



Maintenance and Service Guide

E190i model

SUMMARY

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

© Copyright 2021 HP Development Company, L.P.

AMD is a trademark of Advanced Micro Devices, Inc. Bluetooth is a trademark owned by its proprietor and used by HP Inc. under license. NVIDIA is a trademark and/or registered trademark of NVIDIA Corporation in the U.S. and other countries. USB Type-C and USB-C are registered trademarks of USB Implementers Forum. DisplayPort and the DisplayPort logo are trademarks owned by the Video Electronics Standards Association (VESA) in the United States and other countries.

The information contained herein is subject to change without notice. The only warranties for HP products and services are set forth in the express warranty statements accompanying such products and services. Nothing herein should be construed as constituting an additional warranty. HP shall not be liable for technical or editorial errors or omissions contained herein.

First Edition: January 2022

Document Part Number: 734057-E190i-MSG-V1

Assembly part number: 734057-001

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".

Table of Contents

1	Getting started	1
	Important safety information	1
	Important service information and precautions	1
	RoHS (2002/95/EC) requirements	2
	General descriptions	2
	Firmware updates	2
	Before returning the repaired product to the customer	2
2	Monitor features	3
	Features	3
	Front components	5
	Rear and side components	6
	Locating the serial number and product number	7
3	Illustrated parts catalog	8
	How to order parts	9
4	Removal and replacement procedures	11
	Preparation for disassembly	11
	Rear Cover	11
	Power board	14
	Connector repair	15
	D-Sub connector P302	17
	DVI connector P303	17
	DP connector P302	17
	USB-B connector P202	18
	USB-A connector P2A2, P2A3	18
	Function test	19
	Support and troubleshooting	19
	Index	21

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

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

Display features

- EliteDisplay E190i model, 47.99 cm (18.89-inch) diagonal viewable area display with 1280 x1024 resolution, plus full-screen support for lower resolutions: includes custom scaling for maximum image size
- Non-glare panel with an LED backlight
- Wide viewing angle to allow viewing from a sitting or standing position, or moving from side to side
- Tilt capabilities
- Pivot capability to rotate display to portrait mode
- Swivel and height adjustment capabilities
- Removable stand for flexible monitor head mounting solutions
- Video signal input to support VGA analog (cable provided)
- Video signal input to support DVI digital (cable provided)
- Video signal input to support DisplayPort digital (cable optional in some countries)
- USB 2.0 hub with one upstream port (connects to the computer) and two downstream ports (connects to USB devices)
- USB cable provided to connect the monitor's USB hub to the USB connector on the computer
- Supports an optional HP speaker bar
- Plug and play capability if supported by the system
- Privacy filter slots to insert filters (purchased separately) to block side screen viewing
- Security slot provision on rear of monitor for optional cable lock
- Cable management feature for placement of cables and cords
- On-Screen Display (OSD) adjustments in several languages for easy setup and screen optimization
- HP Display Assistant for adjusting monitor settings and enabling theft deterrence features
- HDCP copy protection on DVI and DisplayPort inputs
- Software and documentation disc that includes monitor drivers and product documentation
- Energy saver feature to meet requirements for reduced power consumption
- Intelligent Management AssetControl
- Compliant with the following regulated specifications (for additional certifications and agency notices, refer to the *HP LCD Monitors Reference Guide* on the disc included with this monitor)
 - European Union CE Directives

