



Maintenance and Service Guide

Series 5 Pro 524pn model

SUMMARY

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

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First Edition: May 2024

Document Part Number: N84960-HP Series 5 Pro 524pn-MSG-V1

Assembly part number: N84960-001

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.

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 compliant, the replacement parts can be non-ROHS compliant. If the original parts are RoHS compliant, the replacement parts **MUST** be RoHS compliant.

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

Display features

- 61,1 cm/24 in diagonal viewable screen area with 1920 x 1200 resolution (HSD-0177-W), plus full-screen support for lower resolutions; includes custom scaling for maximum image size while preserving original aspect ratio
- Nonglare screen with an LED backlight
- Wide viewing angle to allow viewing from a sitting or standing position, or when moving from side to side
- Tilt, swivel, and height adjustment capabilities
- Pivot capability to rotate the monitor head from landscape to portrait mode
- Removable stand for flexible monitor head mounting solutions
- Plug and Play capability, if supported by your operating system
- 100 mm integrated VESA mounting
- Security cable slot provision on rear of monitor for optional security cable
- On-Screen Display (OSD) adjustments in several languages for easy setup and screen optimization
- HP Display Assistant software for adjusting monitor settings and enabling theft deterrence features
- High-bandwidth Digital Content Protection (HDCP) copy protection on all digital inputs
- Energy saver feature to meet requirements for reduced power consumption

Connectors

- DisplayPort™ video input (cable included)
- High-Definition Multimedia Interface® (HDMI®) video input
- USB hub with one USB Type-B port that connects to the computer (upstream) and four USB-A ports that connect to USB devices (downstream)
- HDMI cable
- DisplayPort cable
- USB Type-B-to-USB Type-A cable

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 **Setup & User Guides**.

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

Rear and side components

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

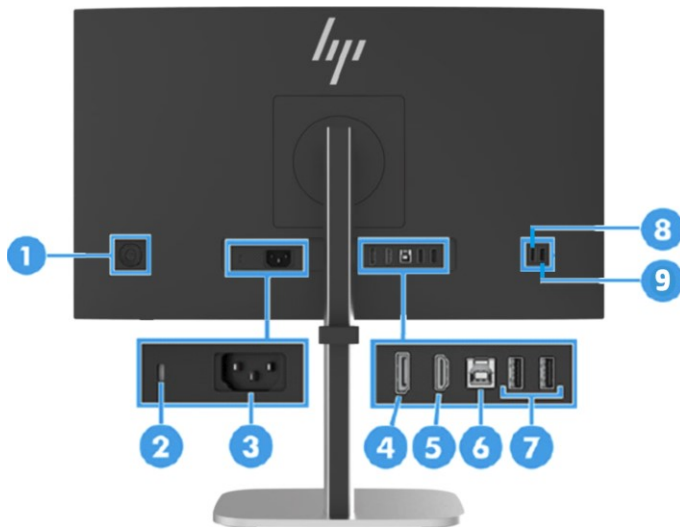


Table 2-2 Rear and side components and their descriptions

Component	Description
(1) Menu button and Function buttons	Press to open the OSD menu, select a menu item from the OSD, or close the OSD menu. Use these buttons to navigate through the OSD menu based on the indicators above the buttons that are activated while the OSD menu is open.
(2) Security cable slot	Connects an optional security cable to the monitor.
(3) Power connector	Connects a power cord.
(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) USB Type-B port (upstream)	Connect USB cables to peripheral devices, such as a keyboard, mouse, or USB hard drive, and provides data transfer.
(7)(8) USB Type-A ports (3) (downstream)	Connect a USB cable to a peripheral device, such as a keyboard, mouse, or USB hard drive.
(9) USB Type-A port (1) (downstream)	Connect a USB cable to a peripheral device, such as a keyboard, mouse, or USB hard drive, and charge peripheral devices. (1)

