

## Maintenance and Service Guide Z24m G3 model

SUMMARY

This guide provides information about spare parts, removal and replacement of parts, diagnostic tests, problem troubleshooting, and more.

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Assembly part number: M84047-700

#### **Product notice**

Only trained service personnel familiar with this product should service it. Before performing any maintenance or service, be sure to read "Important Safety Information".

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## **1** Getting started

Read this chapter to learn about safety information and where to find additional HP resources.

### Important safety information

Carefully read the cautions and notes within this document to minimize the risk of personal injury to service personnel. The cautions and notes are not exhaustive. Proper service methods are important to the safe, reliable operation of equipment. Improper service methods can damage equipment.

The service procedures recommended and described in this service manual provide effective methods of performing service operations. Service engineers should have prior repair knowledge and experience as well as appropriate training for the product before performing service procedures.

- Be sure your working environment is dry and clean and meets all government safety requirements.
- Be sure that other persons are safe while you are servicing the product.
- Do not perform any action that can cause a hazard to the customer or make the product unsafe.
- Use proper safety devices to ensure your personal safety.
- Always use approved tools and test equipment for servicing.
- Never assume the product's power is disconnected from the main power supply. Check that it is
  disconnected before opening the product's cabinet.
- Modules containing electrical components are sensitive to electrostatic discharge (ESD). Follow ESD safety procedures while handling these parts.
- Some products contain more than one battery. Do not disassemble or expose a battery to high temperatures, such as throwing into fire, or the battery may explode.
- Refer to government requirements for battery recycling or disposal.

This information provides general service information for the monitor. Adherence to the procedures and precautions is essential for proper service.

**IMPORTANT:** Only trained service personnel who are familiar with this HP product should perform service or maintenance for it. Before performing any service or maintenance, personnel must read the important safety information.

**IMPORTANT:** You must disconnect the power cord from the power source before opening the monitor to prevent component damage.

### Important service information and precautions

- Repair must be performed by professional service technicians in a repair center. End users should not perform these procedures.
- Please note during servicing that the primary side is the high voltage area.
- This monitor meets ROHS requirements. Be sure to use lead-free solder wire when soldering.
- If you must change a capacitor, be sure to match the polarity as printed on the PCB.
- If you must replace a capacitor, make sure the specification and part number match the BOM and

location.

- If you must replace a capacitor, insert new parts carefully to avoid a short circuit caused by the near pin.
- Do not get the board wet. Water and moisture can cause a short circuit that causes malfunctions.
- To avoid damage, be sure to use lead-free solder.
- When soldering, work quickly to avoid overheating the circuit board.
- Keep the soldering iron tip clean and well tinned when replacing parts.
- After repair, perform a close inspection of the circuit board to confirm it is in good condition.
- After repair, perform a function test to confirm the power supply is working properly.

#### **ERP Lot5 requirement**

1. A professional repairer must have the technical competence to repair electronic displays and comply with the applicable regulations for repairers of electrical equipment in the Member States where the repairer operates. Reference to an official registration system as professional repairer, where such a system exists in the Member States, shall be accepted as proof of compliance.

2. A professional repairer must have insurance that covers liabilities resulting from repairs, regardless of whether required by the Member State.

### RoHS (2002/95/EC) requirements

#### Applied to all countries that require RoHS.

The RoHS (Restriction of Hazardous Substance in Electrical and Electronic Equipment Directive) is a legal requirement by the EU (European Union) for the global electronics industry sold in the EU and other countries. Any electrical and electronics products launched in the market after June 2006 should meet this RoHS requirement. Products launched in the market before June 2006 are not required to be compliant with RoHS parts. If the original parts are not RoHS complaint, the replacement parts Can be non-ROHS complaint. If the original parts are RoHS compliant, the replacement parts MUST be RoHS complaint.

If product service or maintenance requires replacing parts, confirm the RoHS requirement before replacement.

### **General descriptions**

This manual contains general information. There are two levels of service:

Level 1: Cosmetic/appearance/alignment service

Level 2: Circuit board or standard parts replacement

### **Firmware updates**

Firmware updates for the monitor are available at <u>support.hp.com</u>. If no firmware is posted, the monitor does not need a firmware update.