- Swedish TCO Requirements

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

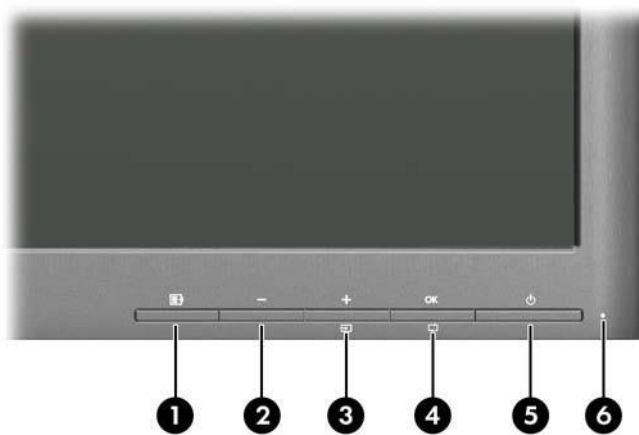







Table 2-1 Monitor Front Panel Controls

Control	Function
1 	Menu Opens, selects or exits the OSD menu.
2 	Minus If the OSD menu is on, press to navigate backward through the OSD menu and decrease adjustment levels.
3 	Plus/Input If the OSD menu is on, press to navigate forward through the OSD menu and increase adjustment levels. If the OSD menu is inactive, press to activate the Input button that chooses the video signal input (VGA, DVI, or DisplayPort)
4 	OK/auto If the OSD menu is on, press to select the highlighted menu item. If the OSD menu is inactive, press to activate the autoadjustment feature to optimize the screen image.
5 	Power Turns the monitor on or off.
6	Power LED White = Fully powered. Amber = Sleep mode. Flashing Amber = Sleep Timer mode.

Rear and side components

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

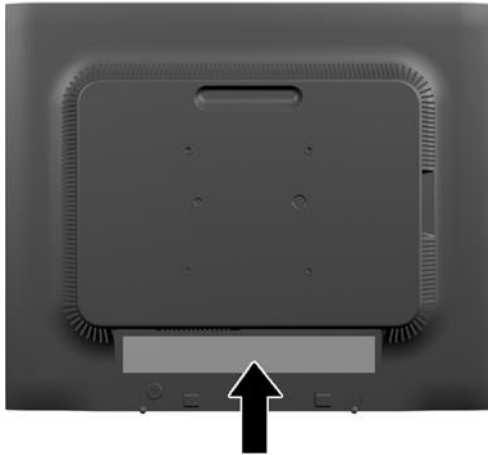


Table 2-2 Rear and side components and their descriptions

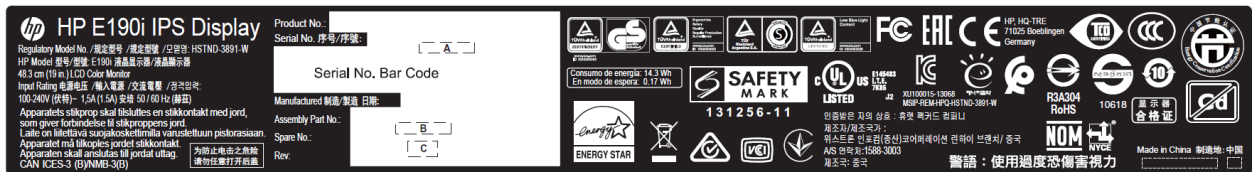
Component		Function
1	AC Power Connector	Connects the AC power cord to the monitor
2	DisplayPort	Connects the DisplayPort cable to the monitor (select regions only)
3	DVI-D	Connects the DVI-D cable to the monitor
4	VGA	Connects the VGA cable to the monitor
5	USB Upstream Connector	Connects the USB hub cable to the monitor's USB hub connector and to a host USB port/hub
6	USB Downstream Connectors (2)	Connects optional USB devices to the monitor

Locating the serial number and product number

The Spec and Barcode label are located on the rear of the monitor. The serial number and product number are located on a Barcode label. You may need these numbers when contacting HP about the monitor model.



Barcode and Spec label (except India):



Barcode and Spec label (For India):



