Maintenance and Service Guide

E243m 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:

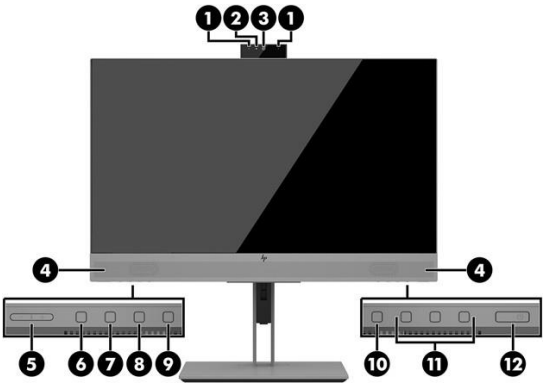
- 60.5 cm (23.8-inch) diagonal viewable screen area with 1920 x 1080 resolution, plus full-screen support for lower resolutions; includes custom scaling for maximum image size while preserving original aspect ratio
- 68.5 cm (27-inch) diagonal viewable screen area with 1920 x 1080 resolution, plus full-screen support for lower resolutions; includes custom scaling for maximum image size while preserving original aspect ratio
- The monitor features include the following:
- Nonglare panel with an LED backlight
- Skype for Business–certified popup camera and microphone for online collaboration (select models)
- Wide viewing angle to allow viewing from a sitting or standing position, or when moving from side to side
- Tilt capability
- Pivot capability to rotate the monitor panel from landscape to portrait mode
- Swivel and height adjustment capabilities
- Removable stand for flexible monitor panel mounting solutions
- DisplayPort and VGA video inputs (cables provided)
- One HDMI (High-Definition Multimedia Interface) video input (cable not provided)
- USB 3.0 hub with one upstream port (connects to the computer) and two downstream ports (connect to USB devices)
- USB BM to AM cable provided to connect the monitor's USB hub to the USB connector on the computer (23.8–inch model only)
- USB CM to AM cable provided to connect the monitor's USB hub to the USB connector on the computer (27–inch model only)
- Plug and Play capability, if supported by your operating system
- 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 the theft deterrence features
- Cyberlink YouCam software
- HDCP (High-bandwidth Digital Content Protection) copy protection on all digital inputs
- Software and documentation optical disc (provided with the monitor in select regions) that includes monitor drivers and product documentation

- Energy saver feature to meet requirements for reduced power consumption

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 components

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



Front of monitor showing location of controls

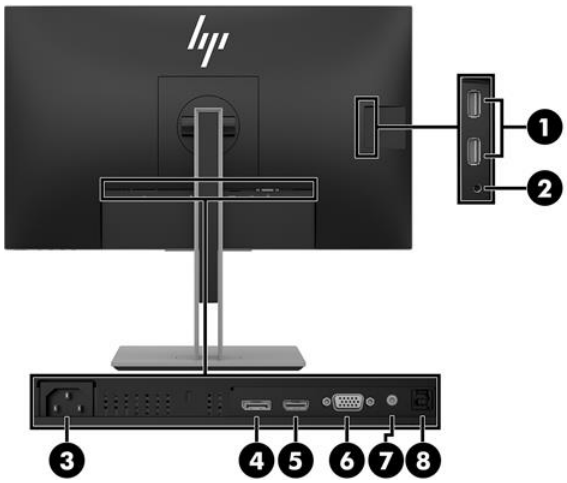
Table 1-1: Front components and their descriptions

23.8–inch models		
Component		**Function**
1	Camera microphones	Allow you to participate in a video conference.
2	Camera light	On: The camera is in use.
3	Camera lens	Transmits your image in a video conference.
4	Speakers	Transmit sound from audio input.
5	+/- (Plus/Minus) button	Press to increase (+) or decrease (-) speaker volume.
6	Answer/Call button	Press to answer or make a call. Illuminates green when on the phone. Green light and red light blink when there is an incoming call.
7	Mute microphone button	Press to mute or activate the camera microphone. Illuminates amber when microphone is muted.
8	Mute speaker button	Press to mute or activate the speakers. Illuminates amber when speakers are muted.
9	Reject/Hang up button	Press to decline or end a call. Green light and red light blink when there is an incoming call.
10	Menu button	Press to open the OSD menu, select a menu item from the OSD, or close the OSD menu. An indicator is activated above the Menu button when the OSD menu is open.
11	Function buttons	Use these buttons to navigate through the OSD menu based on the indicators above the buttons that are activated when the OSD menu is open.

23.8–inch models		
Component		**Function**
		NOTE: You can reconfigure the Function buttons in the OSD menu to quickly select the most commonly used operations. See Assigning the function buttons on page 20 for more information.
12	Power button	Press the button to turn the monitor on or off. When the monitor is on, the power light above the power button is on.

