Maintenance and Service Guide

HP 527fd G2 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”.

Table of Contents

1 Getting started 2
Important safety information 2
Important service information and precautions 2
RoHS (2002/95/EC) requirements 3
General descriptions 3
Firmware updates 3
Before returning the repaired product to the customer 3
2 Monitor features 4
Features 4
Front components 5
Rear components 6
Locating the serial number and product number 8
3 Illustrated parts catalog 9
How to order parts 10
4 Removal and replacement procedures 12
Preparation for disassembly 12
Rear Cover 12
Power board 17
Connector repair 18
HDMI connector CN502 20
DP 1 connector CN501 21
USB Type-C 1 connector CN102 22
DP 2 connector CN503 23
RJ45 connector CN140 24
USB connector CN105 24
USB Type-C 2 connector CN103 25
USB 2 connector CN1004 26
USB 3 connector CN1005 26
Function test 27
Support and troubleshooting 27
Index 29

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:

Display features

- 68.6 cm (27 in) diagonal viewable screen area with 1920 × 1080 (FHD) resolution with 120 Hz refresh rate, plus full-screen support for lower resolutions; includes custom scaling for maximum image size while preserving original aspect ratio.
- Liquid crystal display (LCD) with active matrix and in-plane switching (IPS) technology.
- 8-bit depth (6 + 2 FRC) (FHD model)
- 100% sRGB display color gamut
- Wide viewing angle to allow viewing from a sitting or standing position, or moving from side to side
- Antiglare panel with an LED backlight
- Tilt, swivel, and height adjustment capabilities
- Pivot capability to rotate the monitor head from landscape to portrait orientation
- On-screen display (OSD) adjustments in several languages for easy setup and screen optimization.
- Energy saver feature to meet requirements for reduced power consumption
- Security cable slot on the rear of the monitor for an optional security cable
- Cable management feature for placement of cables and cords
- Plug and Play capability, if supported by your operating system
- DisplayPort™ multistreaming capability
- Joypad OSD navigation
- Flicker-free technology, which eliminates visible screen flicker and prevents eye strain and fatigue, producing a more comfortable viewing experience
- HP Eye Ease (TÜV Low Blue Light Hardware Solution certified)
- Compatible with HP Display Center and HP Client Management Script Library (CMSL)
- Secure firmware updates with HP Display Center

Connectors

- DisplayPort video input and video output
- High-Definition Multimedia Interface (HDMI) video input
- USB Type-C® Alt DisplayPort 1.4 with 100W PD
- USB hub with one USB Type-C port that connects to the computer (upstream) and three USB ports that connect to USB devices (downstream), and one USB Type-C port (downstream)
- RJ-45 (network) jack with IT Manageability (MAPT, PXE Boot, Wake on LAN)

Monitor stand

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

NOTE: For safety and regulatory information, see the *Product Notices* at HP Regulatory, Safety, Compliance, and Warranty Information. To access the latest user guide,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 1-1: Front components and their descriptions

	Component	Description
(1)	Power button	Turns the monitor on or off. NOTE:When applicable HP products are connected to the USB Type-C port, pressing the power button on the display turns on/off your notebook, or puts it to sleep based on your power setting.
(2)	Power LED	Indicates that the monitor is powered on.

Rear components

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

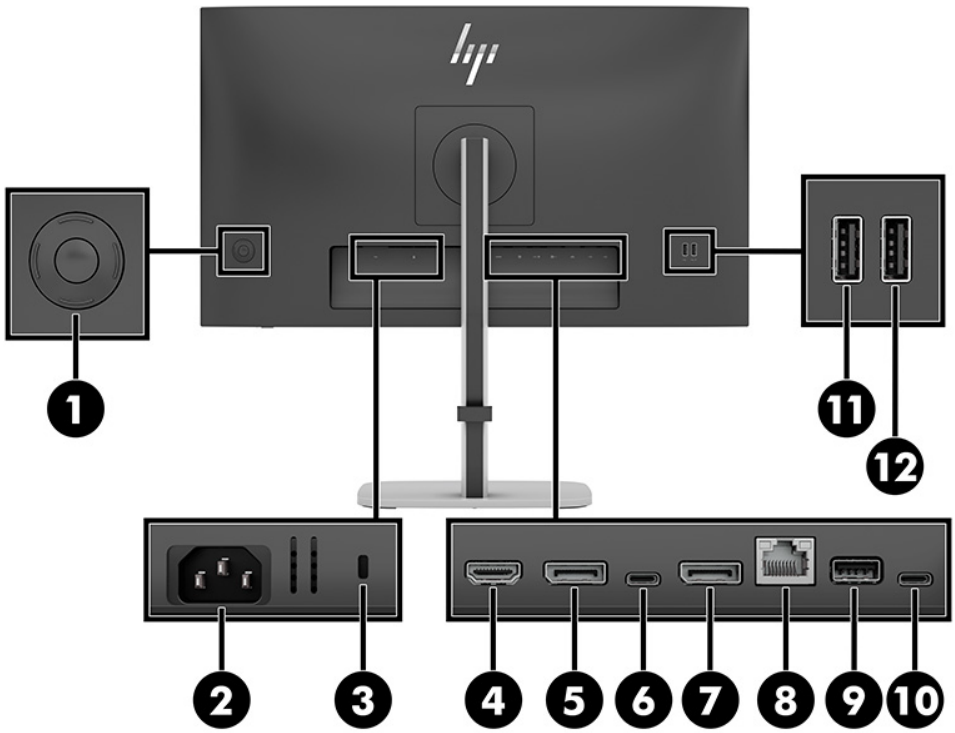
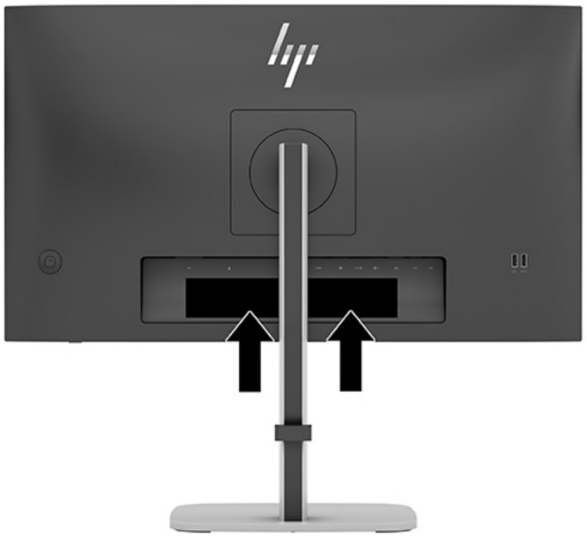