3 Illustrated parts catalog

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

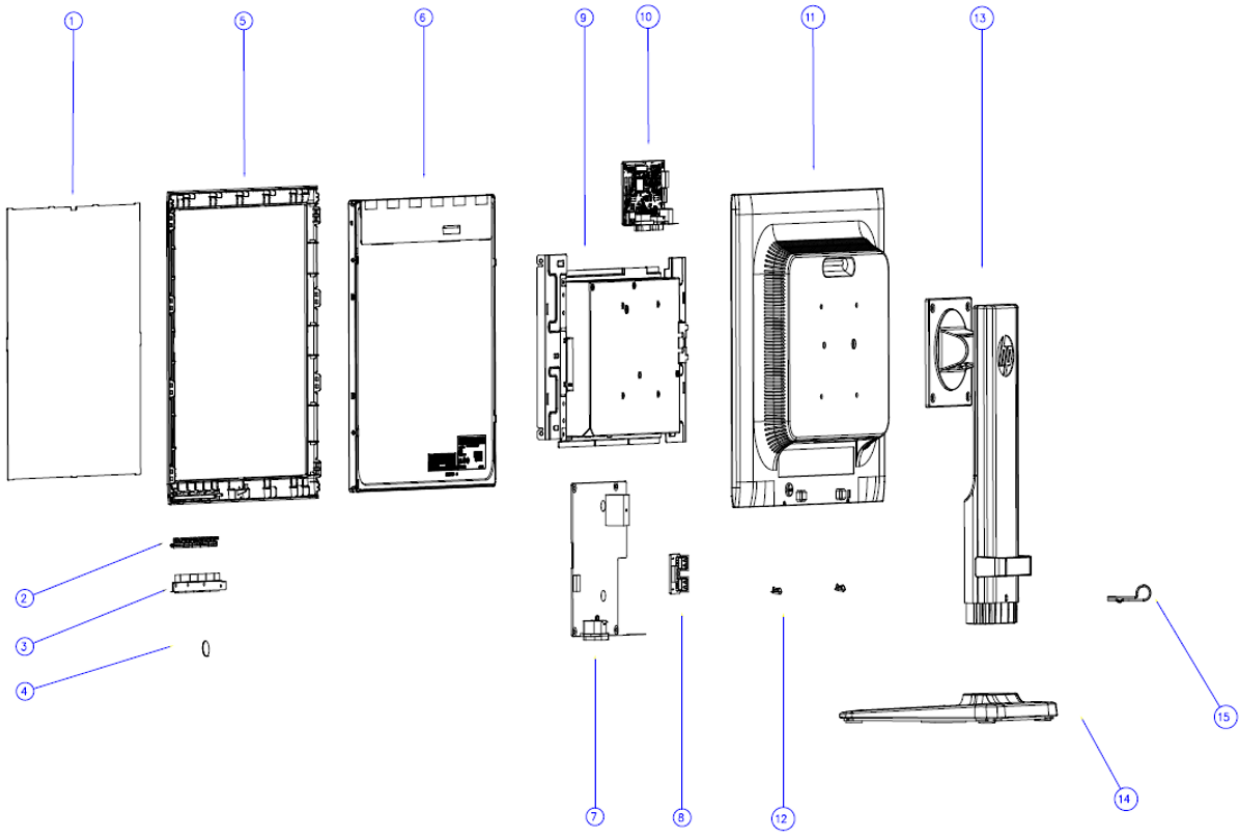


Table 3-1: Monitor major components and their descriptions

Item	Description	Part number	Qty
1	# Privacy filter E190i		1
2	# Function key E190i		1
3	# Key BD E190i		1
4	# Logo E190i		1
5	# Bezel E190i		1
6	# Panel E190i		1
7	# Power BD E190i		1
8	# USB BD E190i		1
9	# Chassis E190i		1
10	# IF BD E190i		1
11	# Rear Cover E190i		1
12	# Rubber E190i		2
13	# Stand E190i		1

14	# Base E190i	1
15	# Lock pin E190i	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
PWR BD E190i LGD DIP	N12865-001	55.7W704.001G
PWR BD E190i BOE DIP	N12866-001	55.7W704.002G
PWR BD E190i LGD ES7.0 DIP	N12867-001	55.7W704.003G
PWR BD E190i BOE ES7.0 DIP	N12868-001	55.7W704.004G
PWR BD E190i LGD ES8.0 DIP	N12869-001	55.7W704.005G
PWR BD E190i LGD ES8.0 w/62368 DIP	N12870-001	55.7W704.006G
PWR BD E190i LGD ES8.0 w/62368 and PWR IC DIP	N12871-001	55.7W704.007G

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

- Suscon: www.su-scon.com

Capacitors by distributor

Component description	Location	Component distributor	Distributor part number
CAP EL 1000U 16V M RT5 10*20 MG E2411	C822, C823	SUSCON	MG016M102G20T014P50R
CAP EL 1000U 16V M RT5 10*20 MC	C824	SUSCON	MC016M102G20T014P50R

Connectors by manufacturer

Component description	Location identifier	Component distributor	Distributor part number	Remark
D-SUB	P302	TCONN	https://www.digikey.com PN: 28-00010-1A61-A	
DVI	P303	TCONN	https://www.digikey.com PN: 28-00090-1A11-A	

DP	P304	TCONN	https://www.digikey.com PN: 22-D0110-5001-0	
USB-B	P202	TCONN	https://www.digikey.com PN: 18-20440-1A01-A	
USB-A	P2A2 P2A3	TCONN	https://www.digikey.com PN: 18-20420-1A01-A	Side BD

