Maintenance and Service Guide

Z32k G3 model

SUMMARY

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

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".

Table of Contents

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 support.hp.com. 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

- 80 cm (31.5 in) diagonal viewable screen area with 3840x2160 resolution 4K UHD, plus full-screen support for lower resolutions; Includes custom scaling for maximum image size while preserving original aspect ratio.

- Liquid crystal display (LCD) with active matrix and in-plane switching (IPS)

- Wide color gamut to provide coverage of the P3 color space

- 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

- Dual Picture in Picture(PIP) and Picture beside Picture(P2P) functionality to enable the DisplayPort™ and High-Definition Multimedia Interface™ (HDMI) inputs to be viewed in each half of the screen

- On-screen display (OSD) adjustments in several languages for easy setup and screen optimization

- Workflow-based color space presets for standard and wide gamut applications

- 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 1.4 video input (cable included)

- DisplayPort 1.4 downstream pass through connection

- High-Definition Multimedia Interface™ (HDMI) video input (cable included)

- USB Type-C® Thunderbolt ports (DisplayPort Alt Mode 1.4, power delivery up to 100 W, cable included)

- USB Type-C port (data only, power delivery up to 15 W, downstream)

- Four USB ports that connect to USB devices (downstream)

- USB TBT4 - to - USB TBT4 cable provided

- USB Type B (cable included in select regions)

- RJ45(network) jack

- Plug and Play capability, if supported by your operating system

Monitor stand

- Removable stand for flexible monitor head mounting solutions

- HP Quick Release 2 device to quickly attach the monitor head to the stand with a simple click, and then remove it with the convenient sliding tab release

- VESA® mounting bracket for attaching the monitor head to a wall-mount device or swing arm

- VESA mounting capability (100 $\times$ 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 on your optical disc or in your documentation kit. To locate updates to the user guide for your product, go to http://www.hp.com/ support and select your country. Select Find your product, and then follow the on-screen instructions.

Front components

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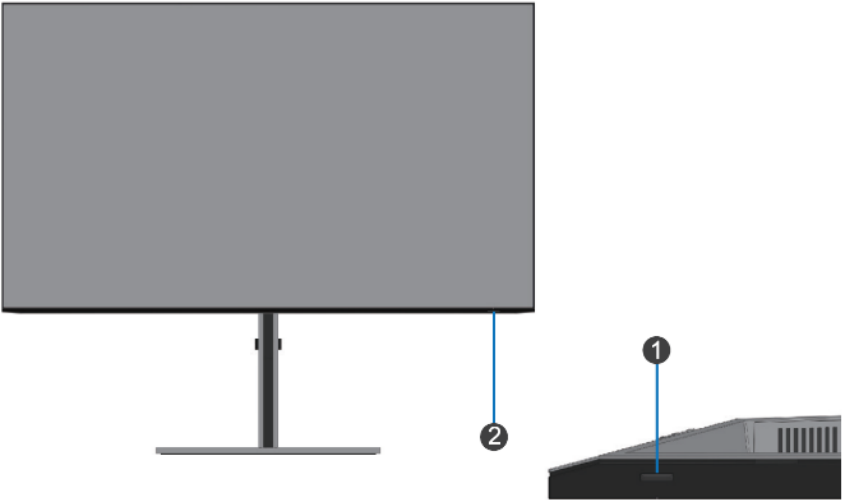

Table 1-1: Front components

	Component	Function
1	Power button	Turns the monitor on or off.
2	Power ligh	White: The monitor is powered on. Amber: Monitor is in a reduced power state because of inactivity.

Rear components

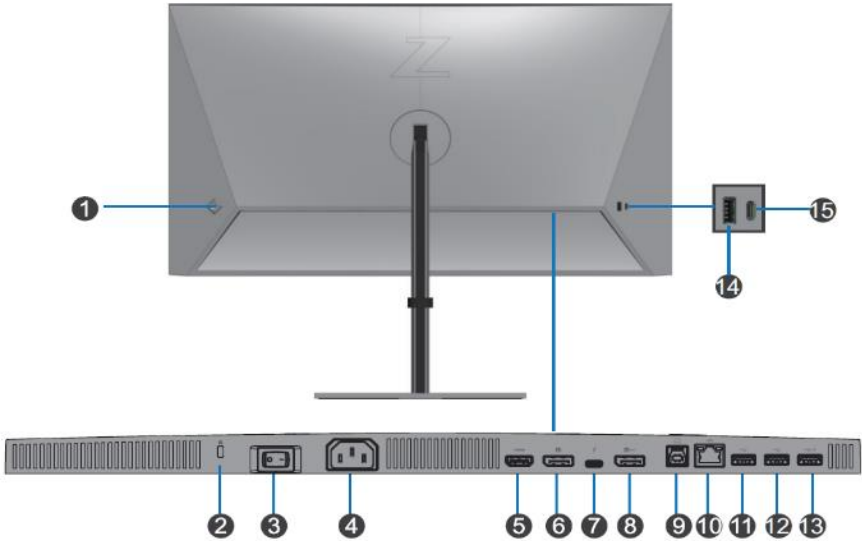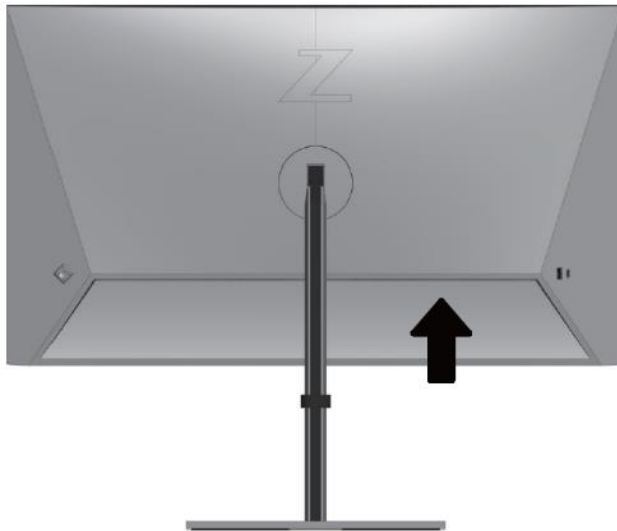To identify the components on the rear of the monitor, use this illustration and table.

