



# Maintenance and Service Guide

## HP Series 3 Pro 324pe model

### **SUMMARY**

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

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Document Part Number: P21777-HP Series 3  
Pro 324pe-MSG-V1

Assembly part number: P21777-001

#### **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.

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**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.

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

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## 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](http://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.

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## 2 Monitor features

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

### Features

#### Display features

- 60.5 cm (23.8) diagonal viewable screen area with 1920 x 1080 resolution, 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) technology
- Wide color gamut to provide coverage of NTSC color spaces
- Nonglare screen 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 mode
- On-Screen Display (OSD) adjustments in several languages for easy setup and screen optimization
- Energy saver feature to meet requirements for reduced power consumption
- Security cable slot provision on rear of monitor for optional security cable
- Cable management feature for placement of cables and cords
- Plug and Play capability, if supported by your operating system
- Flicker-Free technology, which eliminates visible screen flicker and prevents eye strain and fatigue, producing a more comfortable viewing experience

#### Connectors

- DisplayPort™ video input, output, or output (cable included)
- High-Definition Multimedia Interface® (HDMI®) video input

#### Monitor stand

- Removable stand for flexible monitor head mounting solutions
- 100 mm x 100 mm VESA® mounting capability for attaching the monitor to a wall mount device or swing arm

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**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**.

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# Front components

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

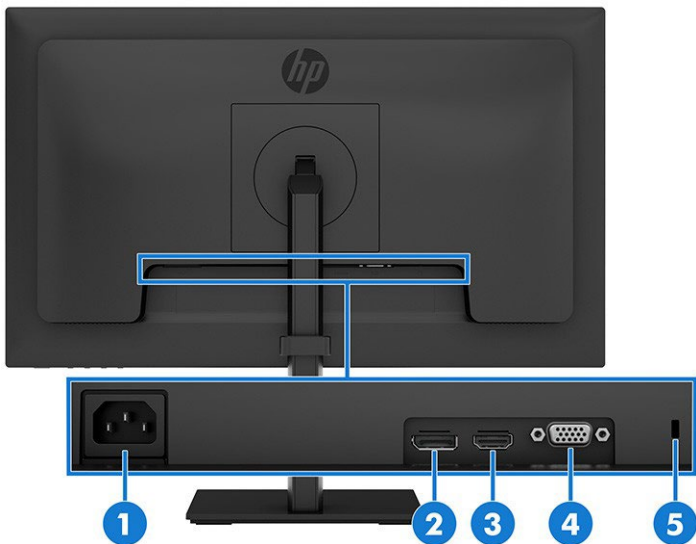


**Table 2-1** Front components and their descriptions

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

# Rear and side components

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



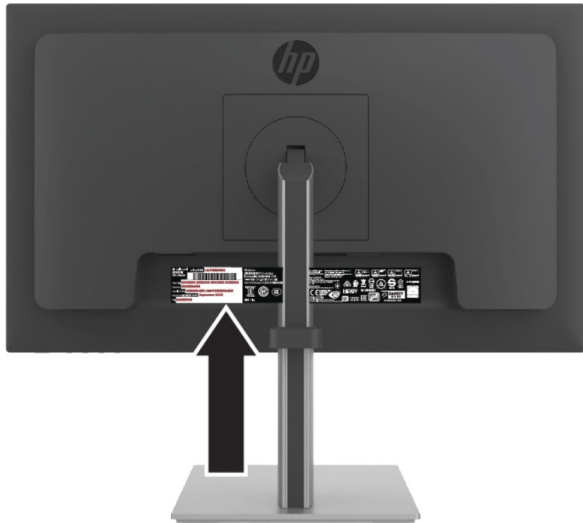
**Table 2-2 Rear components and their descriptions**

Component		Description
(1)	Power connector	Connects a power cord.
(2)	DisplayPort	Connects a DisplayPort cable to a source device such as a computer.
(3)	HDMI port	Connects the HDMI cable to a source device such as a computer.
(4)	VGA port	Connects a VGA cable to a source device such as a computer or game console.
(5)	Security cable slot	Connects an optional security cable.



