Maintenance and Service Guide
327ph 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

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

Features

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

- 68.6 cm (27.0 in), plus full-screen support for lower resolutions; includes custom scaling for maximuimage size while preserving original aspect ratio
- Liquid crystal display (LCD) with active matrix and in-plane switching (IPS)
- NTSC color gamut
- Nonglare panel with an LED backlight
- Tilt capabilities
- Height adjustment capabilities (select models only)
- On-screen display (OSD) adjustments in several languages for easy setup and screen optimization
- Ergonomic monitor setup guide via the HP Display Center software during first-time use
- Joypad OSD navigation
- 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
- HP Eye ESE (TUV low blue light hardware solution, certified and up to 100Hz max refresh rate)
- Compatible with display software, including:

  – HP Display Center
  – HP CMSL (Client Management Script Library)

Connectors

- VGA port
- DisplayPort™ video input
- High-Definition Multimedia Interface™ (HDMI) video input
- Plug and Play capability, if supported by your operating system

Monitor stand

- Removable stand for flexible monitor head mounting solutions
- 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, see 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 Setup & User Guides.

Front components

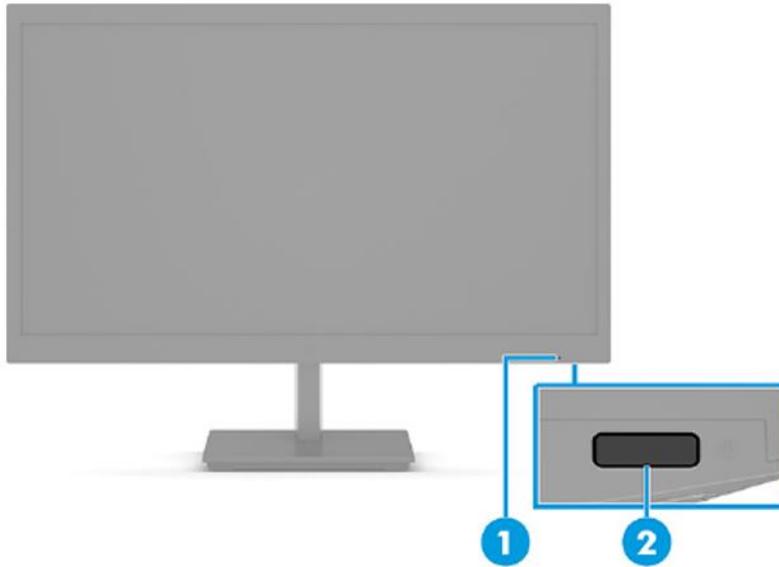To identify the components on the front of the monitor, use this illustration and table.

Table 1-1: Front components and their descriptions

Component	Description
(1) Power LED	Indicates that the monitor is powered on.
(2) Power button	Turns the monitor on or off.

Rear components

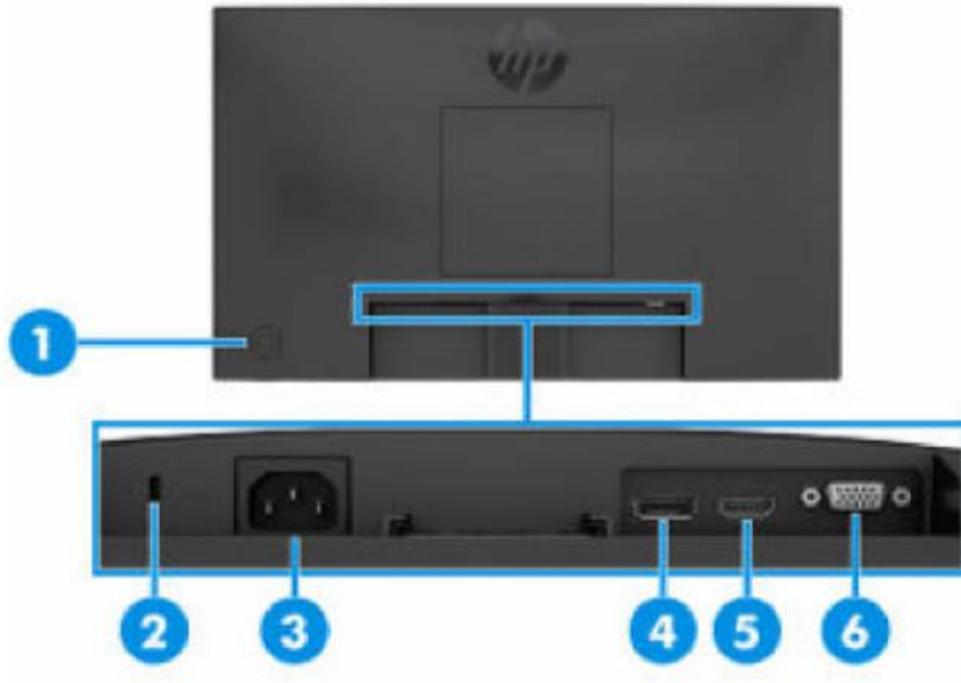To identify the components on the rear of the monitor, use this illustration and table.