Table 1-2: Rear components

Component		Function
1	OSD control	Pressing the center activates the OSD buttons so that the button labels appear on the right side of the screen. Up button: Next Active Input Down button: Display Information Left button: Brightness Right button: Color
2	Security cable slot	Connects an optional security cable to the monitor.
3	Main Power Switch	Switch the main power on/off.
4	Power connector	Connects the power cord.
5	HDMI port	Connects an HDMI cable from the monitor to a source device such as a computer.
6	DisplayPort in connector	Connects the DisplayPort cable from the monitor to a source device such as a computer.
7	USB Type-C® Thunderbolt ports (cable included in select regions)	Connects a USB Type-C cable to a source device such as a computer or game console. This USB Type-C port can function as a DisplayPort video input or as a USB 3.2 Gen1 data connection. Charges most USB Type-C devices even when the monitor is in sleep mode
8	DisplayPort out connector	Connects the Display Port from the monitor to next monitor
9	USB Type-B(upstream) (cable included in select regions)	Connects the AM-BM cable from the monitor to a source device such as a computer for data.
10	RJ45(network)	Ethernet interface.
11	USB port (downstream)	Connects a USB cable to a peripheral device such as a keyboard, mouse, or USB hard drive.
12	USB port (downstream)	Connects a USB cable to a peripheral device such as a keyboard, mouse, or USB hard drive.
13	USB port (charging)	Connects a USB cable to a peripheral device, such as a keyboard, mouse, or USB hard drive and supports battery charging.
14	USB port (Charging)	Connects a USB cable to a peripheral device, such as a keyboard, mouse, or USB hard drive and supports battery charging.
15	USB Type- C ports(downstream)	Connects a USB Type-C cable to a peripheral device, such as a keyboard, mouse, or USB hard drive.

Locating the serial number and product number

The Barcode label **(1)** and SPEC label **(2)** are located on the rear of the monitor. The serial number and product number are located on labels on the underside of the monitor bezel. You may need these numbers when contacting HP about the monitor model.

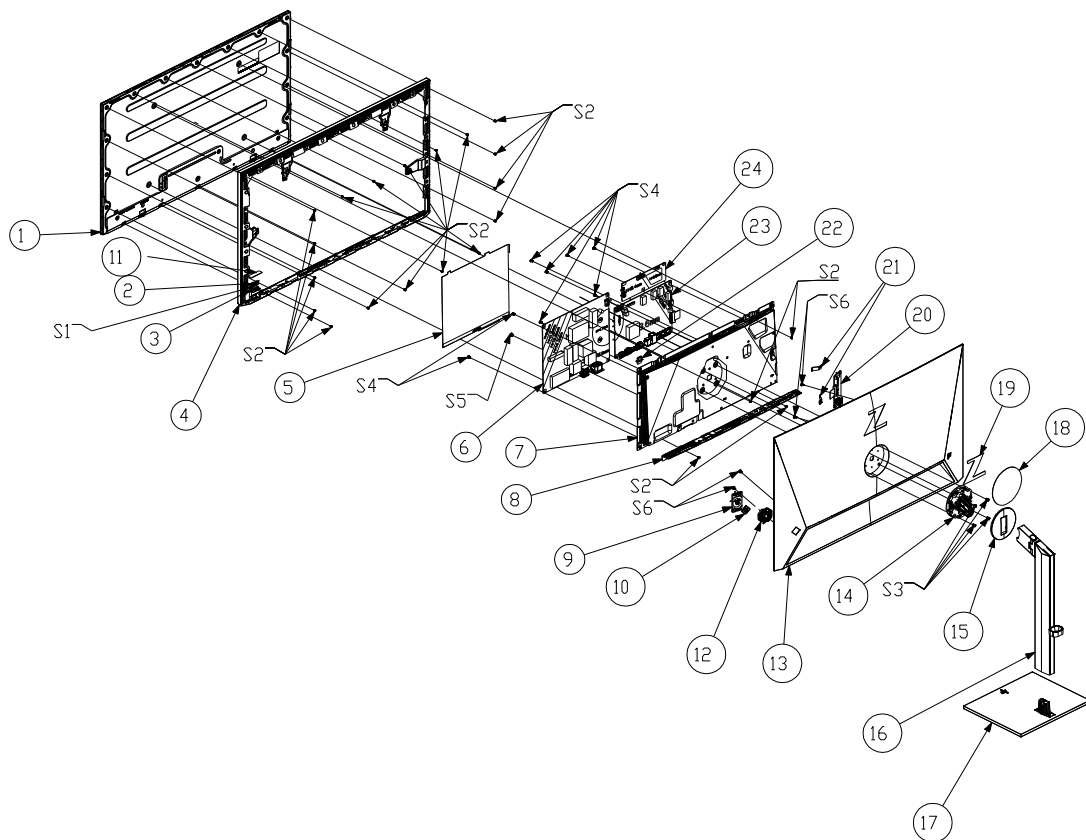**For worldwide models**

Barcode label

Spec label

3   Illustrated parts catalog

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

Item	Description	Qty
1	Panel	1
2	KEY_POWER	1
3	Key Board	1
4	MIDDLE_FRAME	1
5	INSULATING SHEET 250*223.6*5	1
6	POWER BOARD	1
7	MAIN FRAME	1
8	Cover_IO L315W-Ehp1-p1	1
9	Connector Board	1
10	KEY_FRAME	1
11	SPONGE	1
12	KEY_FUNCTION	1