Rear components

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



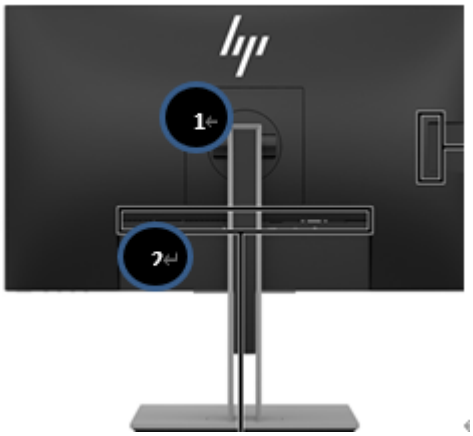
Rear of monitor showing location connectors

Table 1-2: Rear components and their descriptions

23.8–inch model		
Component		**Function**
1	USB ports (2)	Connect USB devices.
2	Audio-out (headphone) jack	Connects optional powered stereo speakers, headphones, earbuds, a headset, or a television audio cable. **WARNING!** To reduce the risk of personal injury, reduce the volume before using headphones, earbuds, or a headset. For additional safety information, see the *Product Notices* provided on the optical disc, if one is included with your product. **NOTE:** When a device is connected to the headphone jack, the monitor speakers are disabled.
3	Power connector	Connects the power cord.
4	DisplayPort port	Connects the DisplayPort cable to the source device.
5	HDMI port	Connects the HDMI cable to the source device.
6	VGA port	Connects the VGA cable to the source device.
7	Audio line in port	Connects the audio cable to the monitor.
8	USB 3.0 upstream port	Connects the USB Type-B cable from the source device to the monitor.

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):

Barcode label

Barcode label for Worldwide region

Spec label

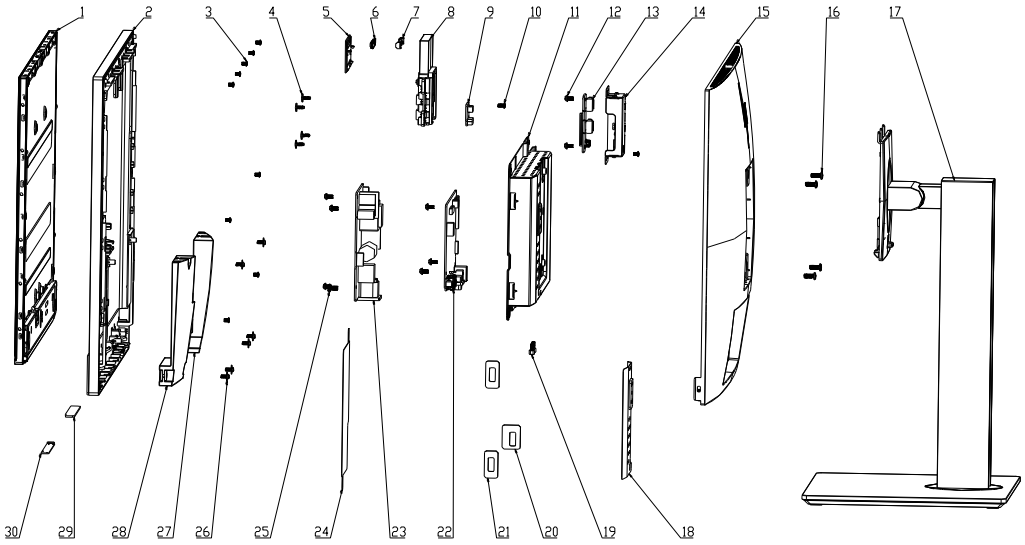
Spec label for Worldwide region

India Barcode Label

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	PANEL	1
2	ASSY, BEZEL, ASTROID, WBP, BOE-EC, E243m	1
3	SCREW, I, CROSS, M3*4 ZN-CC	10
4	SCREW, I, CROSS, T3*8, Zn	4
5*	ASSY, POP-UP MODULE, NEW, E243m	1
6	Webcam	1
7*	ASSY, POP-UP MODULE, NEW, E243m	1
8*	ASSY, POP-UP MODULE, NEW, E243m	1
9	Webcam Control Board	1
10	SCREW, I, CROSS T, T3*6 ZN CC	6
11	ASSY, CHASSIS, E243m, LP24QA	1
12	SCREW, P, CROSS M3*6, ZN-CC	8
13	Side USB Board	1
14	ASSY, USB COVER, E243m, LP24QA	1
15	ASSY, BUCKET, JACK BLACK, E243m, LP24QA	1
16	SCREW, I, CROSS, M4*10, BLK-NL	4

