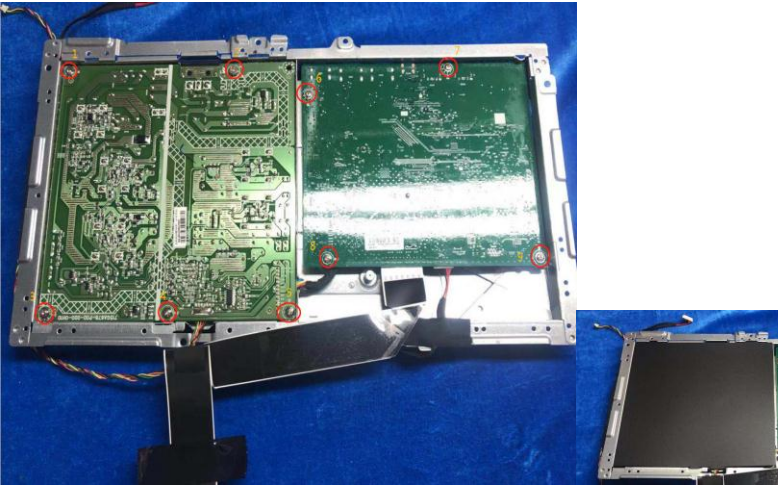
(No.1~3 screw size=M2X2.5, Torque: 6±1kgf.cm)



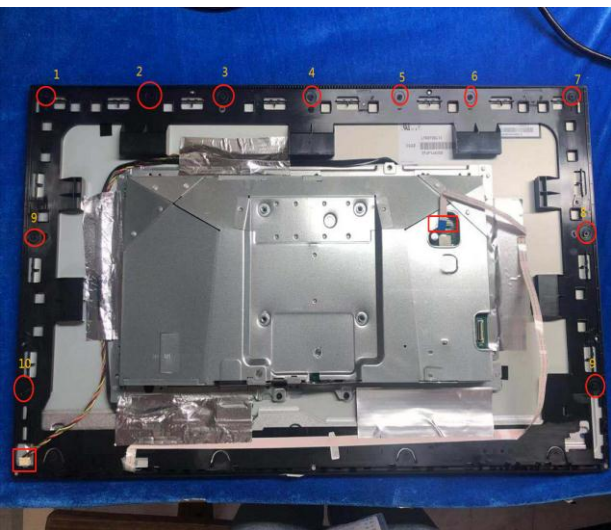
S4 Connect all of the cables between the power board and main board.



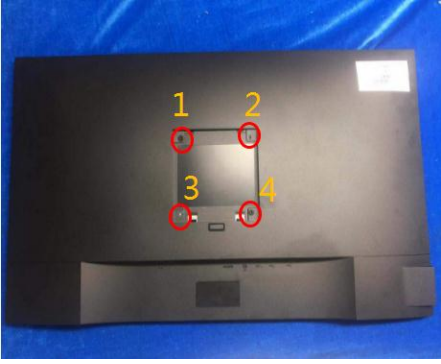
S5 stick the mylar by hand and Use a Philips-head screwdriver to lock 9 screws for locking the main board and the adapter board



S6 Connect all the cable on the rear cover and put it on a protective cushion. Use a Philips-head screwdriver to lock 10 screws for locking the middle plastic bezel with the whole unit,. (No.1~20 screw size=M3x4, Torque=3±0.5kgfxcm)

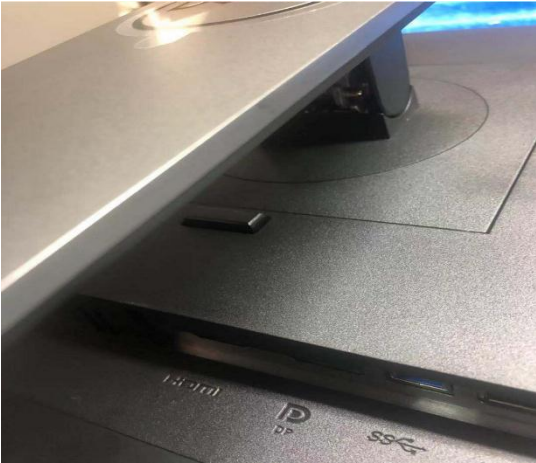


S7 Assemble the rear cover. Use a Philips-head screwdriver to lock four screws on the rear cover



S8

Assemble the stand .



4. Trouble shooting instructions

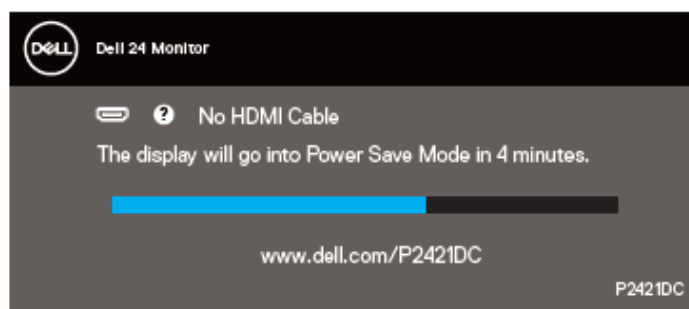
⚠ WARNING: Before you begin any of the procedures in this section, follow the [Safety Instructions](#).

