



# Maintenance and Service Guide

## 22m/24m/27m 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.

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**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.

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

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## 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](http://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.

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## 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:

- 54.6 cm (21.5 in) diagonal viewable area with 1920 × 1080 resolution, plus full-screen support for lower resolutions, includes custom scaling for maximum image size while preserving the original aspect ratio
- 60.47 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
- 68.58 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
- 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 capability
- VGA video input
- HDMI (High-Definition Multimedia Interface) video input
- Plug-and-play capability if supported by the 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
- HDCP (High Bandwidth Digital Content Protection) copy protection on all digital inputs
- Energy saver feature to meet requirements for reduced power consumption

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**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**.

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## 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

Control	Function
1 Menu/OK	Opens the OSD menu or selects items on the OSD menu.
2 Information or Auto Adjustment / Minus	Information or Auto Adjustment : If using an HDMI source and the OSD menu is inactive, press to show the monitor OSD. If using a VGA source, press to do an auto-adjustment. Minus : If the OSD menu is active, press to navigate backward through the OSD menu and decrease adjustment levels.
3 Viewing Modes / Plus	Viewing Modes : If the OSD menu is inactive, press to activate the Viewing Modes to choose different video settings. Plus : If the OSD menu is active, press to navigate forward through the OSD menu and increase adjustment levels.
4 Next Input / Exit	Next Input : If the OSD menu is inactive, press to switch the video signal input. Exit : If the OSD menu is active, press to save any changes made and exit the OSD menu.
5 Power	Turns the monitor on or off.

## 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	Function
1 Power Good LED Indicator	White indicates power on
2 Power connector	Connects the power cable to the monitor
3 HDMI connector	Connects the HDMI cable to the monitor
4 VGA connector	Connects the VGA cable to the monitor
5 Security cable slot	Connects the Security cable 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.