17	ASSY, STAND, FOR BOE, JARLLY, E243m	1
18	MYLAR FOR PI, BACK, E243m, LP24QA	1
19	BOLT, #4-40x11.8, Ni FOR D-SUB/DVI, C1018	2
20	MYLAR, CHASSIS MAIN, E233, SIDE 1	1
21	MYLAR, CHASSIS MAIN, E233, SIDE 2	2
22	IF BD	1
23	PWR BD	1
24	MYLAR FOR PI, FRONT, E243m, LP24QA	1
25	SCREW, PW, CROSS M4X9, Zn-CC	1
26	SCREW, P, CROSSW/WAS, T3X6, BLACK-ZN	6
27	SPK-L	1
28	SPK-R	1
29	LYNC keypad	1
30	PWR & OSD Keypad	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	Remark
PCBA,PI/BD,W/SPK,LP24QA-D18/E243m/HF	M74385-001	790NQ1400D00H01	BOE
PCBA,PI/BD,W/SPK,LP24QA-818/E243m/HF	M74386-001	790NQ1400800H01	SDC
PCBA,PI/BD,W/SPK,LP24QA-A18/E243m/HF	M74387-001	790NQ1400A00H01	LGD
PCBA,PI/BD,W/SPK,LP24QA-A18/E243m/HF/ES8	M74388-001	790NQ1400A01H01	LGD ES8
PCBA,PI/BD-1,W/SPK,LP24QA-D18/E243m/HF	M74389-001	790NQ1400D01H01	BOE EC and ES8
PCBA,PI/BD,W/SPK,LP24QA-818/E243m/ES8.0	M74390-001	790NQ1400801H01	SDC ES8

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

Capacitors by distributor

Component description	Location	Component distributor	Distributor part number
Capacitor 470 µF 10 *16 8K	C864 and C865	Farnell/RS	EEUFR1V471
Capacitor 470 µF 10*16 10K		Farnell/RS	35ZLH470MEFC10X16
Capacitor 470 µF 10*16 10K		RS	35YXJ470M10X16

Connectors by manufacturer

Component description	Location identifier	Component distributor	Distributer part number
DisplayPort	CN401	Farnell	47272-0001
HDMI	CN301	Farnell	208658-1051
VGA	CN201	Digi-Key	193-015-213R531-ND
Audio in	CN502	Farnell	STX-3120-5B
USB upstream	CN602	Farnell	897-46-009-90-300000

USB A	P101, P102	Farnell	48405-0003
Headphone	CN101	Digi-Key	54-00177(Notes: the chassis and rear cover need to be modified to make the connector opening larger)

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.

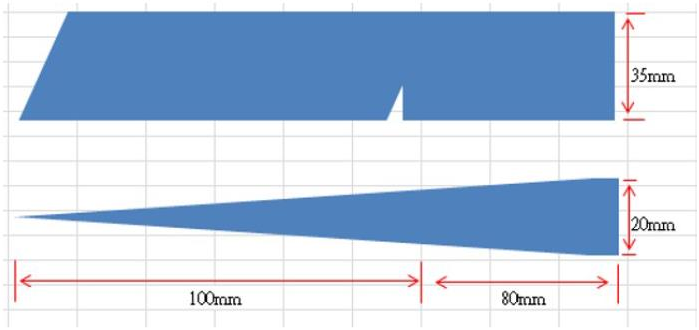
4 Removal and replacement procedures

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 Preparation for disassembly on page 14

Remove the RC:

1) Remove four screw from the rear case.

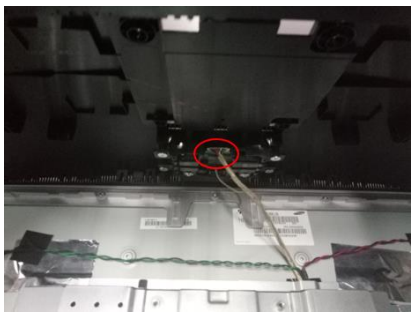
Remove screw from rear cover

2) Insert the scraper bar tool into the gap between the middle frame and rear case, and then rotate. The hook opens. Repeat the steps. Be careful with four corners DO NOT move away rear case immediately.

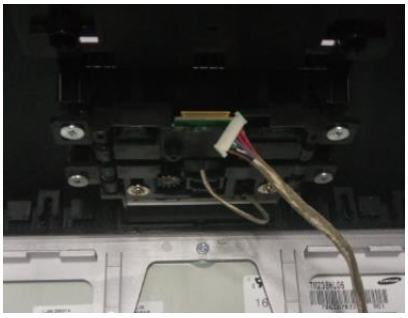
Separate rear cover and middle frame step

Separate rear cover and middle frame step

3) Hang up rear case, disconnect the webcam control cable and then take away rear case.

