Maintenance and Service Guide

Mini-in-One 24 model

SUMMARY

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

First Edition: Mar 2021

Document Part Number:
L56039--Mini-in-One 24-MSG-V1

Assembly part number: L56039-001

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

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-in) diagonal viewable screen area with 1920 × 1080 resolution, plus full-screen support for lower resolutions
- Nonglare panel with an LED backlight
- Wide viewing angle to allow viewing from a sitting or standing position, or when moving from side to side
- Supports a 35 W or 65 W HP Desktop Mini attached to the rear of the HP Mini-in-One in a fully enclosed compartment
- Single Power On for both the HP Desktop Mini and the HP Mini-in-One
- On-screen display (OSD) adjustments in several languages for easy setup and screen optimization
- Plug and Play capability, if supported by your operating system
- Tilt, swivel, height, and pivot adjustment capabilities
- Removable stand for flexible display head mounting solutions
- VESA® mounting capability for attaching the display to a wall mount device or swing arm
- USB Type-C connector for interfacing with an HP Desktop Mini
- 6 USB 3.1 Gen1 ports (4 on the rear and 2 on the side)
- USB Type-B upstream port
- One DisplayPort™ video input
- Audio-out (headset) jack on side
- 2.5 W stereo internal speakers
- 1080p HD webcam
- Security cable slot on rear of display for optional security cable
- HDCP (High-bandwidth Digital Content Protection) used on all digital inputs
- Power Saver mode 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.

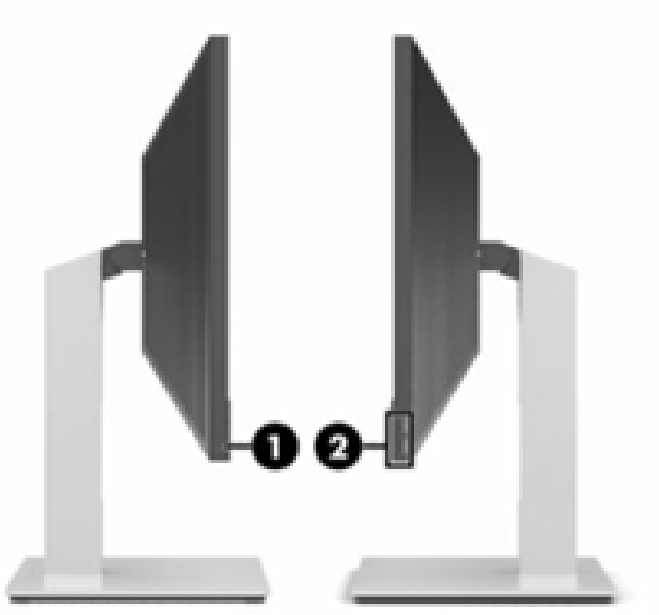
Front of monitor showing locations of front components

Table 1-1: Front components and their descriptions

Component		Function
1	Dual-array microphones	Record sound.
2	Webcam light	Indicates the webcam is on.
3	Webcam shutter	Opens or closes the webcam.
4	Webcam lens	Allows you to share video of your image.
5	Speaker grill	Covers the stereo speakers.
6	Power button	Turns the monitor on or off.

Side components

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



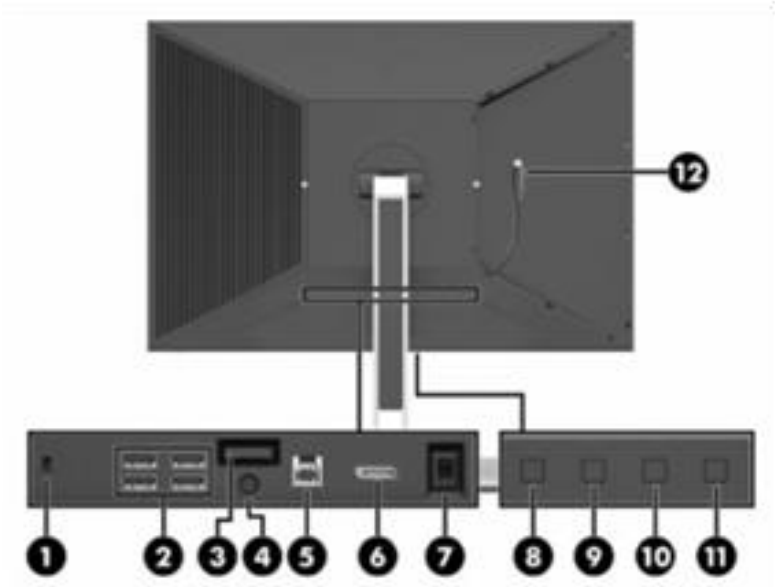
Sides of monitor showing locations of side components

Table 1-2: Side components and their descriptions

Component		Function
1	Headset jack	Connects headphones or a headset.
2	USB 3.1 Gen1 ports (2)	Connect USB devices.