## 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 all regions:**

**Barcode label:**

Regulatory Model/ 規定型号/規定型號/ 모델명: HSD-0188-W  
 Serial No. 序号/序號: **CN45040001**  
  
 Product No.: **B1GM5AA**  
 Spares No.: **P23185-001/ASSY P21777-700**  
 Assembly Part No.: **P21777-001**  
 Manufactured 制造/製造日期/제조년월: **January 2025**  
 Rev.: **E5IT1111**

型号: HP 324pe Monitor /液晶显示器/液晶顯示器/모니터 60,5 cm (23.8 in.)  
 Input Rating 电源电压/輸入電源/交流電壓/정격입력:  
 100-240V ( 伏特)~ 1,3A (1.3A安培 50 / 60 Hz (赫茲)  
 Made in China/Fabrique en Chine/ 제조국: 중국/製造地: 中国/製造地: 中國  
 IS 13252 (Part 1)/ IEC 60950-1  
  
 R-41081183  
 www.bis.gov.in  
 制造商: HP Inc.

**Spec label:**

은모드 소비전력: 16.8W  
 모델명: HSD-0188-W  
 최저소비효율기준 만족제품  
 XU101307-25175  
 R-R-hpi-HSD-0188-W  
 인증받은 자의 성호: HP Inc.  
 제조지/제조국가: 위스트론 인포컴(중산)코어퍼레이션  
 연락처: 1588-3003  
 제조국: 중국  
 HP Inc UK Ltd, Regulatory Enquiries,  
 Earley West, 300 Thames Valley Park Drive, Reading, RG6 1PT  
 HP REG 23010, 08028  
 Barcelona, Spain  
 reg@hp.com  
 This device complies with part 15 of the FCC Rules.  
 Operation is subject to the following two conditions:  
 (1) This device may not cause harmful interference, and (2) this device must  
 accept any interference received, including interference that may cause undesired operation.

Apparats stikprop skal tilsluttes en stikkontakt med jord,  
 som giver forbindelse til stikproppens jord.  
 Laite on liitettävä suojakoskettimilla varustettuun pistorasiaan.  
 Apparät må tillkoplas jordet stikkontakt.  
 Apparaten skall anslutas till jordat uttag.

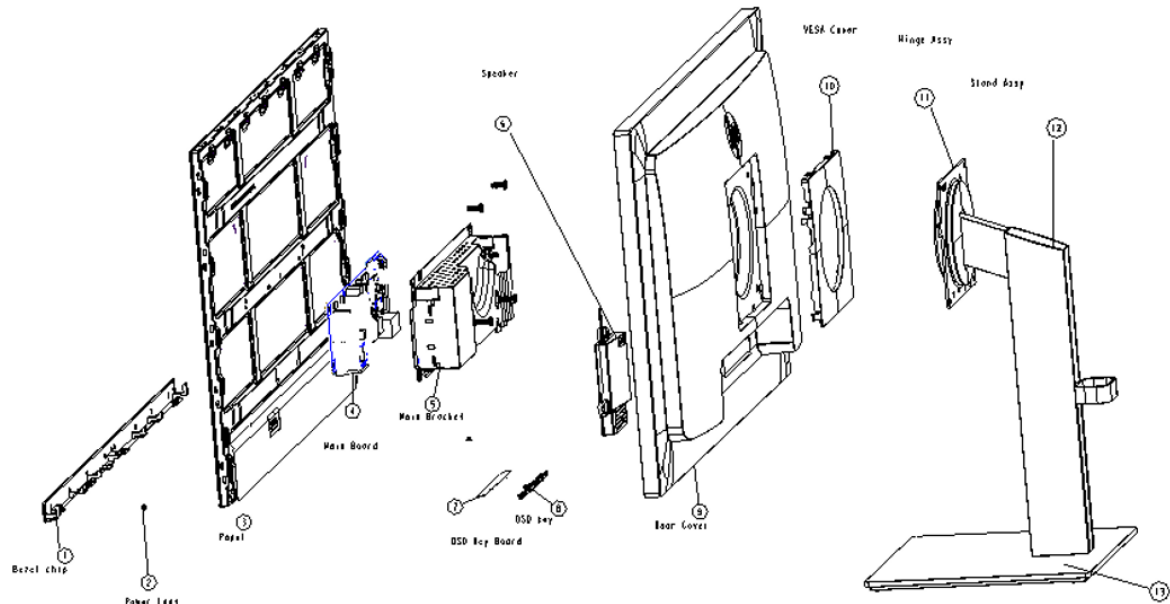
TÜV Rheinland CERTIFIED  
 Type Approved Safety Regular Production Revalidation  
 www.bis.gov.in  
 TÜV Rheinland CERTIFIED  
 Low Blue Light (Eye-Device Solution)  
 www.bis.gov.in  
 TÜV Rheinland ULE  
 04525  
 R3A304 RoHS  
 04525  
 CAN ICES (B)/NMB (B)  
 ENERGY STAR  
 250010-15