13	REAR_COVER L315W-Ehp1-p1	1
14	HINGE ASS"Y	1
15	HINGE_LEFT	1
16	stand ass"y L315W-Ehp1-p1 NA	1
17	BASE_ASS'Y L315W-Ehp1-p1 N/A	1
18	FILM φ119*0.06	1
19	LOGO Z other	1
20	USB Board	1
21	Spring Finger	2
22	RUBBER PAD NA -- NA 60 94V-V0	1
23	Main Board	1
24	Converter Board	1
S1	Q01G6019 1	1
S2	QM1G076Z0400470ARA	22
S3	0M1G 140 8225	4
S4	0D1G1030 6120	8
S5	QM1G38400601200ARA	1
S6	0Q1G2030 6120	4

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
PSU Z32k G3	N12319-001	ADPCL1922ACG+ LNPCLL322GAAF

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

- Farnell: Farnell UK - Electronic Components Distributor

- RS Component: Capacitors | RS Components (rs-online.com)

- Tme Component: Transfer Multisort Elektronik

- Digi-Key: Digikey Electronics

Capacitors by distributor

Component description	Location	Component distributor	Distributor part number
EC 470uF 20% 25V 10x12 5000 hr 1.6A TL1	C9102	digikey	25WXA470MEFC10X9

Connectors by manufacturer

Component description	Location identifier	Component distributor	Distributer part number
HDMI	CN5001	RS	SD-47151-001 (Molex)
DP	CN5101	Farnell	DP1RD20JQ1 (JAE)
DP2	CN5201	Farnell	DP1RD20JQ1 (JAE)
USB3.0-A	CN1002/CN1102/CN1104	RS	10117835-002LF （Amphenol ICC）
USB 3.0-B	CN1001	RS	692221030100 （Wurth Elektronik）
USB type C	CN1801	RS	DX07S024JJ2R1300 （JAE）
RJ45	CN1201	tme	LMJ34788114NWGY （AMPHENOL ）
USB3.0-A	CN154	RS	10117836-002LF (Amphenol ICC)
USB Type-C	CN152	RS	632722110112 （WE）

NOTE: Rear cover and chassis need to be modified to hold connector. Connector may need modifications to meet functional, safety and regulatory requirements accordingly if it doesn't match exactly.

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

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

NOTE: HP continually improves and changes product parts. For complete and current information about supported parts for your product, go to https://partsurfer.hp.com/Search.aspx, select your country or region, and then follow the on-screen instructions.

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

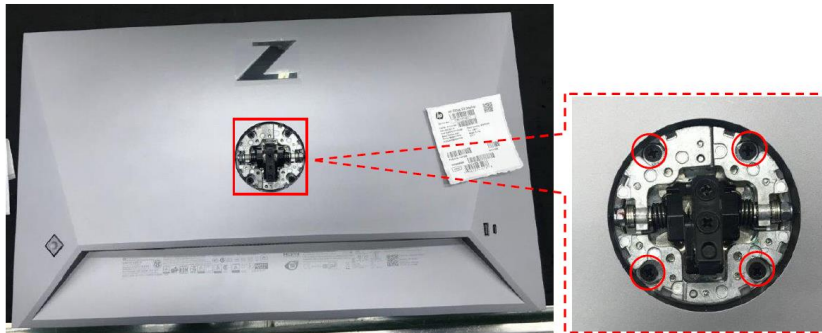- Scraper bar in the following dimensions:
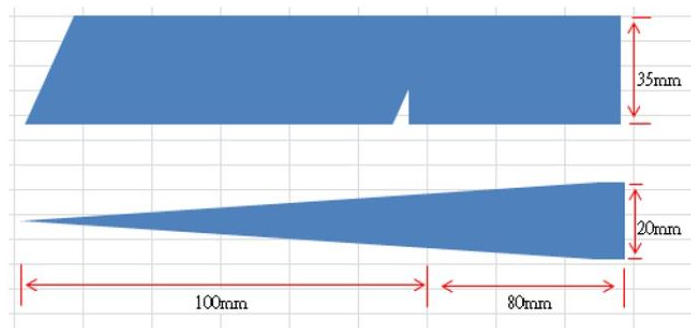
Rear Cover

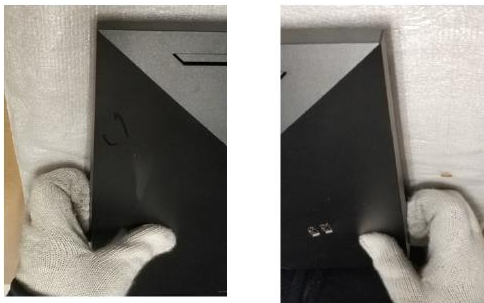Before removing the Rear Cover, follow these steps:

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

Remove the Rear Cover:

1) Remove six screw from the hinge.

2) Use your fingers to split the left and right sides apart between the middle frame and rear case.

