Simplified Service Manual–UP3221QB

Version: 01

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1. General Safety Instructions

Use the following safety guidelines to help ensure your own personal safety and to help protect your equipment and working environment from potential damage.
NOTE: In this section, equipment refers to monitors.

IMPORTANT NOTICE FOR USE IN HEALTHCARE ENVIRONMENTS:
Dell products are not medical devices and are not listed under UL or IEC 60601 (or equivalent). As a result, they must not be used within 6 feet of a patient or in a manner that directly or indirectly contacts a patient

1.1 SAFETY: General Safety

WARNING: To prevent the spread of fire, keep candles or other open flames away from this product at all times.

When setting up the equipment for use:

- Place the equipment on a hard, level surface. Leave 10.2 cm (4 in) minimum of clearance on all vented sides of the computer to permit the airflow required for proper ventilation.
- Restricting airflow can damage the computer or cause a fire.
- Do not stack equipment or place equipment so close together that it is subject to recalculated or preheated air.
- NOTE: Review the weight limits referenced in your computer documentation before placing a monitor or other devices on top of your computer.
- Ensure that nothing rests on your equipment's cables and that the cables are not located where they can be stepped on or tripped over.
- Ensure that all cables are connected to the appropriate connectors. Some connectors have a similar appearance and may be easily confused (for example, do not plug a telephone cable into the network connector).
- Do not place your equipment in a closed-in wall unit or on a bed, sofa, or rug.
- Keep your device away from radiators and heat sources.
- Keep your equipment away from extremely hot or cold temperatures to ensure that it is used within the specified operating range.
- Do not push any objects into the air vents or openings of your equipment. Doing so can cause fire or electric shock by shorting out interior components.
- Avoid placing loose papers underneath your device. Do not place your device in a closed-in wall unit, or on a soft, fabric surface such as a bed, sofa, carpet, or a rug.

When operating your equipment:

- Do not use your equipment in a wet environment, for example, near a bath tub, sink, or swimming pool or in a wet basement.
- Do not use AC powered equipment during an electrical storm. Battery powered devices may be used if all cables have been disconnected.
- Do not spill food or liquids on your equipment.
- Before you clean your equipment, disconnect it from the electrical outlet. Clean your device with a soft cloth dampened with water. Do not use liquids or aerosol cleaners, which may contain flammable substances.
- Clean the monitor display with a soft, clean cloth and water. Apply the water to the cloth, then stroke the cloth across the display in one direction, moving from the top of the display to the bottom. Remove moisture from the display quickly and keep the display dry.
- Long-term exposure to moisture can damage the display. Do not use a commercial window cleaner to clean your display.
- If your equipment does not operate normally - in particular, if there are any unusual sounds or smells coming from it - unplug it immediately and contact an authorized dealer or service center.

Protecting Against Electrostatic Discharge

Electrostatic discharge (ESD) events can harm electronic components inside your equipment. Under certain conditions, ESD may build up on your body or an object, such as a peripheral, and then discharge into another object, such as your computer. To prevent ESD damage, you should discharge static electricity from your body before you interact with any of your equipment's internal electronic components, such as a memory module. You can protect against ESD by touching a metal grounded object (such as an unpainted metal surface on your computer's I/O panel) before you interact with anything electronic. When connecting a peripheral (including handheld digital assistants) to your equipment, you should always ground both yourself and the peripheral before connecting it. In addition, as you work inside the equipment, periodically discharge any static charge your body may have accumulated.

You can also take the following steps to prevent damage from electrostatic discharge:

- When unpacking a static-sensitive component from its shipping carton, do not remove the component from the antistatic packing material until you are ready to install the component. Just before un wrapping the antistatic package, be sure to discharge static electricity from your body.
- When transporting a sensitive component, first place it in an antistatic container or packaging.
- Handle all electrostatic sensitive components in a static-safe area. If possible, use antistatic floor pads and work bench pads.

1.2 SAFETY: General Power Safety

Observe the following guidelines when connecting your equipment to a power source:

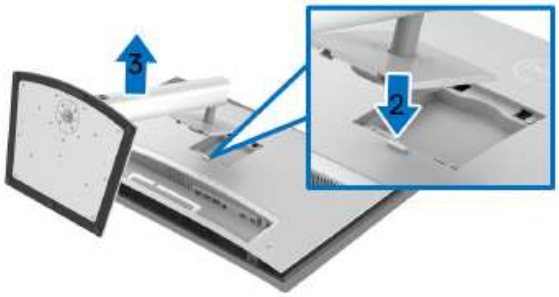
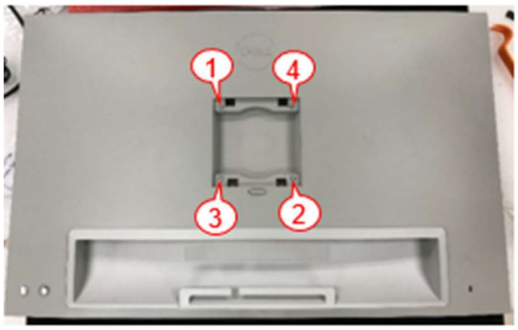
- Check the voltage rating before you connect the equipment to an electrical outlet to ensure that the required voltage and frequency match the available power source.
- Do not plug the equipment power cables into an electrical outlet if the power cable is damaged
- Norway and Sweden: If this product is provided with a 3-prong power cable, connect the power cable to a grounded electrical outlet only.
- If you use an extension power cable, ensure that the total ampere rating of the products plugged in to the extension power cable does not exceed the ampere rating of the extension cable.
- If you must use an extension cable or power strip, ensure the extension cable or power strip is connected to a wall power outlet and not to another extension cable or power strip. The extension cable or power strip must be designed for grounded plugs and plugged into a grounded wall outlet.
- If you are using a multiple-outlet power strip, use caution when plugging the power cable into the power strip. Some power strips may allow you to insert a plug incorrectly. Incorrect insertion of the power plug could result in permanent damage to your equipment, as well as risk of electric shock and/or fire. Ensure that the ground prong of the power plug is inserted into the mating ground contact of the power strip.
- Be sure to grasp the plug, not the cable, when disconnecting equipment from an electric socket.

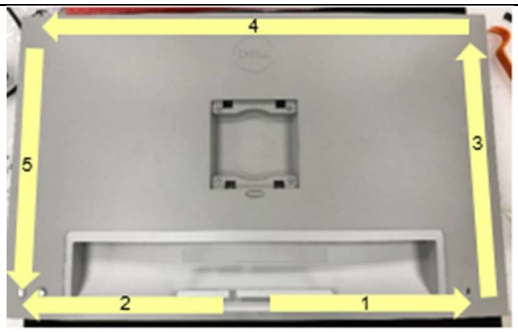
If your equipment uses an AC adapter:

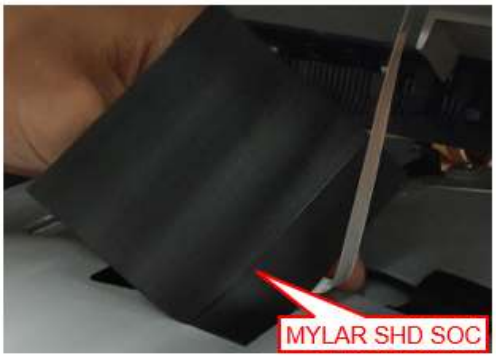
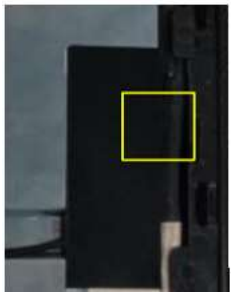
- Use only the Dell provided AC adapter approved for use with this device. Use of another AC adapter may cause a fire or explosion.
- NOTE: Refer to your system rating label for information on the proper adapter model approved for use with your device.
- Place the AC adapter in a ventilated area, such as a desk top or on the floor, when you use it to run the computer or to charge the battery. Do not cover the AC adapter with papers or other items that will reduce cooling; also, do not use the AC adapter inside a carrying case.
- The AC adapter may become hot during normal operation of your computer. Use care when handling the adapter during or immediately after operation.
- It is recommended that you lay the adapter on the floor or desk so that the green light is visible. This will alert you if the adapter should accidentally go off due to external effects. If for any reason the green light goes off, disconnect the AC power cord from the wall for a period of ten seconds, and then reconnect the power cord.
- Japan Only: Use only the Dell-provided AC power cable with the AC adapter. Use of any other power cable may damage the device or AC adapter or may present risk of fire or electric shock.