UK CA  
 FCC  
 CE  
 TCO  
 HDMI  
 VCCI  
 EAC  
 cd  
 SAFETY MARK  
 ENERGY STAR

警告: 使用過度恐傷害視力

### 3 Illustrated parts catalog

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



**Table 3-1:** Monitor major components and their descriptions

Item	Description	Part number	Qty
1	#ASSY Front Chin 324pe		1
2	#Lens 324pe		1
3	#Panel ASSY 324pe		1
4	#PCB ASSY-324pe		1
5	#Main Chassis ASSY 324pe		1
6	#Speaker-324pe		2
7	#OSD Key BD 324pe		1
8	#OSD Key 324pe		1
9	#Rear Cover 324pe		1
10	#VESA Cover 324pe		1
11	#ASSY Hinge 324pe		1
12	#ASSY Arm 324pe		1
13	#ASSY Base 324pe		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
MB RG238HC-BSAWK(C)324PE HKC P	P36735-001	7ZB.0CQ01.0024 7ZB.0CQ01.0026
MB RG238HC-BSAWT(C) 324PE CSOT P	P36736-001	7ZB.0CQ01.0025 7ZB.0CQ01.0027

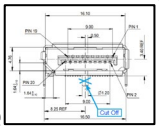
Capacitors and connectors are available for purchase from the following EU distributors:

- SUSCOM: [www.suscom-ind.co.uk](http://www.suscom-ind.co.uk)
- CAPXON: [www.capxongroup.com](http://www.capxongroup.com)

### Capacitors by distributor

Component description	Location	Component distributor	Distributor part number
CAP EL 330U 35V M P5 10*13 MG	PT504, PT507		SUSCON
CAP EL 330U 35V M P5 10*12.5 GL			CAPXON
CAP EL 47U 100V M 10*13 P5 HF	PT506		SUSCON
CAP EL 47U 100V K 10*12.5 GF BW CAPXON			CAPXON

### Connectors by manufacturer

Component description	Location identifier	Component distributor	Distributor part number	Remark
HDMI	HDMI1	Switchcraft Inc.	<a href="https://www.digikey.com">https://www.digikey.com</a> PN: 137-RAHHD19TR-ND	
DP	DP1	Molex	<a href="https://www.digikey.com">https://www.digikey.com</a> PN: WM14328DKR-ND	1. Only DP1.2 2. Cut off the through hole 
D-Sub	CRT1	Kycon, Inc.	<a href="https://www.digikey.com">https://www.digikey.com</a> PN: 2092-K61X-E15S-N-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 <https://partsurfer.hp.com/Search.aspx>.

**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.

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

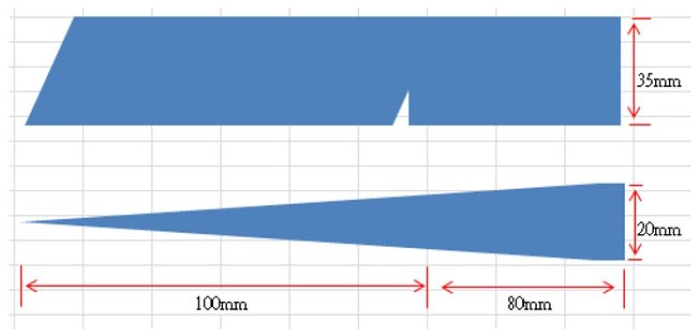
## 4 Removal and replacement procedures

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:

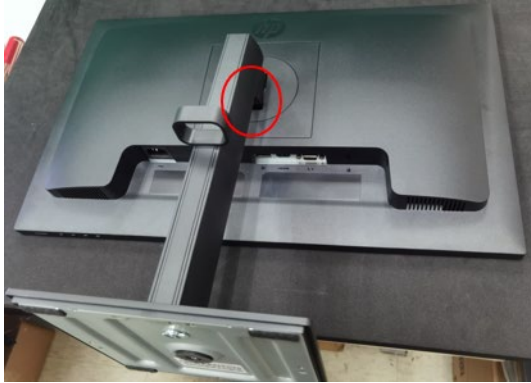


### Rear Cover

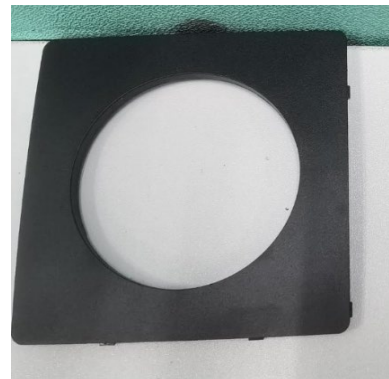
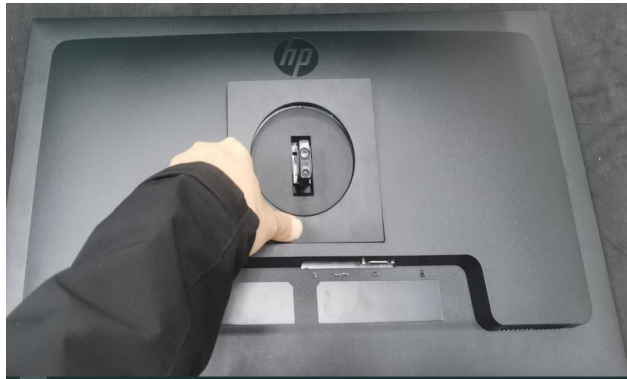
Before removing the Rear Cover, follow these steps:

- ▲ Prepare the monitor for disassembly. See Preparation for disassembly on page 9.

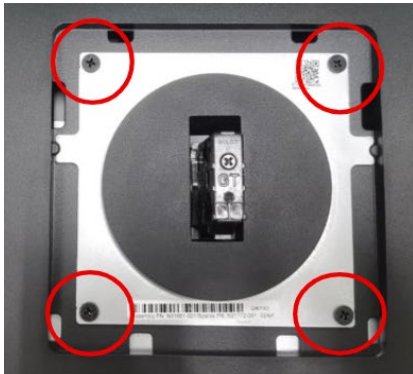
- 1) Pull the release button to remove the stand base from the display head.



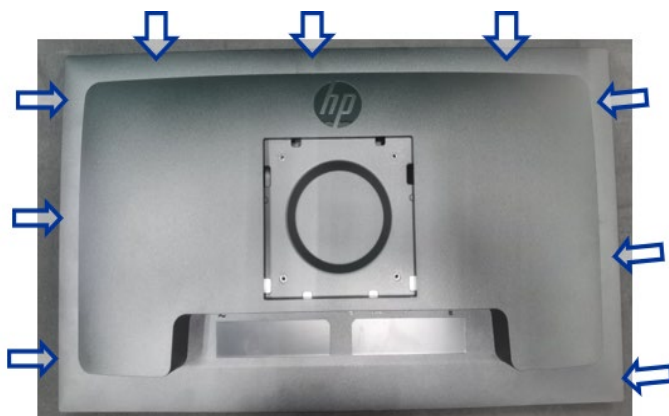
- 2) Press VESA cover on the bottom side to release VESA cover.



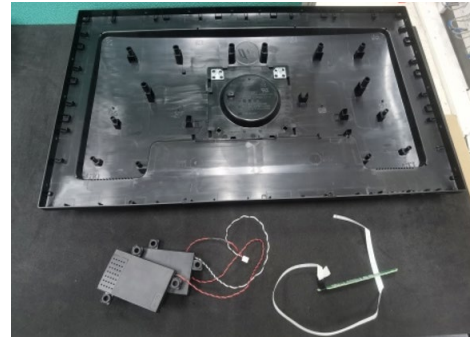
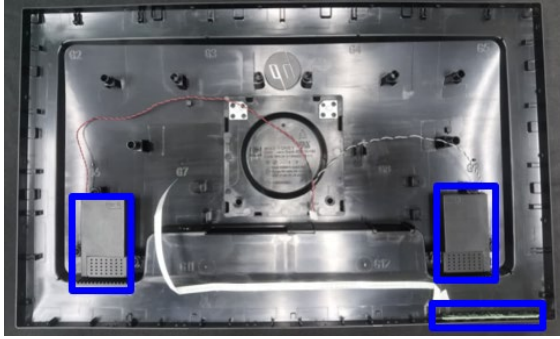
- 3) Release four wall mount screws to remove hinge assy.