Table 1-2: Rear components and their descriptions

Component	Description
(1) Joypad OSD button	Opens the OSD settings.
(2) Security cable slot	Connects an optional security cable.
(3) Security cable slot	Connects an optional security cable.
(4) DisplayPort connector	Connects a DisplayPort cable to a source device such as a computer or game console.
(5) HDMI port	Connects the HDMI cable to a source device such as a computer or game console.
(6) VGA port	Connects the VGA cable to a source device such as a computer or game console.

Locating the serial number and product number

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

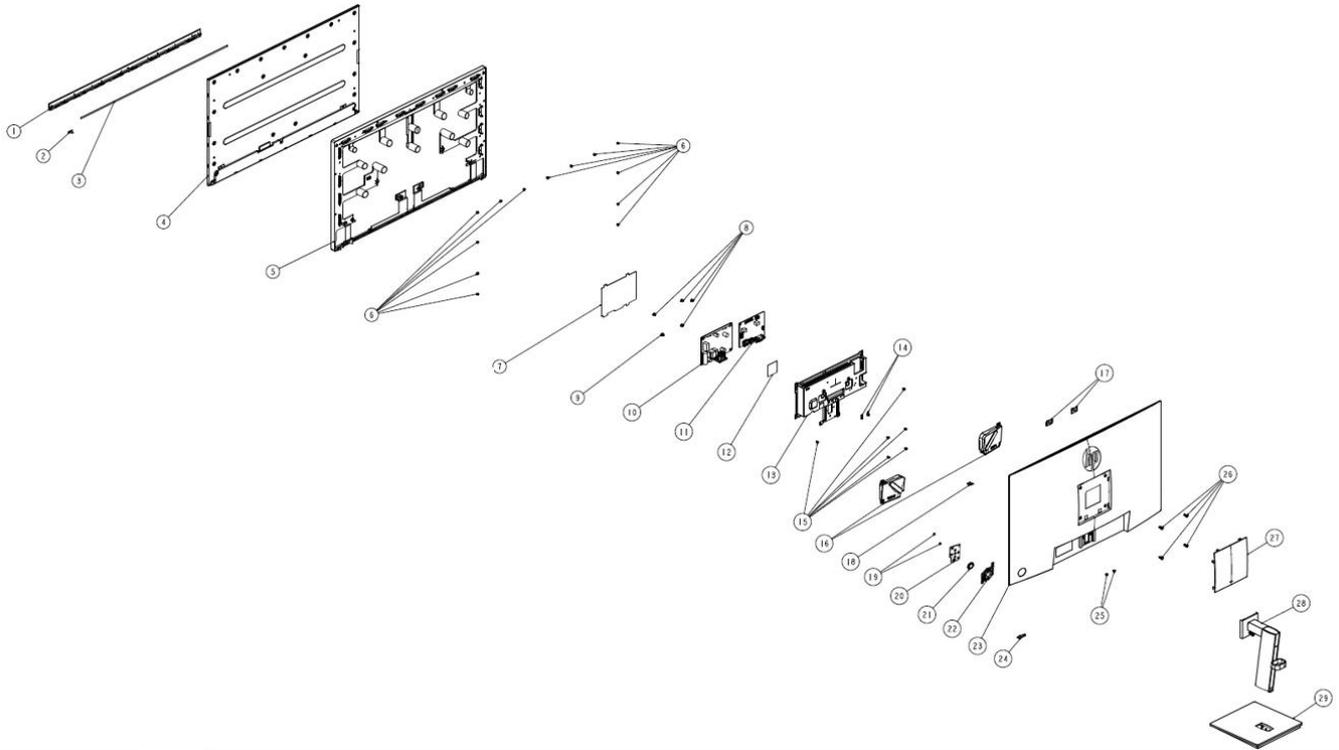**For worldwide models:**

Barcode label

Spec label

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

3. Ilustrated parts catalog

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

ITEM	Part Name	Q'ty
1	DECO BEZEL	1
2	Lens power	1
3	DECO BEZEL SPONGE	1
4	Panel	1
5	Middle frame	1
6	Screw M3xL4	13
7	Power Bottom Mylar	1
8	Screw M3xL6	4
9	Screw M4xL6	1
10	Power board	1
11	Scalar board	1
12	Power Internal Mylar	1
13	Mainframe ASSY	1
14	Screw VGA	2
15	Screw M3xL6	6
16	Speaker	1
17	VESA NUT BKT	2