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/>

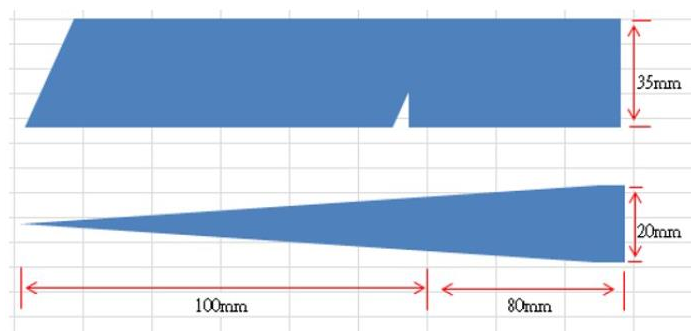
4 Removal and replacement procedures

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:

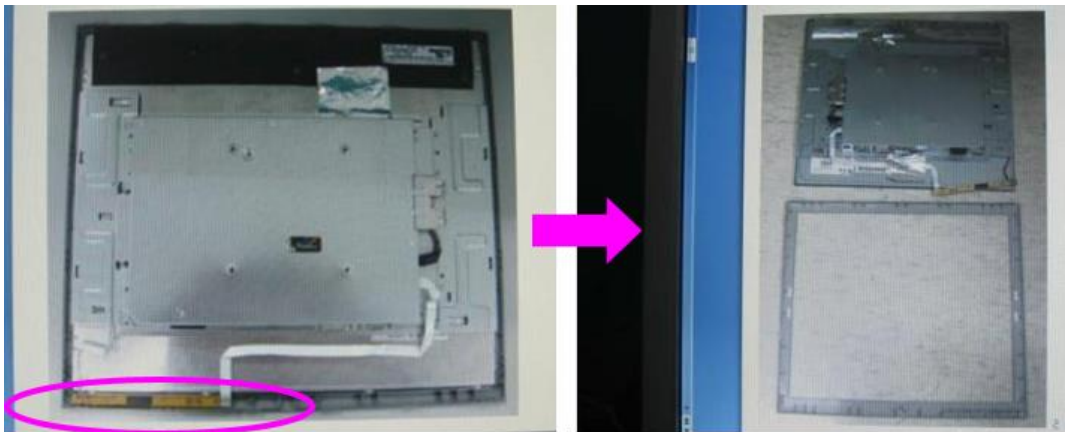
- ▲ Prepare the monitor for disassembly. See Preparation for disassembly.
- 1) Release the 4pcs screws for Stand to RC and remove Stand from Display Head.



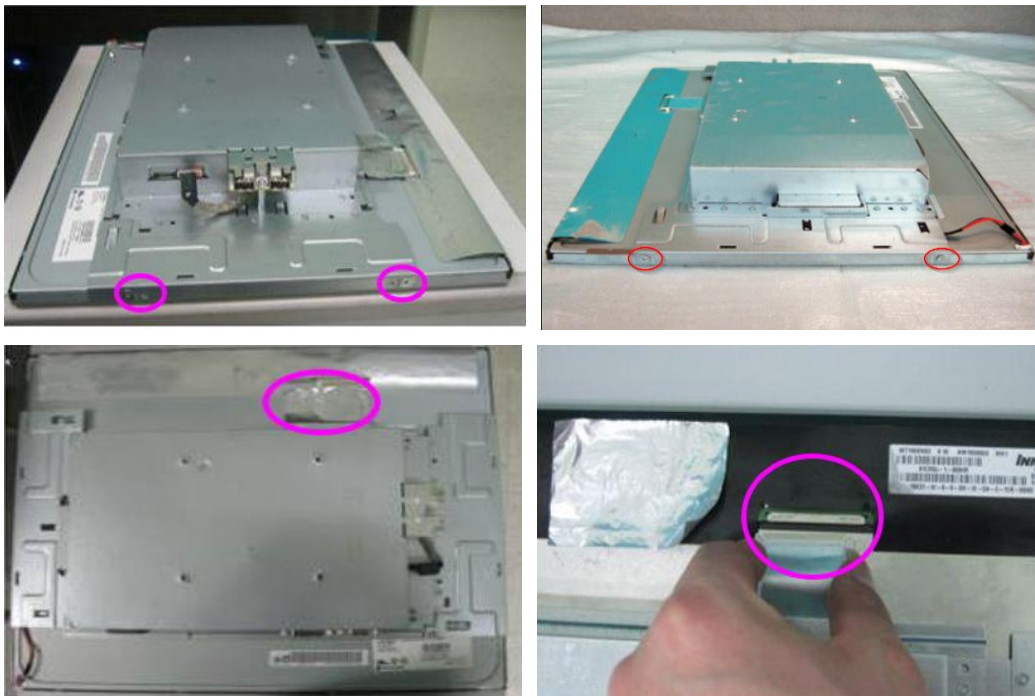
2) Remove Rear Cover from Display Head.



