Maintenance and Service Guide

OMEN 27u model

SUMMARY

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

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Product notice

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

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1 Getting started

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

Important safety information

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

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

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

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

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

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

Important service information and precautions

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

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

ERP Lot5 requirement

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

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

RoHS (2002/95/EC) requirements

Applied to all countries that require RoHS.

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

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

General descriptions

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

Level 1: Cosmetic/appearance/alignment service

Level 2: Circuit board or standard parts replacement

Firmware updates

Firmware updates for the monitor are available at 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:

- 68.5 cm (27-inch) diagonal viewable screen area with 3840 x2160 resolution, plus full-screen support for lower resolutions; includes image scaling for three present mode options, Fill to Screen, Fill to Aspect Ratio or Pixel-for-pixel.
- HP Eye Ease with Eyesafe® certification (default mode) to reduce blue light to keep your eyes comfortable
- Flicker-free feature for optimal eye comfort and viewing (Remark: Flicker-Free only effective on static refresh rate and backlight control, but disable when MPRT is on. There is no "visible" flicker within the range of 0~3000Hz)
- Liquid crystal display (LCD) with active matrix and in-plane switching (IPS)
- Wide color gamut to provide coverage of sRGB/DCI-P3 color spaces
- Anti-Glare panel with an LED backlight
- Wide viewing angle to allow viewing from a sitting or standing position, or when moving from side to side
- Tilt and height adjustment capabilities
- Picture beside Picture (PbP) functionality to enable the DisplayPort and 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
- Color space presets for sRGB and DCI-P3
- Energy saver feature to meet requirements for reduced power consumption

Connectors

- DisplayPort™ video input (cable provided with select products only)
- High-Definition Multimedia Interface™ (HDMI) video input (cable provided with select products only)
- Audio-out (headphone) jack (cable provided with select products only)
- USB Type-C–to–USB Type-A cable and DisplayPort cable (cable provided with select products only)
- Plug and Play capability, if supported by your operating system

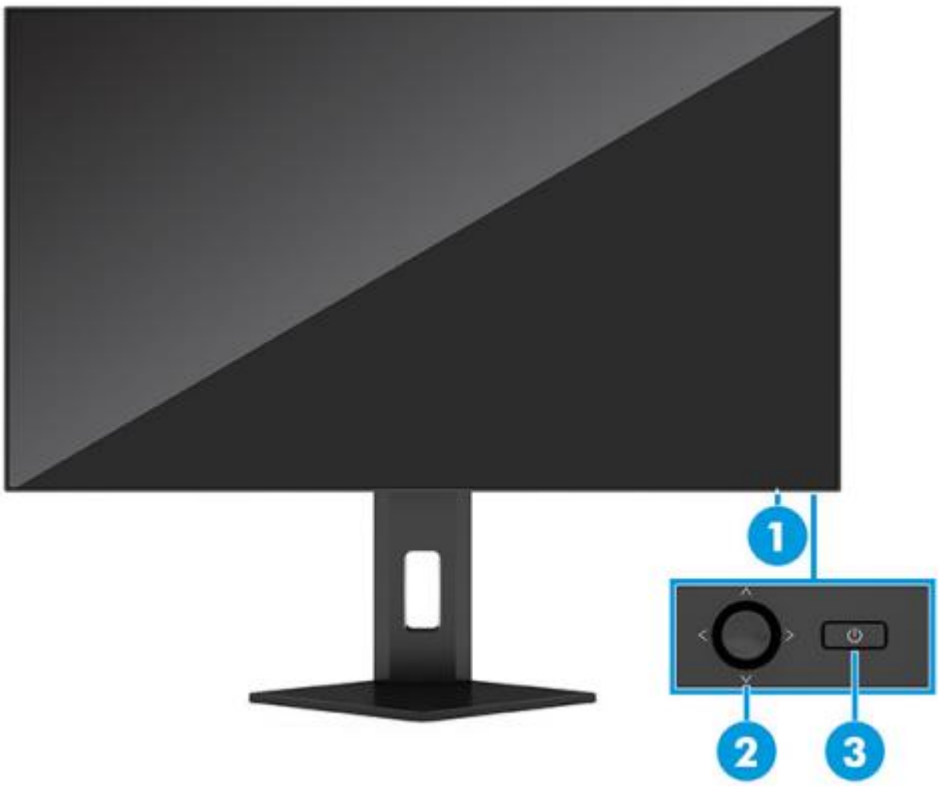
Monitor stand

- Removable stand for flexible monitor head mounting solutions
- VESA® mounting capability (100 × 100 mm) for attaching the display to a swing arm mount
- Support for a mounting bracket to attach the monitor to a workstation