18	K-lock bkt	1
19	Screw M2xL4	2
20	OSD Key board	1
21	OSD Key Center	1
22	OSD Key Ring	1
23	Rear cover	1
24	Power button	1
25	Screw M3xL4	2
26	Screw M4xL10	4
27	VESA Cover	1
28	327ph Stand Ass'Y	1
29	327ph BASE ASS'Y	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
327ph 1st source	P36731-001	PLPCOH471AFAB
327ph 2nd source	P36732-001	PLPCOH511KFAC

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)

- DK : https://www.digikey.com/

Capacitors by distributor

Component description	Location	Component distributor	Distributor part number
CAP EC 470uF 20% 25V 10*12 5000hr 1.7A P5.0 EV1E471MP51012P9SUV CHINSAN	C916/C917	Farnell	MAL217256471E3 (VISHAY) 4000hr

Connectors by manufacturer

Component description	Location identifier	Component distributor	Distributer part number
DisplayPort	CN501	digikey	DP1RD20JQ2R400 (JAE)
HDMI	CN502	digikey	DC04S019JA1R600 (JAE)

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 computer, go to http://partsurfer.com, 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
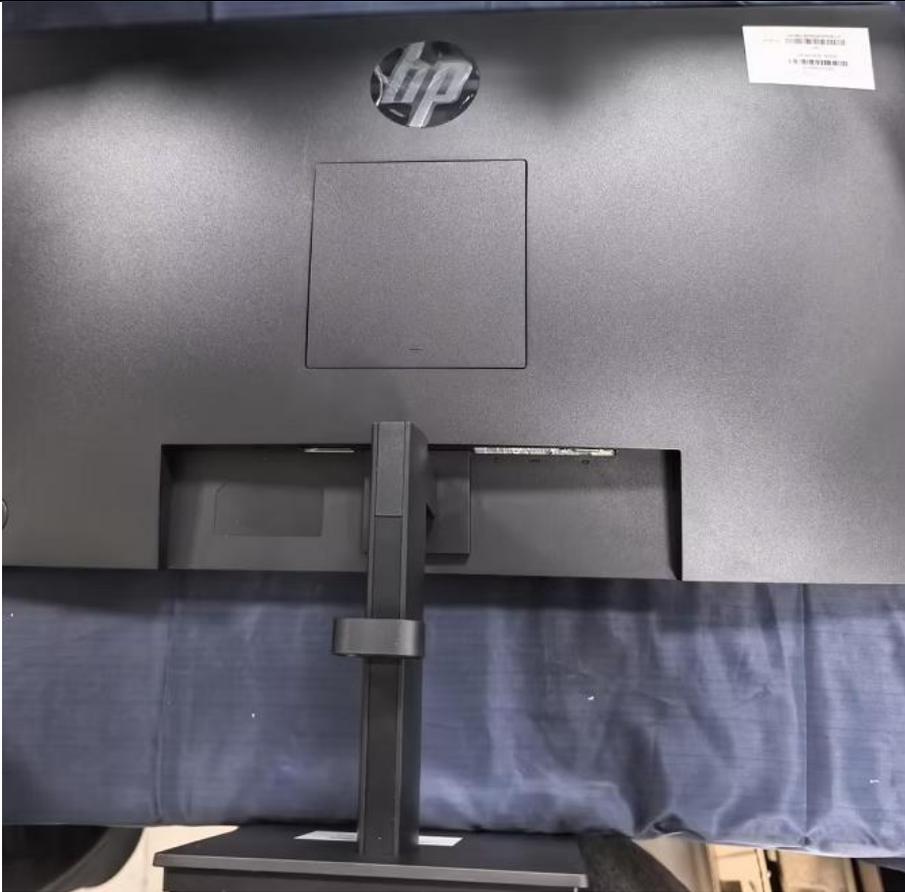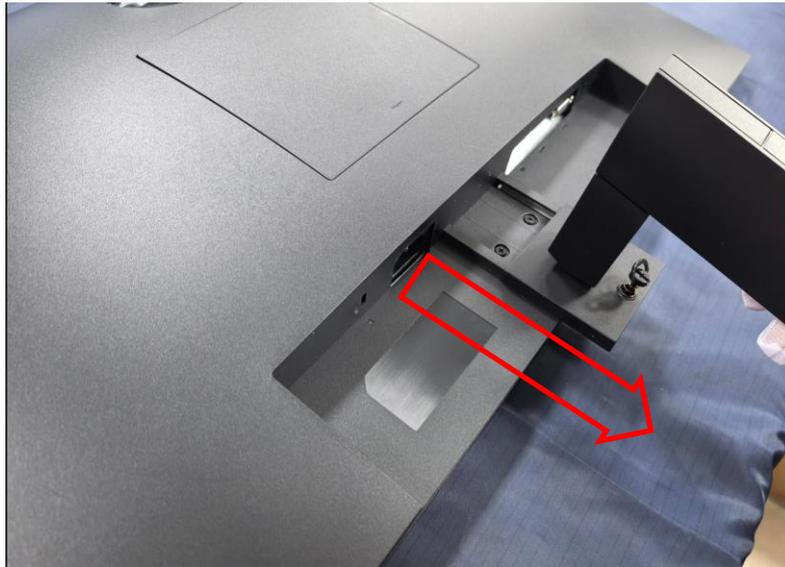- ESD protection
- Scraper bar in the following dimensions:
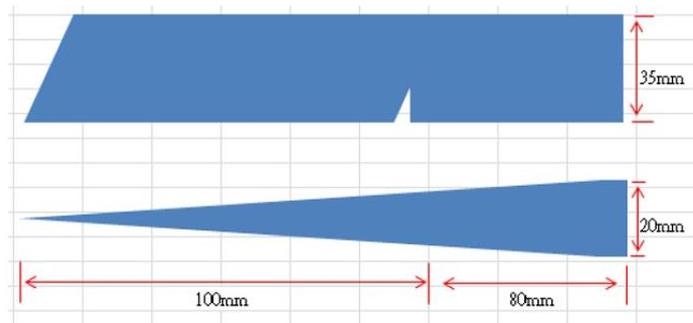
RC

