Maintenance and Service Guide

P22 G5 model

N09013

P22h G5 model

N08981

P24 G5 model

N09064

P24h G5 model

N08984

P27h G5 model

N09004

P32u G5 model

N08976

Applicable to P22-G5 and P24-G5 SN: 3CMXXXXXXX

SUMMARY

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

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 monitors features.

Features

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

- 54.6 cm (21.5 in) diagonal viewable screen area with 1920 × 1080 FHD plus full-screen support for lower resolutions; includes custom scaling for maximum image size while preserving original aspect ratio

- 60.5 (23.8 in) diagonal viewable screen area with 1920 × 1080 FHD plus full-screen support for lower resolutions; includes custom scaling for maximum image size while preserving original aspect ratio

- 68.6 cm (27.0 in) diagonal viewable screen area with 1920 × 1080 FHD resolution, plus full-screen support for lower resolutions; includes custom scaling for maximum image size while preserving original aspect ratio

- 80.01 cm (31.5 in) diagonal viewable screen area with 2560 × 1440 QHD resolution, 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)

- Wide color gamut to provide coverage of sRGB color spaces

- Anti-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 adjustment capability

- Four on-screen display (OSD) buttons, three that you can reconfigure to quickly allow selection of the most commonly used operations

- On-screen display (OSD) adjustments in several languages for easy setup and screen optimization

- Color space presets for sRGB (only P32u G5)

- 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

NOTE: For safety and regulatory information, refer to the Product Notices provided in your documentation kit. To access the latest user guide, go to http://www.hp.com/support, and follow the instructions to find your product. Then select User Guides.

Front components

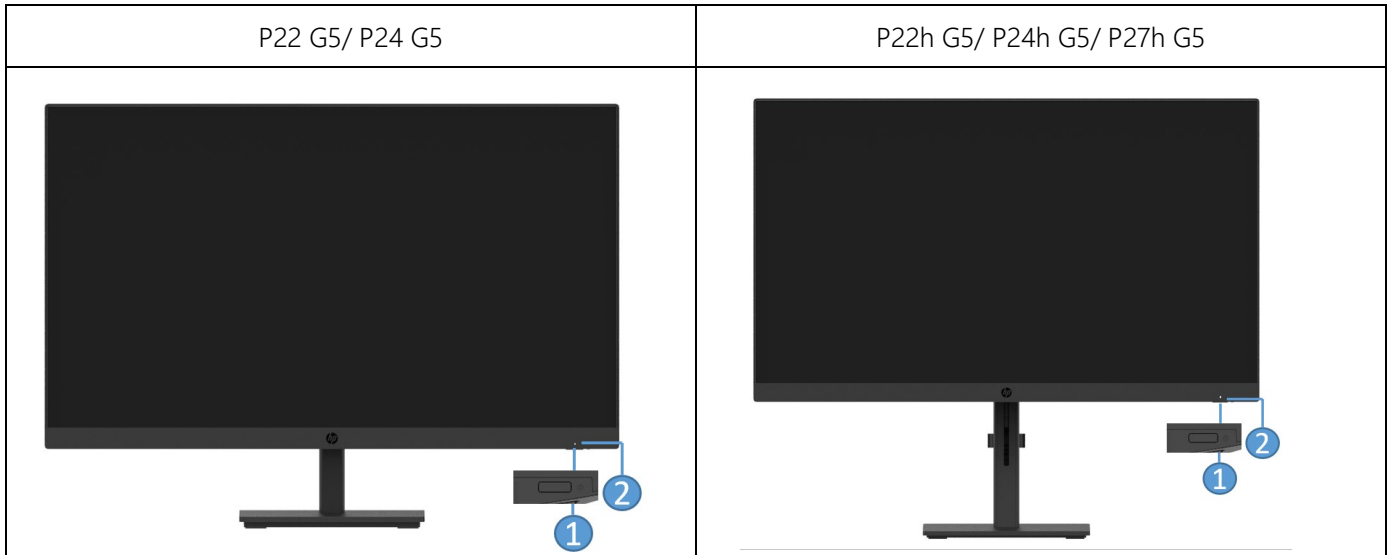To identify the components on the front of the monitor, use this illustration and table.

P22 G5/ P24 G5	P22h G5/ P24h G5/ P27h G5

Table 1-1: Front components and their descriptions

Component		Function
1	Power button	Turns the monitor on or off.
2	Power light	White: The monitor is on. Amber: Monitor is in a reduced power state because of inactivity.