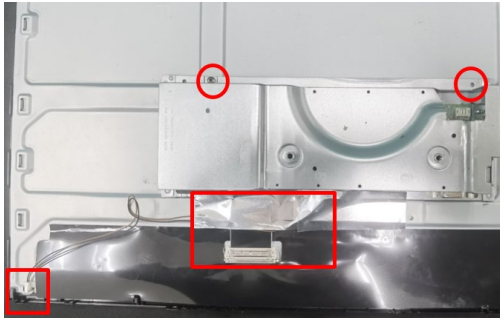
- 4) Pull the rear cover on the left & right & top side, then disconnect key cable and speakers cable from the main chassis to remove the rear cover.



- 5) Remove the key board and two speakers from the rear cover.



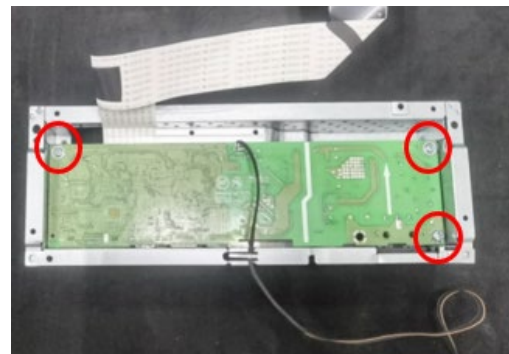
- 6) Remove AL tape and two screws, then disconnect LVDS cable and lightbar cable, and then remove the main chassis from the panel.



- 7) Remove the screw to secure the front bezel with the panel.

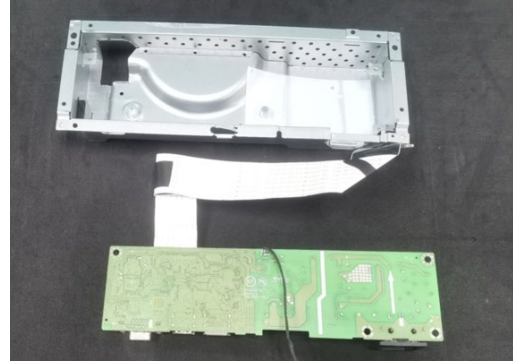
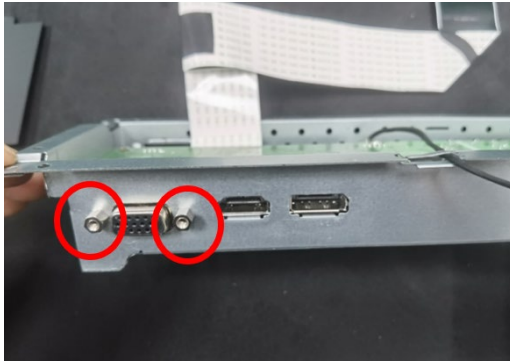


- 8) Remove the Mylar sheet, then release the three screws on the main board.



- 9) Remove the two screws to release VGA connector, then remove the main board from chassis.





## Power board

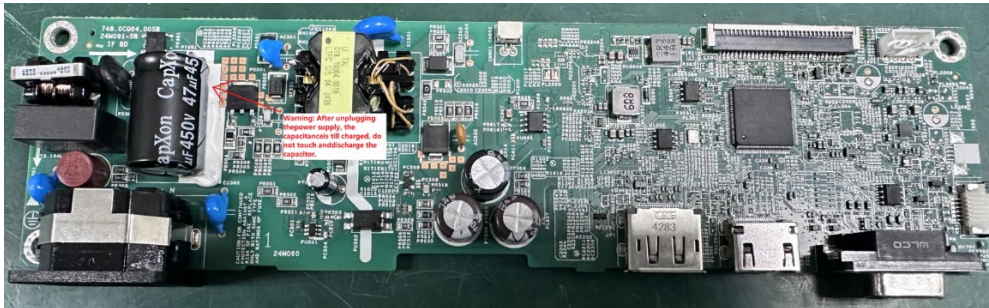
The power board part number is 7ZB.0CQ01.0020.