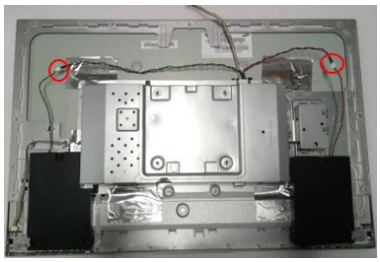
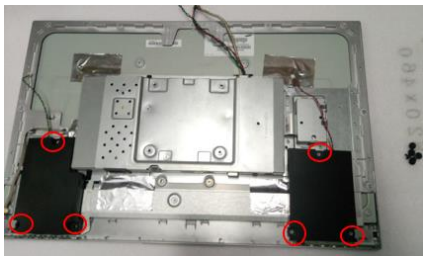


Webcam cable separate step



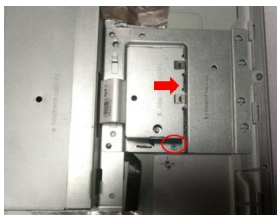
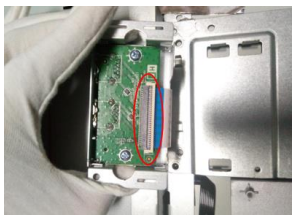
Webcam cable separate step

4) Peel off tapes, disconnect the speaker cables unfix six screws and take out the speakers.

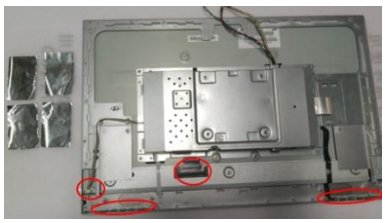
Speaker separate step

5) Unscrew the side USB cover, pull it rightward and reverse, then disconnect the cable.

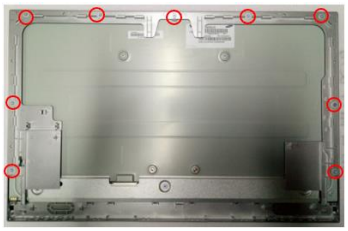
USB side chassis separate step

6) Peel the foils off, disconnect the backlight cable and LVDS cable. Take out the OSD keypad and LYNC keypad.



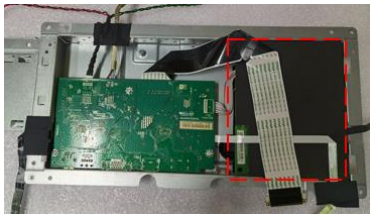
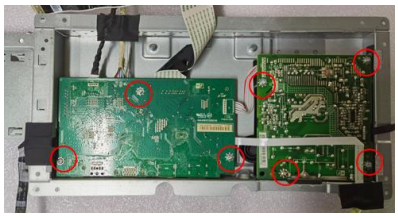
cable and materials separate step

7) Take away the metal chassis, unscrew middle frame from panel.



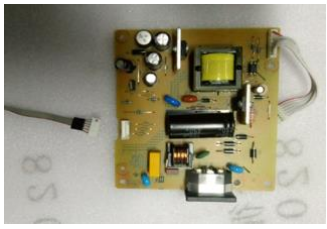
Separate middle frame and panel

8) Peel all tapes off the metal chassis, take out mylar sheet, unfix two bolts and seven pan head screws.

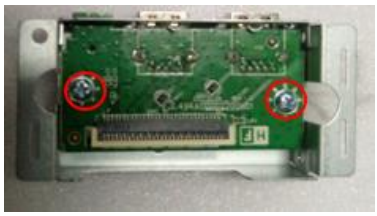
PCBA and Chassis separate step

9) Take out IF BD and Power BD, disconnect all cables.



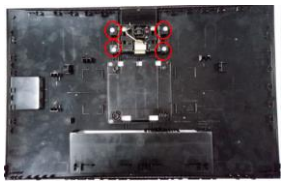
Take out all cables from PCBA

10) Unscrew USB board and take it out.



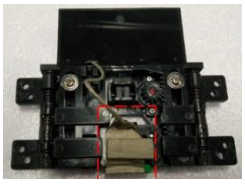
Take off screw from USB side board

11) Unscrew push-push webcam module from rear case.