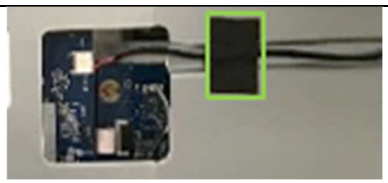
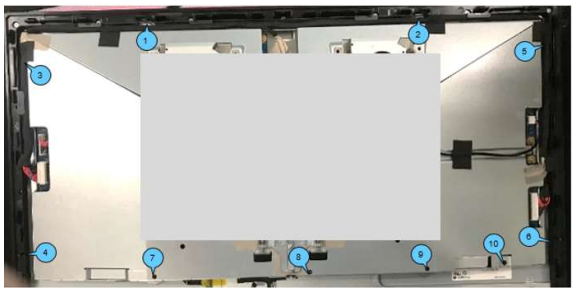
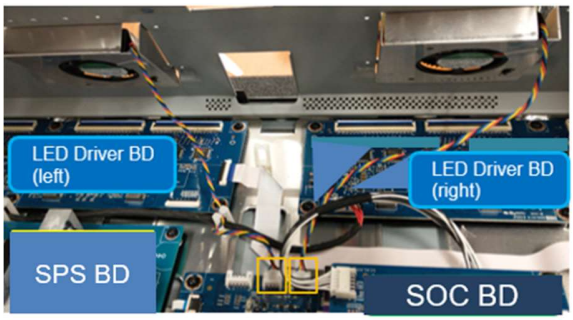
2. Disassembly SOP

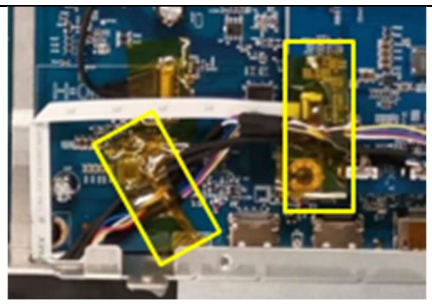
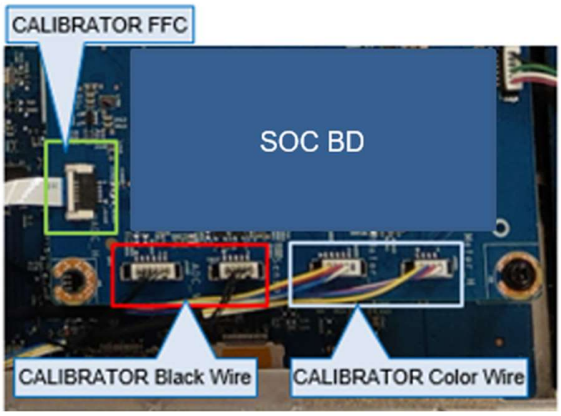
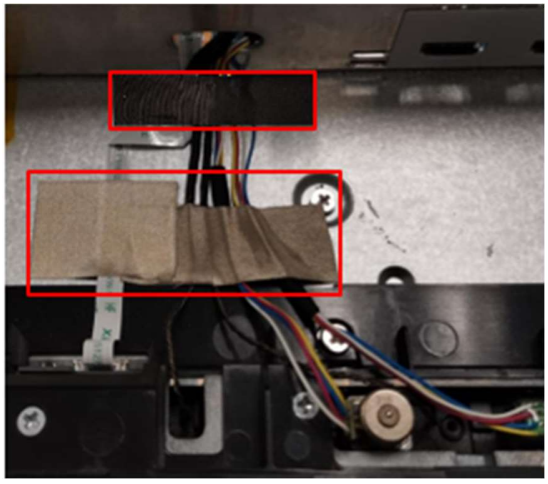
Preparation before disassemble
1. Clean the room for disassemble
2. Identify the area for monitor
3. Check the position that the monitors be placed and the quantity of the monitor; prepare the area for material flow; according to the actual condition plan the disassemble layout
4. Prepare the implement, equipment, material as bellow:
   1) Working table
   2) Screw-driver
   3) Glove
   4) Cleaning cloth
   5) ESD protection

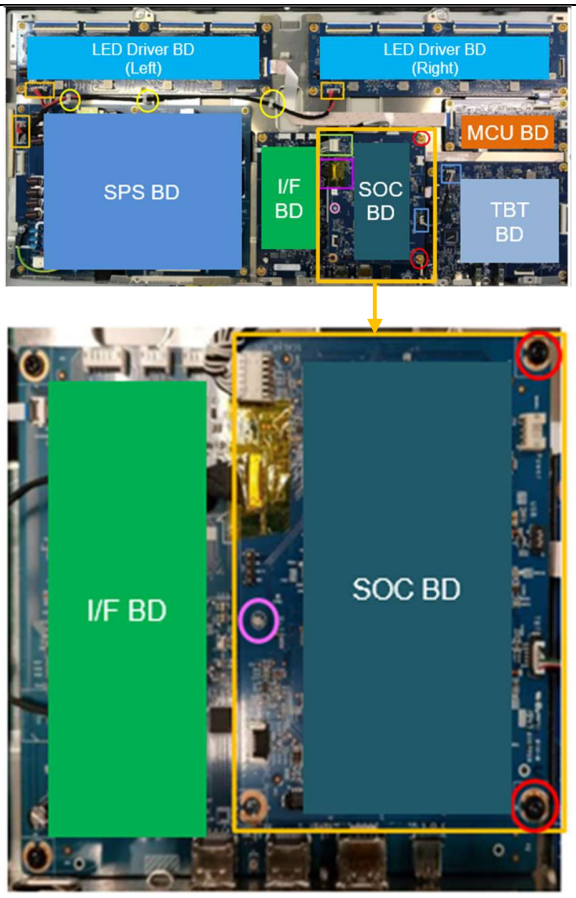
Item	Picture	Operation	Tool	Notes
1		To remove the stand: 1. Place the monitor on a soft cloth or cushion 2. Press and hold the stand release button 3. Press and lift the cover latch to release and remove the cover		
2	 	1. Unlock 2 RC base screws and 4 RC screws to disassemble Rear Cover	Screw-driver Torsion RC screw: 9±1 kg Torsion RC base Screw: 4.5±0.5kg	