Before removing the power board, follow these steps:

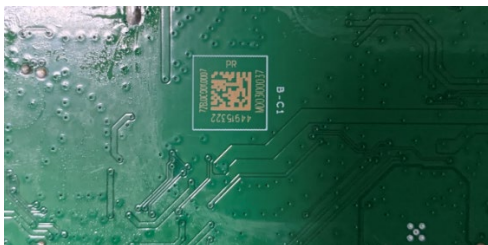
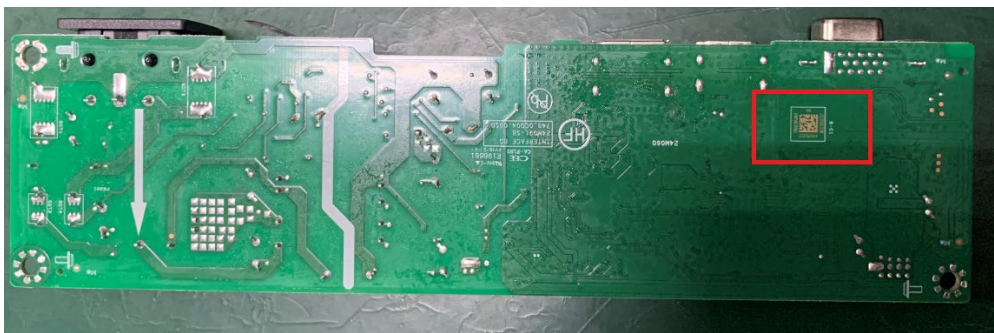
- ▲ Prepare the monitor for disassembly. See Preparation for disassembly on page 9.

Remove the power board:

- 1) The HP Series 3 Pro 324pe main board connector position is as follows:



- 2) Locate the part number location on the main board.



- 3) Pin solder with soldering iron and absorber.  
NA

- 4) Lift the connector up and away from the PCB.  
NA

## Connector repair

This procedure includes HDMI, Display Port, and D-Sub connectors.

The connectors are on the main board (board part number 7ZB.0CQ01.0020).

The connector identifiers are as follows:

Connector	Location
HDMI	HDMI1
DP	DP1
D-Sub	CRT1



Before repairing connectors, follow these steps:

- ▲ Prepare the monitor for disassembly. See [Preparation for disassembly](#) on page 9.

### HDMI connector HDMI1

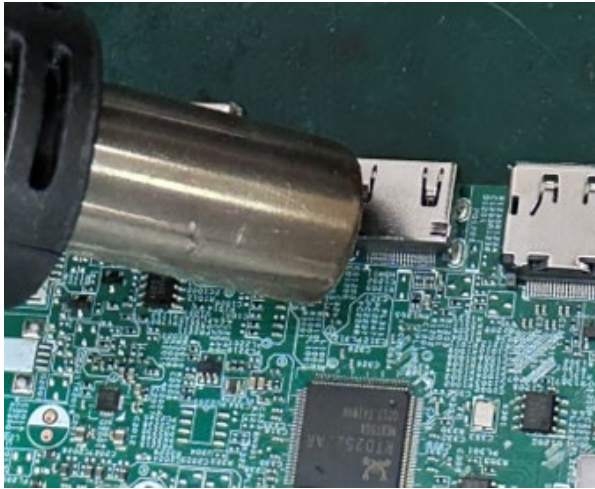
Repair the HDMI connector:

- 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.

## D-Sub connector CRT1

Repair the D-Sub connector:

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



- 2) Lift the D-Sub 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.

## 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
D-Sub Test	Confirm whether image displays plays correctly on the monitor.	Computer or Notebook

## 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 blinking.	Power cord is disconnected.	Connect the power cord.
	Monitor is off.	Press the monitor power button.  <b>NOTE:</b> 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 Auto-Sleep Mode.	Press any key on the keyboard or move the mouse to inactivate the screen blanking utility.
	Video card is incompatible.	Perform one of the following actions: Open the OSD menu and select the Input menu. Set Auto-Switch Input to Off, and then manually select the input. 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 setting is too low.	Open the OSD menu, and select Brightness to adjust the brightness scale as needed.
"Check Video Cable" is displayed on the 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 connecting the video cable.
"Input Signal Out of Range" is displayed on screen.	Video resolution rate, refresh rate, or both, are set higher than the monitor supports.	Change the settings to a supported setting.
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 Power, select Auto-Sleep Mode, and then set auto-sleep to On.
"OSD Lockout" is displayed.	The monitor's OSD Lockout function is enabled.	Press and hold the <b>Left</b> button for 10 seconds to disable the OSD Lockout function.
Slow performance from USB.		The monitor has a two-lane default for USB-C. On selected products, you can press the Joypad button to open the OSD menu, navigate to the USB Type-C configuration, and then select USB-C Video + USB 3.0 for data transfer prioritization
Lower refresh rate or color bits.		Select USB-C Video + USB 2.0 for refresh rate/color bits prioritization
LAN connection drop.		Check if the LAN driver version on the host PC is up to date

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