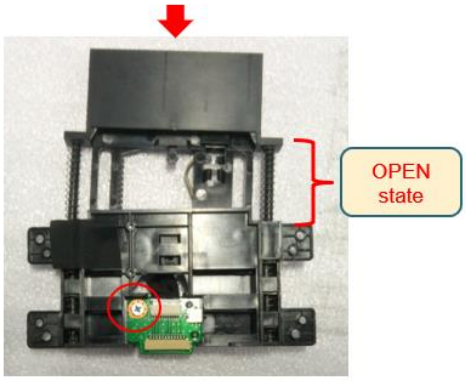
Take off screw from rear cover

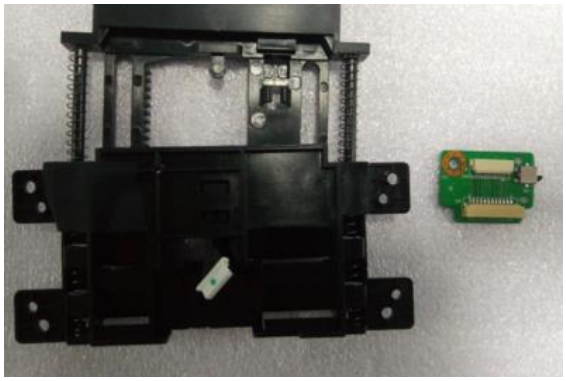
12) Peel off gasket, conductive fabric, foil, and tape.



Separate webcam module step

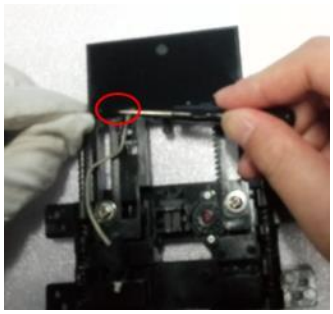
13) Reverse the module, PUSH it to “OPEN” and unscrew webcam control board. Disconnect webcam control board and pass the cable through the module

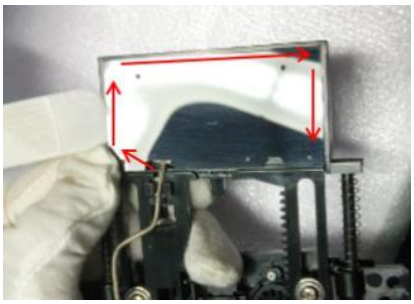




Separate webcam board module step

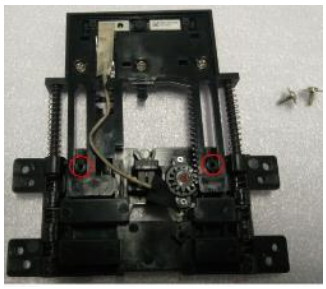
14) Lift the webcam lens and insert the scraper bar, then unhook it from the module.

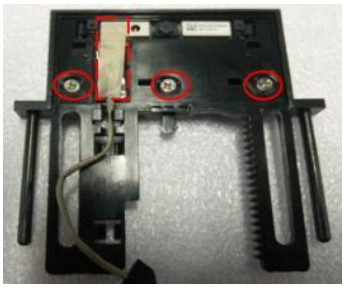


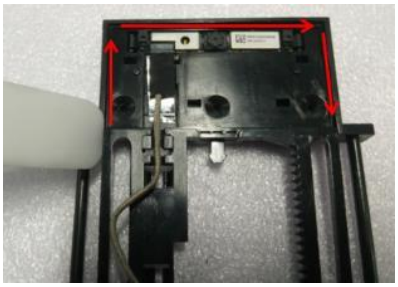


Separate webcam module step

15) Unscrew two PW screws and take it out. Unlock three flat screws, peel off conductive fabric, insert the scraper bar and separate the two plastic parts.

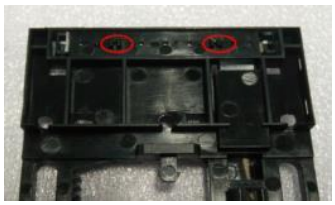


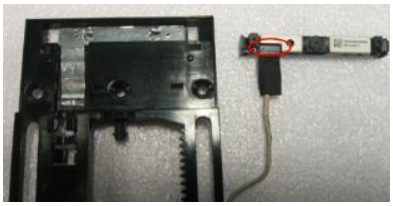




Separate webcam module step

16) Unhook the webcam and disconnect the cable. Be noticed that the webcam is sticked with the plastic sheet too.