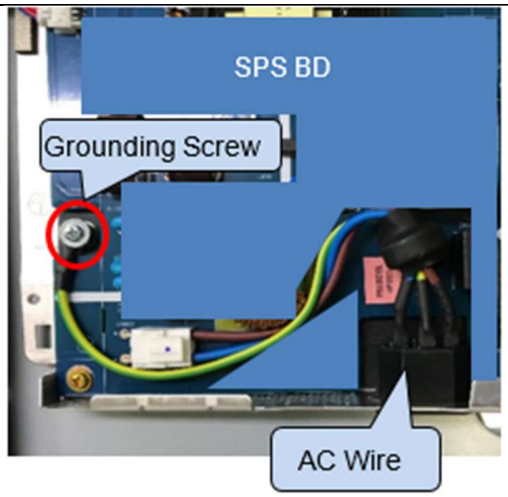
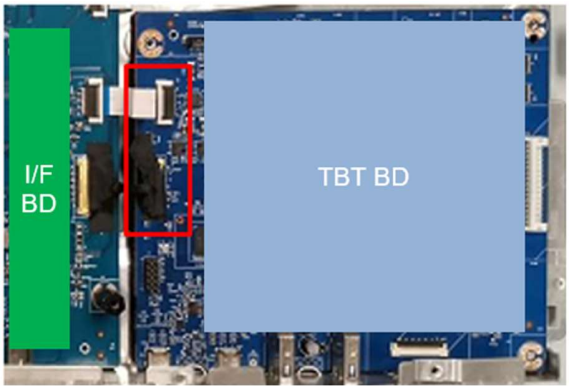
3	   	1. Use hands or scraper bar and follow the sequency to disassemble Rear Cover from Middle Frame	Scraper bar	
4	  	1. Disassemble LENS BD from Middle Frame 2. Unplug CTRL BD FFC from LENS BD 3. Tear off “MYLAR SHD VESA” from Main SHD and unplug CTRL FFC from I/F BD		

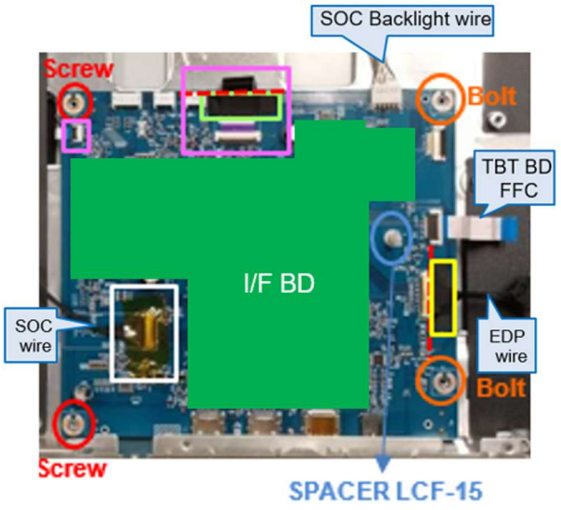
4	    	4. Tear off “MYLAR SHD SOC” from Main SHD and unplug USB FFC from SOC BD 5. Take off Rear Cover from Middle Frame 6. Tear off an acetate tape from “Mylar SHD MCU” and Middle Frame 7. Tear off all mylars from Main SHD		

5	         	1. Tear off an acetate tape from Main SHD (See Green mark) 2. Tear off 3 conductive tapes from Main SHD to disassemble “SPS BD wire” from Middle Frame (See Orange mark) 3. Unplug “SPS BD wire” from SPS BD, I/F BD, MCU BD and TBT BD (See Red Mark) 4. Unlock screw*10 to disassemble Main SHD from Panel (See Blue mark) 5. Unplug FAN wire from I/F BD 6. Take off Main SHD from Panel	Screw-driver Torsion MF screw: 4.0-4.5 kg	