Before removing the RC, follow these steps:

▲ Prepare the monitor for disassembly. See <u>Preparation for disassembly</u> on page 11.

Remove the RC:

Step	Figure	Description
Preparation		Lay the monitor on a flat, soft and clean surface.
Remove the Stand-base Ass'y		Turn the screw to remove the Stand-base Ass'y.

Remove the Stand-base Ass'y		Slide the stand-base Ass'y.
Remove the VEAS		Use the screwdriver to remove 4pcs VEAS screws.
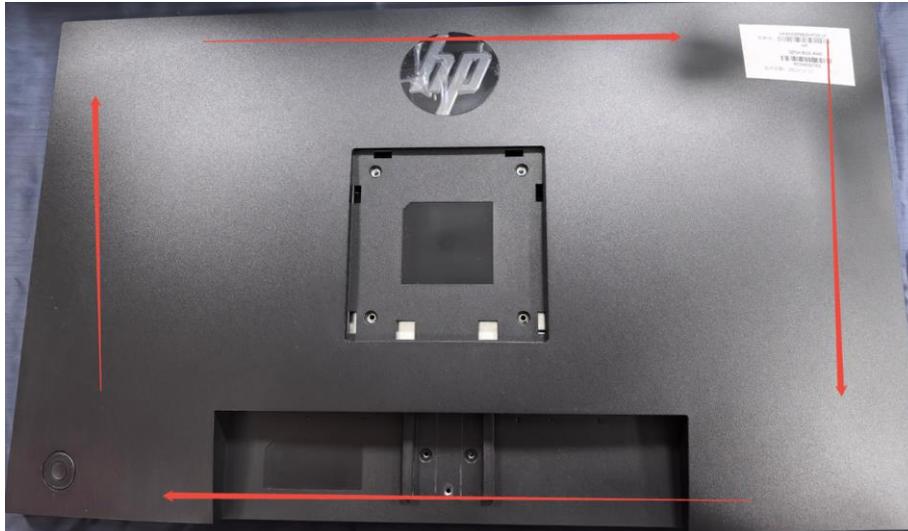
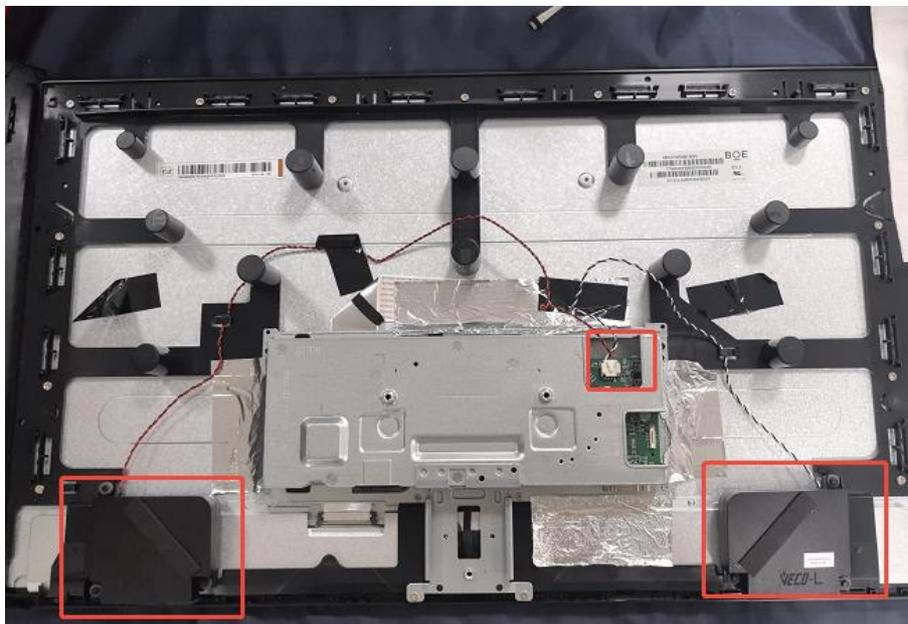|		
Open the REAR COVER		Use disassembly tool to open all the latches along the edge of the rear cover.
Disconnect key board wire.		Disconnect key board wire.
Remove the SPEAKER		Disconnect the pin and remove the speaker.