Separate webcam module step

Power board

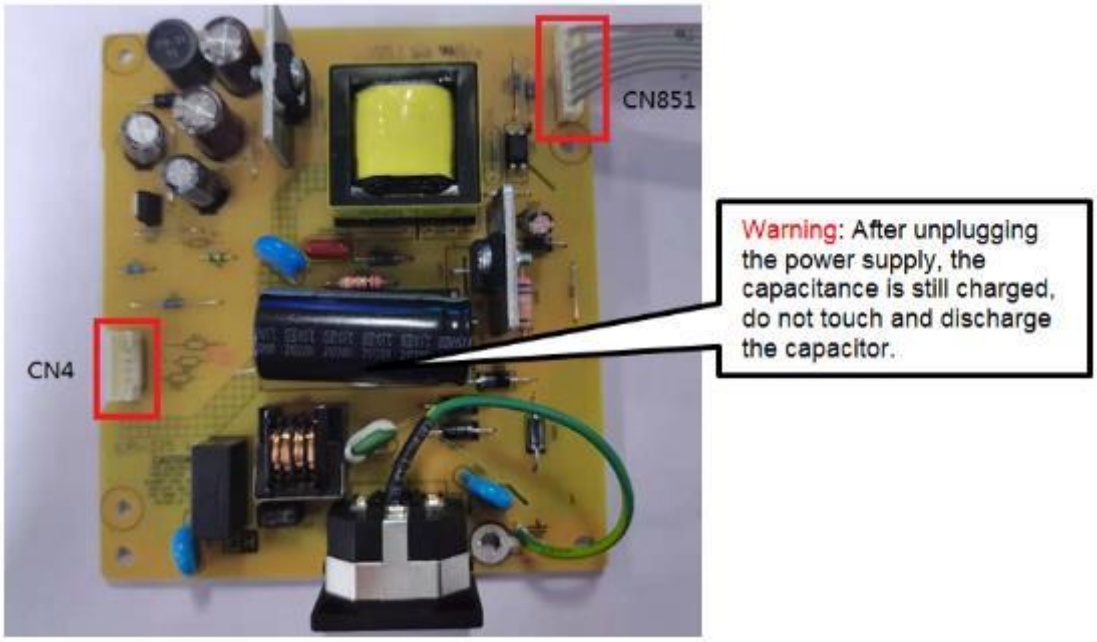
The power board part number is 790NQ1400***H01*.

Before removing the power board, follow these steps:

▲ Prepare the monitor for disassembly. See Preparation for disassembly on page 14.

Remove the power board:

1) The HP E243m power board connector position is as follows:

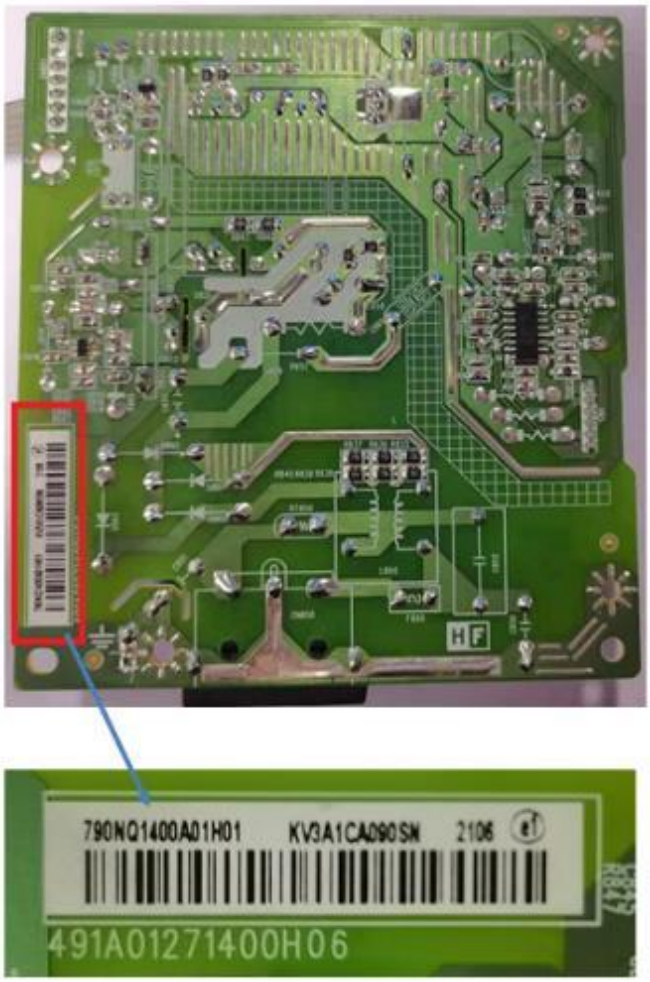


Power Board location showing of connector

CN4 Foxconn P/N: 3406BA900-39U-H

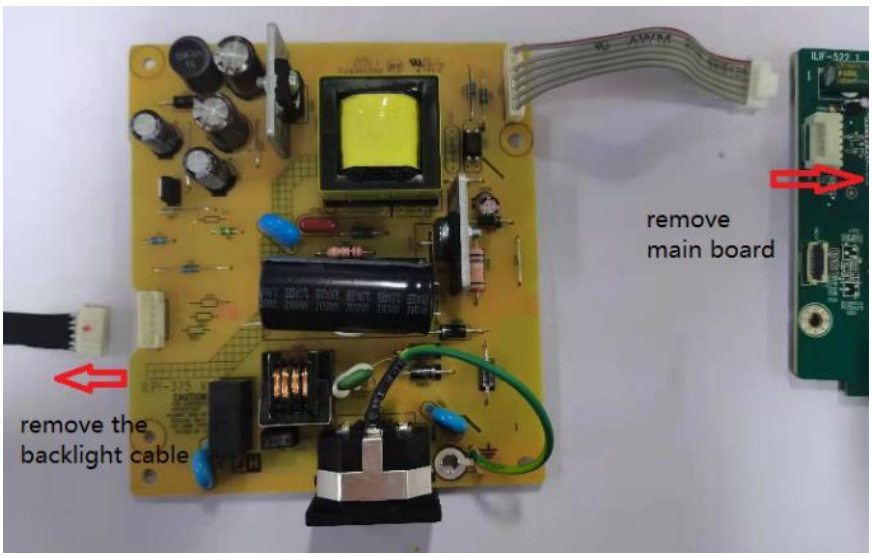
CN851 Foxconn P/N: 35104C700-39U-H

2) Locate the part number location on the board.



Part number location of power board

3) Remove the backlight cable and main board.



Remove the backlight cable and main board.

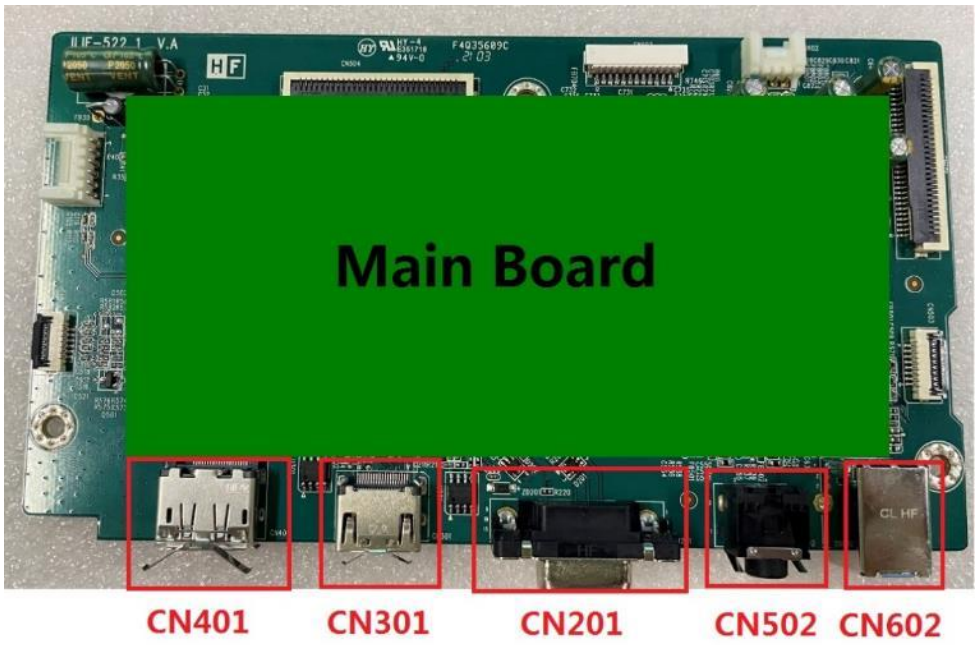
Connector repair

This procedure includes HDMI, Display Port, VGA, audio in, headphone, USB upstream and USB connectors.

The connectors are on the main board (board part number 790NQ1300***H01) and USB side board (board part number 790NQ0300***H0*).