6	  	1. Tear off 2 yellow tapes from SOC BD 2. Unplug “CALIBRATOR FFC” from SOC BD (See Green mark) 3. Unplug “CALIBRATOR Color Wire” from SOC BD (See Blue mark) 4. Unplug “CALIBRATOR Black Wire” from SOC BD (See Red mark) 5. Tear off the tapes from CALIBRATOR wires and Panel 6. Take out all CALIBRATOR wires from the hole of Main SHD		

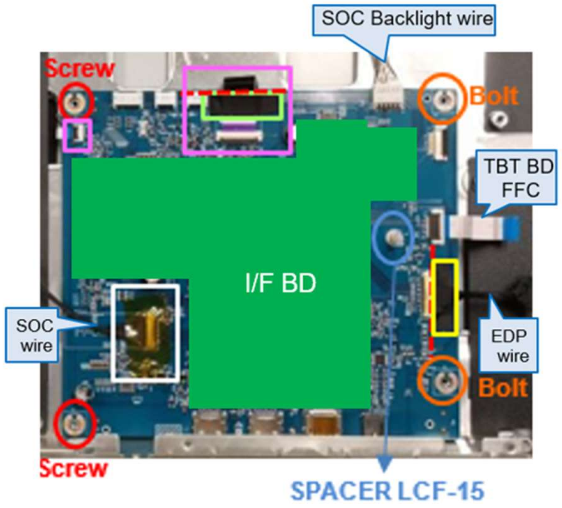
7		1. Unplug “SPS BD to LED DRV BD Wire” from SPS BD and LED DRV BD (See Orange mark) 2. Disassemble “SPS BD to LED DRV BD Wire” from the clips (See Yellow mark) 3. Unplug “TBT BD Wire” from “TBT BD” and “SOC BD” (See Blue mark) 4. Unplug “SOC Backlight wire” from “SOC BD” (See Green mark) 5. Tear off a yellow tape and unplug “SOC wire” from “SOC BD” (See Purple mark) 6. Unlock 2 PCBA screws to disassemble “SOC BD” from I/F BD (See Red mark) 7. Disassemble “Short Spacer” from SOC BD (See Pink mark)	Screw-driver Torsion of PCBA screw: 5.0-5.5 kg	

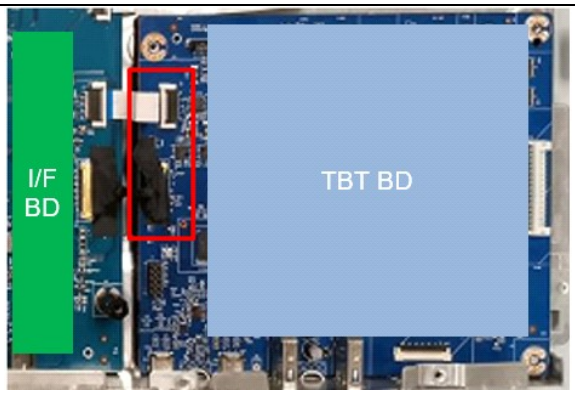
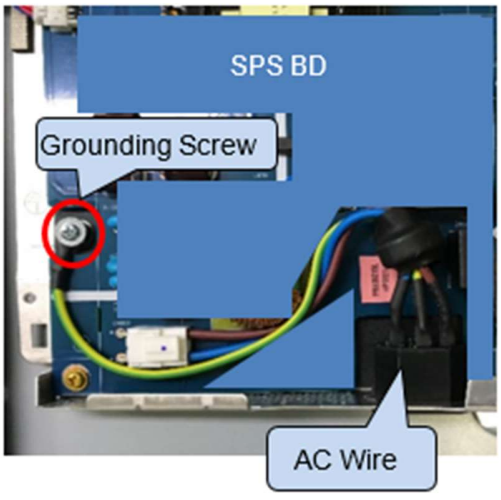
8	 	1. Unlock 1 grounding screw 2. Disassemble “AC Wire” from “ASSY BKT PLATE” 3. Unlock PCBA screw*5 to disassemble SPS BD from “ASSY BKT PLATE”	Screw-driver Torsion of PCBA screw: 5.0-5.5 kg	
9	 	1. Unplug “MCU BD FFC” from I/F BD 2. Tear off a tape from EDP wire and TBT BD 3. Unplug “TBT BD FFC” and “EDP wire” from “TBT BD”	Screw-driver Torsion of PCBA screw: 5.0-5.5 kg	