NOTE: You can reconfigure the Function buttons in the OSD menu to quickly select the most commonly used operations. Press the Menu button to open the OSD, and then select Menu Control. Select Assign buttons, and then select one of the available options for the button you want to assign.

Rear components

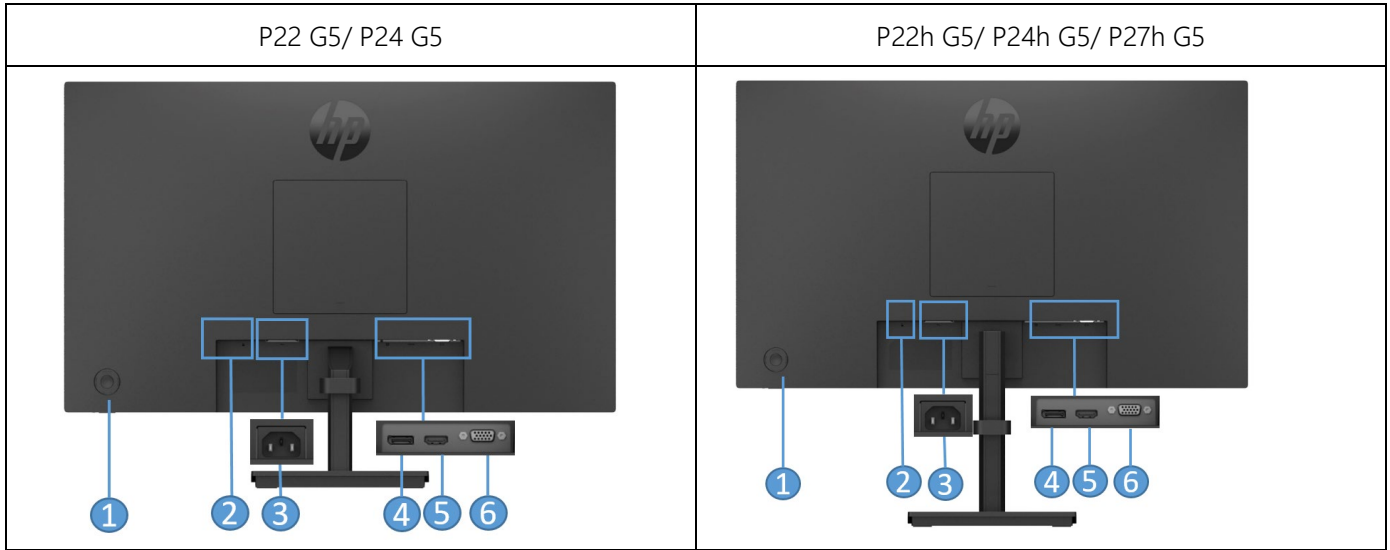To identify the components on the rear of the monitor, use this illustration and table.

P22 G5/ P24 G5	P22h G5/ P24h G5/ P27h G5

Table 1-2 Rear components and their descriptions

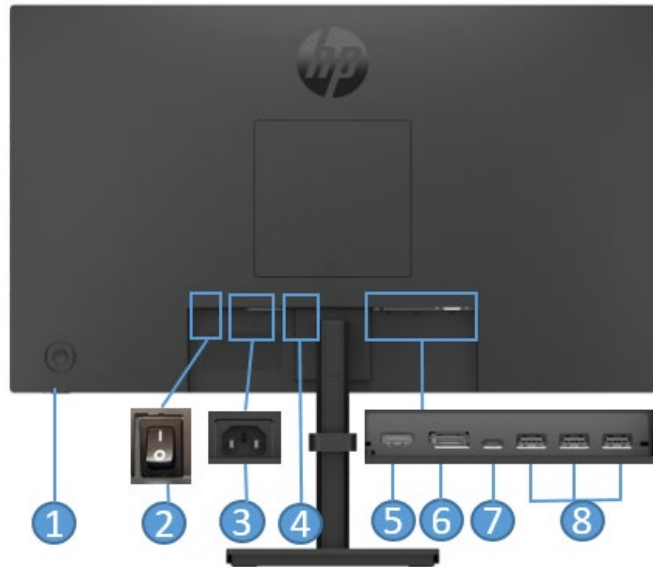| Component		Description
(1)	OSD button	When the OSD menu is open, press the buttons to navigate through the menu. For a description of these functions, see Using the OSD function buttons on page 15.
		You can reassign the function buttons to quickly select the most commonly used operations.
(2)	Security cable slot	Connects an optional security cable.
(3)	Power connector	Connects an AC adapter.
(4)	DisplayPort connector	Connects the DisplayPort cable to a source device such as a computer or game console.
(5)	HDMI port	Connects the HDMI cable to a source device such as a computer or game console.
(6)	VGA port	Connects a VGA cable from the monitor to a source device such as a computer.