## For worldwide models (except India):

22m/24m



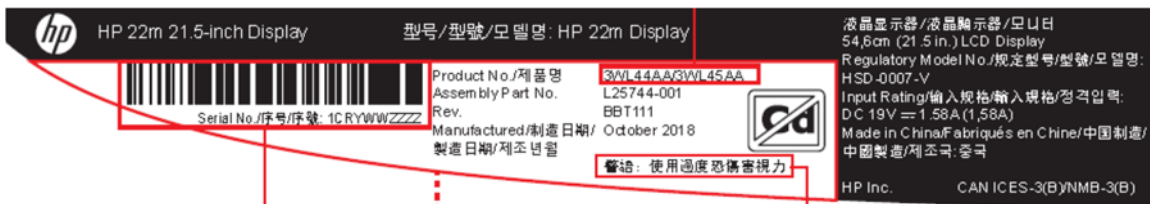
27m



22m/24m  
Barcode label



Spec label



27m



**For India:**  
22m/24m

Bar code label



Spec label

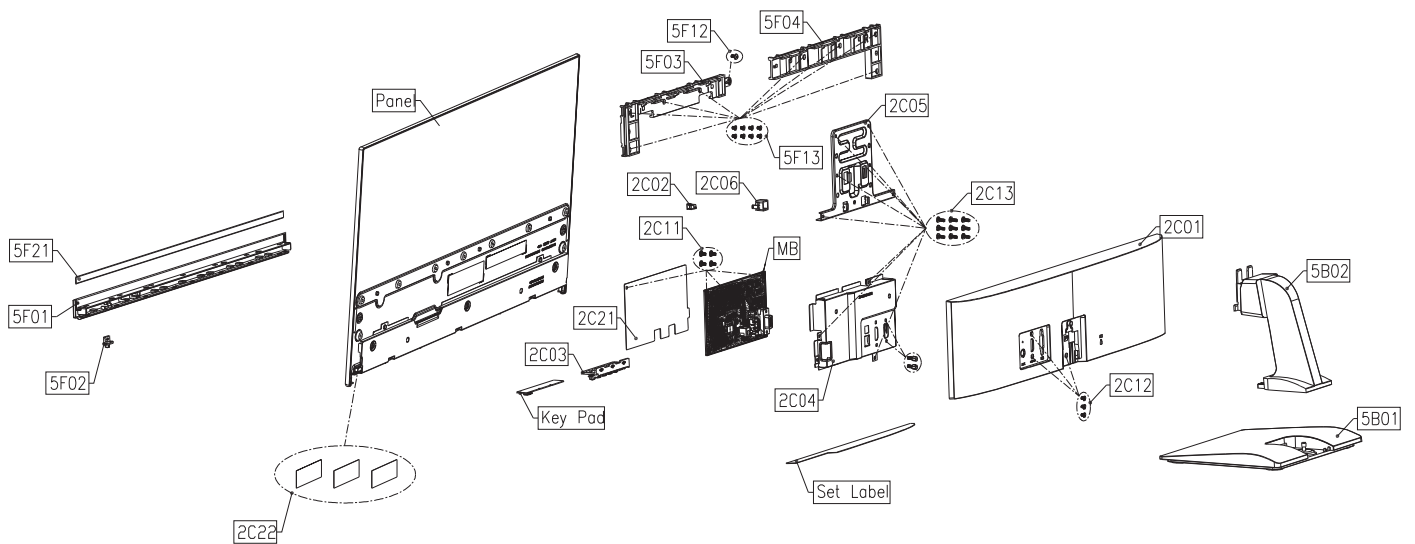


27m



# 3 Illustrated parts catalog

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



## How to order parts

The HP authorized repair center can purchase the power board from HP.

Connectors are available for purchase from the following EU distributors:

- Digi-Key: [digikey.co.uk](http://digikey.co.uk)

### Capacitors by distributor

Component description	Location	Component distributor	Distributor part number
Capacitor_330uF_25V_10*7	C909	Digi Key	URS1E331MPD-ND

### Connectors by manufacturer

Component description	Location identifier	Component distributor	Distributor part number
VGA	P101	Digi Key	609-4032-ND
HDMI	P102	Digi Key	380-SS-53000-003-ND
DC	P103	Digi Key	CP-044A-ND

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**NOTE:** The connector may need to be modified to meet functionality, regulatory and safety requirements if it is not an exact match.

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

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**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.

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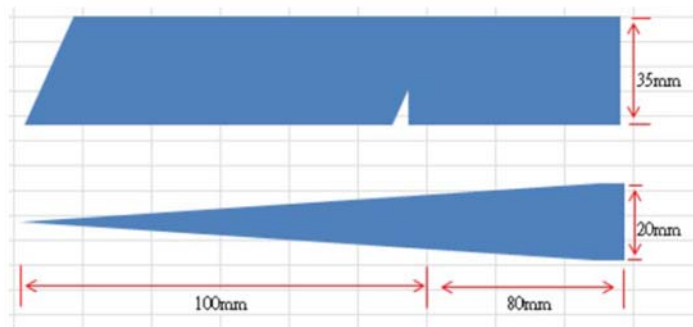
## 4 Removal and replacement procedures

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.

- 1) Remove the base. Rotate the screw from counterclockwise to remove base and arm.



- 2) Remove the hinge. Press the quick release button and pull out the hinge.



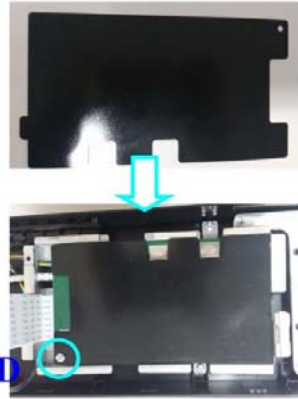
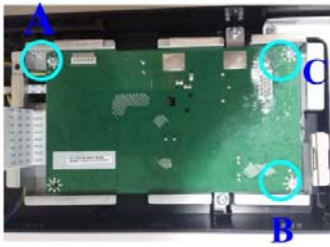
- 3) Remove the rear cover. Use tool to open the latches and remove the LED cable & LVDS cable from panel side.



- 4) Remove frame & deco from panel side. Loosen screw (red circles) then remove R/L frame from panel back side, Remove deco from panel bottom side.