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

Front/Rear components

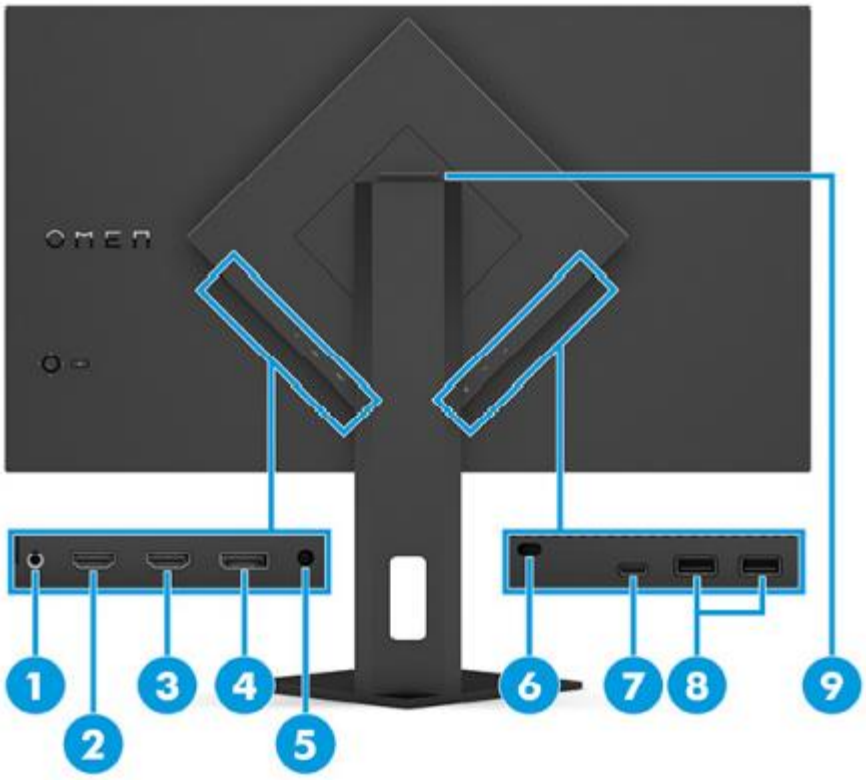
To identify the components on the rear of the monitor, use this illustration and table.



Back of monitor showing locations of controls

Table 1-1: Front and rear components and their descriptions

Component		Function
1	Power light	White: The monitor is on. Amber: The monitor is in a reduced power state because of inactivity.
2	OSD controller	Opens the OSD menu and makes adjustments to monitor settings.
3	Power button	Turns the monitor on or off.



Rear component location showing

Table 1-2: Rear components and their descriptions

Component		Function
1	Audio-out (headphone) jack	Connects the headphone or earduds. **CAUTION:** To reduce the risk of personal injury, adjust the volume before using headphones or earbuds. For additional safety information, see the Product Notices provided in your documentation kit.
2	HDMI 2.0 port	Connects the HDMI cable to a source device such as a computer or game console.
3	HDMI 2.1 port	Connects the HDMI cable to a source device such as a computer or game console.
4	DisplayPort connector	Connects the DisplayPort cable to a source device such as a computer or game console.
5	Power connector	Connects an AC adapter.
6	Security cable slot	Connects an optional security cable.
7	USB Type-C port (Upstream)	Connects a USB Type-C to A cable to a source device such as a computer or game console's USB Type-A receptacle. *It's USB hub for data only. This port only enables the USB Type-A ports to perform their functions
8	USB Type-A ports (downstream)	Connects a USB cable to a peripheral device, such

		as a keyboard, mouse, or USB flash drive.
9	Headphone storage	The monitor features a headphone hook at the top of the stand for convenient headphone storage

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.

Label Location

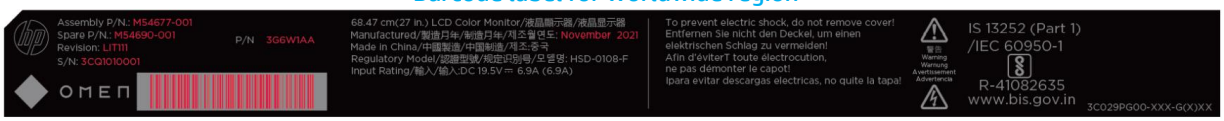
For worldwide models (except India):