### Before returning the repaired product to the customer

Perform an AC leakage current check on exposed metallic parts to be sure the product is safe to operate without the potential of electrical shock. Do not use a line isolation transformer during this check.

Measurements that are not within specified limits present a possible shock hazard. You must check and repair the product before returning it to the customer.

## 2 Monitor features

This chapter provides an overview of the monitor's features.

### **Features**

Depending on the model, your monitor might include the following features:

#### **Display features**

- 60.5 cm (23.8 in) diagonal viewable screen area with 2560 × 1440 resolution, plus full-screen support for lower resolutions; includes custom scaling for maximum image size while preserving original aspect ratio
- HP Eye Ease with Eyesafe<sup>®</sup> certification (default mode) to reduce blue light to keep your eyes comfortable
- Liquid crystal display (LCD) with active matrix and in-plane switching (IPS)
- Nonglare panel with an LED backlight
- Wide viewing angle to allow viewing from a sitting or standing position, or moving from side to side
- Tilt, swivel, and height adjustment capabilities
- Pivot capability to rotate the monitor head from landscape to portrait orientation
- 5-in-1 joystick control and five on-screen display (OSD) buttons. Moving the joystick up, down, left, or right displays the OSD button labels, or hot keys. For select monitors, moving the joystick or joypad in a defined direction immediately performs a hot-key function without showing the OSD button menu first.
- On-screen display (OSD) adjustments in several languages for easy setup and screen optimization
- Color space presets for sRGB 99%, DCI-P3 90%, and BT.709 99%
- Energy saver feature to meet requirements for reduced power consumption
- Security cable slot on the rear of the monitor for an optional security cable
- Cable management feature for placement of cables and cords

#### Connectors

- DisplayPort ™ video input (cable included)
- High–Definition Multimedia Interface (HDMI) video inputs
- USB Type-C<sup>®</sup> port (camera model)
- USB Type-B port (noncamera model)
- USB Type-A ports
- Plug and Play capability, if supported by your operating system
- RJ-45(network)

#### **Monitor stand**

Removable stand for flexible monitor head mounting solutions

- HP Quick Release 2 device to attach the monitor head to the stand with a click and then remove it with the sliding tab release
- VESA® mounting bracket for attaching the monitor head to a wall-mount device or swing arm
- VESA mounting capability (100 × 100 mm) for attaching the monitor to a swing arm mount
- Support for a mounting bracket to attach the monitor to a workstation

**NOTE:** For safety and regulatory information, refer to the Product Notices provided in your documentation kit. To access the latest user guides or manuals for your product, go to http://www.hp.com/support and follow the instructions to find your product. Then select **Manuals**.

## **Front components**

To identify the components on the front of the monitor, use this illustration and table.

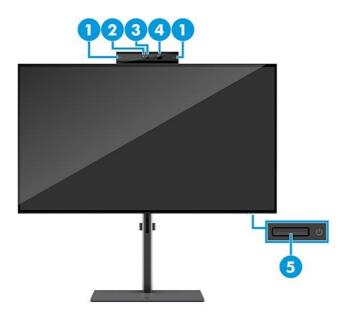
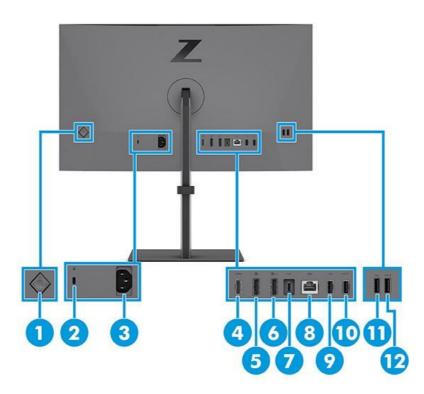


Table 2-1         Front components, camera model and their descriptions			
Component	Description		

Component		Description	
(1)	Tilt levers	Allows you to tilt the camera.	
(2)	Camera light	On: The camera is in use.	
(3)	Camera RGB lens	Transmits your image in a video conference.	
(4)	Camera IR lens	Transmits your image in a video conference.	
(5)	i) Power button Turns the monitor on or off.		

### **Rear and side components**

To identify the components on the rear of the monitor, use this illustration and table.