Table 1-2 Rear components and their descriptions

Component		Description
(1)	OSD button	When the OSD menu is open, press the buttons to navigate through the menu. For a description of these functions, see Using the OSD function buttons on page 15. You can reassign the function buttons to quickly select the most commonly used operations.
(2)	A/C Switch	
(3)	Power connector	Connects an AC adapter.
(4)	Security cable slot	Connects an optional security cable.
(5)	HDMI port	Connects the HDMI cable to a source device such as a computer or game console.
(6)	DisplayPort connector	Connects the DisplayPort cable to a source device such as a computer or game console.
(7)	USB Type-C port	Connects a USB Type-C cable to a source device such as a computer or game console. Provides video display, data transfer, and (for select products) charges small devices when the computer is on or in Sleep state.
(8)	USB Type-A port	Connects a USB cable from the monitor to a source device such as a computer.

Locating the serial number and product number

Depending on the product, the serial number and product number are located on a label on the rear of the monitor or on a label under the front bezel of the monitor head. You might need these numbers when contacting HP for support.

For worldwide models (except India):

Barcode label
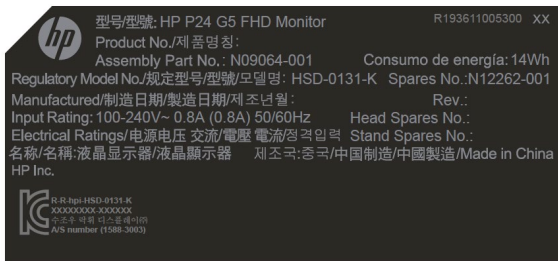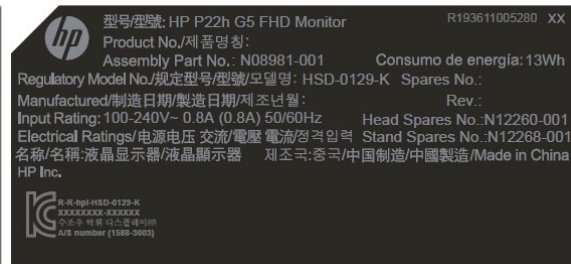
Safety label

For India:

Barcode label

HP 品名：液晶顯示器/液晶显示器 R193611005191 XX
Product No./제품명칭: 64X86AA / 64X86A7
Assembly Part No.:N09013-001   Consumo de energía: 13Wh
Regulatory Model No./规定型号/型號/모델명: HSD-0128-K   Spares No.:N12259-001
Manufactured/制造日期/製造日期/제조년월: Rev.:
Input Rating: 100-240V~ 0.8A (0.8A) 50/60Hz   Head Spares No.:
Electrical Ratings/电源电压 交流/電壓 電流/정격입력   Stand Spares No.:
제조국:중국/中国制造/中國製造/Made in China
IS 13252(Part 1)/
IEC 60950-1
R - 41083240
www.bis.gov.in

HP 品名：液晶顯示器/液晶显示器 R193611005201 XX
Product No./제품명칭: 64W30AA / 64W30A7
Assembly Part No.:N08981-001   Consumo de energía: 13Wh
Regulatory Model No./规定型号/型號/모델명: HSD-0129-K   Spares No.:
Manufactured/制造日期/製造日期/제조년월: Rev.:
Input Rating: 100-240V~ 0.8A (0.8A) 50/60Hz   Head Spares No.:N12260-001
Electrical Ratings/电源电压 交流/電壓 電流/정격입력   Stand Spares No.:N12268-001
제조국:중국/中国制造/中國製造/Made in China
IS 13252(Part 1)/
IEC 60950-1
R - 41083240
www.bis.gov.in

HP 品名：液晶顯示器/液晶显示器 R193611005211 XX
Product No./제품명칭: 64X66AA / 64X66A7
Assembly Part No.:N09064-001   Consumo de energía: 14Wh
Regulatory Model No./规定型号/型號/모델명: HSD-0131-K   Spares No.:N12262-001
Manufactured/制造日期/製造日期/제조년월: Rev.:
Input Rating: 100-240V~ 0.8A (0.8A) 50/60Hz   Head Spares No.:
Electrical Ratings/电源电压 交流/電壓 電流/정격입력   Stand Spares No.:
제조국:중국/中国制造/中國製造/Made in China
IS 13252(Part 1)/
IEC 60950-1
R - 41083240
www.bis.gov.in