Spec label

Spec label for Worldwide region

Barcode label

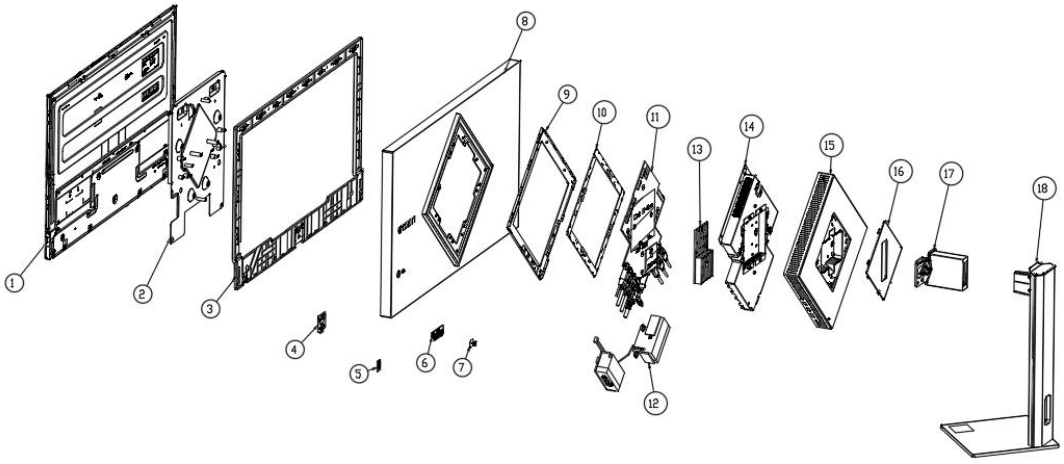
Barcode label for Worldwide region



Barcode label for India region

3 Illustrated parts catalog

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



Mechanical explosion

Item	Description	Qty
1	LG Panel	1
2	Main BKT	1
3	Middle frame	5
4	Bottom Ambient light PCB	1
5	Power Lens PCB	1
6	Keypad PCB	1
7	OSD control	4
8	Rear cover Assy	1
9	Ambient light Lens	1
10	Ambient light PCB	4
11	IF Board	1
12	Speaker	1
13	Heat Sink	1
14	Top BKT	1
15	Rear Pack Assy	1
16	VESA Cover	1
17	Hinge Assy	1
18	Stand Base	1

How to order parts

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)
- Digi-Key Component: Digi-Key Electronic United Kingdom

Connectors by manufacturer

Component description	Location identifier	Component distributor	Distributor part number
HDMI Port	HDMI280, HDMI281	Farnell	208658-1051
Display Port	DP250	Farnell	47272-0001(Notes: the chassis and rear cover need to be modified to make the connector opening larger)
Headphone	CN800	N/A	N/A (Please contact HP Service)
USB-A	P601, P602	RS	48392-0003(Notes: the chassis and rear cover need to be modified to make the connector opening larger)
USB-C	P600	Farnell	DX07S024JJ2R1300
DC jack	CN102	N/A	N/A (Please contact HP Service)

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/.

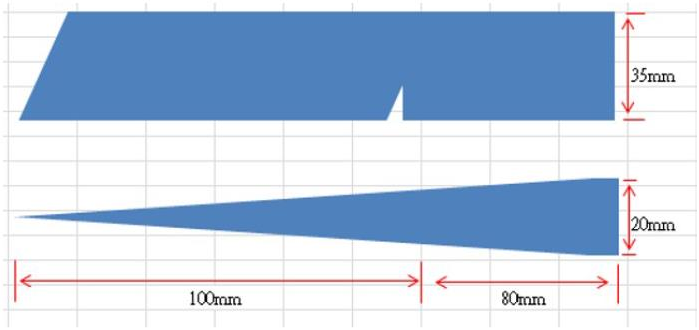
4 Removal and replacement procedures

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:

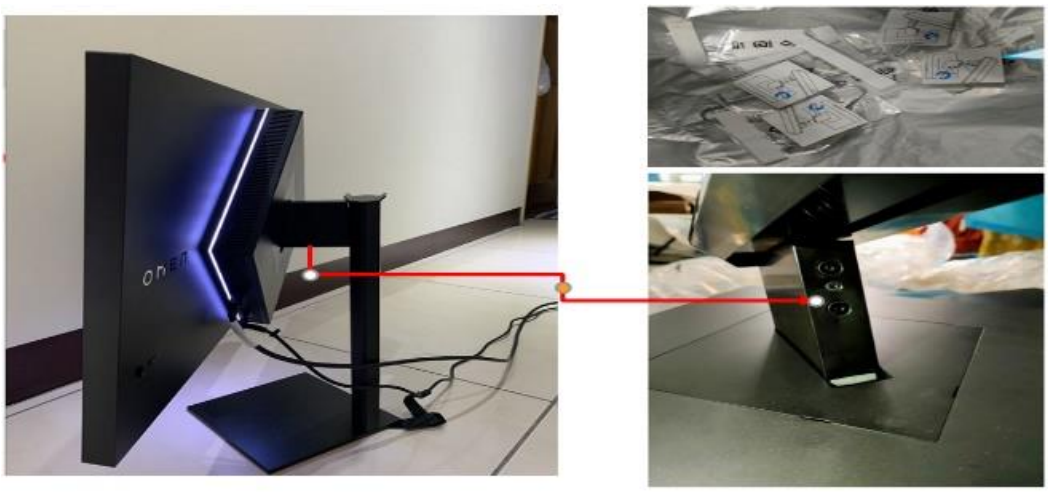


Rear Cover

Before removing the Rear Cover, follow these steps:

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

1) Disassemble Stand. Use the hex key attached to the above base, Release the 2 pcs screw, Separate the head and foot of the monitor.



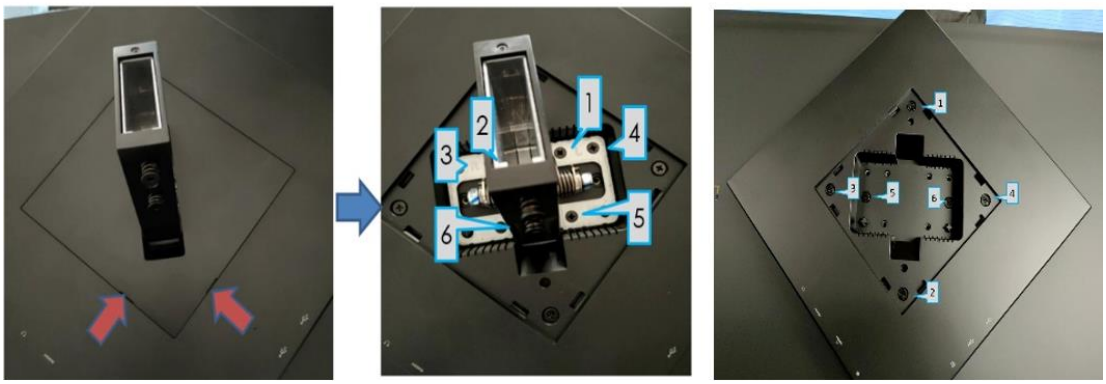
Disassemble Stand

2) Disassemble VESA screws:

A: Remove this hole with a plastic disassembly rod; Remove VESA cover.

B: Use a Phillips screwdriver to remove the above 6PCS screws, Separate the stand hinge from the display head.

C: Use a Phillips screwdriver to remove the above 6 pcs screws.

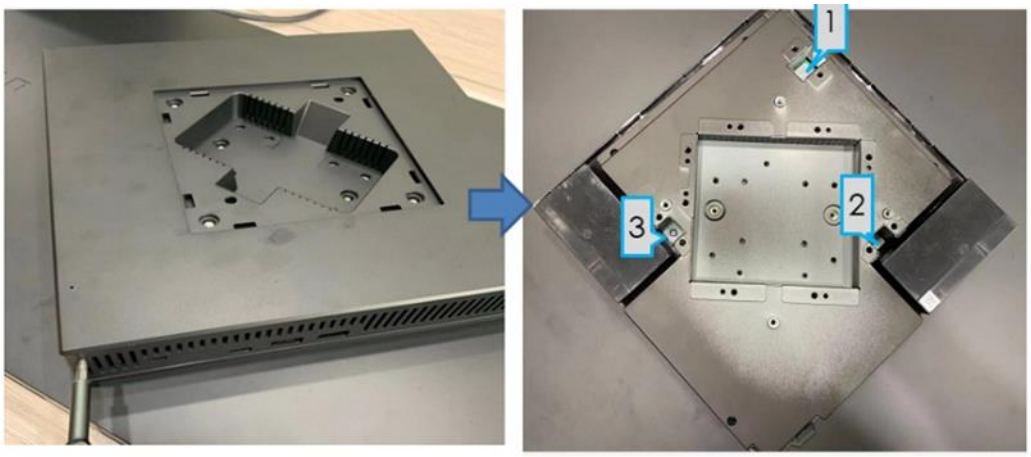


Disassemble VESA screws

3) Disassemble pack Cover& Shielding BKT:

A: Use a plastic disassembly rod; insert the heat dissipation hole on the side of the small back cover, pry the small back cover and remove it

B: Use a Phillips screwdriver to remove the above 3pcs screws, Remove the metal parts of the top cover.



Disassemble pack Cover& Shielding BKT

4) Disassemble Main board.