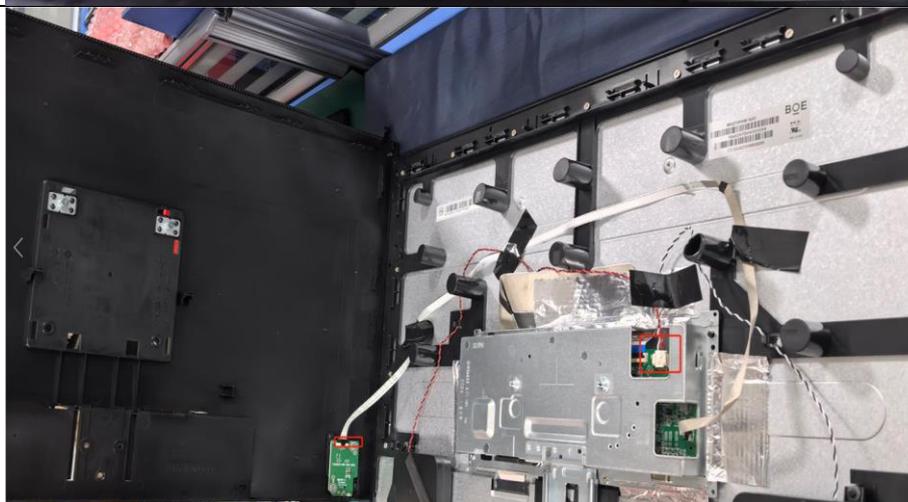
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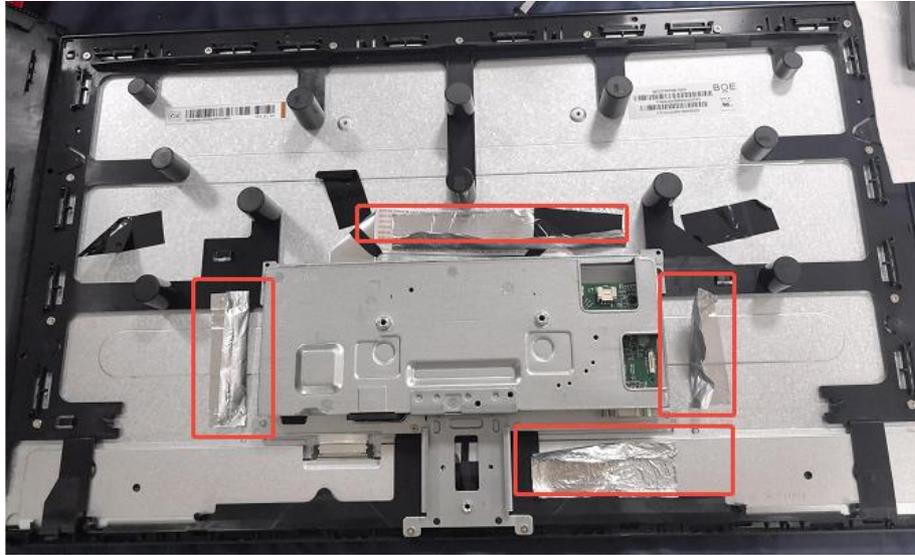
Tear off the ALL foil		Tear off the all foil.
Remove the MAIN FRAME		Remove 6pcs screws, disconnect all connector to remove the main frame.
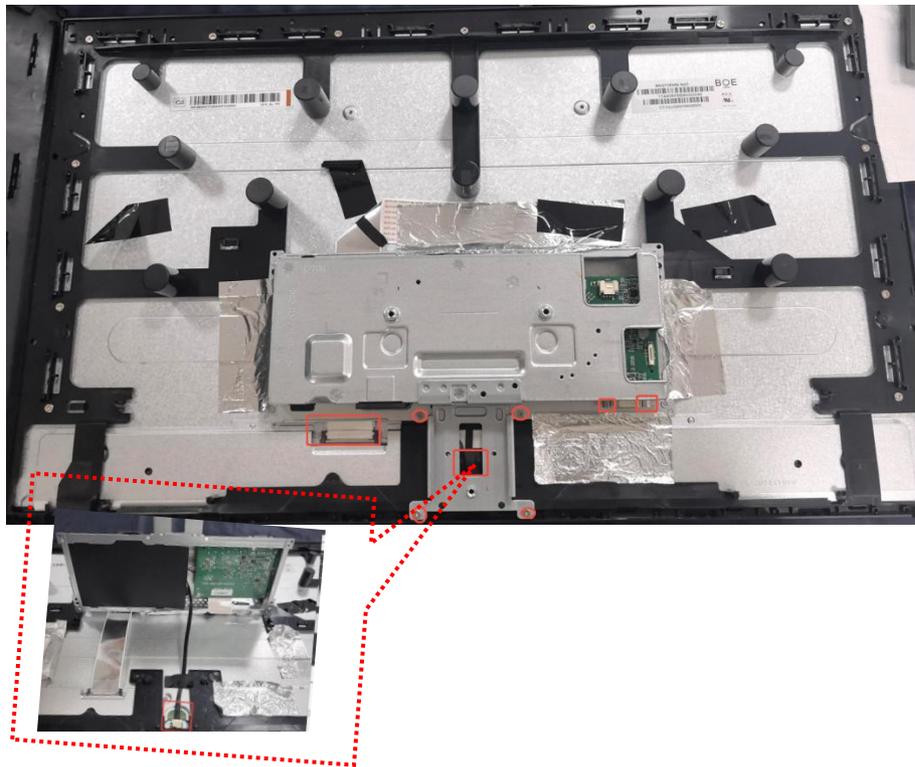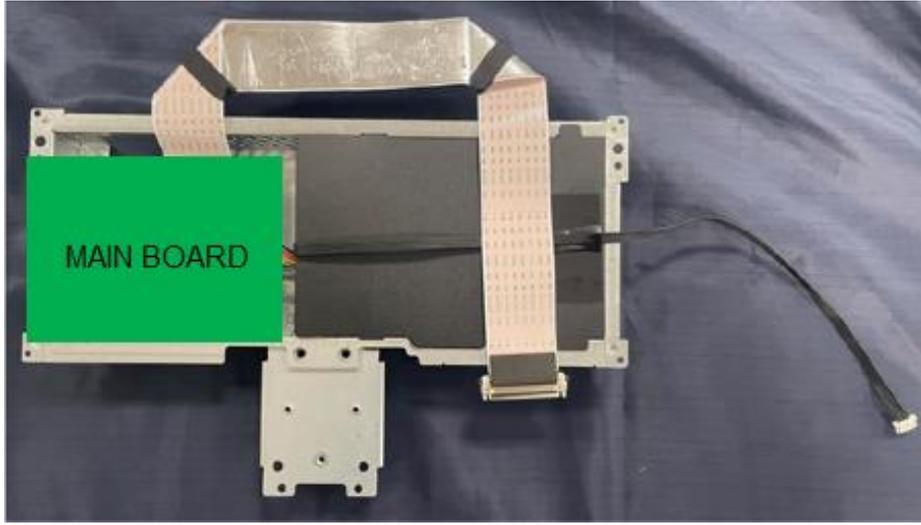
Remove the MAYLR.		Remove the MAYLR.