3) Remove Front Cover with function key board from Display Head.



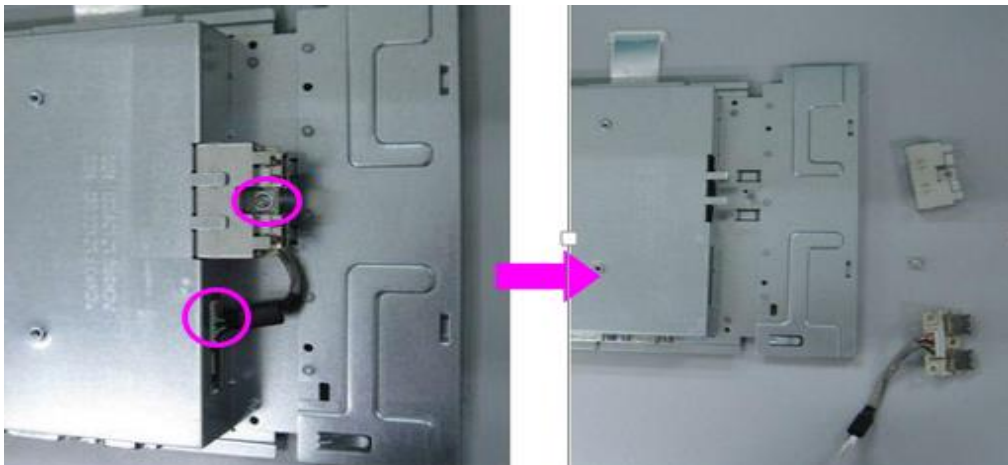
4) Remove 4pcs screw for unlocking the bracket with panel. Tear off AL tape and disconnect LVDS cable..



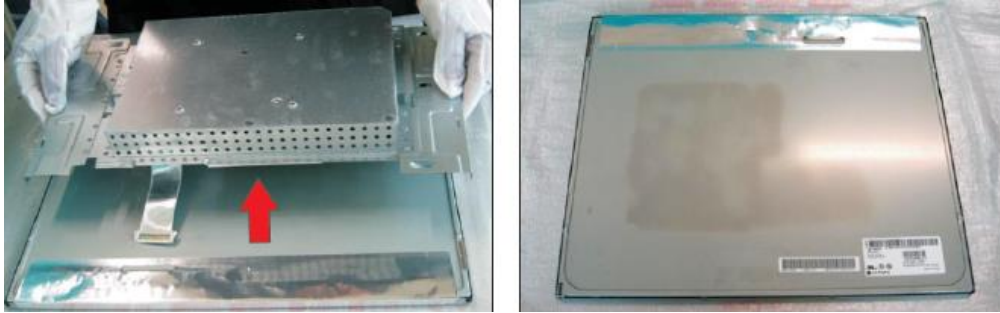
5) Remove 7pcs screws for unlocking the AC outlet and all connectors.



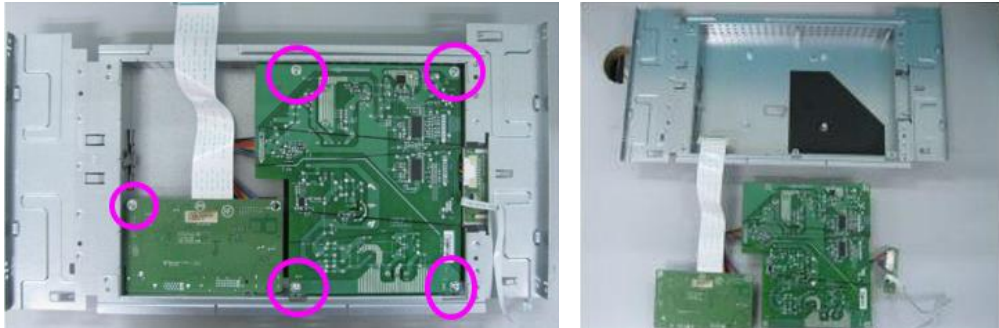
6) Remove 1pcs screws for unlocking the USB unit, then remove the cable from the connector.