Self-Test

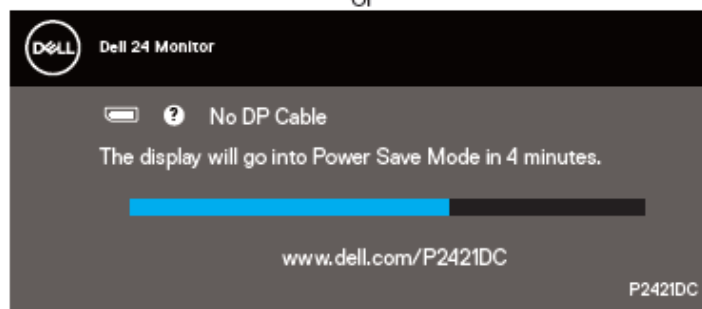
Your monitor provides a self-test feature that allows you to check if your monitor is functioning properly. If your monitor and computer are properly connected but the monitor screen remains dark, run the monitor self-test by performing the following steps:

1. Turn off both your computer and the monitor.
2. Disconnect all video cables from the monitor. This way, the computer doesn't have to be involved.
3. Turn on the monitor.

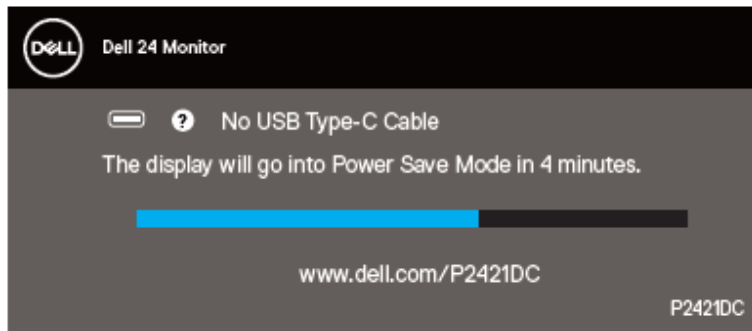
If the monitor is working correctly, it detects that there is no signal and one of the following message appears. While in self-test mode, the power LED remains white.




or



or



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

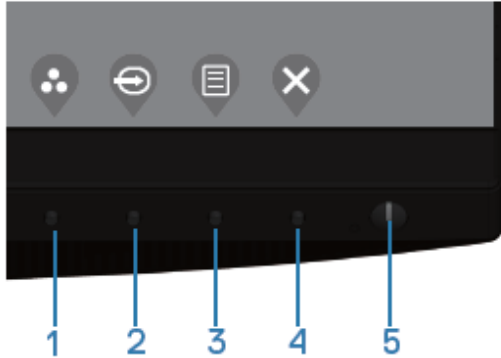
4. Turn Off your monitor and reconnect the video cable; then turn on your computer and the monitor.

If your monitor remains dark after you reconnect the cables, check your video controller and computer.

Built-in diagnostics

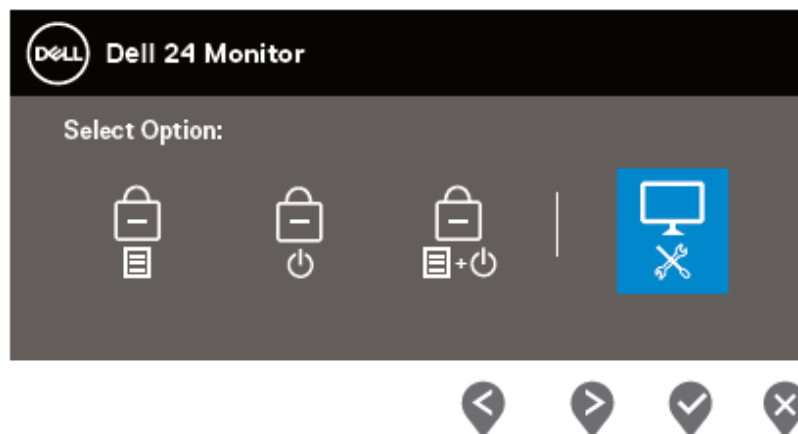
Your monitor has a built-in diagnostic tool that helps you determine if any screen abnormality you experience is an inherent problem with your monitor, or with your computer and video card.

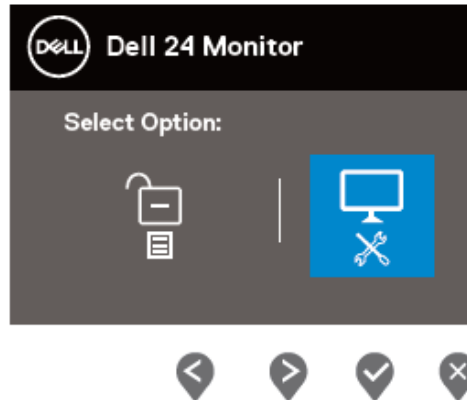
NOTE: You can run the built-in diagnostics only when the video cable is unplugged and the monitor is in self-test mode.




To run the built-in diagnostics:

1. Ensure that the screen is clean (no dust particles on the surface of the screen).
2. Unplug the video cable (s) from the back of the computer or monitor. The monitor then goes into the self-test mode.
3. Press and hold the Exit key (button 4) for 4 seconds to enter the OSD lock/unlock menu.





4. Select the  icon to enable the built-in diagnostics.
5. Carefully inspect the screen for abnormalities.
6. Press the Up key (button 1) on the back cover again. The color of the screen changes to grey.
7. Inspect the display for any abnormalities.
8. Repeat step 6 and 7 to inspect the display in red, green, blue, black, white and text pattern screens.

The test is complete when the text pattern screen appears. To exit, press the Up key (button 1) 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.