#### Table 2-2 Rear and side components and their descriptions

Component (1) OSD control		Description	
		Activates the OSD buttons so that the button labels appear on the right side of the screen.	
(2)	Security cable slot	Connects an optional security cable.	
(3)	Power connector	Connects an AC adapter.	
(4)	HDMI port	Connects the HDMI cable to a source device such as a computer.	
(5)	DisplayPort connector(in)	Connects the DisplayPort cable to a source device such as a computer or game console.	
(6) DisplayPort connector (OUT)		Connects the DisplayPort cable to a source device such as a computer or game console.	
(7)	USB Type-C port	Connects a USB Type-C cable to a source device such as a computer.	
and		Note: Connect a USB Type-C cable between the source device and monitor to enable the webcam, microphone, network, and USB ports on the monitor.	
(8)	RJ-45 port	Connects an Ethernet network cable.	
		- Green (left): The network is connected.	
		- Amber (right): Activity is occurring on the network.	
		NOTE: MAC Address Pass through for HP models only.	
		NOTE: This network port is fully energy efficient according to	

		the standards of the Energy Efficient Ethernet (IEEE 802.3az- 2010) as long as all connected devices support this feature.
(9)	USB port	Connects a USB cable to a peripheral device, such as a keyboard mouse, or USB hard drive.
(10)	USB port with battery fast charging 1.2	Connects a USB device, provides high-speed data transfer, and charges small devices such as a smartphone, even when the computer is DC off with OSD Performance mode on.
(11)	USB port	Connects a USB cable to a peripheral device, such as a keyboard mouse, or USB hard drive.
(12)	USB port Battery charging 1.2	Connects a USB device, provides high-speed data transfer, and charges small devices such as a smartphone, even when the computer is DC off with OSD Performance mode on.

### Locating the serial number and product number

The serial number and product number are located on the rear of the monitor. You may need these numbers when contacting HP about the monitor model.



#### For worldwide models (including India):

#### Barcode label & Spec label



# Illustrated parts catalog

To identify the monitor major components, use this illustration and table.

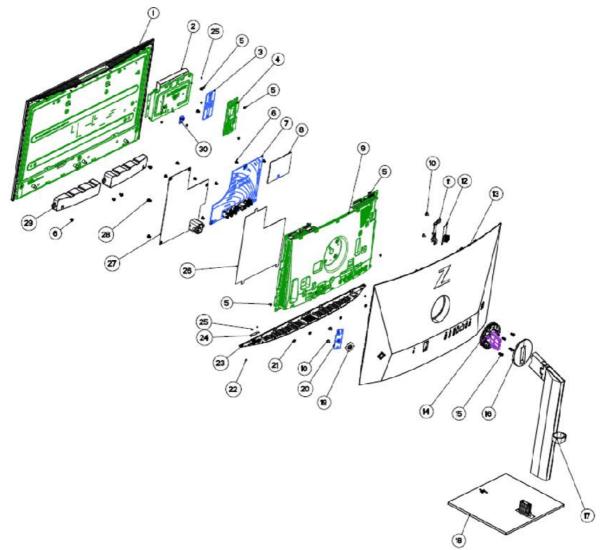


Table 3-1: Monitor major components and their description	<b>Table 3-1:</b> M	Aonitor major	components and	d their d	lescription
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ltem	Description	Part number	Qty
1	#ASSY Panel Z24m		1
2	#Webcam Module Z24m		1
3	#Audio BD Z24m		1
4	#ASSY Audio BRKT Z24m		1
5	#Screw		11
6	#Screw		14
7	#ASSY IF BD Z24m		1
8	#ASSY Driver BD Z24m		1

9	#ASSY Main Chassis Z24m	1
10	#Screw	4
11	#Side USB Holder Z24m	1
12	#ASSY Side USB BD Z24m	1
13	#ASSY Rear Cover Z24m	1
14	#ASSY Hinge Z24m/Z24U	1
15	#Screw	4
16	#Hinge Cover Z24m	1
17	#ASSY Stand ARM Lift Z24m	1
18	#ASSY Stand Base Z24m	1
19	#Joystick Cap Z Series	1
20	#ASSY OSD BD Z Series	1
21	#Screw	4
22	#Screw	4
23	#ASSY Bezel Bottom Z24m	1
24	#ASSY Power Key BD Z24m	1
25	#Screw	5
26	#Power Mylar Z24m	1
27	#ASSY Power BD Z24m	1
28	#Screw	1
29	#ASSY Speaker Z24m	1
30	#ASSY Webcam Switch BD Z24m	1

### How to order parts

The HP authorized repair center can purchase the power board from HP.