- 7) Lift up the bracket chassis module away from the panel module.



- 8) Remove 5pcs crews for unlocking all circuit board, then remove all the boards from the bracket.



Power board

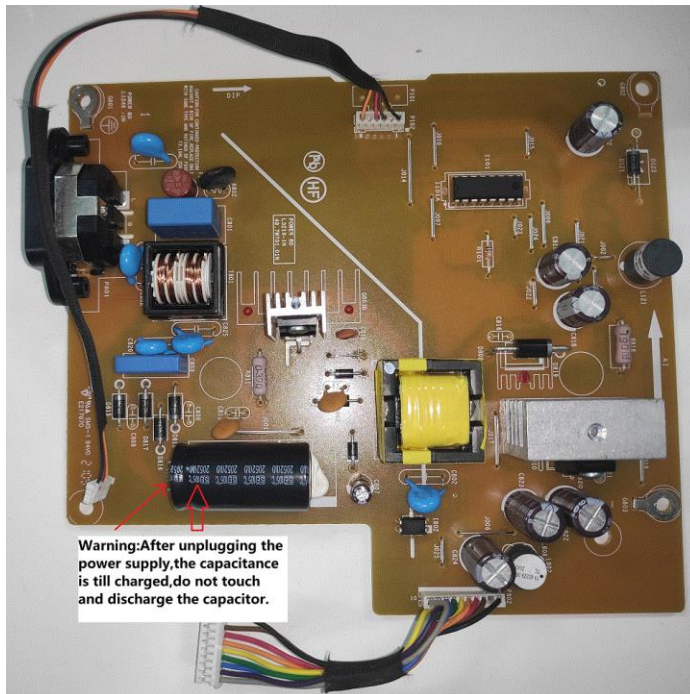
The power board part number is 55.7W704.001G.

Before removing the power board, follow these steps:

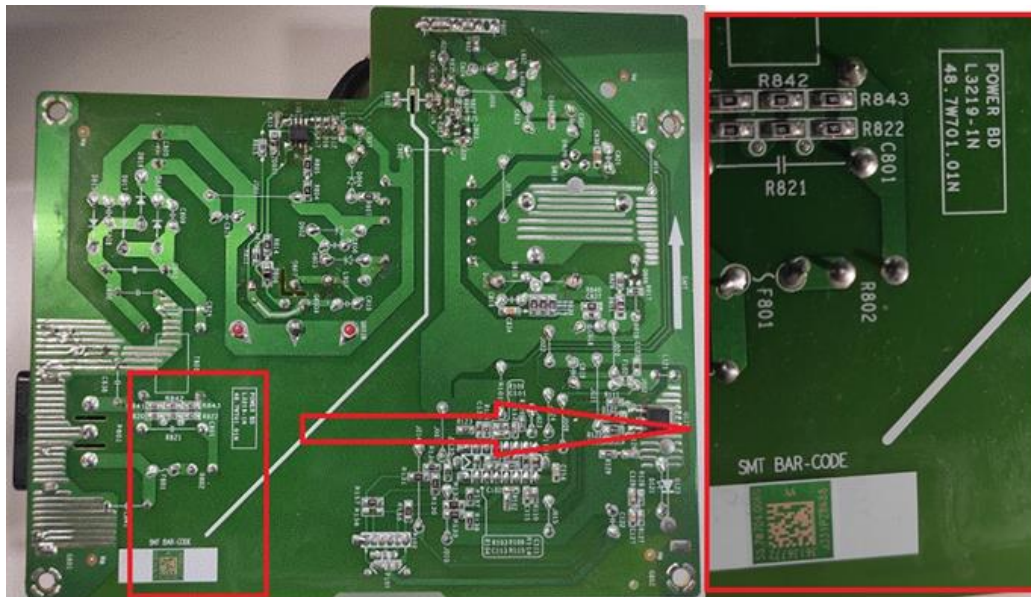
- ▲ Prepare the monitor for disassembly. See Preparation for disassembly on page 11.