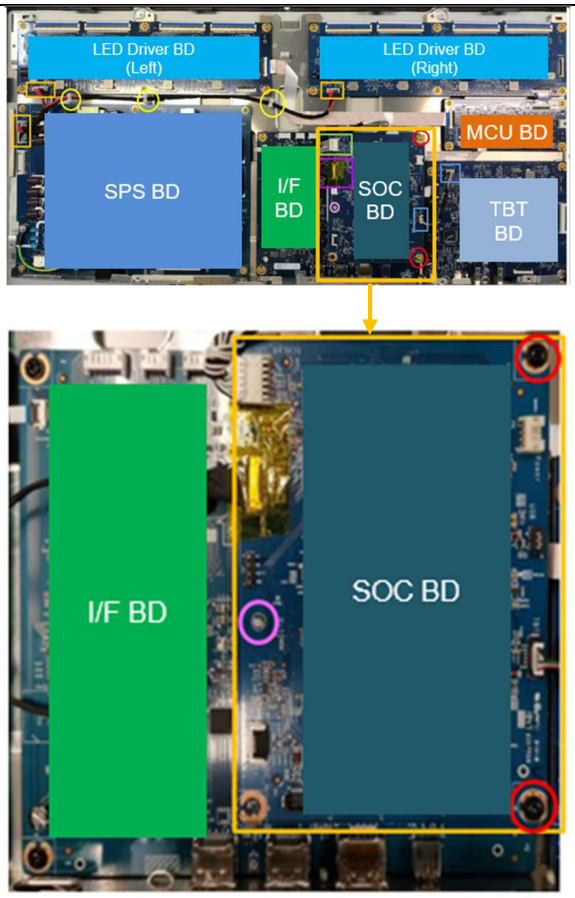
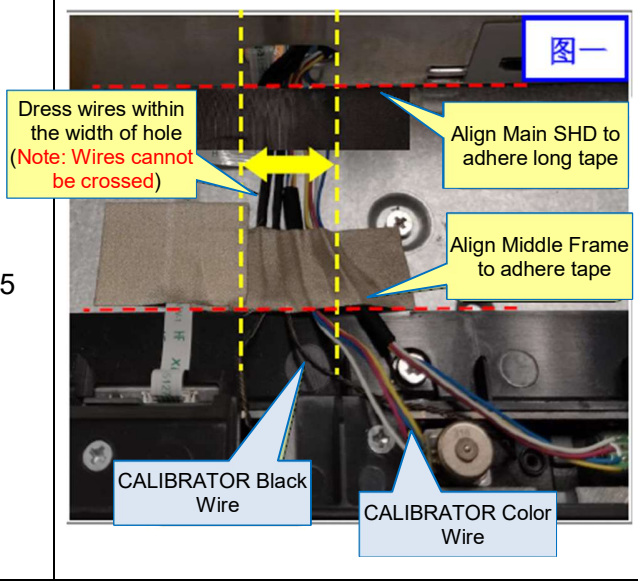
10		1. Tear off a yellow tape from “SOC wire” and I/F BD (See White mark) 2. Unplug “SOC wire” and “SOC Backlight wire” from I/F BD 3. Tear off a tape from “EDP FFC” (See Green mark) 4. Unplug “Thermal Sensor FFC” and “EDP FFC” from I/F BD (See Pink mark) 5. Disassemble “Spacer” from I/F BD (See Blue mark) 6. Unlock 2 Bolts (See Orange mark) and 2 PCBA screws (See Red mark) from I/F BD to disassemble I/F BD from “ASSY BKT PLATE” 7. Tear off a tape from EDP wire and I/F BD (See Yellow mark) 8. Unplug “TBT BD FFC” and “EDP wire” from I/F BD	Screw-driver Torsion of PCBA screw: 5.0-5.5 kg Torsion of Bolt: 5.0-5.5 kg	Note: Insert “Thermal Sensor FFC” and “EDP FFC” through the hole of “ASSY BKT PLATE” while disassembling “ASSY BKT PLATE” from Panel