Remove the MAIN BOARD and POWER BOARD	 	Disconnect the connector between power board and main board.
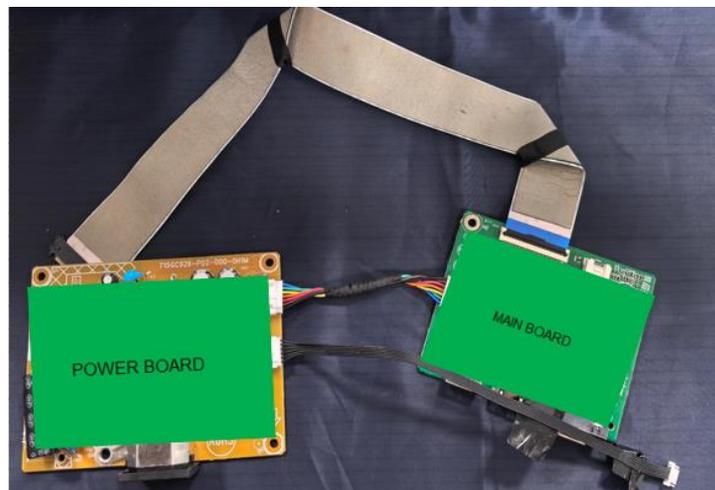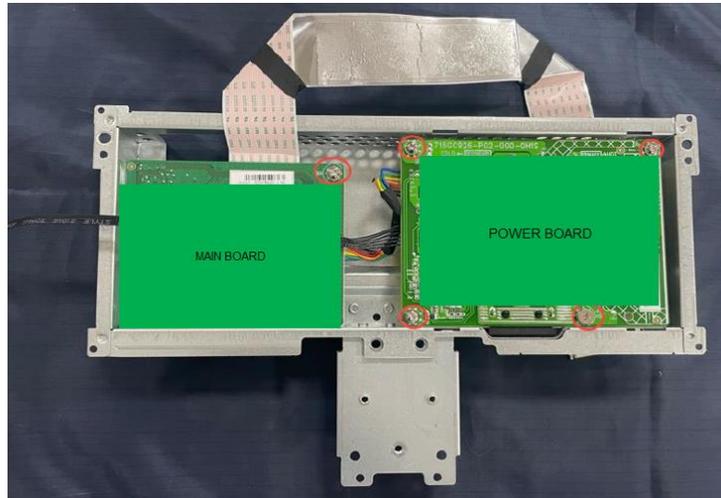
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THE POWER BOARD		The power board.
THE MAIN BOARD		The main board
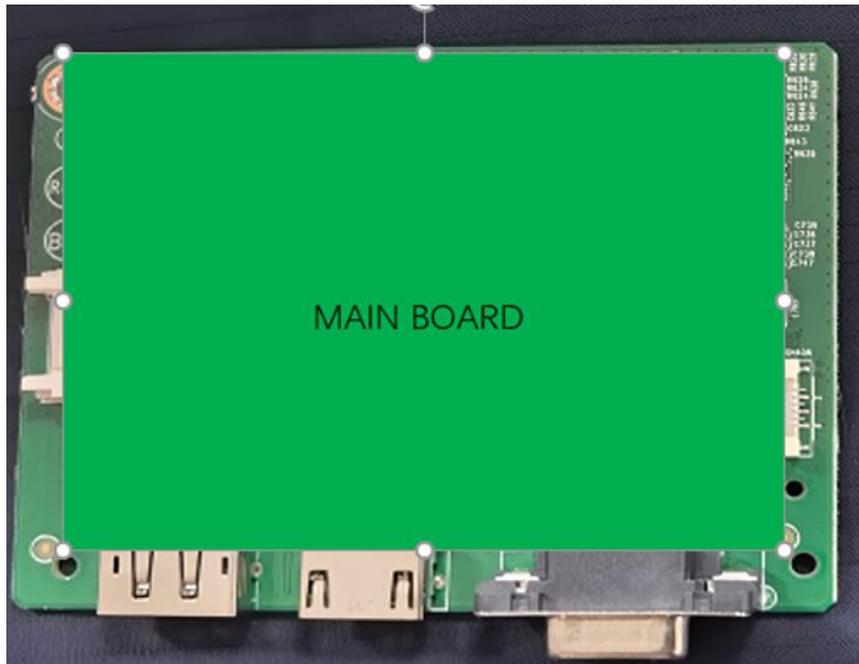
Power board