Remove the power board:

- 1) The HP E190i power board connector position is as follows:



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



- 3) Pin solder with soldering iron and absorber.
NA
- 4) Lift the connector up and away from the PCB.
No

Connector repair

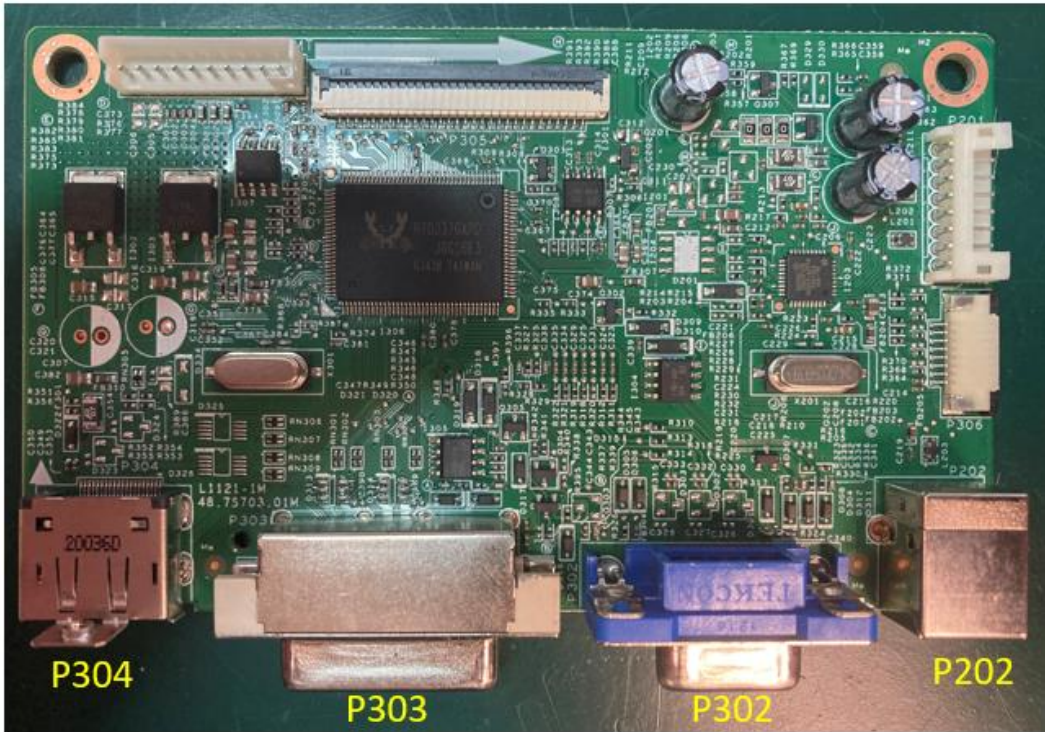
This procedure includes D-SUB, DVI, Display Port, USB-B and USB-A connectors.

The connectors are on the main board (board part number 48.7S703.01M and side BD 48.7J705.011).

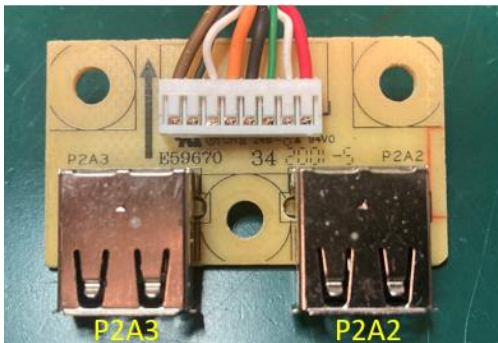
The connector identifiers are as follows:

Connector	Location
D-SUB	P302
DVI	P303
DP	P304
USB-B	P202
USB-A	P2A2, P2A3

Main BD - 48.7S703.01M



Side BD - 48.7J705.011



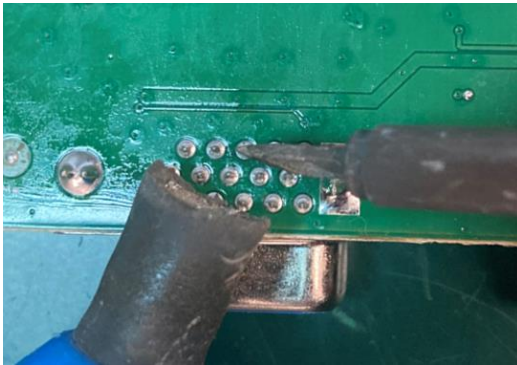
Before repairing connectors, follow these steps:

- ▲ Prepare the monitor for disassembly. See [Preparation for disassembly](#) on page 11.