Table 1-2: Rear components and their descriptions

	Component	Description
(1)	Joypad	Press to open the OSD settings.
(2)	Power connector	Connects a power cord.
(3)	Security cable slot	Connects an optional security cable.
(4)	HDMI port	Connects the HDMI cable to a source device, such as a computer.
(5)	DisplayPort	Connects a DisplayPort cable to a source device, such as a computer.
(6)	USB Type-C port (upstream)	Connects a USB Type-C cable to a source device, such as a computer. This USB Type-C port can function as a DisplayPort audio/video input or as a USB Type-C 3.2 Gen 1 connection. The USB Type-C port offers a faster transfer rate, and the alternate mode with DP1.4 supports the maximum resolution of 1920 × 1080 @120 Hz. It can also be used to deliver up to 100 W of power to a device. Power delivery outputs are 20 V/5 A, 15 V/5 A, 12 V/5 A, 9 V/3 A, and 5 V/3 A to achieve a 100 W PD output. The USB Type-C port will only be connected to specify equipment which declared by manufacturer with fire enclosure and complied with IEC 62368-1 or IEC 60950-1. For a specific equipment, go to http://www.hp.com/go/hppc-60950-62368.
(7)	DisplayPort OUT connector	Connects the monitor to another monitor for multistreaming.
(8)	RJ-45 (network) jack	Network (RJ-45) data rate via USB Type-C max speed is 1000 Mbps • Green (left): The network is connected. • Amber (right): Activity is occurring on the network. **NOTE:** Supports Out-of-Band Wake on Lan (WOL), Out-of-Band Mac Address Passthrough (MAPT), and PXE boot (HP models only). The functionality may vary with PC settings. **NOTE:** This network port is fully energy efficient according to IEEE standards (IEEE 802.3az-2010), as long as all connected devices support this feature.
(9)	USB port	Connects a USB cable to a peripheral device, such as a keyboard, mouse, or USB hard drive.
(10)	USB Type-C port (downstream)	Connects a USB Type-C cable to a peripheral USB device and provides data transfer, even when the monitor is in sleep mode or DC off with OSD performance mode on. This port charges most devices (up to 15 W), such as a smartphone or a tablet. NOTE: Cables or adapters may be required (purchased separately).
(11)	USB port	USB port: Connects a USB device, provides data transfer, and (for select products) charges small devices (such as a smartphone).
(12)	USB port with battery fast-charging 1.2	USB port: Connects a USB device, provides data transfer, and (for select products) charges small devices (such as a smartphone). USB port with battery fast-charging 1.2 (5 V × 1.5 A = 7.5 W): Connects a USB device, provides high-speed data transfer, and charges small devices (such as a smartphone), even when the monitor is DC off with OSD performance mode on. NOTE: Use a standard USB Type-A charging cable or cable adapter when charging a small external device (purchased separately).

Locating the serial number and product number

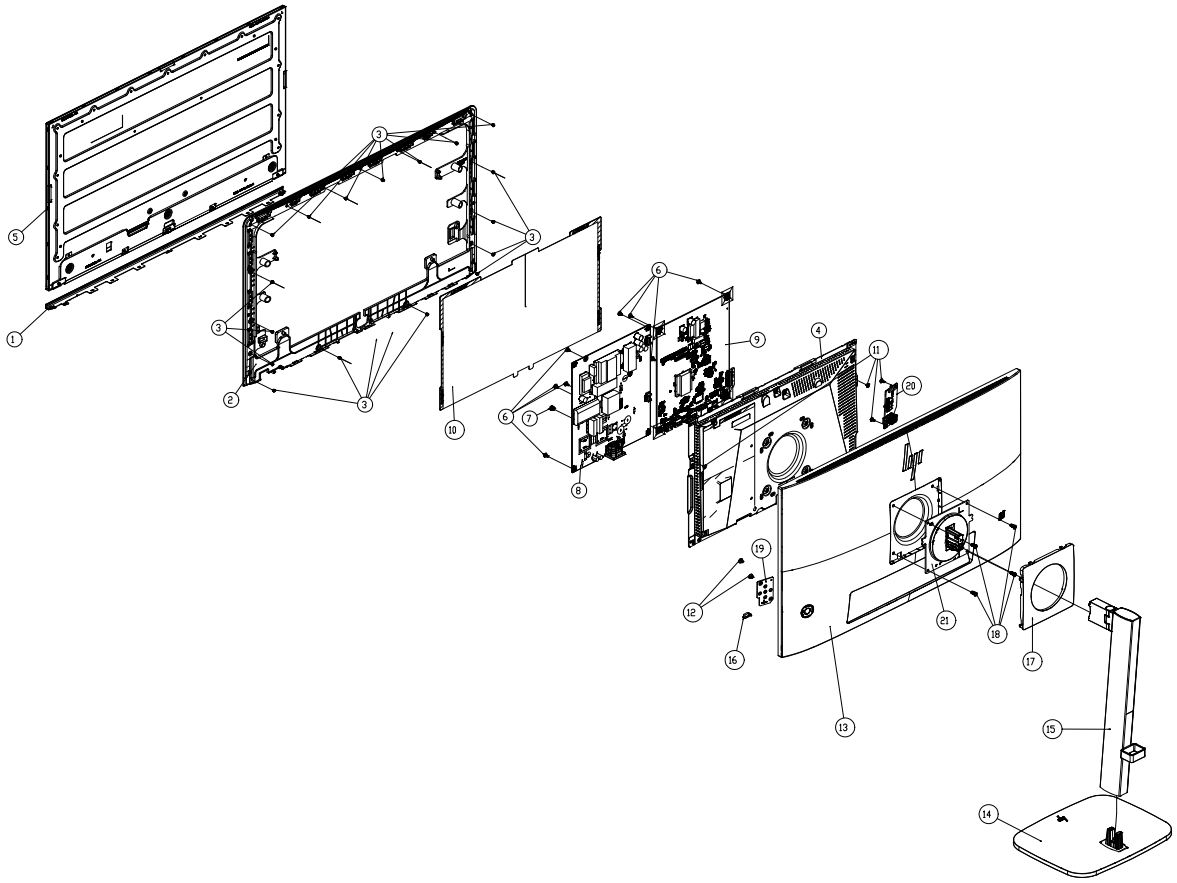
The Barcode label **(1)** and SPEC label **(2)** are located on the rear of the monitor. The serial number and product number are located on a Safety label. You may need these numbers when contacting HP about the monitor model.