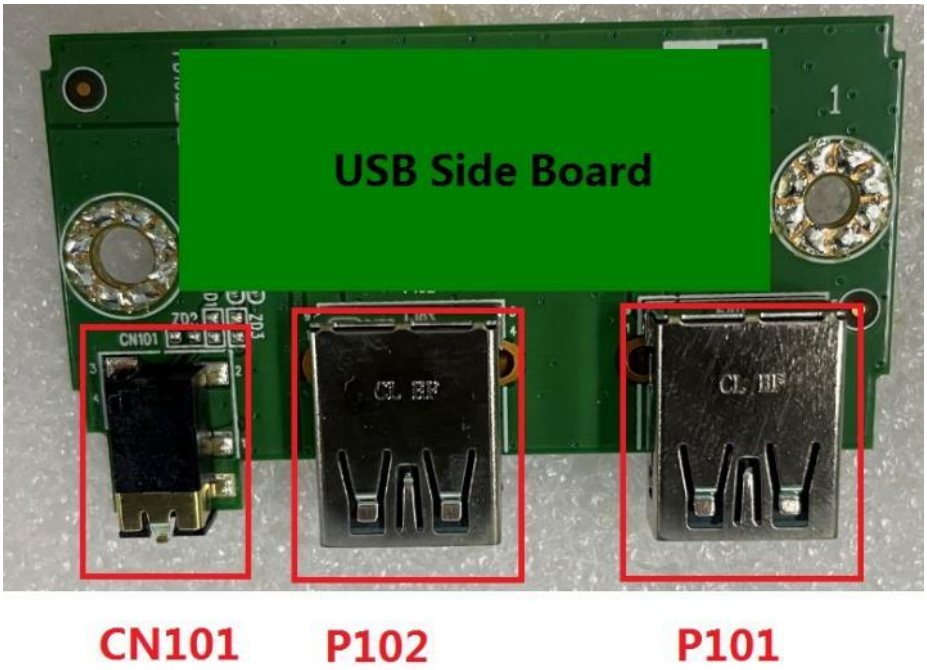
The connectors' identifiers are as follows:

Connector	Location
HDMI	CN301
DisplayPort	CN401
Audio in	CN502
USB upstream	CN602



Connector location showing of main board

Connector	Location
USB	P101,P102
Headphone	CN101



Connector location showing of USB side board

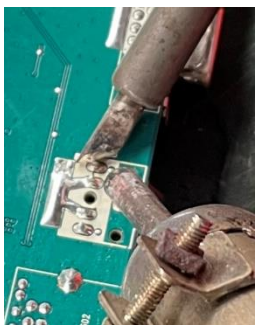
Before repairing connectors, follow these steps:

▲ Prepare the monitor for disassembly. See Preparation for disassembly on page 14.

Audio connector CN50

Repair the audio 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 CN502 out of the through holes.



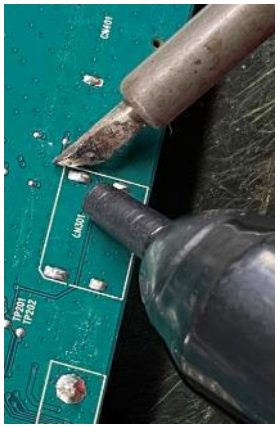
Audio connector repairing

2) Lift the CN502 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.

HDMI connector CN301

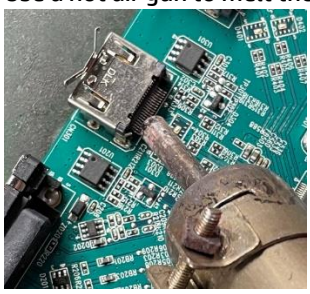
Repair the HDMI connector:

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



HDMI connector repairing

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



HDMI connector repairing

3) Lift the J2 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.

VGA connector CN201

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 CN201 out of the through holes.

VGA (D-Sub) connector repairing

2) Lift the CN201 connector from the PCB.

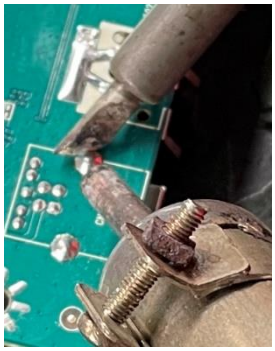
3) Place the new component on the PCB. Be sure that it matches the PCB footprint.

4) Solder the new component.

USB upstream connector CN602

Repair the USB upstream 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 CN602 out of the through holes.



USB upstream connector repairing

2) Lift the CN602 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 connector P101, P102

Repair the USB 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 P101, P102 out of the through holes.

USB Connector repairing

2) Lift the P101, P102 connector from the PCB.

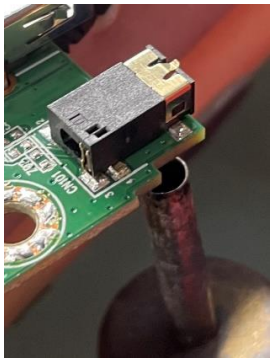
3) Place the new component on the PCB. Be sure that it matches the PCB footprint.

4) Solder the new component.

Headphone connector CN101

Repair the Headphone connector:

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



Headphone connector repairing

2) Lift the CN101 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
VGA test	Confirm whether image displays correctly on the monitor.	Computer
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

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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