#### Power board

Description	HP spare part number	Manufacturer part number
PWR BD MG238HC-BQCW(C)Z24m G3 BOE P D	N12332-001	755.08102.0001

Capacitors and connectors are available for purchase from the following EU distributors:

- TC (RUBYCON ALU CAP): www.thin-chan.com.tw
- CAPXON: <u>www.capxongroup.com</u>

#### **Capacitors by distributor**

Component description	Location	Component distributor	Distributor part number
CAP EL 470U 35V M P5 10*16 ZH	AC714,AC715,AC717,AC718	CAPXON	ZH471M035G160ETABHR

#### Connectors by manufacturer

Component description	Location identifier	Component distributor	Distributer part number	Remark
HDMI	HDMI1	Switchcraft Inc.	https://www.digikey.com PN: HD03-19-P-FR	
DP	DP1 DP2	Molex	https://www.digikey.com PN: 2041441-1	
USB-C	USB1	AE Electronics	https://www.digikey.com PN: DX07S024WJ1R350	
USB-A	USB2 USB3	Amphenol ICC Commercial Products)	<u>https://www.diqikey.com</u> PN: WM10413TR-ND	14 40 <sup>5</sup> 25 6,500 000 000 000 000 000 000 000
RJ45	RJ45	Würth Elektronik	https://www.digikey.com PN: 732-3170-ND	

**NOTE:** The connector may need to be modified to meet functionality, regulatory and safety requirements if it is not an exact match.

You can purchase cables from the HP part store at <u>https://partsurfer.hp.com/Search.aspx.</u>

**NOTE:** HP continually improves and changes product parts. For complete and current information about supported parts for your computer, go to <u>http://partsurfer.com</u>, select your country or region, and then follow the on-screen instructions.

Internal and External Power Supplies are available for purchase from the following EU distributor: EET <a href="https://www.eetgroup.com/en-eu/">https://www.eetgroup.com/en-eu/</a>

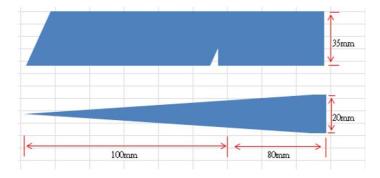
## 4 Removal and replacement procedures

Adherence to these procedures and precautions is essential for proper service.

### **Preparation for disassembly**

Use this information to properly prepare to disassemble and reassemble the monitor.

- 1) Read the "Important safety information" and "Important service information and precautions" sections in the "Getting started" chapter of this guide.
- 2) Clean the room for disassembly.
- 3) Identify the disassembly area.
- 4) Check the position that the monitors are to be placed along with the number of monitors. Prepare the area for material flow according to the disassembly layout.
- 5) Be sure to have the following equipment and materials:
  - Press fixture
  - Working table
  - Screwdriver
  - Knife
  - Gloves
  - Cleaning cloth
  - ESD protection
  - Scraper bar in the following dimensions:



### **Rear Cover**

Before removing the Rear Cover, follow these steps:

- A Prepare the monitor for disassembly. See Preparation for disassembly on page 12.
- 1) Push the release button, then pull the stand to remove stand base from display Head



2) Remove Rear Cover From Display Head: Use the tool to remove the hinge cover, then release the four screws from back bracket and remove the hinge, then Loose all the hooks by hand for pulling the rear cover





1. Loose the top corners



2. Loose the top side



3. Loose the left side



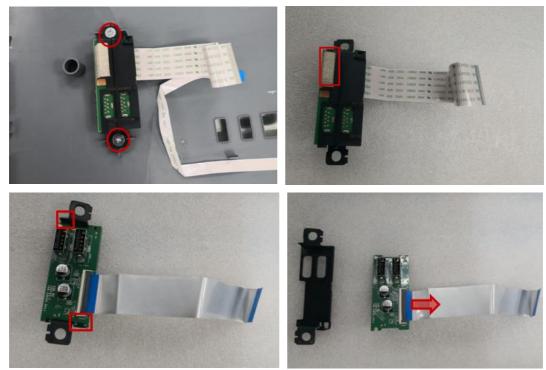
4. Loose the right side



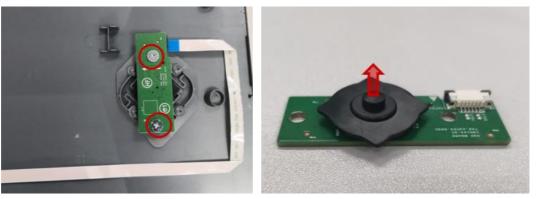
5. Loose the bottom side



- 6. Loose the middle
- 3) Remove USB board unit from rear cover by unlocking 2pcs screws. Tear off the EMI gasket, then loose the two hooks by hand, and then disconnect the cable