3 Illustrated parts catalog

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



Item	Description	Qty
1	DECO_BEZEL	1
2	MIDDLE_FRAME	1
3	SCREW M3*3.8 M3*3.8	15
4	MAINFRAME	1
5	PANEL	1
6	SCREW D3 6	8
7	SCREW M4 6	1
8	ADAPTER BOARD	1
9	MAIN BOARD	1
10	INSULATING_SHEET	1

11	SCREW M3 6	4
12	SCREW Q2 3	2
13	REAR_COVER	1
14	BASE_ASS'Y	1
15	STAND_ASS'Y	1
16	KEY BOARD	1
17	COVER_VESA	1
18	SCREW M4 10	4
19	KEY BOARD	1
20	USB BOARD	1
21	HINGE ASS'Y	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
PSU HP 527fd G2	Q29234-001	PLPCQH521GAAF LG-T
PSU HP 527fd G2	Q29235-001	PLPCQH671KAAH BOE-T
PSU HP 527fd G2	Q29236-001	PLPCQH681AAAJ AUO-T

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

- UK.RS Component: https://uk.rs-online.com/web/
- Digi-Key Component: Digikey Electronics

Capacitors by distributor

Component description	Location	Component distributor	Distributor part number
EC 470uF 20% 25V 10x12 5000 hr 1.6A ENB1	C9120/C9121/C9128	Digikey	493-1304-ND

Connectors by manufacturer

Component description	Location identifier	Component distributor	Distributer part number
HDMI 1	CN502	Digikey	2086581051
DP1	CN501	Digikey	472720029
USB Type-C 1	CN102	Digikey	44116B01231
DP2	CN503	Digikey	472720029
RJ45	CN140	Digikey	RJHSE5081
USB 1	CN105	RS	10117835-002LF（Amphenol ICC）
USB Type-C 2	CN103	Digikey	44116B01231
USB 2	CN1004	RS	10117836-002LF (Amphenol ICC)
USB 3	CN1005	RS	10117836-002LF (Amphenol ICC)

NOTE: Rear cover and chassis need to be modified to hold connector. Connector may need modifications to meet functional, safety and regulatory requirements accordingly if it doesn't match exactly.

You can purchase cables from the HP part store at https://partsurfer.hp.com/Search.aspx.

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

NOTE: HP continually improves and changes product parts. For complete and current information about supported parts for your product, go to https://partsurfer.hp.com/Search.aspx, select your country or region, and then follow the on-screen instructions.

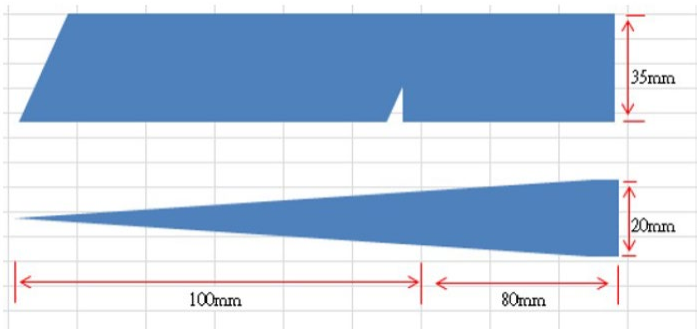
4 Removal and replacement procedures

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:



Rear Cover

Before removing the Rear Cover, follow these steps:

▲ Prepare the monitor for disassembly. See Preparation for disassembly on page 12.

Remove the Rear Cover:

1) Remove six screw from the rear case.

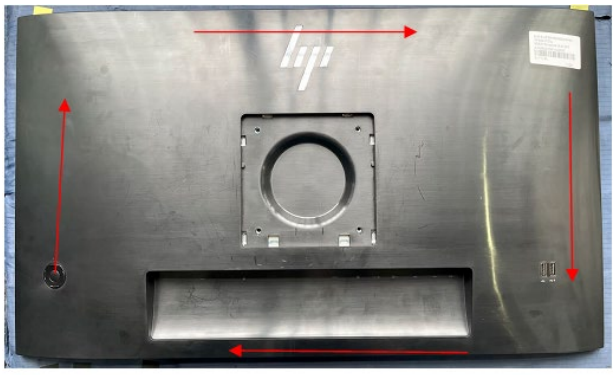


2) Use your fingers to split the left and right sides apart between the middle frame and rear case.

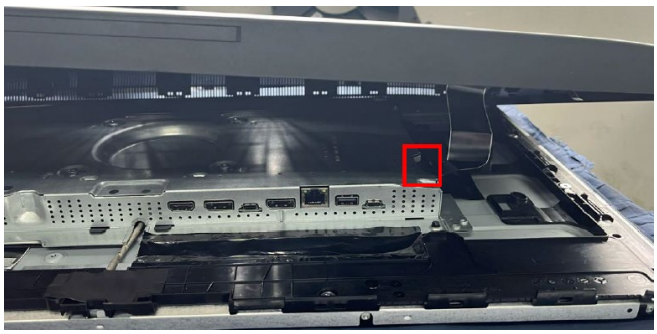




3) Insert the scraper bar tool into the gap between the middle frame and rear case, and then rotate. The hook opens. Repeat the steps.



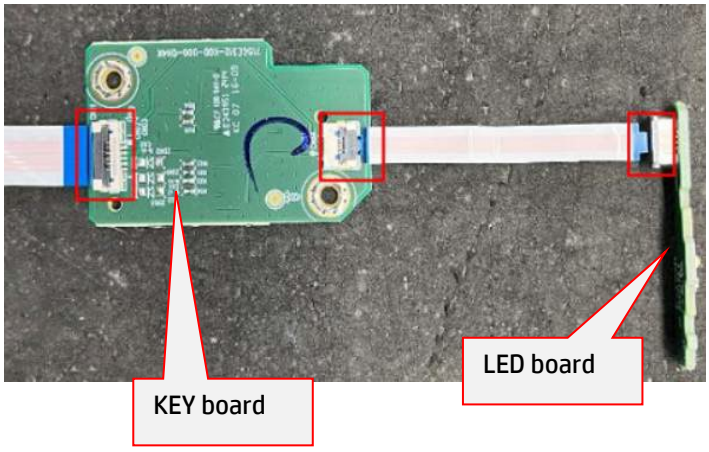
4) Disassemble Rear Cover.



5) Remove the key board, the LED board and the USB board.



6) Disassemble the key board/LED board/USB board from the Rear Cover (if required).