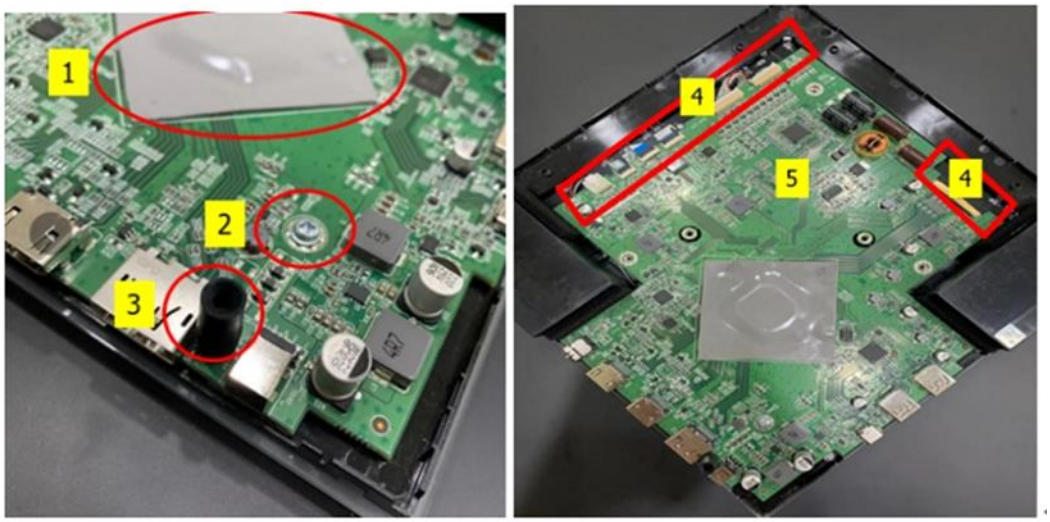
A: Remove thermal PAD

B: Remove the above screws with a Phillips screwdriver

C: Remove the LED holder on the main board

D: Remove all EE cable

E: Remove all Main board



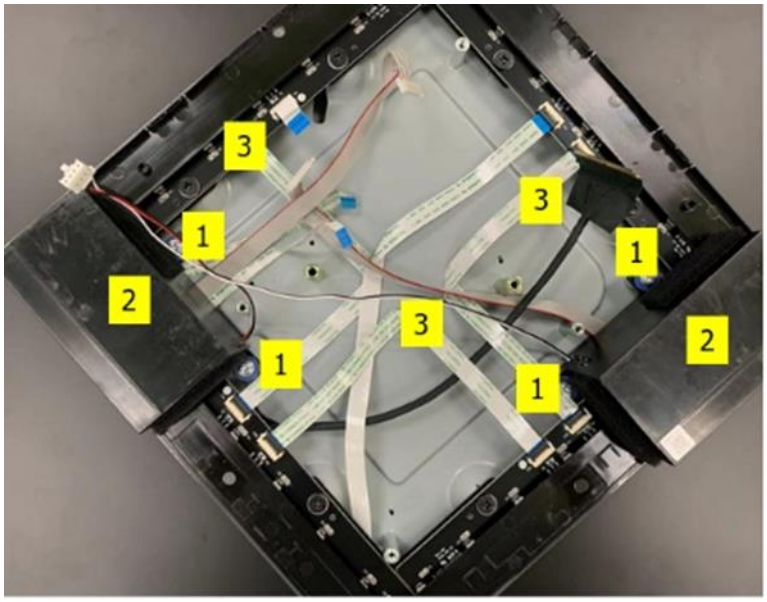
Separate cable and other materials from main board

5) Disassemble Speaker.

A: Remove 4pcs screw.

B: Remove the speaker.

C: Remove EE Led FFC Cable.



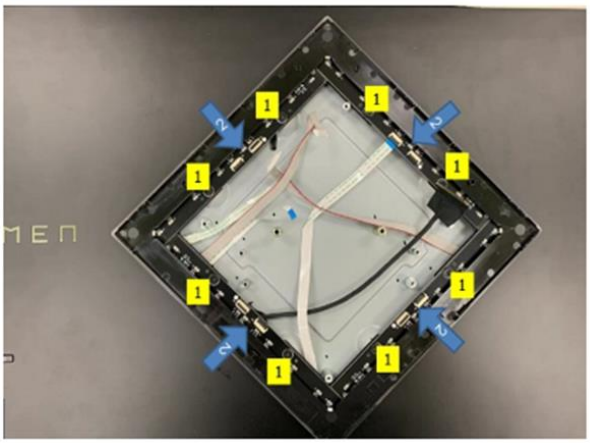
Separate speakers and cables

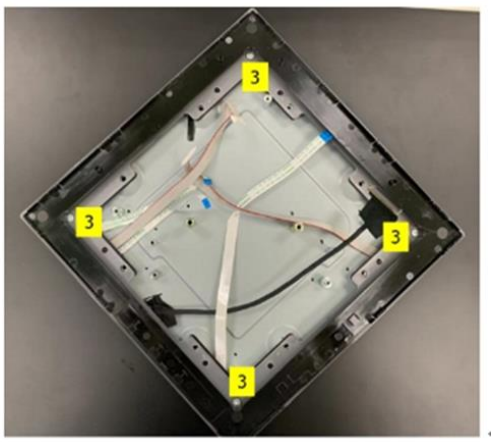
6) Disassemble LED light Assembly.