HP 品名：液晶顯示器/液晶显示器 R193611005221 XX
Product No./제품명칭: 64W34AA / 64W34A7
Assembly Part No.:N08984-001   Consumo de energía: 14Wh
Regulatory Model No./规定型号/型號/모델명: HSD-0132-K   Spares No.:
Manufactured/制造日期/製造日期/제조년월: Rev.:
Input Rating: 100-240V~ 0.8A (0.8A) 50/60Hz   Head Spares No.:N12263-001
Electrical Ratings/电源电压 交流/電壓 電流/정격입력   Stand Spares No.:N12269-001
제조국:중국/中国制造/中國製造/Made in China
IS 13252(Part 1)/
IEC 60950-1
R - 41083240
www.bis.gov.in

HP 品名：液晶顯示器/液晶显示器 R193611005251 XX
Product No./제품명칭: 64W41AA / 64W41A7
Assembly Part No.:N09004-001   Consumo de energía: 16Wh
Regulatory Model No./规定型号/型號/모델명: HSD-0135-K   Spares No.:
Manufactured/制造日期/製造日期/제조년월: Rev.:
Input Rating: 100-240V~ 1.1A (1.1A) 50/60Hz   Head Spares No.:N12266-001
Electrical Ratings/电源电压 交流/電壓 電流/정격입력   Stand Spares No.:N12270-001
제조국:중국/中国制造/中國製造/Made in China
IS 13252(Part 1)/
IEC 60950-1
R - 41083240
www.bis.gov.in

HP 品名：液晶顯示器/液晶显示器 R193611005261 XX
Product No./제품명칭: 64W51AA / 64W51A7
Assembly Part No.:N08976-001   Consumo de energía: 24Wh
Regulatory Model No./规定型号/型號/모델명: HSD-0137-K   Spares No.:
Manufactured/制造日期/製造日期/제조년월: Rev.:
Input Rating: 100-240V~ 2A (2A) 50/60Hz   Head Spares No.:N12267-001
Electrical Ratings/电源电压 交流/電壓 電流/정격입력   Stand Spares No.:N12271-001
제조국:중국/中国制造/中國製造/Made in China
IS 13252(Part 1)/
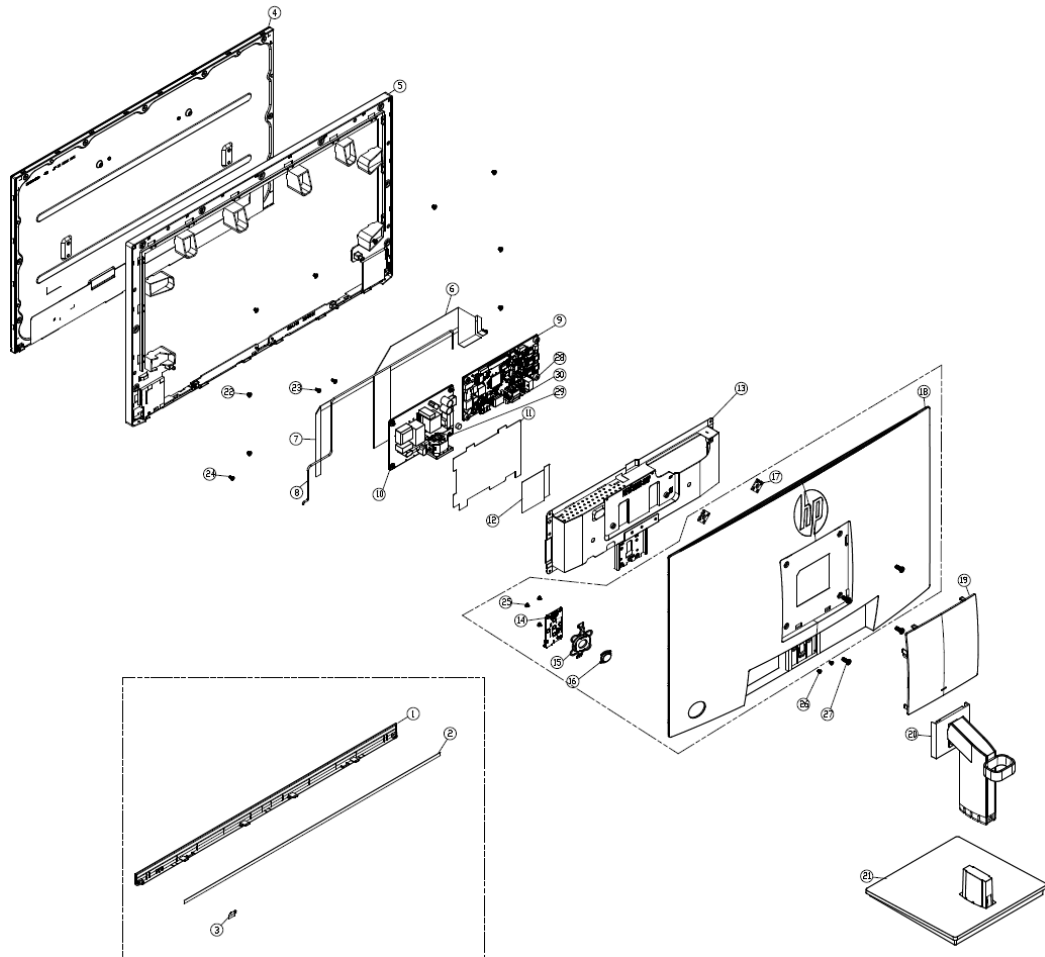IEC 60950-1
R - 41083240
www.bis.gov.in