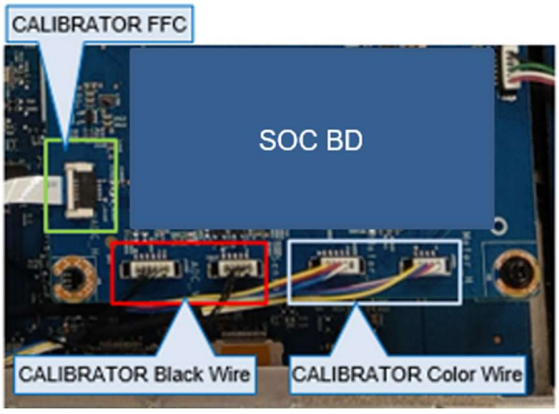
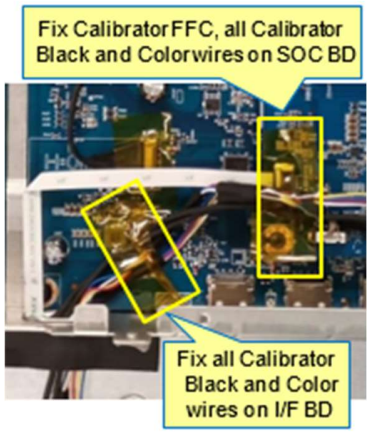
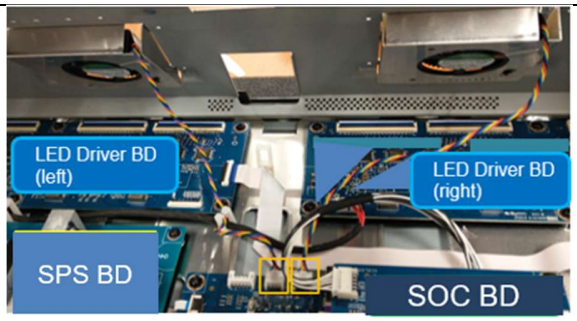
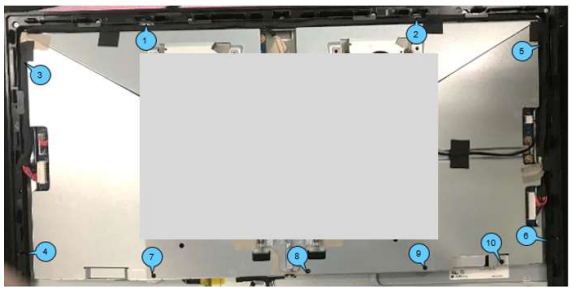
3. Assembly SOP

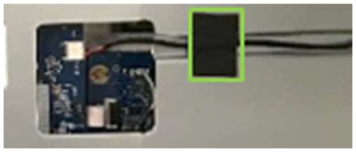
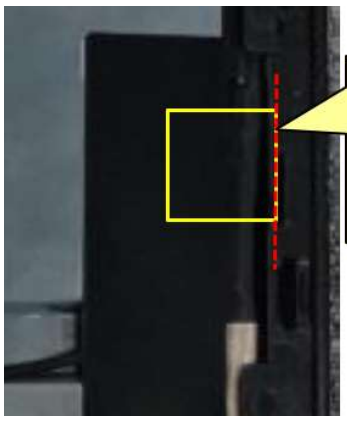
Preparation before assemble
1. Clean the room for work
2. Identify the area for material
3. Prepare the implement, equipment, material as bellow:
   1) Working table
   2) Screw-driver
   3) Glove
   4) Cleaning cloth
      ESD protection

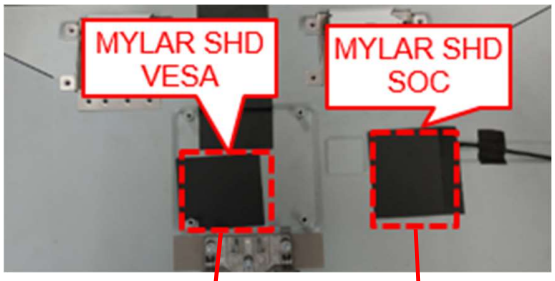
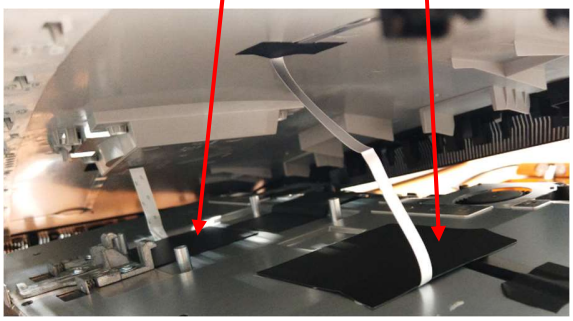
Item	Picture	Operation	Tools	Notes
1		1. Insert “TBT BD FFC” and “EDP wire” into I/F BD 2. Adhere a tape to fix EDP wire on I/F BD (See Yellow mark) 3. Assemble I/F BD to “ASSY BKT PLATE” and lock 2 Bolts (See Orange mark) and 2 PCBA screws (See Red mark) to fix I/F BD 4. Assemble “Spacer” on I/F BD (See Blue mark) 5. Insert “Thermal Sensor FFC” and “EDP FFC” into I/F BD (See Pink mark), then, adhere a tape to fix “EDP FFC” (See Green mark) 6. Insert “SOC wire” and “SOC Backlight wire” into I/F BD 7. Paste a yellow tape to fix “SOC wire” on I/F BD (See White mark)	Screw-driver Torsion of PCBA screw: 5.0-5.5 kg Torsion of Bolt: 5.0-5.5 kg	