The power board part number is：

PLPCOH471AFAB (1st source) or PLPCOH511KFAC (2nd source).

Before removing the power board, follow these steps:

▲ Prepare the monitor for disassembly. See Preparation for disassembly on page 11

Remove the power board:

1) The HP 327ph 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.

2) Locate the part number location on the board.

Connector repair

This procedure includes HDMI, DisplayPort , USB and audio connectors.

The connectors are on the main board (board part number CBPR4EBHPF1).

The connectors identifiers are as follows:

Connector	Location
DisplayPort	CN501
HDMI	CN502
D-SUB	CN503

Before repairing connectors, follow these steps:
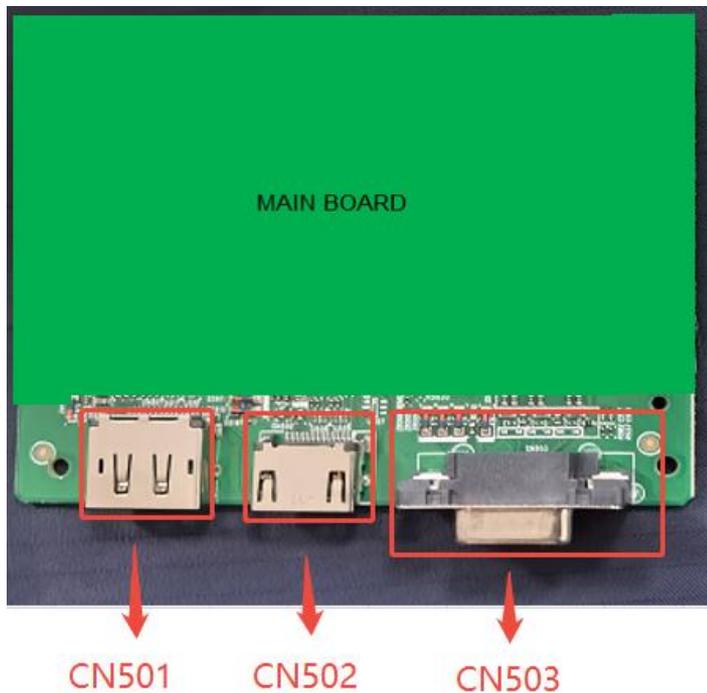
▲ Prepare the monitor for disassembly. See <u>Preparation for disassembly </u>on page 11

IMPORTANT:
• 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.

DisplayPort connector CN501

Repair the DisplayPort connector:

1)   Use a hot air gun to melt the solder on the pins.
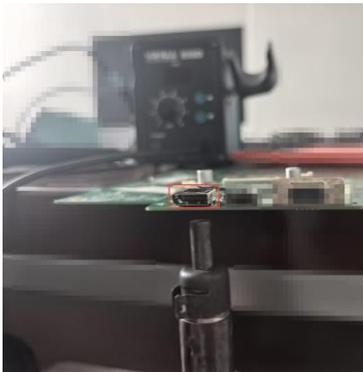
2)   Remove the CN501 connector from the PCB with tweezers.

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

4)   Solder the new component.

HDMI connector CN502

Repair the HDMI connector:

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

2）Remove the CN502 connector from the PCB with tweezers.

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

4）Solder the new component.

D-SUB connector CN503

Repair the D-SUB connector:

1）Use a soldering iron and a desoldering 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 CN503 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.

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
Audio test	Change volume and balance to confirm whether volume is smooth and loud enough.	Speaker
D-SUB test	Confirm whether image displays and sound plays correctly on the monitor.	Computer or DVD player

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

Problem	Possible cause	Solution
Screen is blank or video is flashing.	Power cord is disconnected.	Connect the power cord.
	Monitor is 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.
	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 Control 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.
Check Video Cable is	Monitor video cable is disconnected.	Connect the appropriate video signal cable

displayed on screen.		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.	The monitor's power saving control is disabled.	Open the OSD menu and select Power Control > Auto-Sleep Mode and set auto-sleep to On.
On-Screen Menus are Locked is displayed.	The monitor's OSD lock function is enabled.	Press and hold the Menu button on the front bezel to 10 seconds to disable the OSD lockout function.
Power Button is Locked is Displayed	The monitor's power button is locked.	Press and hold the power button for 10 seconds to disable the power button lock function.