3) Insert the scraper bar tool into the gap between the middle frame and rear case, and then rotate. The hook opens. Repeat the steps.
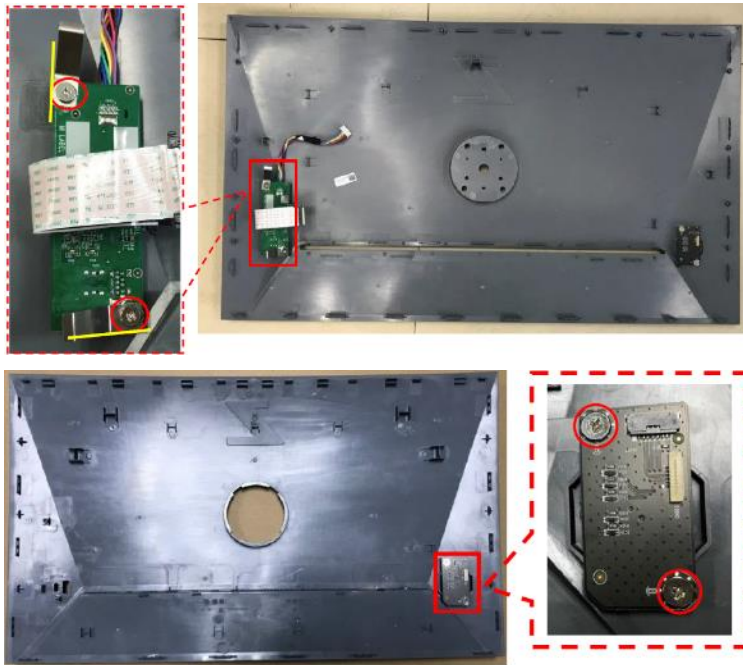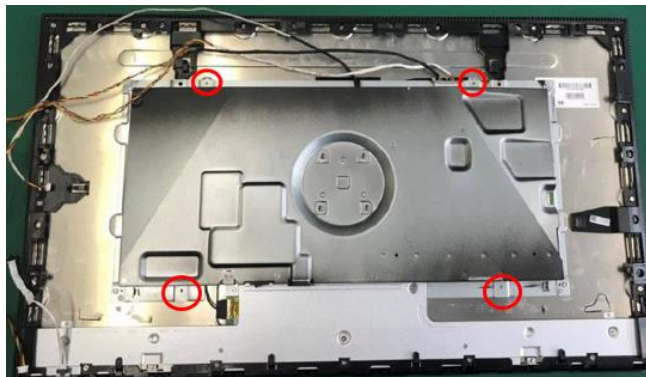

4) Disassemble Rear Cover.

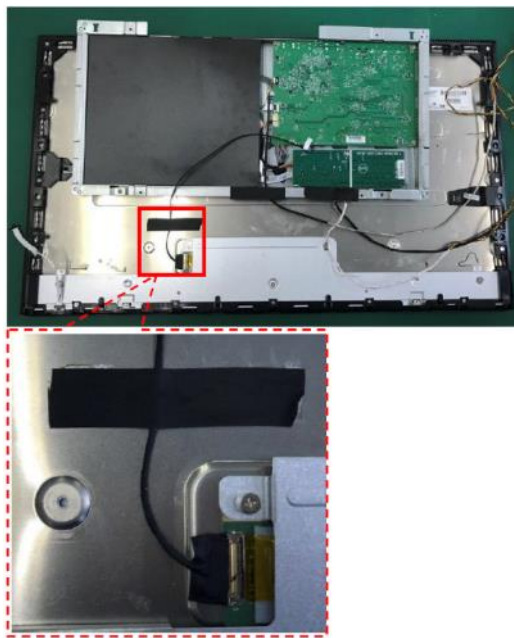5) Remove the USB board wire, FFC wire and key board wire from the Interface-board.

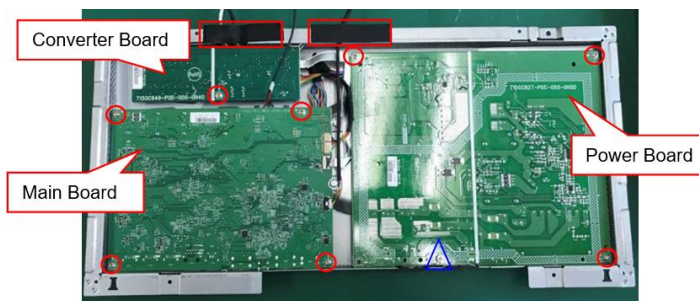6) Disassemble the USB board and key board from the Rear Cover (if required).

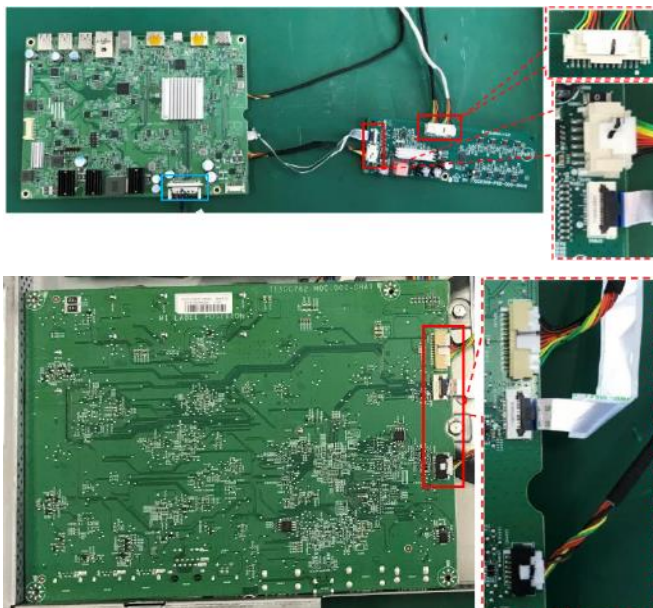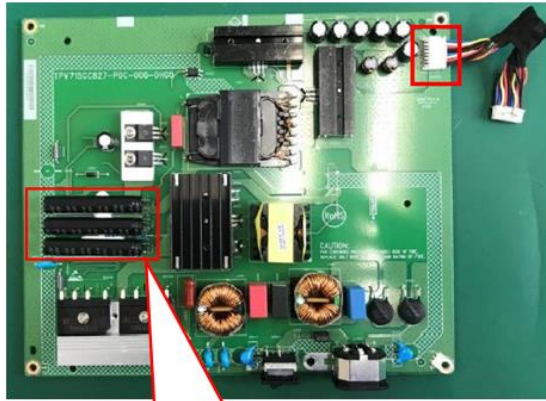7) Remove 4 screws and disconnect the FFC cable to disassemble the main frame from panel