3 Illustrated parts catalog

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

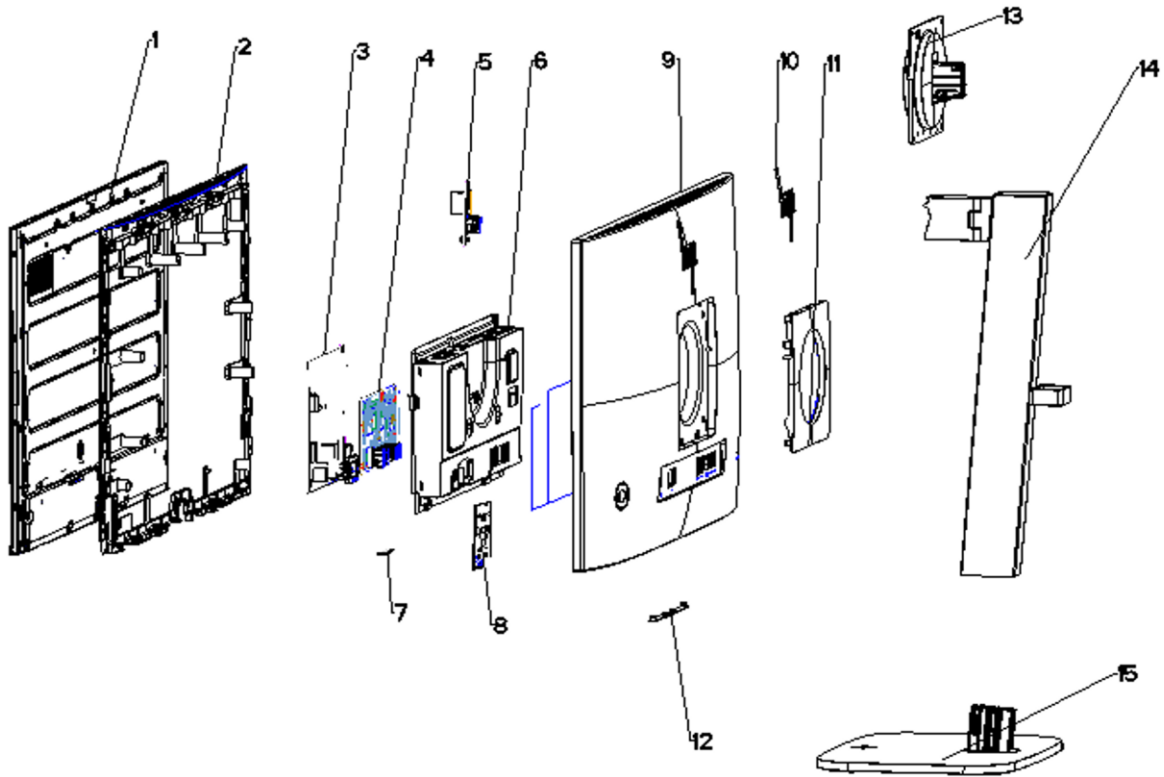


Table 3-1: Monitor major components and their descriptions

Item	Description	Part number	Qty
1	#ASSY Panel 524pn		1
2	#ASSY-MC 524pn		1
3	#Power BD 524pn		1
4	#ASSY-IF BD 524pn		1
5	#ASSY-USB BD 524pn		1
6	#ASSY Main chassis 524pn		1
7	#ASSY Power key BD 524pn		1
8	#ASSY-OSD key BD 524pn		1
9	#Assy RC 524pn		1
10	#Rear LOGO 524pn		1
11	#ASSY VESA Cover 524pn		1
12	#Speaker cover 524pn		1
13	#ASSY Hinge 524pn		1
14	#ASSY Arm 524pn		1
15	#ASSY Base 524pn		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
POWER BD MK24WHC-WUL(C)524pn LG	P12420-001	755.0BP04.0001
POWER BD MK24WHC-WUE(C)524pn BOE	P12421-001	755.0BP04.0002

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

- SUSCON : www.su-scon.com
- CAPXON: www.capxongroup.com

Capacitors by distributor

Component description	Location	Component distributor	Distributor part number
CAP EL 100U 450V M P7.5 16*45 R HE	PT501	SUSCON	HE450M101J45T014ZCGR
CAP EL 100U 450V M P7.5 16*45 R CAPXON		CAPXON	FL101M450J450ELKR