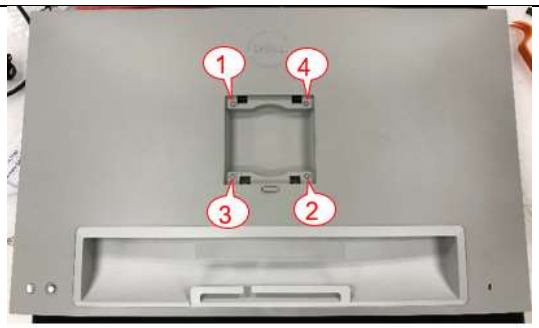
2	 	1. Insert “TBT BD FFC” and “EDP wire” into “TBT BD” 2. Adhere a tape to fix EDP wire on TBT BD 3. Insert “MCU BD FFC” into I/F BD	Screw-driver Torsion of PCBA screw: 5.0-5.5 kg	
3	 	1. Assemble SPS BD to “ASSY BKT PLATE” and fix it by PCBA screws*5 2. Assemble “AC Wire” to “ASSY BKT PLATE” 3. Lock 1 grounding screw	Screw-driver Torsion of PCBA screw: 5.0-5.5 kg	

4		1. Assemble “Short Spacer” on SOC BD (See Pink mark) 2. Assemble “SOC BD” to I/F BD and lock 2 PCBA screws to fix “SOC BD” (See Red mark) 3. Insert “SOC wire” into “SOC BD” and adhere a yellow tape to fix it on “SOC BD” (See Purple mark) 4. Insert “SOC Backlight wire” into “SOC BD” 5. Insert “TBT BD Wire” into “TBT BD” and “SOC BD” (See Blue mark) 6. Insert “SPS BD to LED DRV BD Wire” into SPS BD and LED DRV BD (See Orange mark) 7. Use the clips to address “SPS BD to LED DRV BD Wire” (See Yellow mark)	Screw-driver Torsion of PCBA screw: 5.0-5.5 kg	
5		1. Insert all CALIBRATOR wires through the hole of Main SHD 2. Adhere a conductive tape to fix “CALIBRATOR Black Wire” 3. Adhere a conductive tape to fix “CALIBRATOR Color Wire” 4. Adhere “CALIBRATOR FFC” on Panel and paste a conductive tape to fix it on Middle Frame 5. Adhere a long acetate tape to fix all CALIBRATOR wires		

6	 	6. Insert “CALIBRATOR Black Wire” into the 2 connectors on the left side of SOC BD (See Red mark) 7. Insert “CALIBRATOR Color Wire” into the 2 connectors on the right side of SOC BD (See Blue mark) 8. Insert “CALIBRATOR FFC” to SOC BD (See Green mark) 9. 9. Adhere 2 yellow tapes to fix wires on SOC BD		
7	 	1. Insert FAN wire into I/F BD 2. Place Main SHD on Panel and fix it by screw *10 (See Blue mark)		

8	       	1. Insert “SPS BD wire” into SPS BD, I/F BD, MCU BD and TBT BD (See Red Mark) 2. Dress “SPS BD wire” under Middle Frame and adhere 3 conductive tapes to fix it on Main SHD (See Orange mark) 3. Adhere an acetate tape to fix “SPS BD wire” on Main SHD (See Green mark)		
9	   	1. Adhere mylars to Main SHD 2. Adhere an acetate tape on “Mylar SHD MCU” and Middle Frame to fix “SPS BD wire” (See Yellow mark”)		

10	    	1. Insert CTRL FFC into I/F BD (See Blue mark) 2. Insert USB FFC into SOC BD (See Yellow mark) 3. Adhere “MYLAR SHD VESA” and “MYLAR SHD SOC on Main SHD 4. Insert CTRL BD FFC to LENS BD 5. Assemble LENS BD to Middle Frame		

11	 	1. Assemble Rear Cover to Middle Frame 2. Lock 4 RC screws and 2 RC base screws to fix Rear Cover	Screw-driver Torsion RC screw: 9±1 kg Torsion RC base Screw: 4.5±0.5kg	
12		1. Insert the stand base blocks fully into the stand slot 2. Lift the screw handle and turn the screw clockwise 3. After tightening the screw, fold the screw handle flat within the recess		
13		Attach the stand assembly to the monitor: a. Fit the two tabs on the upper part of the stand to the groove on the back of the monitor b. Press the stand down till it snaps into place		