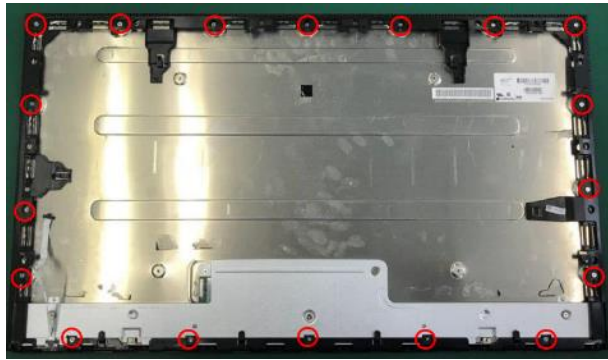8) Tear off tapes and disassemble 9 screws from the board.

9) Disassemble all the boards from housing.

10) Disconnect all the wires from the board.

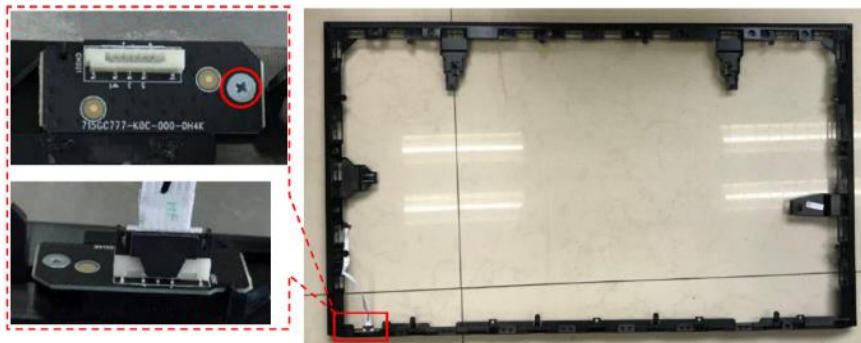Capacitors greater than
2.5cm in diameter or height

11) Disassemble 18 screws to remove the middle frame and Panel.

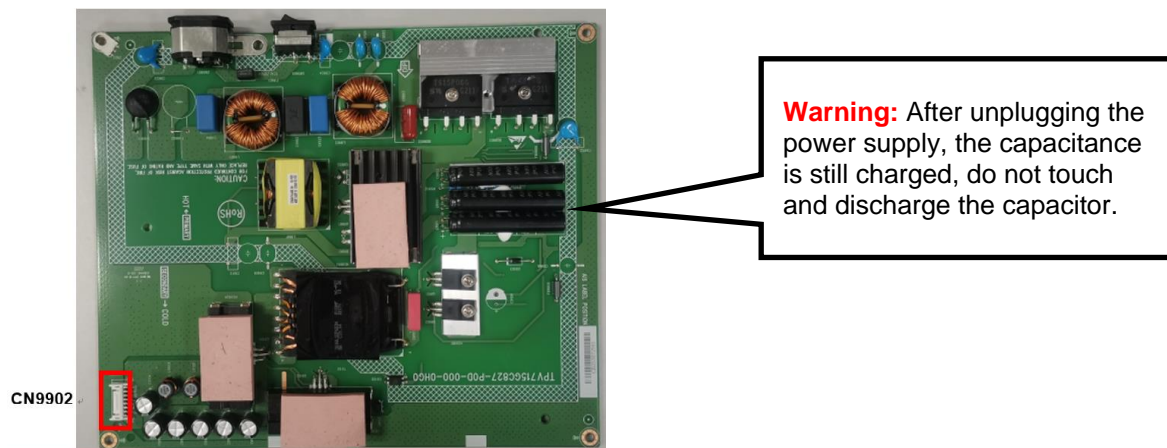

12) Remove the key board.(if required)

Power board

The power board part number is ADPCL1922ACG + LNPCLL322GAAF

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) The HP Z32K G3 power board connector position is as follows:

Warning: After unplugging the power supply, the capacitance is still charged, do not touch and discharge the capacitor.

CN9902

2) Locate the part number location on the board
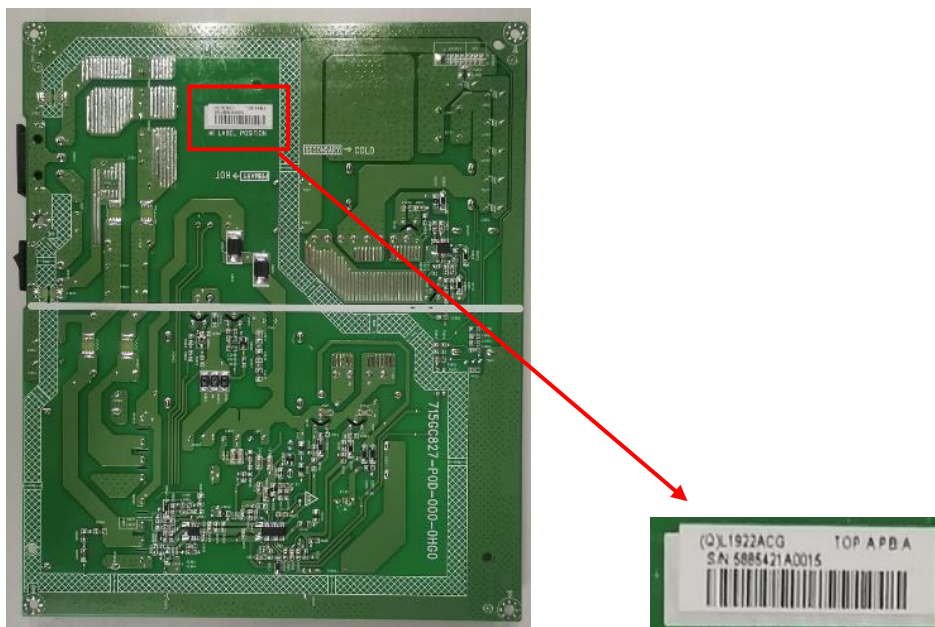
Connector repair

This procedure includes HDMI, DisplayPort, USB Type C, USB B type, RJ45, USB 3.0A connectors.