Connectors by manufacturer

Component description	Location identifier	Component distributor	Distributor part number	Remark
DP	DP1	TE Connectivity AMP Connectors	https://www.digikey.com PN: 2041441-1	
HDMI	HDMI1	CUI Devices	https://www.digikey.com PN: HD12-19-SMT-TR	
USB-B	USB1	Kycon, Inc	https://www.digikey.com PN: KUSBVX-BS1N9-BL30	
USB-A	USB2 USB3	TE Connectivity Linx	https://www.digikey.com PN: 2438987-1	

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/>

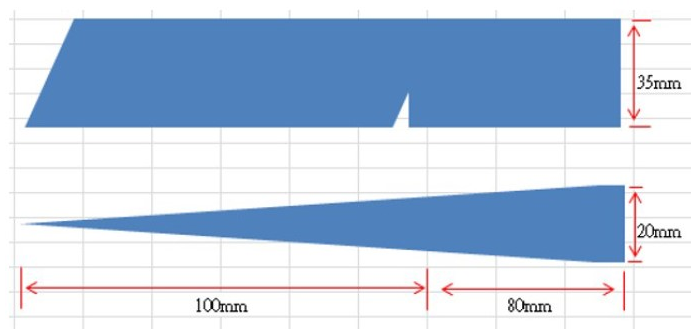
4 Removal and replacement procedures

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:



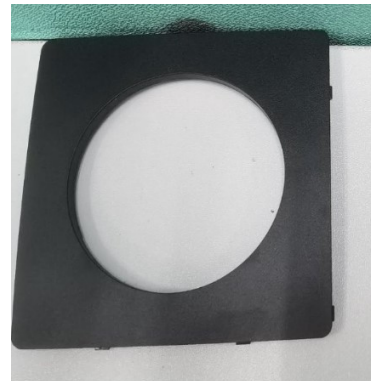
Rear Cover

Before removing the Rear Cover, follow these steps:

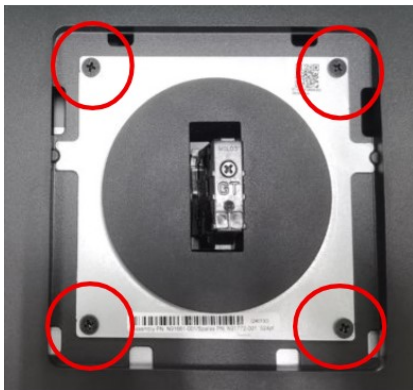
- ▲ Prepare the monitor for disassembly. See Preparation for disassembly on page 9.
- 1) Pull the release button to remove Stand Base From Display Head



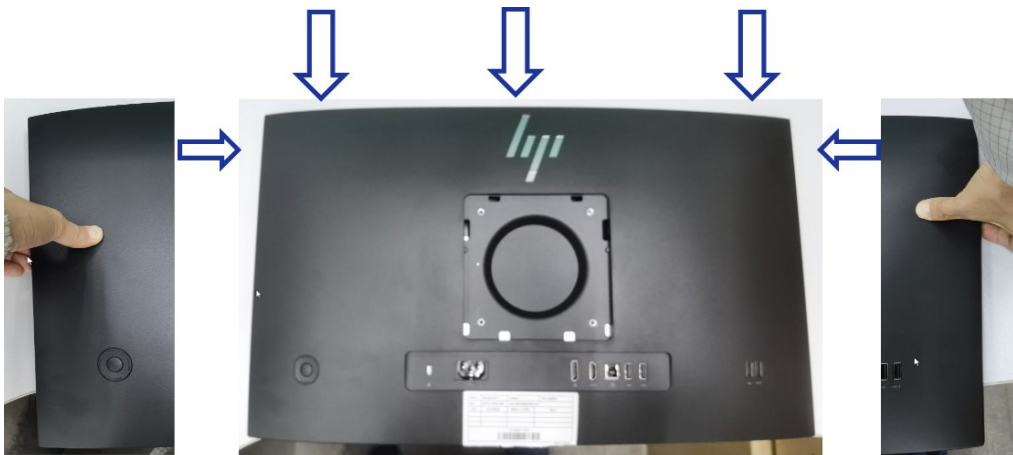
2) Press VESA cover on the bottom side to release VESA cover.