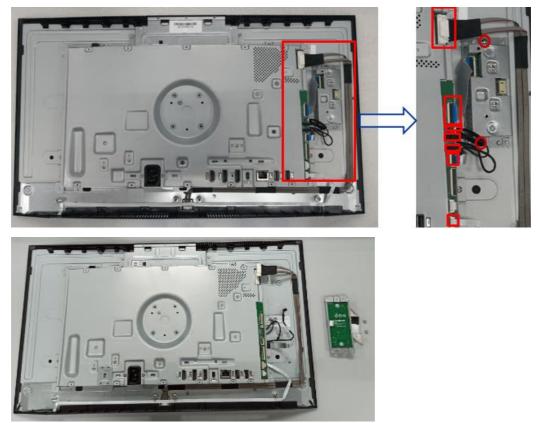
4) Release OSD key board from rear cover: remove 2pcs screws to release the OSD board, and then remove the OSD key.



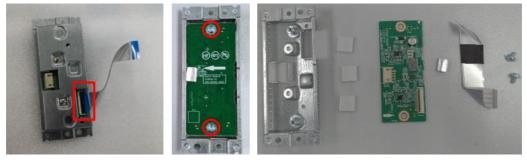
5) Disassemble speaker module: remove 4pcs screws and unplug the audio cable from the connector, then remove the two speakers from the holders.



6) Remove Audio board Module: disconnect the seven inside cables from the connectors, then remove 2pcs screws and put it aside.



7) Disassemble Audio Board Module: disconnect the cable, then remove 2pcs screws and release the audio board from the small bracket.



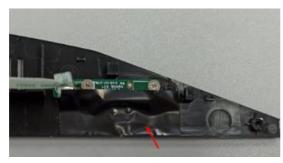
8) Remove the bracket chassis module from the unit: remove 4pcs screws, then disconnect EDP cable away from the connector of panel module.

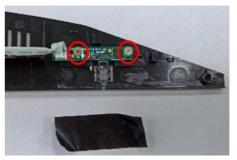


9) Release bottom bezel assembly by unlocking 6pcs screws.



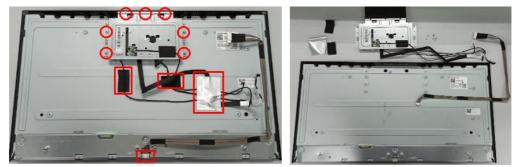
10) Disassemble bottom bezel unit: tear off 1pcs masking tape, then remove 2pcs screws for releasing the power key board away from the bottom bezel.



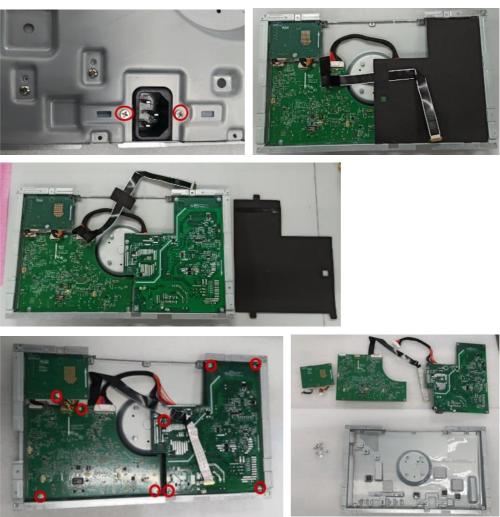




11) Remove Webcam Module: disconnect panel lamp cable from the connector of the panel, then tear off 1pcs AL foil and 2pcs acetate tape, then unlock 4pcs screws with panel and 3pcs screws with the middle bezel.