A: Remove 8 pcs M4 screw

B: Remove 4 pcs LED Bar

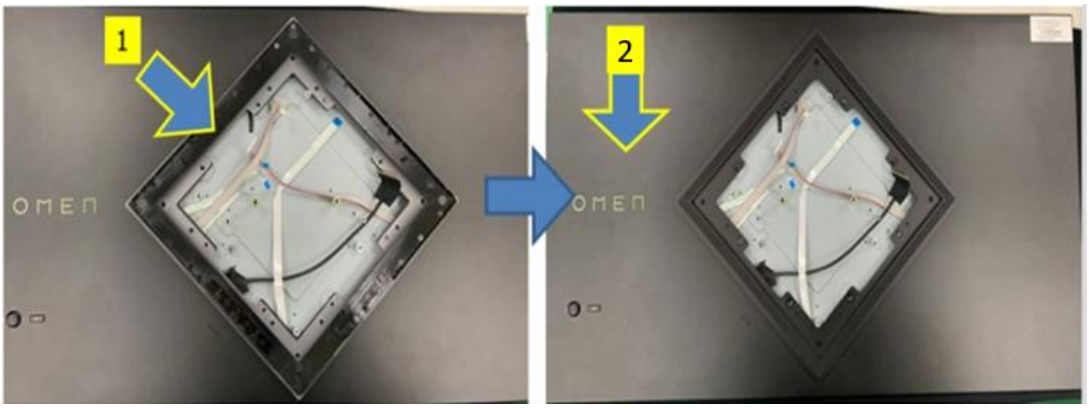
C: Remove 4pcs T3 screw





Separate LED bar PCBA and cables

7) Disassemble Ambient Light Led Lens



Separate Ambient Light LED Lens

8) Disassemble Middle Frame

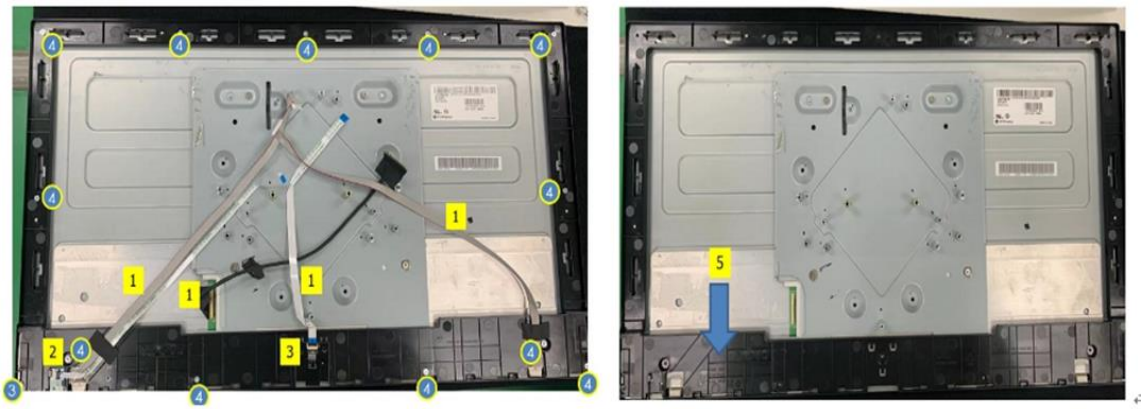
A: Remove all EE Cables

B: Remove power LED Board

C: Remove AMBILIGHT Bottom board on display chin.