Rear components

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



Rear of monitor showing locations of rear components

Table 1-3: Rear components and their descriptions

Component		Function
1	Security cable slot	Connects an optional security cable.
2	USB 3.1 Gen1 ports (4)	Connect USB devices.
3	Stand release latch	Releases the stand.
4	Power connector	Connects an AC adapter.
5	USB-Type-B upstream port	Connects the USB hub cable to a source device such as a computer
6	DisplayPort connector	Connects a DisplayPort cable to a source device such as a computer.
7	Master power switch	Turns off all power to the display.
8	Back button	If the OSD menu is open, press to exit or return to previous menu level. If the OSD menu is closed, press to open the Brightness menu.
9	Plus button	If the OSD menu is open, press to navigate forward through the OSD menu and increase adjustment levels. If the OSD menu is closed, press to open the Color menu.
10	Minus button	If the OSD menu is open, press to navigate backward through the OSD menu and decrease adjustment levels. If the OSD menu is closed, press to open the Next Active Input menu.
11	Menu/OK button	Press to open the OSD menu, or select a menu item from the OSD.
12	USB Type-C cable	Connects an HP Desktop Mini inserted into the display rear compartment.

Locating the serial number and product number

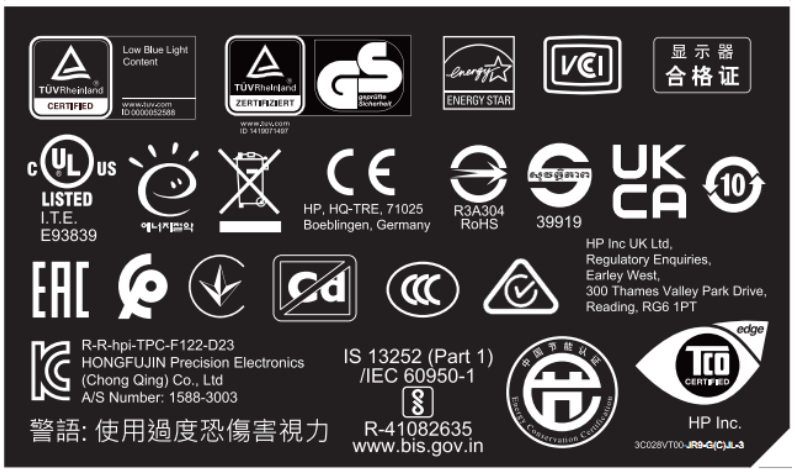
The serial number and product number are located on a barcode label on the bottom edge of the display head. You may need these numbers when contacting HP about the display model.