12) Disassemble bracket chassis module: Remove 2pcs screws for unlocking the AC power outlet, then remove the Mylar tape from the bracket, and use a screwdriver to remove 9pcs screws, then remove power board, driver board and interface board from main bracket and disconnect all cables.



13) Disassemble Webcam Module: please refer to the following step.



02. Webcam top cover assy. disassembly



Release the three screws from the webcam assy.

#### 03. TOF BD disassembly

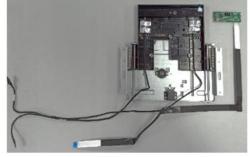


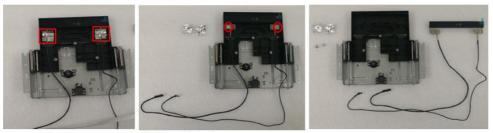
Rise up webcam, then remove webcam top cover



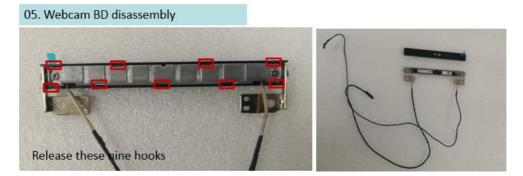
Remove the two hooks, then remove TOF BD

#### 04. Webcam BD module disassembly





Remove these two AL tapes Release these two screws



### **Power board**

The power board part number is 755.0812.0001.

Before removing the power board, follow these steps:

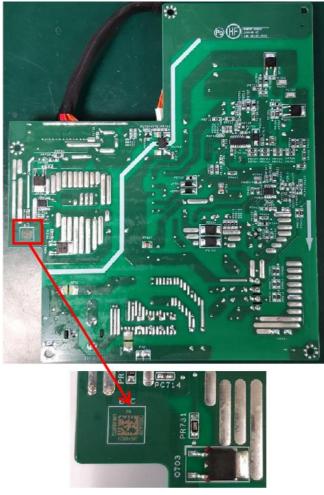
▲ Prepare the monitor for disassembly. See Preparation for disassembly on page 12.

Remove the power board:

1) HP Z24m G3 power board connector position is as follows:



2) Locate the part number location on the board.



- 3) Pin solder with soldering iron and absorber. NA
- 4) Lift the connector up and away from the PCB. No

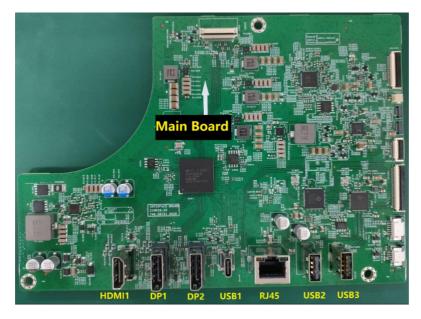
### **Connector repair**

This procedure includes HDMI, Display Port, Display Port out, USB-C, USB-A and RJ45 connectors.

The connectors are on the main board (board part number 7ZB.08101.0009).

Connector	Location	
HDMI	HDMI1	
Display Port	DP1	
Display Port out	DP2	
USB-C	USB1	
USB-A	USB2,USB3	
USB-A	RJ45	

The connector identifiers are as follows:



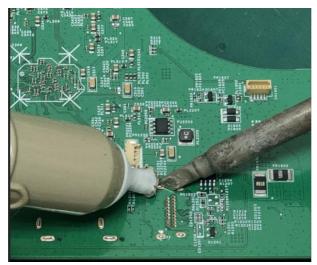
Before repairing connectors, follow these steps:

▲ Prepare the monitor for disassembly. See <u>Preparation for disassembly</u> on page 12.

### **HDMI connector HDMI1**

Repair the HDMI connector:

1) Use a soldering iron and a de-soldering pump to remove as much solder as possible from the pin.



2) Use a hot air gun to melt the solder on the pins.



- 3) Lift the HDMI connector from the PCB.
- 4) Place the new component on the PCB. Be sure that it matches the PCB footprint.
- 5) Solder the new component.

### **DP connector DP1**

Repair the DP connector:

1) Use a soldering iron and a de-soldering pump to remove as much solder as possible from the pin.



- 2) Use a hot air gun to melt the solder on the pins.
- 3) Lift the DP connector from the PCB.
- 4) Place the new component on the PCB. Be sure that it matches the PCB footprint.
- 5) Solder the new component.