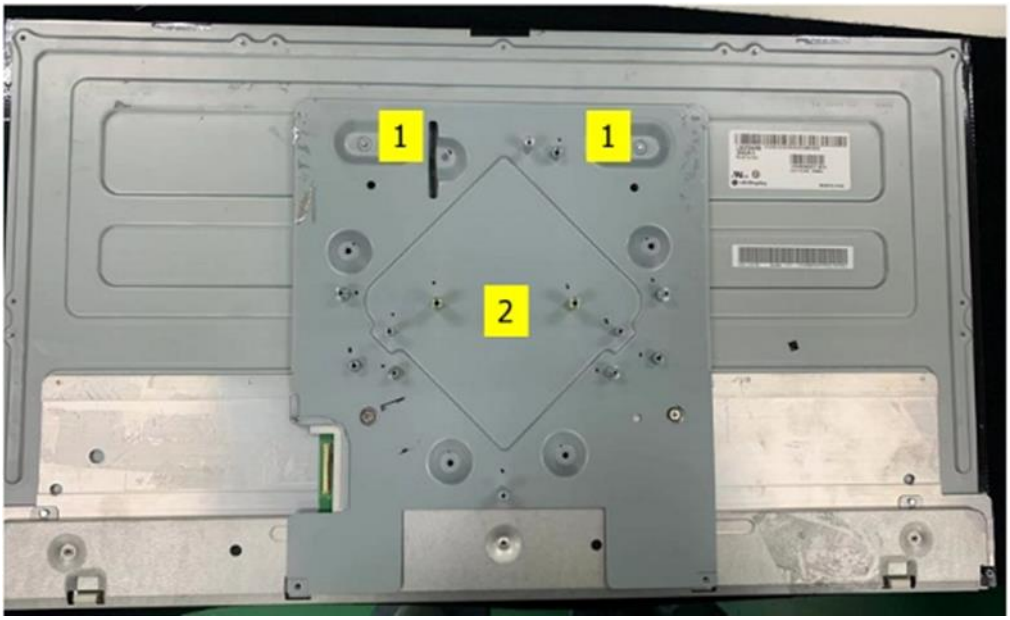
D: Remove all M3 screws

E: Remove Middle Frame



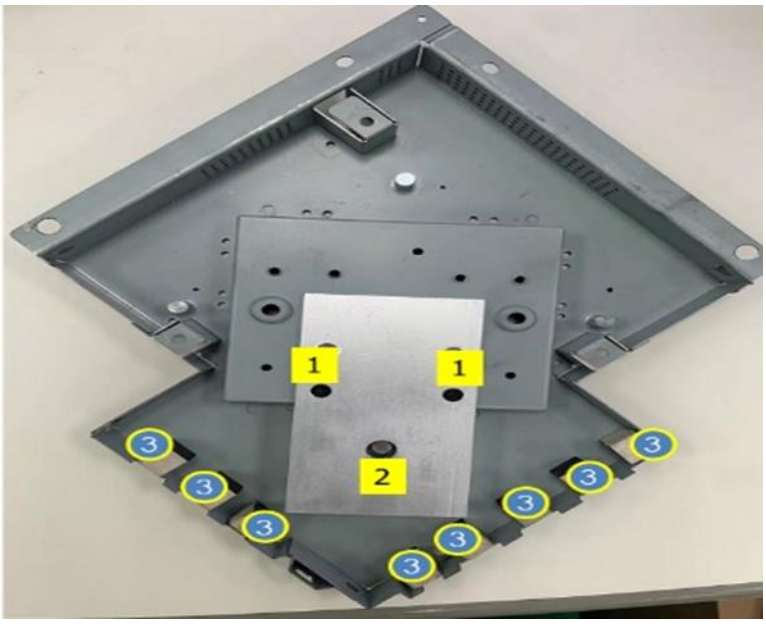
Separate cables& PCBAs from middle frame

9) Disassemble Main BKT: Remove M3 screws and Main BKT.