The connectors are on the main board (board part number CBPC1R4HPQ2)

The connectors' identifiers are as follows:

Connector	Location	Connector	Location
HDMI	CN5001	USB B type	CN1001
DP	CN5101	RJ45	CN1201

Type-C	CN1801	USB 3.0A (1、2、3)	CN1002/CN1102/CN1104
DP2	CN5201		

CN5001 CN5101 CN1801 CN5201 CN1001 CN1201 CN1002 CN1102 CN1104

This procedure includes USB3.0 A, USB Type-C connectors.

The connectors are on the USB board (board part number USB1QA6)

The connectors' identifiers are as follows:

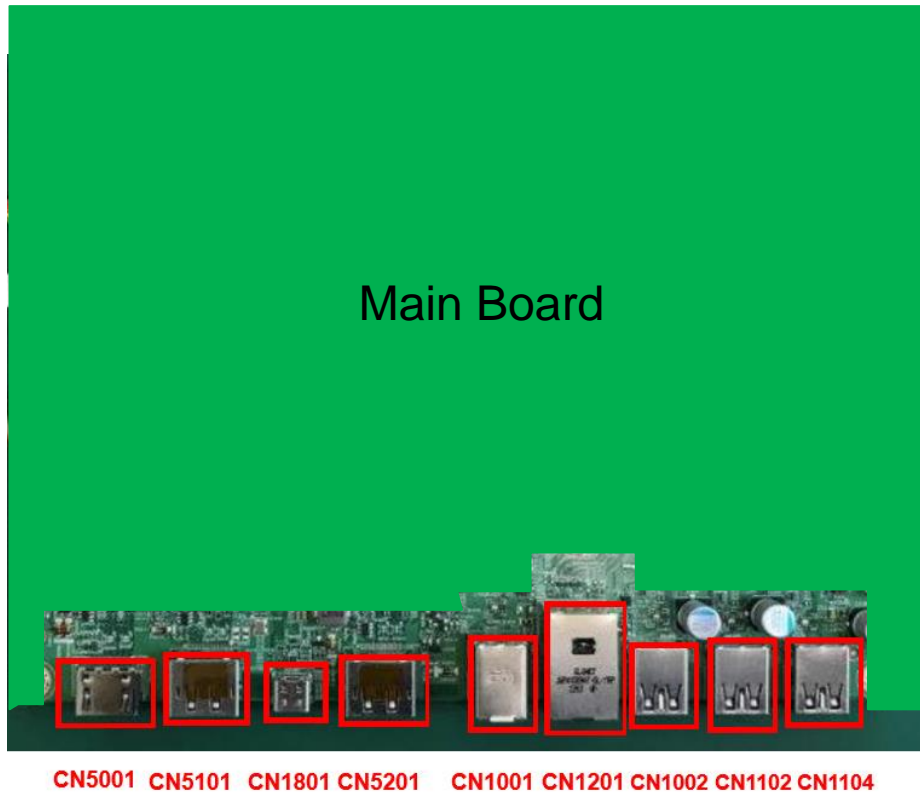| Connector	Location
USB 3.0 A	CN154
USB Type-C	CN152

CN154   CN152

Before repairing connectors, follow these steps:

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

- Repair Condition: Connector repair is only for out of warranty.

- Repairing must operate by professional repairers (Note) in repair center, not applicable for end user.

- Electrostatic protection is required when component replacement is required.

- The monitor meets ROHS, please use Lead-free solder wire for soldering.

- If Connector need to replace, must check specification and part number whether match the BOM and location.

- If connector need to replace, please insert new parts carefully because the near pin may cause short circuit by inappropriate operate.

- DO NOT allow any liquid on the board. Water and moisture may cause short-circuit to the electronic components and lead to malfunctions.

- The fusion point of Lead-Free solder is requested. Repairing with conventional lead wire may cause damage.

- Work quickly to avoid overheating the circuit board as soon as you confirm the steady soldering condition.

- Keep the soldering iron tip clean and well tinned and when replacing parts.

- A close inspection of the circuit board revealed look in good condition.

- After repaired, must connect source to each port to check Main board function is ordinary.

Note: (The requirement of professional repairers' regulation by ERP lot5)

1) The professional repairer has the technical competence to repair electronic displays and complies with the applicable regulations for repairers of electrical equipment in the Member States where it operates. Reference to an official registration system as professional repairer, where such system exists in the Member States concerned, shall be accepted as proof of compliance with this point.

2) The professional repairer is covered by insurance covering liabilities resulting from its activity, regardless of whether this is required by the Member State.

HDMI connector CN5001

Repair the HDMI connector:

1) Use a soldering iron and a de-soldering pump to remove as much solder as possible from the pin.
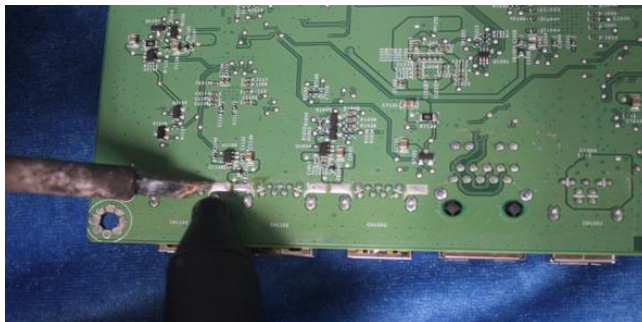
2) Use a hot air gun to melt the solder on the pins.