Safety label

9

3 Illustrated parts catalog

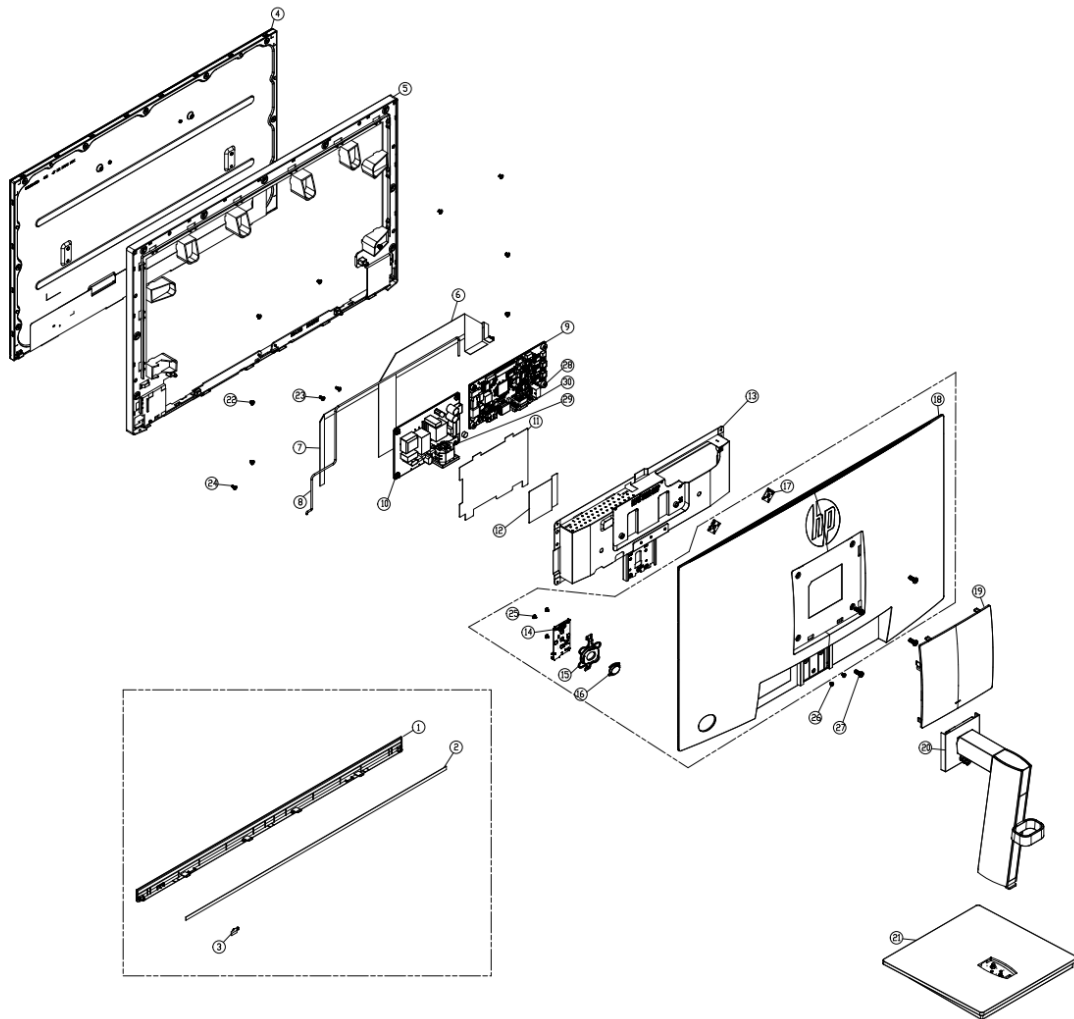To identify the monitor major components, use this illustration and table.