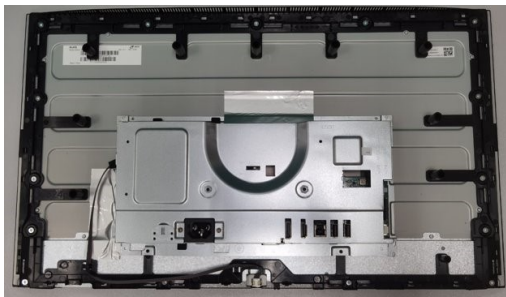
3) Release 4 wall mount screws to remove Hinge ASSY



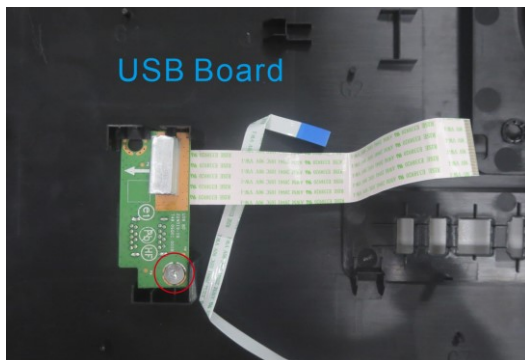
4) Pull the Rear cover on the left & right & top side to release the Rear cover.



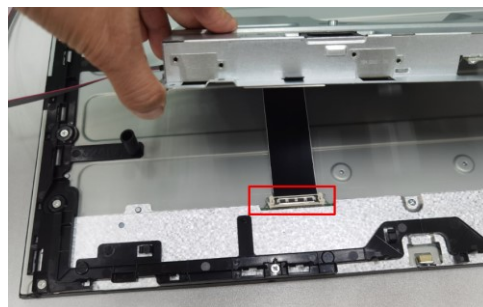
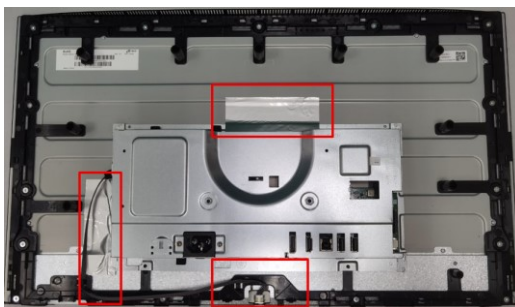
5) Disconnect key cables and remove the rear cover from the display head.



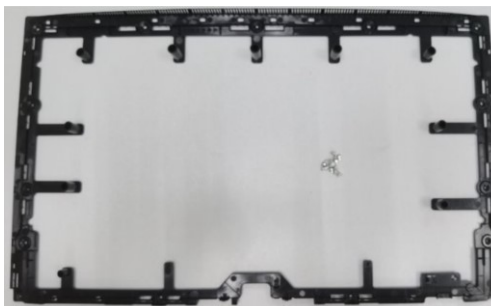
6) Remove 1pcs screw to release the USB board. Release OSD board and Power key board from the rear cover



7) Remove AL tape and disconnect lamp cable and LVDS cable, then remove the main chassis from the panel.

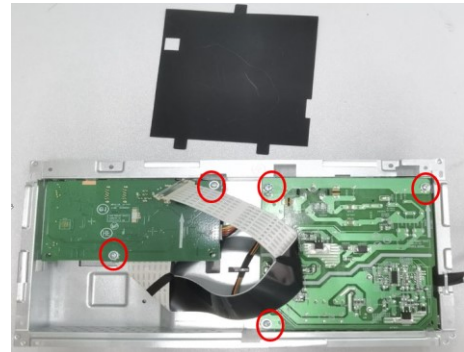
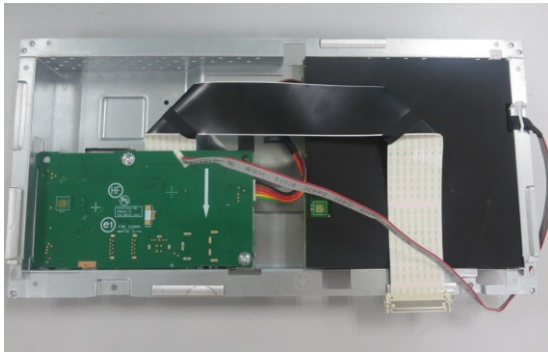


8) Remove all the screws to release the middle frame away from the panel module.