3) Lift the CN5001 connector from the circuit board.

4) Place the new component on the circuit board. Be sure that it matches the footprint.

5) Solder the new component.

DP connector CN5101

Repair the DP connector:

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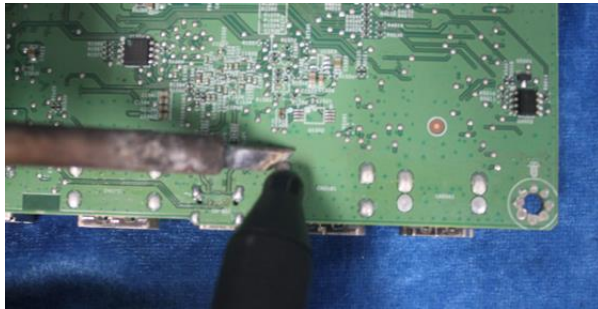

2) Use a hot air gun to melt the solder on the pins.

3) Lift the CN5101 connector from the circuit board

4) Place the new component on the circuit board. Be sure that it matches the footprint.

5) Solder the new component.

Type C connector CN1801

Repair the Type-c connector:

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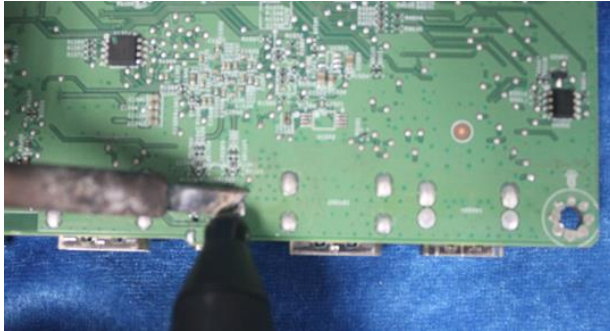

2) Use a hot air gun to melt the solder on the pins.

3) Lift the CN1801 connector from the circuit board.

4) Place the new component on the circuit board. Be sure that it matches the footprint.

5) Solder the new component.

DP connector CN5201

Repair the DP connector:

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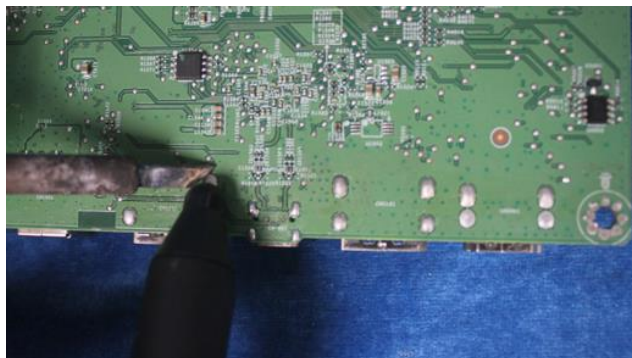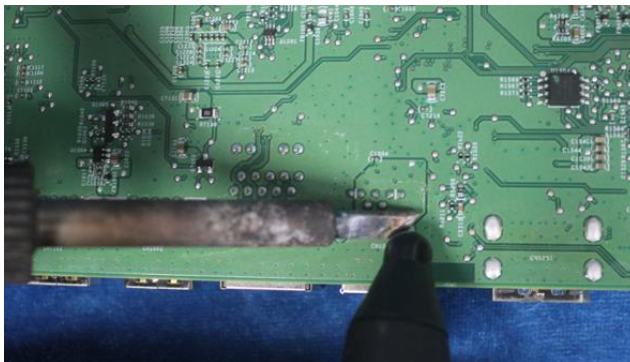

2) Use a hot air gun to melt the solder on the pins.

3) Lift the CN5201 connector from the circuit board

4) Place the new component on the circuit board. Be sure that it matches the footprint.

5) Solder the new component.

USB connector CN1001

Repair the USB connector:

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

2) Lift the CN1001 connector from the circuit board.

3) Place the new component on the circuit board. Be sure that it matches the footprint.

4) Solder the new component.

RJ45 connector CN1201

Repair the RJ45 connector:

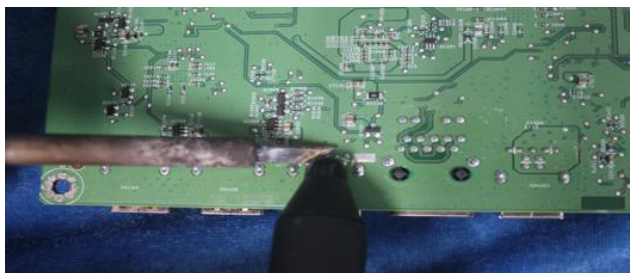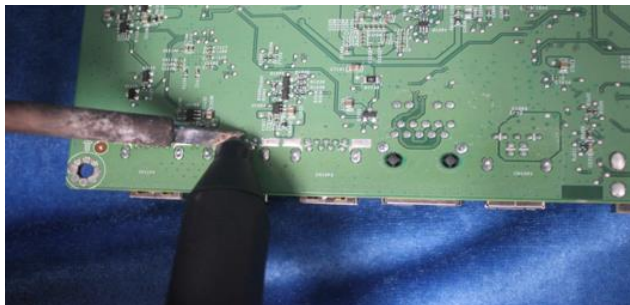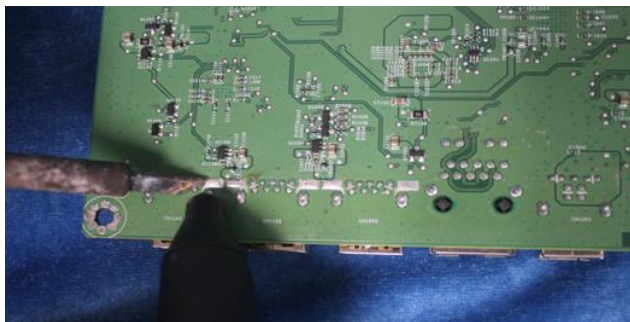1) Use a soldering iron and a de-soldering pump to remove as much solder as possible from the pin.