Label location

Barcode label for Worldwide region

Barcode label for Worldwide region

Spec Label for Worldwide Region



Spec Label for Worldwide Region

3 Illustrated parts catalog

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

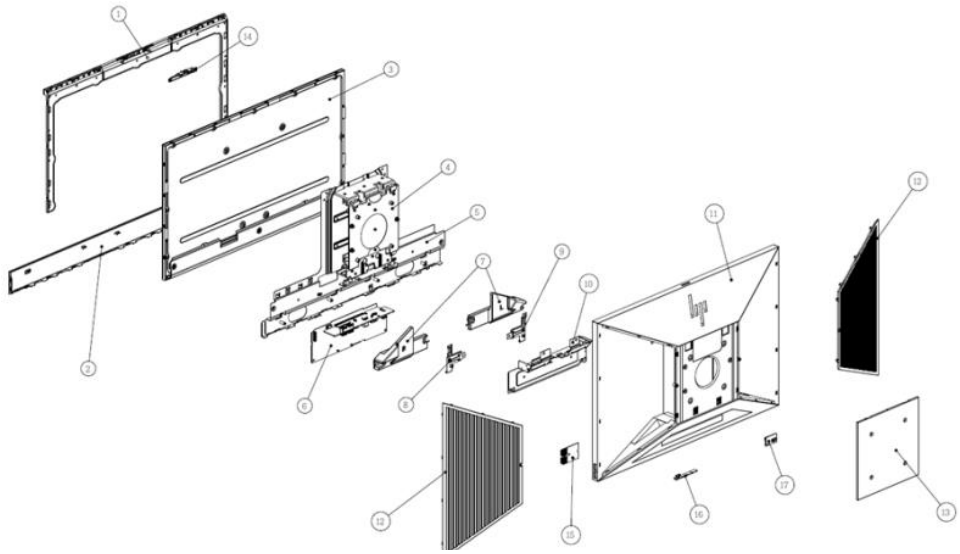


Illustration showing the major components of the monitor

Item	Description	Qty
1	ASSY,MID FRAME,Barzini2	1
2	ASSY,DECO BEZEL,Barzini2	1
3	Panel-BOE	1
4	Panel-LGD	1
5	ASSY,VESA MOUNT,Barzini2	1
6	ASSY,MAIN CHASSIS,Barzini2	1
7	Scalar Board	1
8	GNRC, Speaker 50X22 40HM/2W ,Barzini2	1
9	SUPPORT PCB BKT-L,SECC,T=0.5mm	1
10	SUPPORT PCB BKT-R,SECC,T=0.5mm	1
11	ASSY,IO SHIELDING,Barzini2	1
12	ASSY,BUCKET,Barzini2	1
13	VENT COVER,ABS,MT11010,Barzini2	2
14	VESA COVER,ABS,MT11010,Barzini2	1
15	GNRC,FHD,WEBCAM 2Dmic,Barzini2 MiO	1
16	ASSY, SIDE USB PCBA	1
17	ASSY, FUNCTION PCBA	1

18	ASSY,AUDIO PCBA	1

How to order parts

Connectors are available for purchase from the following EU distributors:

- Farnell: Farnell UK - Electronic Components Distributor
- RS Component: Capacitors | RS Components (rs-online.com)
- Digi-Key Component: Digi-Key Electronic United Kingdom

Connectors by manufacturer

Component description	Location identifier	Component distributor	Distributer part number
DisplayPort	CN5	Digi-Key	2041441-2
Headphone	CN2	N/A	N/A (Please contact HP Service)
USB upstream	P1	Digi-Key	KUSBVX-BS1N9-BL30
USB(VA)	P2,P3,P4,P5	Digi-Key	0484080003 (Notes: the rear cover and chassis need to be modified to make the connector opening larger)
USB(RA)	P1,P2	Farnell	48405-0003(Notes: the rear cover needs to be modified to make the connector opening larger)
DC jack	CN1	N/A	N/A (Please contact HP Service)
USB-C	P1	Farnell	DX07S024JJ2R1300

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.

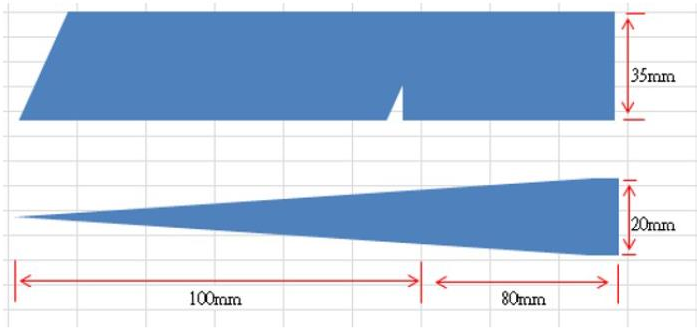
4 Removal and replacement procedures

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 10.

Remove the RC:

1) Remove the screws from the rear case.

Remove the screws from the rear case

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

Split the left and right sides apart

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.

Open the hook

4) Remove the Mylar and release the screws, then remove the IO shielding..

Remove the IO shielding

1

5) Remove all the small board from the Rear cover.






*2 pcs.

Remove the small boards

6) Release the webcam module from the middle frame.

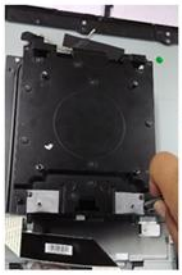


Remove the webcam module

7) Release the screws and remove the Die casting.

8) Release all cables. (LVDS cable, FFC*2,Webcam cable, Type C and Audio cable)

9) Release the screws on scaler board then remove the PCBA.



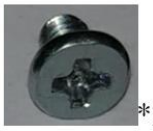

*4pcs.

Remove the PCBA

10) Release the screws on the support bracket then remove the speakers.






*2pcs.

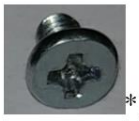
Remove the speakers

11) Release the screws and remove the chassis & middle frame.



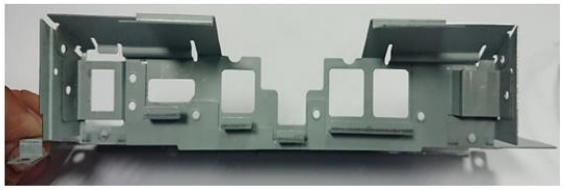




*1pc

*13pcs

Remove the chassis & middle frame

12) Tear off the gasket from the IO Shielding.