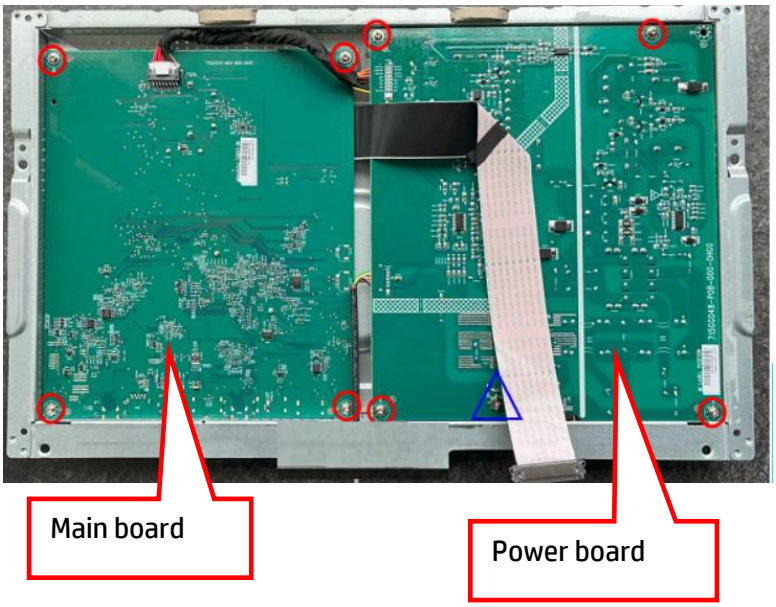
7) Remove the screws to disassemble the main frame/middle frame from panel





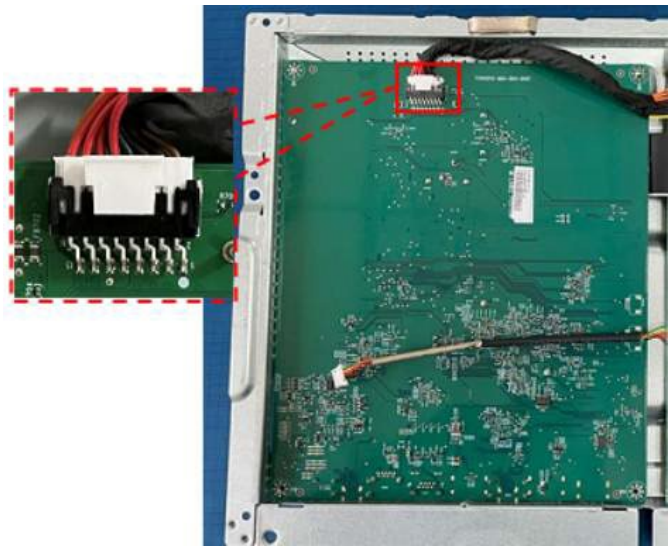


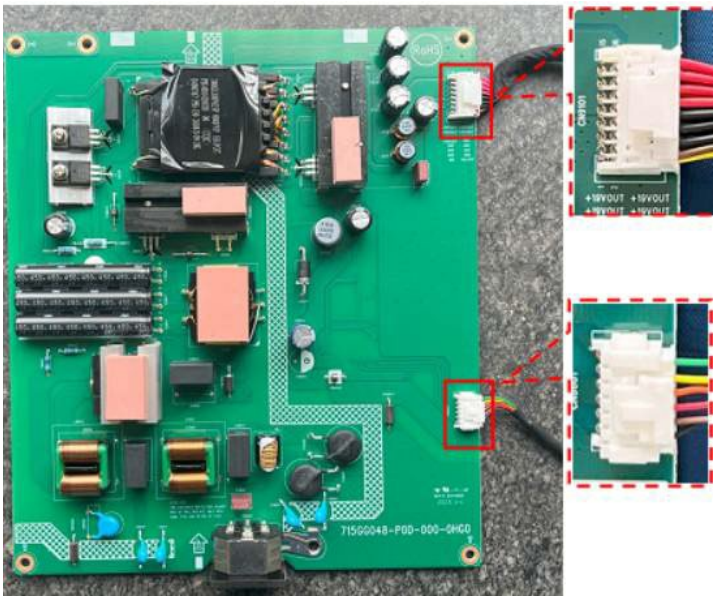
8) Disassemble 9 screws from the board.



9) Disassemble all the boards from housing.

10) Disconnect all the wires from the board.





Power board

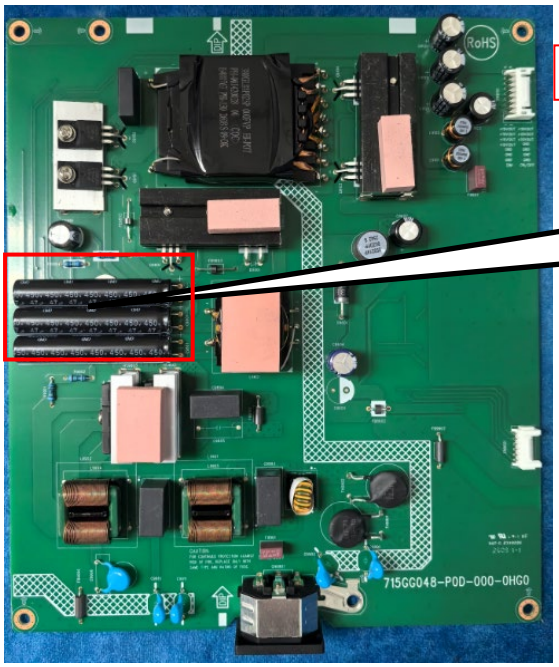
The power board part number is PLPCQH671KAAH)

Before removing the power board, follow these steps:

▲ Prepare the monitor for disassembly. See Preparation for disassembly on page 12.

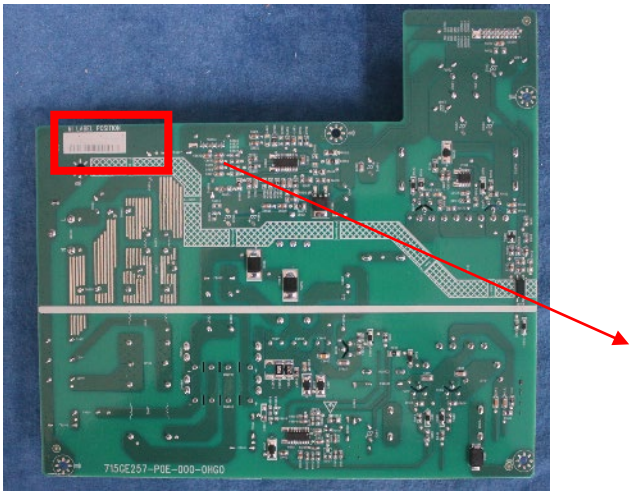
Remove the power board:

1) The HP 527fd G2 power board connector position is as follows:



Warning: After unplugging the power supply, the capacitance is still charged, do not touch and discharge the capacitor.