2) Lift the CN1201 connector from the circuit board.

3) Place the new component on the circuit board. Be sure that it matches the footprint.

4) Solder the new component.

USB 3.0A 1/2/3 connector CN1002/CN1102/CN1104

Repair the USB 3.0A 1/2/3 connector:

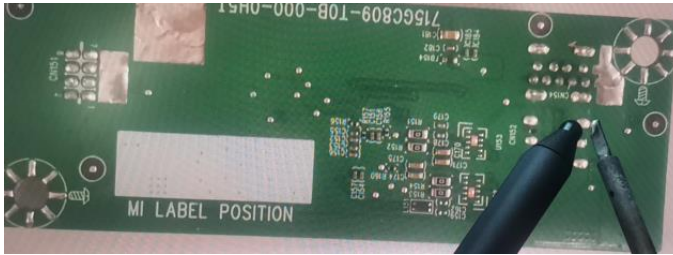1) Use a soldering iron and a de-soldering pump to remove as much solder as possible from the pin.

2) Lift the CN1002/CN1102/CN1104 connector from the circuit board.

3) Place the new component on the circuit board. Be sure that it matches the footprint.

4) Solder the new component.

USB 3.0 A connector CN154

Repair the USB 3.0A connector:

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

2) Lift the CN154 connector from the PCB.

3) Place the new component on the circuit board. Be sure that it matches the footprint.

4) Solder the new component.

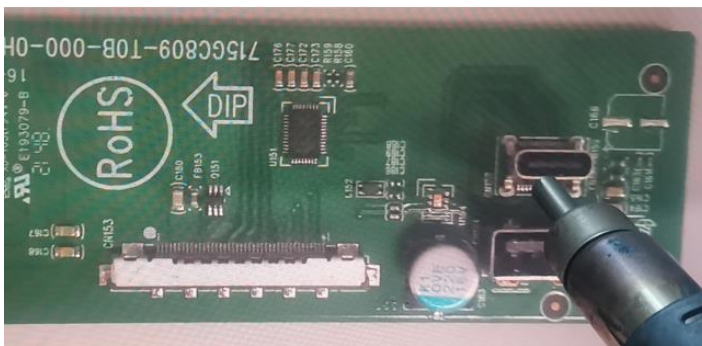## USB type-c connector CN152

Repair the USB type-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 CN152 connector from the PCB.

4) Place the new component on the circuit board. Be sure that it matches the footprint.

5) 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 and sound plays correctly on the monitor.	Computer or DVD player
DP test	Confirm whether image displays and sound plays correctly on the monitor.	Computer or DVD player
USB-C test	Confirm whether image displays and sound plays correctly on the monitor	Computer or USB-C player

Support and troubleshooting

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

Problem	Possible cause	Solution
Screen is blank or video is flashing.	Power cord is disconnected.	Connect the power cord.
	The monitor is turned off.	Press the front bezel 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.
	Video cable is improperly connected.	Connect the video cable properly.
	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 Input menu. Set Auto- Switch Input to Off and manually select the input.
Image appears blurred, indistinct, or too dark.	Brightness is too low.	Open the OSD menu and select Brightness to adjust the brightness scale as needed.

"Input Signal Not Found" is displayed on the screen.	The 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.
The monitor is off but it did not seem to enter into sleep mode.	Auto-Sleep Mode is not turned on.	Open the OSD menu and select Power. Then select Auto- Sleep Mode and set auto-sleep to On.
"OSD Lockout" is displayed	The monitor's OSD lockout function is enabled.	Press and hold the **Menu** button on the front bezel for 10 seconds to disable the OSD Lockout function.
"Power Button Lockout" is displayed.	The monitor's Power Button Lockout function is enabled.	Press and hold the power button for 10 seconds to disable the Power Button Lockout function.
The USB ports do not work, but the monitor is turned on.	There is no upstream USB connection.	Be sure that the host computer is connected to the monitor with a USB Type-C to USB Type-C cable or a USB Type-C to USB Type-A cable.
No power from the USB Type- C or USB Type-A ports when the monitor is in sleep mode.	The monitor is in Power Saver mode.	Open the OSD menu, select Power, and then change the power mode to Performance.
The desktop computer does not turn on.	The monitor is turned off.	Be sure that the monitor power cord is plugged into an AC outlet and press the monitor power button.
	The monitor is in sleep mode.	Press any key on the keyboard or move the mouse to exit sleep mode.
	The monitor is in Power Saver mode.	Open the OSD menu, select Power, and then change the power mode to Performance.
	The desktop computer is not connected to the USB Type-C#1 port on the monitor.	Be sure that the computer is connected to the USB Type-C#1 port on the monitor. NOTE: Desktop host computers must be connected to the USB Type-

		C#1 port for power delivery.
	The Windows display orientation is not set properly.	Right-click the Windows desktop and select Display settings. Click on Identify and be sure that the host computer displays are oriented left to right as they are physically arranged.
The computer turns off when the monitor enters sleep mode.	The monitor is in Power Saver mode.	Open the OSD menu, select Power, and then change the power mode to Performance.

Index