Separate Main BKT

10) Disassemble Gasket &Heat Sink: Remove M3 screws & Heat Sink and Gasket



Separate M3 screws & Heat Sink & Gasket from Main BKT

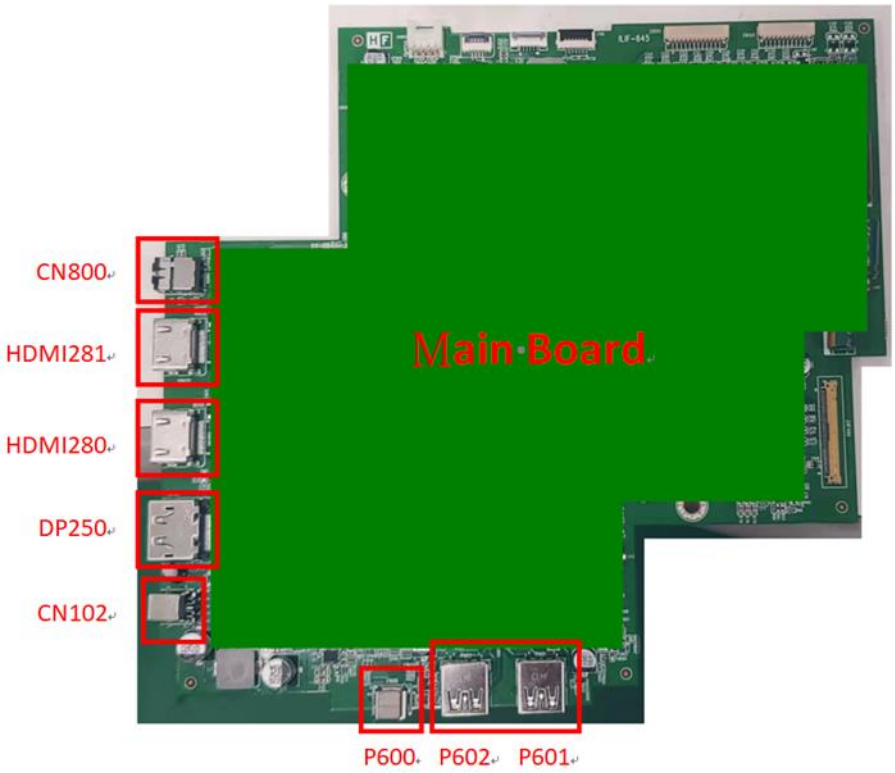
Connector repair

This procedure includes HDMI, Display Port, headphone, USB-C, DC JACK and USB connectors.

The connectors are on the main board (board part number 790TA1300A03H01),

The connectors identifiers are as follows:

Connector	Location
HDMI Port	HDMI280, HDMI281
Display Port	DP250
Headphone	CN800
USB-A	P601, P602
USB-C	P600
DC jack	CN102



Connector location of Mainboard

Before repairing connectors, follow these steps:

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

Headphone connector CN800

Repair the Headphone connector:

1) Use a hot air gun to heat the bottom side of PCB below the headphone connector.

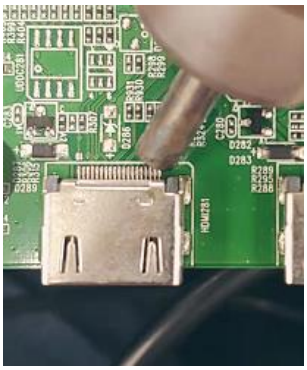
Remove headphone connector

2) Lift the CN800 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.

HDMI connector HDMI280, HDMI281

Repair the HDMI connector:

1) Use a hot air gun to melt the solder on the pins. Pin solder with soldering iron and absorber. You can gently push down with the soldering iron once everything is molten to move the HDMI280, HDMI281 out of the through holes.



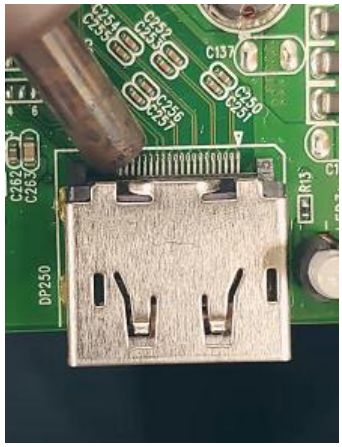
Remove HDMI connector

2) Lift the HDMI280, HDMI281 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.

DP connector DP250

Repair the DP connector:

1) Use a hot air gun to melt the solder on the pins. Pin solder with soldering iron and absorber. You can gently push down with the soldering iron once everything is molten to move the DP250 out of the through holes.



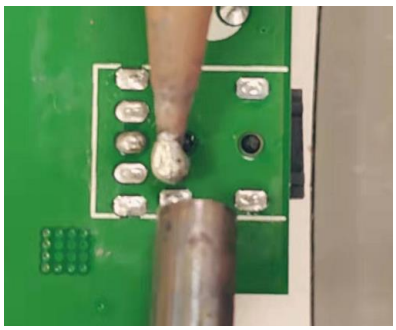
Remove DP connector

2) Lift the DP250 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.

DC JACK connector CN102

Repair the DC JACK connector:

1) Use a hot air gun to heat the bottom side of PCB below the headphone connector.


Remove DC JACK connector

2) Lift the CN102 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-C connector P600

Repair the USB-C connector:

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

Remove USB-C connector

2) Lift the P600 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-A connector P601, P602

Repair the USB-A connector:

1) Use a hot air gun to melt the solder on the pins. Pin solder with soldering iron and absorber. You can gently push down with the soldering iron once everything is molten to move the P601, P602 out of the through holes.

Remove USB-A connector

2) Lift the P601, P602 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.

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 correctly on the monitor.	Computer or DVD player
Audio test	Change volume and balance to confirm whether volume is smooth and loud enough.	Speaker
USB test	Confirm whether transmitting data between computer and USB devices.	Computer and USB devices
USB test	Confirm whether transmitting data between computer and USB devices.	Computer

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 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 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.

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