2) Locate the part number location on the board





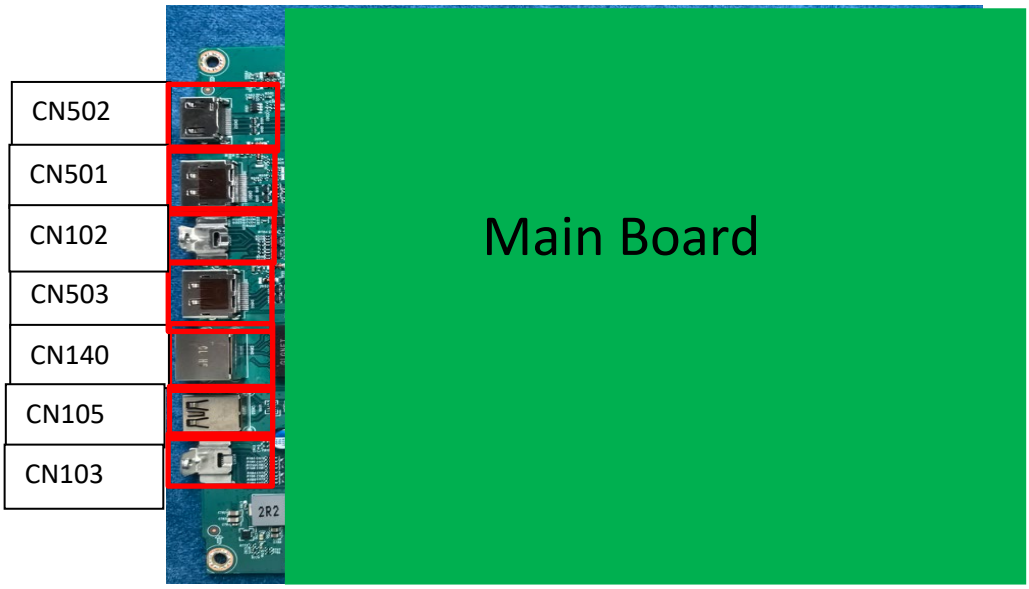
Connector repair

This procedure includes HDMI, DisplayPort, USB, USB Type-C and RJ45 connectors.

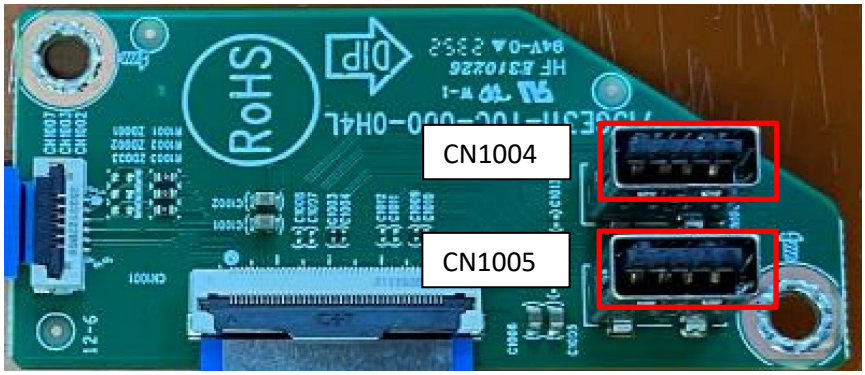
The connectors are on the main board (board part number CBPR5TOH1Q11).

The connector identifiers are as follows:

Connector	Location
HDMI	CN502
DP1	CN501
USB Type-C 1	CN102
DP2	CN503
RJ45	CN140
USB	CN105
USB Type-C 2	CN103



USB 2	CN1004
USB 3	CN1005



Before repairing connectors, follow these steps:

▲ Prepare the monitor for disassembly. See Preparation for disassembly on page 12.

IMPORTANT:

- **Repair Condition: Connector repair is only for out of warranty.**
- **Repairing must operate by professional repairers (Note) in repair center, not applicable for end user.**
- **Electrostatic protection is required when component replacement is required.**
- **The monitor meets ROHS, please use Lead-free solder wire for soldering.**
- **If Connector need to replace, must check specification and part number whether match the BOM and location.**
- **If connector need to replace, please insert new parts carefully because the near pin may cause short circuit by inappropriate operate.**
- **DO NOT allow any liquid on the board. Water and moisture may cause short-circuit to the electronic components and lead to malfunctions.**
- **The fusion point of Lead-Free solder is requested. Repairing with conventional lead wire may cause damage.**
- **Work quickly to avoid overheating the circuit board as soon as you confirm the steady soldering condition.**
- **Keep the soldering iron tip clean and well tinned and when replacing parts.**
- **A close inspection of the circuit board revealed look in good condition.**
- **After repaired, must connect source to each port to check Main board function is ordinary.**

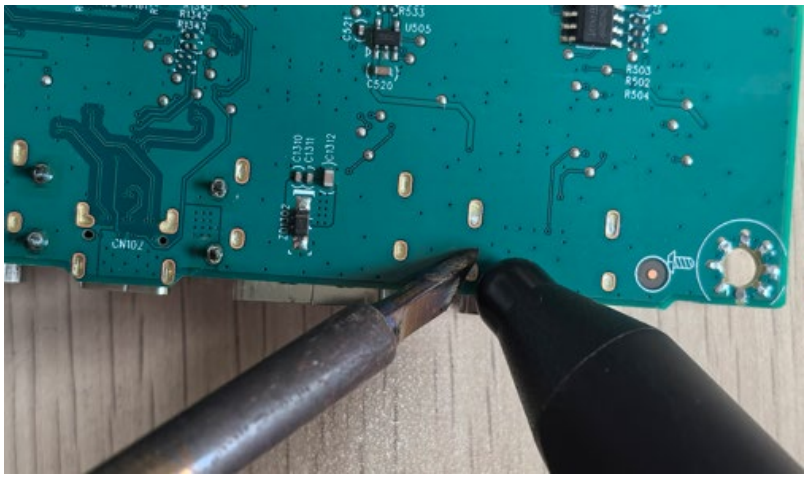
Note: (The requirement of professional repairers' regulation by ERP lot5)

1) The professional repairer has the technical competence to repair electronic displays and complies with the applicable regulations for repairers of electrical equipment in the Member States where it operates. Reference to an official registration system as professional repairer, where such system exists in the Member States concerned, shall be accepted as proof of compliance with this point.
2) The professional repairer is covered by insurance covering liabilities resulting from its activity, regardless of whether this is required by the Member State.