*4pcs

Tear off the gasket

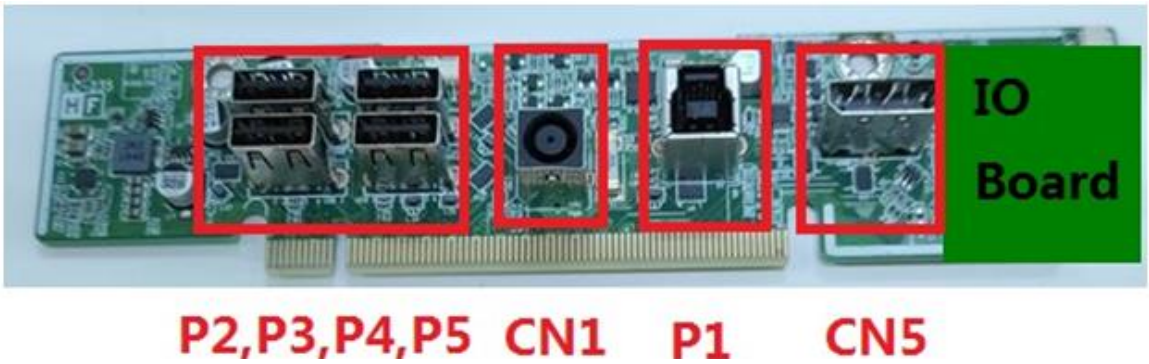
Connector repair

This procedure includes DisplayPort, DC jack, headphone, USB-C, USB upstream and USB A connectors.

The connectors are on the main board (board part number 790QW1300***H01), IO board (board part number 790QW0100***H0*), audio board (board part number 790QW2300***H0*) and USB side board (board part number 790QW0300***H0*).

The connectors' identifiers are as follows:

Connector	Location
DisplayPort	CN5
USB upstream	P1
USB(VA)	P2,P3,P4,P5
DC jack	CN1

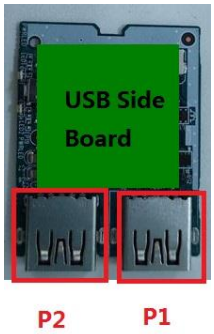


IO Board showing locations of connectors

Connector	Location
USB-C	P1

Main Board showing location of connector

Connector	Location
USB(RA)	P1,P2



USB Side Board showing locations of connectors

Connector	Location
Headphone	CN2

Audio Board showing location of connector

Before repairing connectors, follow these steps:

▲ Prepare the monitor for disassembly. See Preparation for disassembly on page 10.

DP connector CN5

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.

Remove DP connector

2) Lift the CN5 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.

DC jack connector CN1

Repair the DC jack 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.

Remove DC jack connector

2) Lift the CN1 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 P1

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.

Remove USB upstream connector

2) Lift the P1 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 P2, P3, P4, P5 (VA) & P1, P2 (RA)

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.

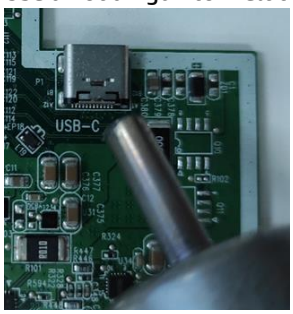
Remove USB connectors

2) Lift the P2, P3, P4, P5 (VA) & P1, P2 (RA) 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-C connector P1

Repair the HDMI connector:

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



Remove USB-C connector

2) Lift the P1 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 CN2

Repair the Headphone connector:

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

Remove headphone connector

2) Lift the CN2 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.

After repair, be sure to confirm that all functions are working.

Function test

After repair, be sure to confirm that all functions are working.

Table 4-1: Function test

Test item	Operating description	Tool used
USB-C test	Confirm whether image displays, sound plays and data transmitting correctly on the monitor.	Computer
DP test	Confirm whether image displays and sound plays correctly on the monitor.	Computer or DVD player
Audio test	Change volume and balance to confirm whether volume is smooth and loud enough.	Speaker
USB test	Confirm whether transmitting data between computer and USB devices.	Computer and USB devices

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	Power cord is disconnected.	Connect the power cord.

video is flashing.		
	Display is turned off.	Press the display power button.
	USB Type-C cable is not connected to the HP Desktop Mini	Connect the USB Type-C cable.
	System is in Sleep mode.	Press any key on the keyboard or move the mouse to exit Sleep mode.
Image appears blurred, indistinct, or too dark.	Brightness setting is too low.	Open the OSD menu and select **Brightness** to adjust the brightness scale as needed.
“Input Signal Not Found” is displayed on the screen.	USB Type-C cable is not connected to the HP Desktop Mini.	Connect the USB Type-C 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 display’s sleep mode is disabled.	Open the OSD menu and select **Power**，select **Auto-Sleep Mode** and then set auto-sleep to **On**.

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