- 5) Remove shielding case from rear cover. Remove screw (as red circle), Remove Screw D to disassembly mylar, then loosen screw A B C



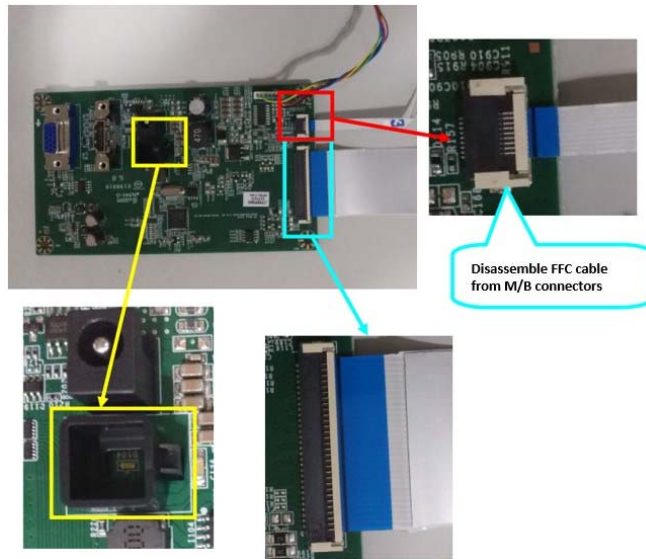
- 6) Remove K/B from rear cover. Slightly move-up the hook then remove K/B board from rear cover(bottom-right side)



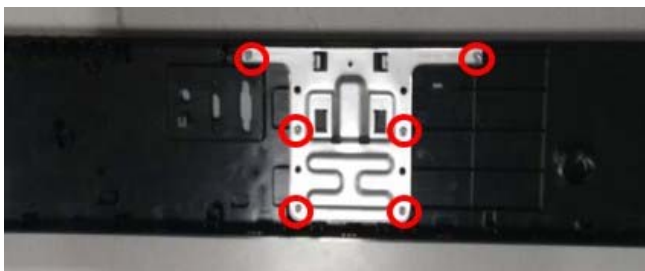
7) Remove M/B from shielding case. Remove D-SUB screw by hex socket screwdriver.



8) Remove cables from MB. Remove LED cable/LVDS cable from M/B, Yellow line is shielding for Power LED.



9) Remove the hinge bracket from back cover. Loosen screws from hinge (red circles) then remove hinge from back cover.





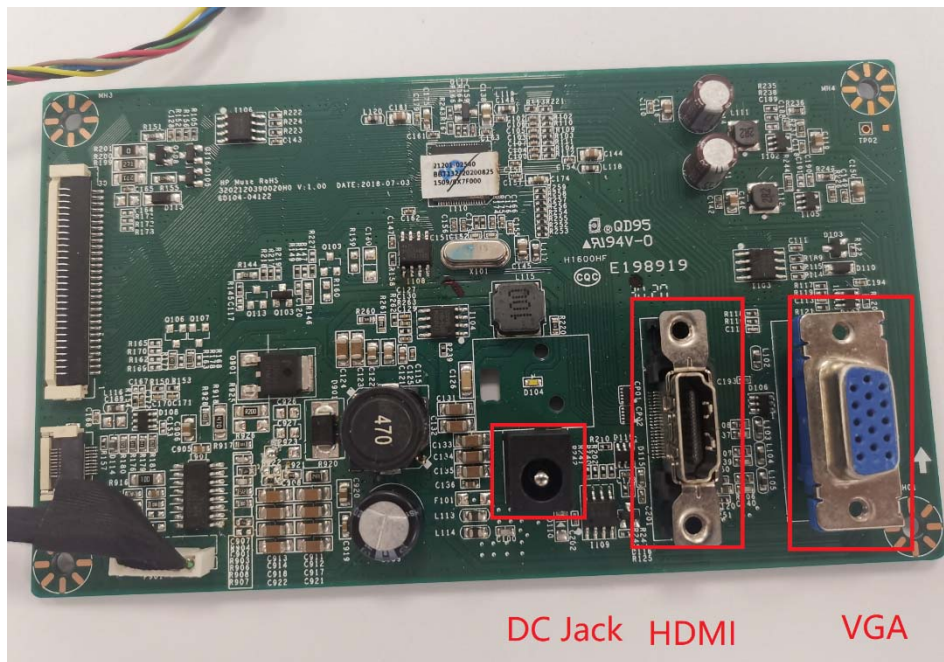
# Connector repair

This procedure includes HDMI, VGA and DC connectors.