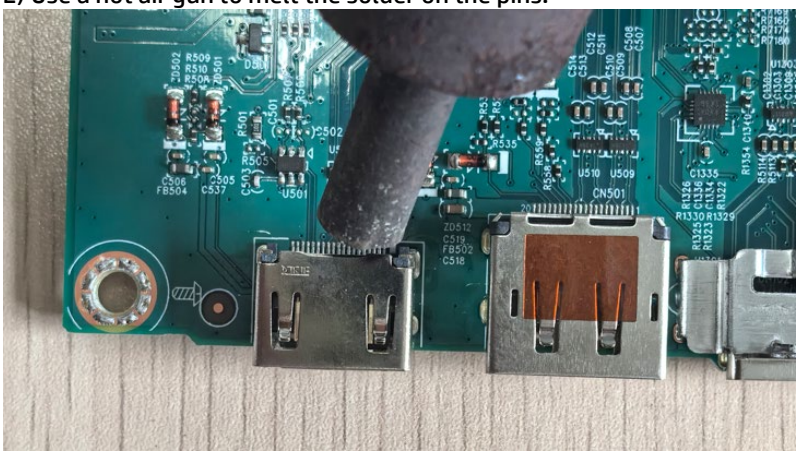
HDMI connector CN502

Repair the HDMI 1 connector:

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



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



3) Lift the HDMI connector from the circuit board.

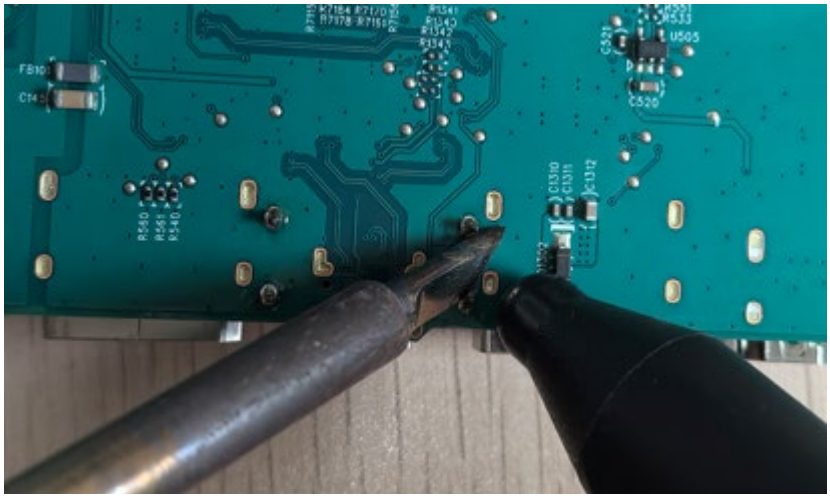
4) Place the new component on the circuit board. Be sure that it matches the circuit board footprint.

5) Solder the new component.

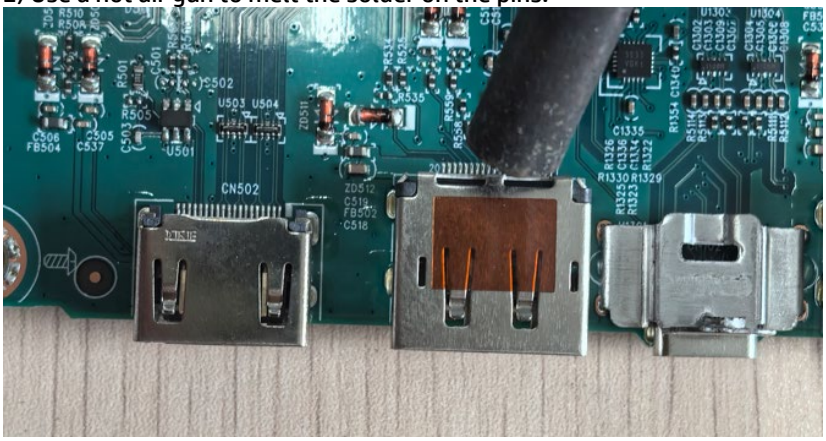
DP 1 connector CN501

Repair the DP 1 connector:

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



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



3) Lift the DP 1 connector from the circuit board.

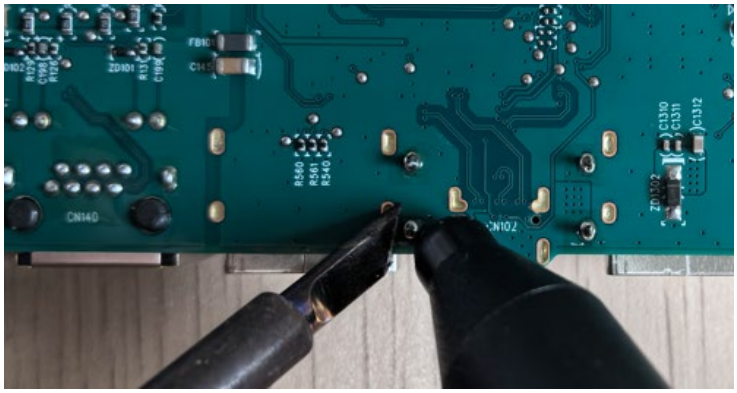
4) Place the new component on the circuit board. Be sure that it matches the circuit board footprint.

5) Solder the new component.

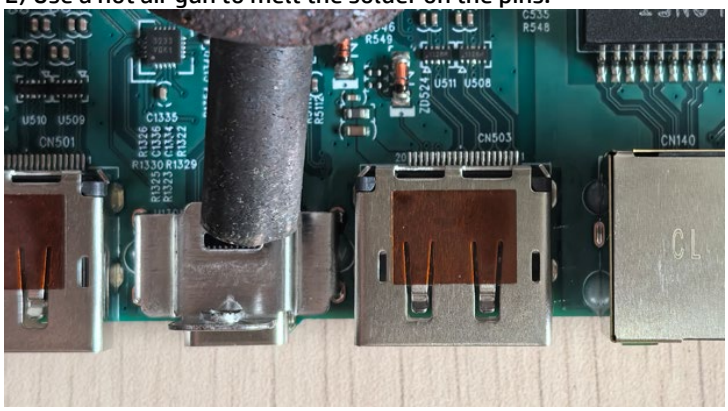
USB Type-C 1 connector CN102

Repair the USB Type-C 1 connector:

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



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



3) Lift the USB Type-C 1 connector from the circuit board.

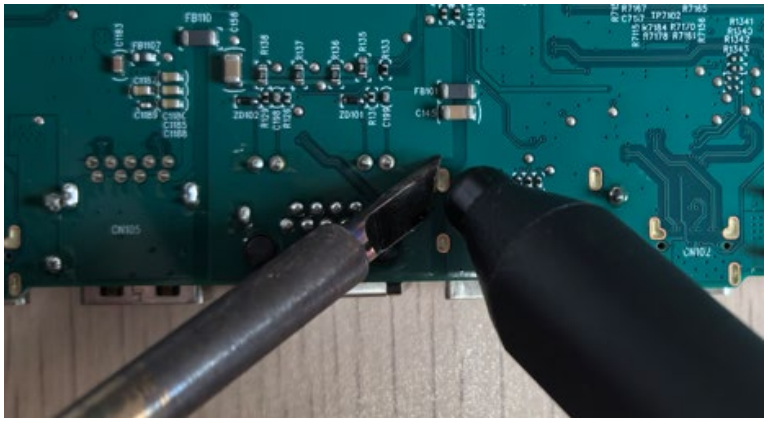
4) Place the new component on the circuit board. Be sure that it matches the circuit board footprint.