- 9) Remove the Mylar sheet, then release the 5pcs screws from the interface BD and power BD



- 10) Remove 2pcs screws to release AC outlet, then remove the power board and interface board from chassis.



Power board

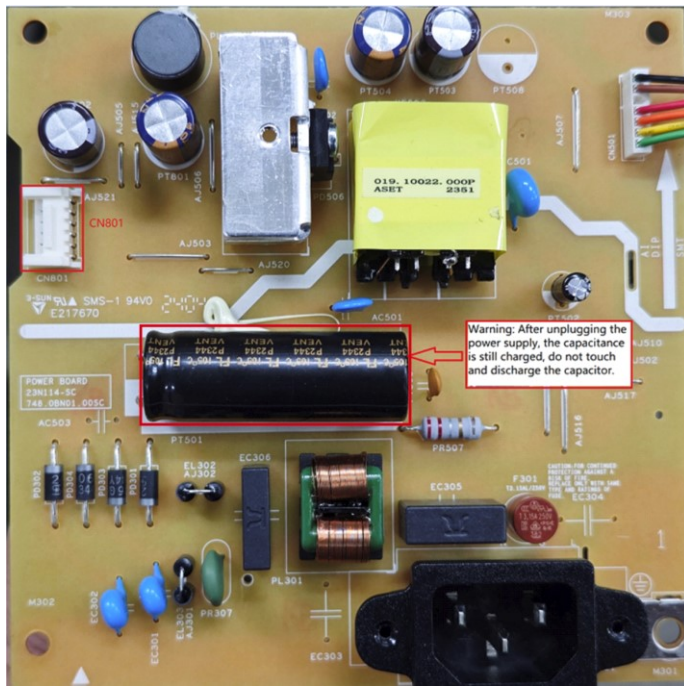
The power board part number is 755.0BP04.0001&755.0BP04.0002.

Before removing the power board, follow these steps:

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

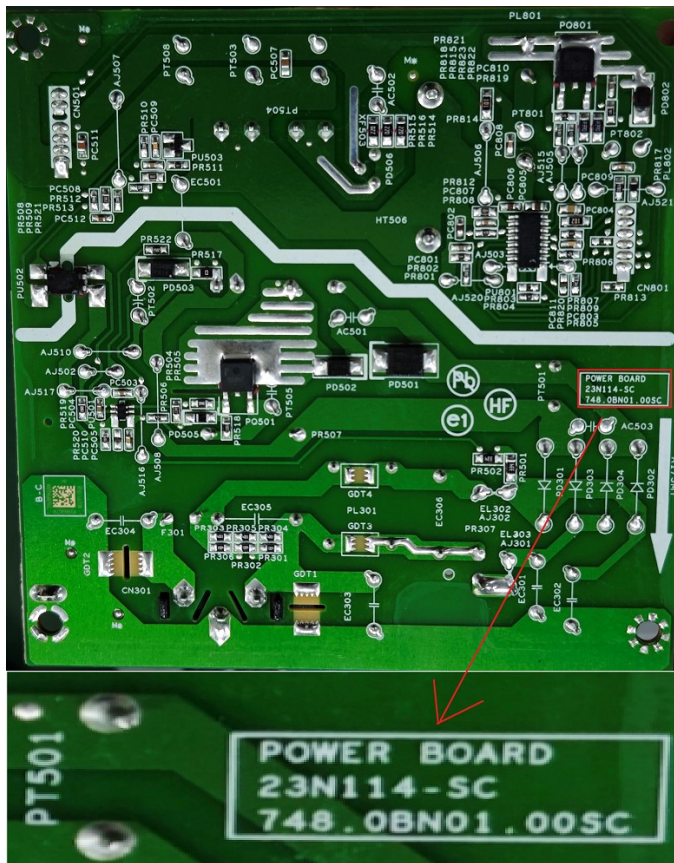
Remove the power board:

- 1) The HP Series Pro 524pn power board connector position is as follows:



CN801 Wistron P/N: 021.61323.0106

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



- 3) Pin solder with soldering iron and absorber.
CN801



- 4) Lift the connector up and away from the PCB.
CN801

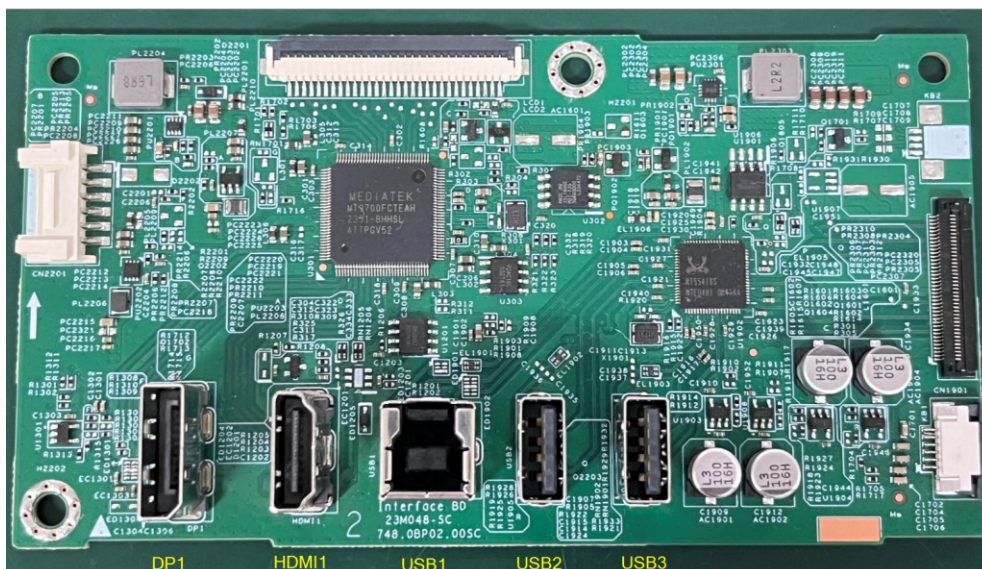
Connector repair

This procedure includes Display Port, HDMI, USB-B and USB-A connectors.

The connectors are on the main board (board part number 7ZB.0BP01.0008).

The connector identifiers are as follows:

Connector	Location
HDMI	HDMI1
DP	DP1
USB-B	USB1
USB-A	USB2, USB3
USB-A	USB4, USB5



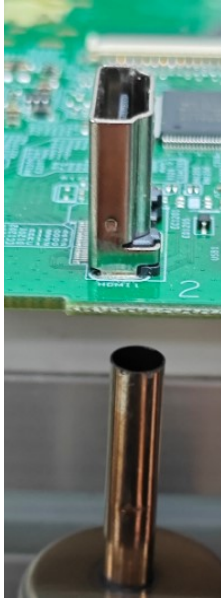
Before repairing connectors, follow these steps:

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

HDMI connector HDMI1

Repair the DP connector:

- 1) Use a hot air gun to melt the solder on the pins from bottom side.



- 2) Lift the HDMI 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.

DP connector DP1

Repair the HDMI connector:

- 1) Use a hot air gun to melt the solder on the pins from bottom side.



- 2) Lift the DP 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.

USB-B connector USB1

Repair the USB-B connector:

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



- 2) Lift the USB-B 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

USB-A connector USB2/USB3

Repair the USB-A connector:

- 1) Use a hot air gun to melt the solder on the pins from bottom side.

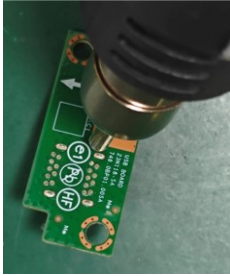


- 2) Lift the USB-A connector from the PCB.
- 3) Place the new component on the PCB. Be sure that it matches the PCB footprint.
- 4) Solder the new component.

USB-A connector USB4/USB5

Repair the USB-A connector:

- 1) Use a hot air gun to melt the solder on the pins from bottom side.



- 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.

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 Hub Test	Confirm USB function of 4-USB Type-A working normally.	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 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.
	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.
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.
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 set auto-sleep to On .
"OSD Lockout" is displayed.	The monitor's OSD lock function is enabled.	Press and hold the Left button for 10 seconds to disable the OSD lockout function
"Power Button Lockout" is displayed.	The monitor's power button lockout feature is enabled.	Press and hold the Power button for 10 seconds to unlock the power button function

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