D-Sub connector P302

Repair the D-Sub connector:

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

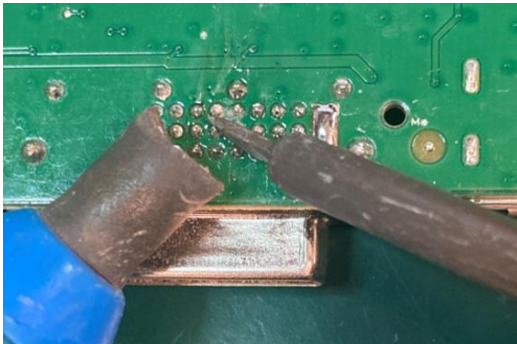


- 2) Use a hot air gun to melt the solder on the pins
- 3) Lift the D-Sub connector from the PCB.
- 4) Place the new component on the PCB. Be sure that it matches the PCB footprint.
- 5) Solder the new component.

DVI connector P303

Repair the DVI connector:

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

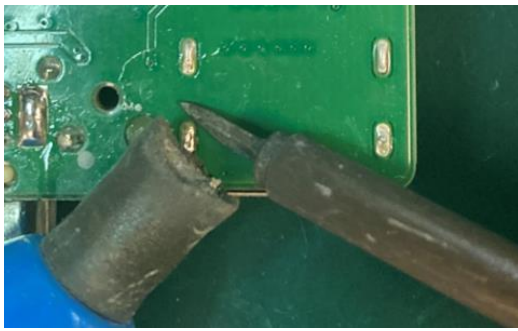


- 2) Use a hot air gun to melt the solder on the pins
- 3) Lift the DVI connector from the PCB.
- 4) Place the new component on the PCB. Be sure that it matches the PCB footprint.
- 5) Solder the new component.

DP connector P302

Repair the DP connector:

- 1) Use a soldering iron 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.

USB-B connector P202

Repair the USB-B connector:

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

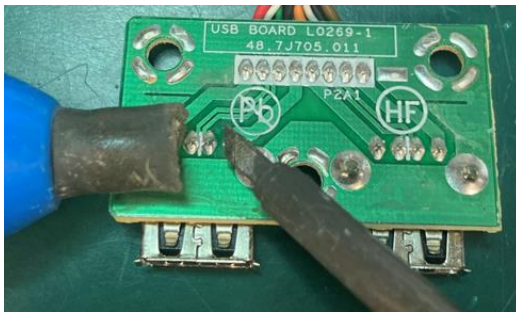


- 2) Use a hot air gun to melt the solder on the pins
- 3) Lift the USB-B connector from the PCB.
- 4) Place the new component on the PCB. Be sure that it matches the PCB footprint.
- 5) Solder the new component

USB-A connector P2A2, P2A3

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 USB-A connector out of the through holes.



- 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
D-SUB test	Confirm whether image displays and sound plays correctly on the monitor.	Computer or Notebook
DVI test	Confirm whether image displays and sound plays correctly on the monitor.	Computer or Notebook
DP test	Confirm whether image displays and sound plays correctly on the monitor.	Computer or DVD player
USB Hub Test	Confirm USB function of 2-USB Type-A and 1-USB Type-B 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 Auto-Sleep Mode.	Press any key on the keyboard or move the mouse to inactivate the screen blanking utility.
	Video card is incompatible.	Open the OSD menu and select the Input menu. Set Auto-Switch Input to Off and manually select the input. or 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 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 Menu button to disable the OSD lockout function.
"Power Button Lockout" 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.

Index

- components
 - front, 5
 - rear, 6
- connector repair, 15
- features, 3
- firmware updates, 2
- front components, 5
- function test, 19
- how to order parts, 9
- illustrated parts catalog, 8
- parts, 8
- parts, ordering, 9
- power board removal, 14
- precautions, 1
- preparation for disassembly, 11
- RC removal, 11
- rear components, 6
- removal
 - power board, 14
 - RC, 11
- removal and replacement procedures, 11
- returning to customer, 2
- RoHS (2002/95/EC) requirements, 2
- safety information, 1
- serial number location, 7
- service information, 1
- spare parts, 8
- support and troubleshooting, 19
- troubleshooting, 19