5) Solder the new component.

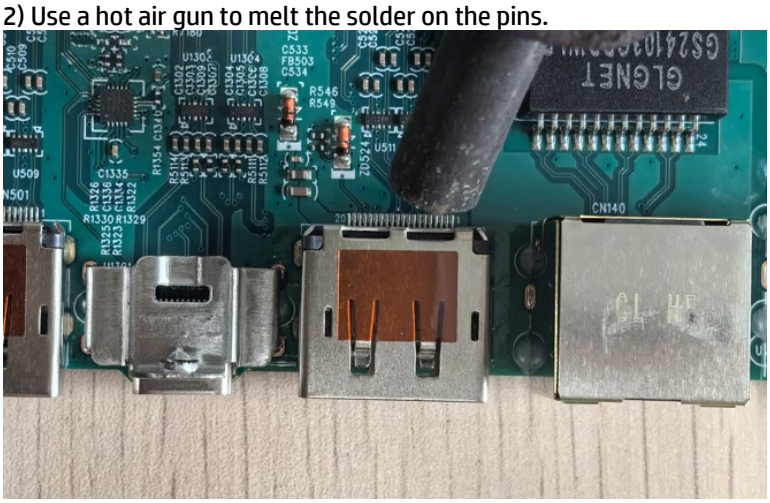
DP 2 connector CN503

Repair the DP 2 connector:

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



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



3) Lift the DP 2 connector from the circuit board.

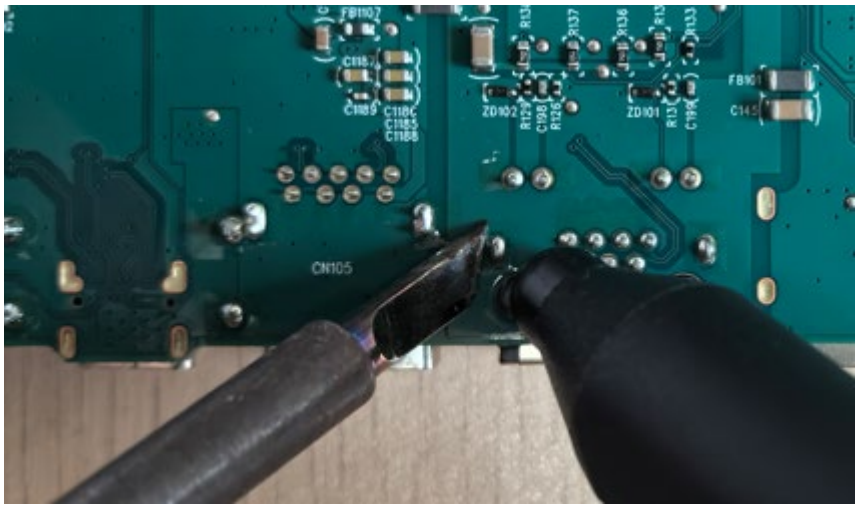
4) Place the new component on the circuit board. Be sure that it matches the circuit board footprint.

5) Solder the new component.

RJ45 connector CN140

Repair the RJ45 connector:

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



2) Lift the RJ45 connector from the circuit board.

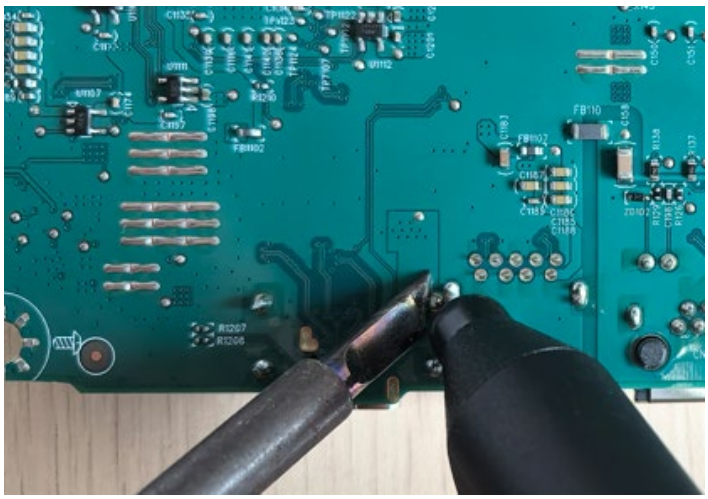
3) Place the new component on the circuit board. Be sure that it matches the circuit board footprint.

4) Solder the new component.

USB connector CN105

Repair the USB connector:

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



2) Lift the USB connector from the circuit board.

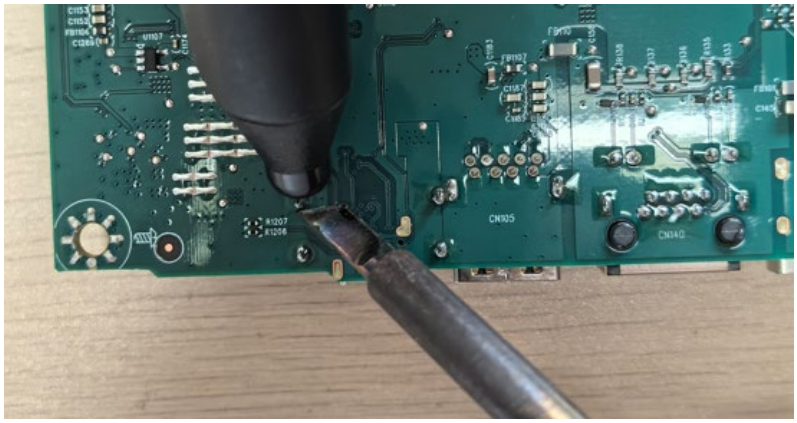
3) Place the new component on the circuit board. Be sure that it matches the circuit board footprint.

4) Solder the new component.