#### **DP out connector DP2**

Repair the DP out connector:

1) Use a soldering iron and a de-soldering pump to remove as much solder as possible from the pin.



- 2) Use a hot air gun to melt the solder on the pins.
- 3) Lift the Mini DP connector from the PCB.
- 4) Place the new component on the PCB. Be sure that it matches the PCB footprint.
- 5) Solder the new component.

### **USB-C connector USB1**

Repair the USB-C connector:

1) Use a soldering iron and a de-soldering pump to remove as much solder as possible from the pin.



2) Use a hot air gun to melt the solder on the pins.



- 3) Lift the USB-C connector from the PCB.
- 4) Place the new component on the PCB. Be sure that it matches the PCB footprint.

5) Solder the new component.

### **USB-A connector USB2/USB3**

Repair the USB-A connector:

 Use a soldering iron and a de-soldering pump to remove as much solder as possible from the pin. You can gently push down with the soldering iron once everything is molten to move USB-A connector out of the through holes.



- 2) Lift the USB-A connector from the PCB.
- 3) Place the new component on the PCB. Be sure that it matches the PCB footprint.
- 4) Solder the new component.

#### **RJ45**

Repair the RJ45 Connector:

1) Use a hot air gun to melt the solder on the pins. Pin solder with soldering iron and absorber. You can gently push down with the soldering iron once everything is molten to move RJ45 out of the through holes.



2) Lift the phone jack from the PCB.



- 3) Place the new component on the PCB. Be sure that it matches the PCB footprint.
- 4) Solder the new component.

### **Function test**

After repair, be sure to confirm that all functions are working.

Table 4-1: Function test
--------------------------

Test item	Operating description	Tool used
HDMI test	Confirm whether image displays	Computer or DVD player
DP test	Confirm whether image displays	Computer or DVD player
USB-C Alt-Mode	Confirm whether image displays and sound plays correctly on the monitor.	Computer or Notebook
USB-C PD Function	Confirm PDO/Charging working normally.	Notebook
USB Hub Test	Confirm USB function of 2-USB Type-A and 1- USB Type-C working normally.	Computer or Notebook
Audio test	Change volume and balance to confirm whether volume is smooth and loud enough.	Sound bar or Earphone

### Support and troubleshooting

The following table lists possible problems, the possible cause or each problem, and the recommended solutions.

Table 4-2: Solving	common	problems
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Problem	Possible cause	Solution
Screen is blank or video is flashing.	Power cord is disconnected.	Connect the power cord.
	Monitor is turned off.	Power the power button. NOTE: If pressing the Power

		button has no effect, press and hold the power button for 10 seconds to disable the Power button lockout feature.
	Master power switch is set to off.	Set the master power switch on the rear of the monitor to theOn position.
	Video cable is improperly connected.	Connect the video cable properly. For more information, see <u>Connecting the cables on page 12</u>
	System is in Sleep mode.	Press any key on the keyboard or move the mouse to exit Sleep mode.
	Video card is incompatible.	Open the OSD menu and select the <b>Input</b> menu. Set <b>Auto-Switch Input</b> to <b>Off</b> and manually select the input.
		or Replace the video card or connect the video cable to one of the computer's on-board video sources.
Image appears blurred, indistinct, or too dark.	Brightness is too low.	Open the OSD menu and select <b>Brightness</b> to adjust the brightness scale as needed.
Check Video Cable is displayed on screen.	Monitor video cable is disconnected.	Connect the appropriate video signal cable between the computer and monitor. Be sure that the computer power is off while you connect the video cable.
Input Signal Out of Range is displayed on screen.	Video resolution and/or refresh rate are set higher than what the monitor supports.	Change the settings to a supported setting (see Preset display resolutions on page 33).
The monitor does not enter into a low-power sleep state.	The monitor's power saving control is disabled.	Open the OSD menu and select <b>Power</b> , select <b>Auto-Sleep Mode</b> and set auto-sleep to <b>On</b> .
"OSD Lockout" is displayed.	The monitor's OSD lock function is enabled.	Press and hold the <b>Menu</b> button to disable the OSD lockout function.
"Power Button Lockout" is displayed.	The monitor's power button is locked.	Press and hold the <b>Power</b> button for 10 seconds to disable the power button lock function.

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