The connectors are on the main board (board part number 60104-04122).

The connectors identifiers are as follows:

Connector	Location
HDMI	P102
VGA	P101
DC jack	P103



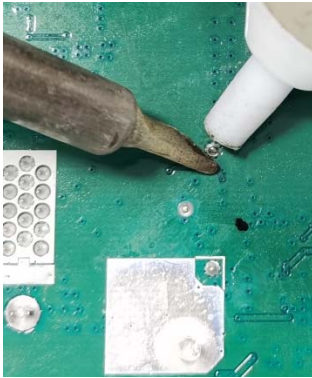
Before repairing connectors, follow these steps:

- ▲ Prepare the monitor for disassembly. See [Preparation for disassembly](#) on page 10.

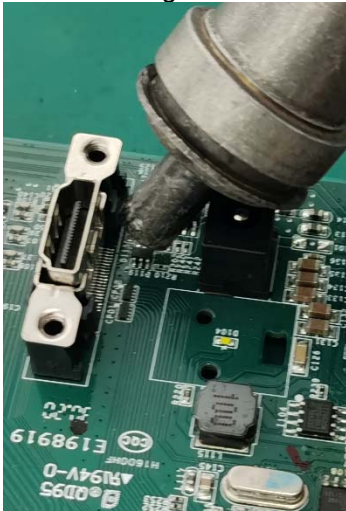
## HDMI connector P102

Repair the HDMI connector:

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



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

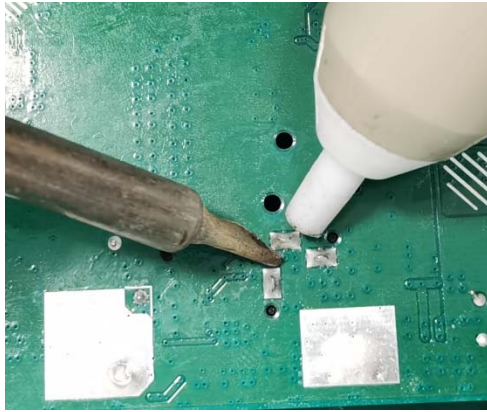


- 3) Lift the P102 connector from the PCB.
- 4) Place the new component on the PCB. Be sure that it matches the PCB footprint.
- 5) Solder the new component.

## DC connector P103

Repair the DC connector:

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



- 7) Lift the P103 connector from the PCB.
- 8) Place the new component on the PCB. Be sure that it matches the PCB footprint.
- 9) Solder the new component.
- 10)

## VGA connector P101

Repair the VGA connector:

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



- 12) Lift the P101 connector from the PCB.
- 13) Place the new component on the PCB. Be sure that it matches the PCB footprint.
- 14) 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
VGA test	Confirm whether image displays and sound plays correctly on the monitor.	Computer

# Support and troubleshooting

The following table lists possible problems, the possible cause or each problem, and the recommended solutions.

**Table 4-2:** Solving common problems

Problem	Possible cause	Solution
Screen is blank or video is flashing.	Power cord is disconnected.	Connect the power cord.
	Monitor is off.	Power the power button. NOTE: If pressing the Power button has no effect, press and hold the power button for 10 seconds to disable the Power button lockout feature.
	Video cable is improperly connected.	Connect the video cable properly.
	System is in Sleep mode.	Press any key on the keyboard or move the mouse to exit Sleep mode.
	Video card is incompatible.	Open the OSD menu and select the Input Control menu. Set Auto-Switch Input to Off and manually select the input
Image appears blurred, indistinct, or too dark.	Brightness is too low.	Open the OSD menu and select <b>Brightness</b> to adjust the brightness scale as needed.
<b>Check Video Cable</b> is displayed on	Monitor video cable is disconnected.	Connect the appropriate video signal cable between the computer and

screen.		monitor. Be sure that the computer power is off while you connect the video cable.
<b>Input Signal Out of Range</b> 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 <b>Power Control &gt; Auto-Sleep Mode</b> and set auto-sleep to <b>On</b> .
<b>On-Screen Menus are Locked</b> is displayed.	The monitor's OSD lock function is enabled.	Press and hold the <b>Menu</b> button on the front bezel to 10 seconds to disable the OSD lockout function.
<b>Power Button is Locked</b> 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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