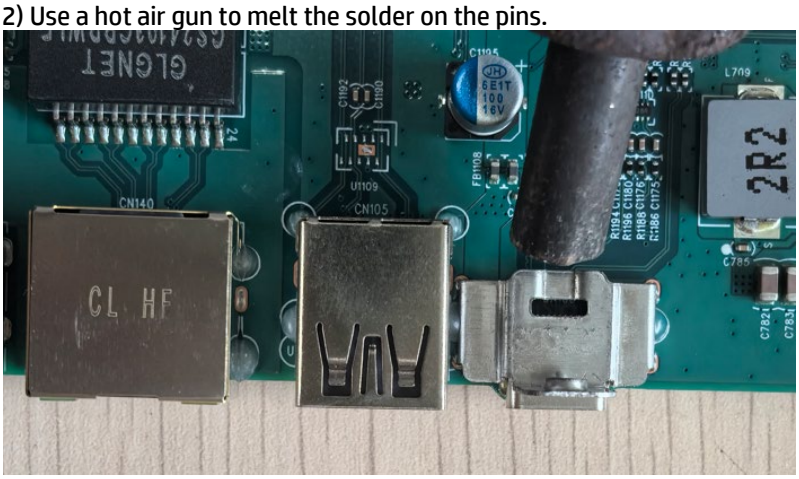
USB Type-C 2 connector CN103

Repair the USB Type-C 2 connector:

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



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



3) Lift the USB Type-C 2 connector from the circuit board.

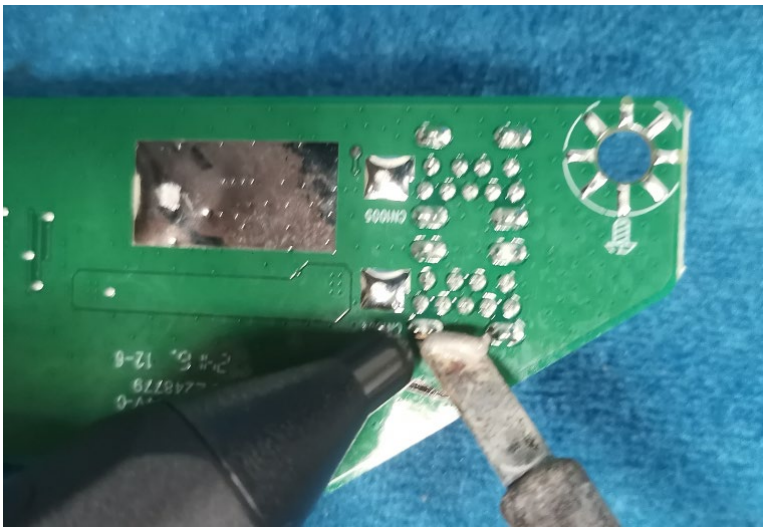
4) Place the new component on the circuit board. Be sure that it matches the circuit board footprint.

5) Solder the new component.

USB 2 connector CN1004

Repair the TYPE-C connector:

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



2) Lift the TYPE-C connector from the circuit board.

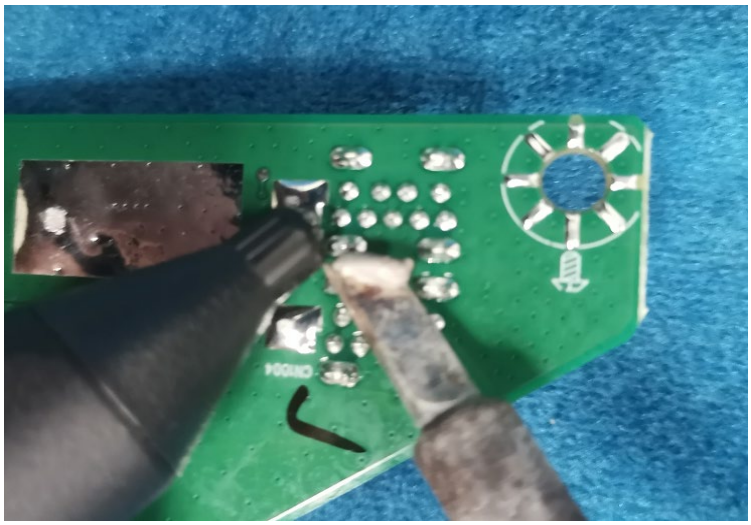
3) Place the new component on the circuit board. Be sure that it matches the circuit board footprint.

4) Solder the new component.

USB 3 connector CN1005

Repair the TYPE-C connector:

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



2) Lift the TYPE-C connector from the circuit board.

3) Place the new component on the circuit board. Be sure that it matches the circuit board 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
USB-C test	Confirm whether image displays and sound plays correctly on the monitor	Computer or USB-C player
Audio test	Change volume and balance to confirm whether volume is smooth and loud enough.	Speaker

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. For more information, see Connecting the cables o 9.
	System is in Auto-Sleep Mode.	Press any key on the keyboard or move the mouse to inactivate the screen blanking utility.
	Video card is incompatible.	Perform one of the following actions: •Open the OSD menu and select the Input menu. Set Auto-Switch Input to Off and manually select the input. •Replace the video card or connect the video cable to one of the computer's on-board video sources.
Image appears blurred, indistinct, or too dark.	Brightness 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 connecting the video cable.
Input Signal Out of Range is displayed on screen.	Video resolution, refresh rate, or both, are set higher than the monitor supports.	Change the settings to a supported setting. See Preset display resolutions on page 29.
The monitor does not enter into a low-power sleep state.	The monitor's power saving control is disabled.	Open the OSD menu and select Power, select Auto-Sleep Mode, and then set auto-sleep to On.
“OSD Lockout” is displayed	The monitor’s OSD lockout function is enabled.	Press and hold the 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.
Monitor has trouble waking from Sleep mode		DisplayPower or USB Type-C inputs: Set the DisplayPort hot-plug detection to Always Active. Power mode monitors: Set the hot-plug detection to Always Active to switch the monitor to Performance mode.
Slow performance from USB devices connected to the USB Type-A monitor connectors		The monitor has a two-lane default for USB-C. On selected products, you can press the Joypad button to open the OSD menu, navigate to the USB Type-C configuration, and then select USB-C Video + USB 3.0 for data transfer prioritization.
Lower refresh rate or color bits		Select USB-C Video + USB 2.0 for refresh rate/color bits prioritization.
LAN connection drop		Check if the LAN driver version on the host PC is up to date.

Index

components
front, 5
rear, 6
connector repair, 18
features, 4
firmware updates, 3
front components, 5
function test, 27
how to order parts, 10
illustrated parts catalog, 9
parts, 9
parts, ordering, 10
power board removal, 17
precautions, 2
preparation for disassembly, 12
RC removal, 12
rear components, 6
removal
power board, 17
RC, 12
removal and replacement procedures, 12
returning to customer, 3
RoHS (2002/95/EC) requirements, 3
safety information, 2
serial number location, 8
service information, 2
spare parts, 9
support and troubleshooting, 27
troubleshooting, 27