- P22 G5

item	Description	Qty
1	FRONT DECO (ABS+85% recycle ABS /JACK BACK (6009-0337))(OCEAN 20 P22 G5)	1
2	SPONGE(L480*W4*0.6t)	1
3	POWER LENS (PC/TRANSPARENT)(OCEAN 20)	1
4	21.5 LCM for HP Ocean'20	1
5	MID FRAME (ABS+85% recycle ABS /JACK BACK (6009-0337))(OCEAN 20 P22 G5)	1
6	WH FFC 30P(1.0mm) 380mm(2FOLD) 60V G/F W/CONN (A15+BC)+AL(AA) HF	1
7	WH FFC 8P(0.5mm) 560mm(2FOLD+1PRO) 60V G/F (A8+A5) HF	1
8	WH A1007H00-6P-L/KY1251HS05-06 #28 450mm W/B HF	1
9	MAIN BD ASS'Y HP P22 G5 (M215HCA) 2L	1
10	Power BD ASS'Y (HP Ocean 20 25W POWER BD)	1

11	MYLAR BLACK FOR SHIELDING BOT (125.7*94.4*0.5t) (OCEAN 20)	1
12	MYLAR BLACK FOR SHIELDING TOP (57.3*50*0.2t) (OCEAN 20)	1
13	MAIN SHIELDING(OCEAN 20 P22 G5 & P22H G5) ASS'Y	1
14	DISPLAY BD ASS'Y HP OCEAN20	1
15	OSD KEY EXTERNAL PARTS (ABS+85% recycle ABS /JACK BACK (6009-0337)) (OCEAN 20 P22 G5)	1
16	OSD KEY INTERNAL PARTS (ABS+85% recycle ABS /JACK BACK (6009-0337))(OCEAN 20 P22 G5)	1
17	WALL MOUNT BKT(SGCC 1.2t)(VX2363)	2
18	REAR COVER (ABS+85% recycle ABS /JACK BACK (6009-0337))(OCEAN 20 P22 G5)	1
19	VESA COVER (ABS+85% recycle ABS /JACK BACK (6009-0337))(OCEAN 20 P22 G5)	1
20	NECK(OCEAN 20 P22 G5)	1
21	BASE(OCEAN 20 P22 G5 & P24 G5)	1
22	MAC. SCREW-MF M3.0*4.0L,NI	9
23	TAP. SCREW-TF #3.0*6.0L,Ni	2
24	TAP. SCREW-TB #2.5*5.0L,Ni	2
25	TAP.SCREW-T1 M2.0*3.0L,NI	3
26	MAC. SCREW-MI M3.0*4.0L,BLK-ZnNi	2
27	MAC. SCREW-MI M4.0*10 ,Blk-Zn	4
28	MAC. SCREW-MRF M3.0*6.0L, BLK-Ni	7
29	MAC.SCREW-PH-LWM4*6L NI	1
30	MAC. SCREW-MH #4-40*5.0L,Ni	2

- P22h G5

item	Description	Qty
1	FRONT DECO (ABS+85% recycle ABS /JACK BACK (6009-0337))(OCEAN 20 P22 G5)	1
2	SPONGE(L480*W4*0.6t)	1
3	POWER LENS (PC/TRANSPARENT)(OCEAN 20)	1
4	21.5 LCM for HP Ocean'20	1
5	MID FRAME (ABS+85% recycle ABS /JACK BACK (6009-0337))(OCEAN 20 P22 G5)	1
6	WH FFC 30P(1.0mm) 380mm(2FOLD) 60V G/F W/CONN (A15+BC)+AL(AA) HF	1
7	WH FFC 8P(0.5mm) 560mm(2FOLD+1PRO) 60V G/F (A8+A5) HF	1
8	WH A1007H00-6P-L/KY1251HS05-06 #28 450mm W/B HF	1
9	MAIN BD ASS'Y HP P22 G5 (M215HCA) 2L	1
10	Power BD ASS'Y (HP Ocean 20 25W POWER BD)	1
11	MYLAR BLACK FOR SHIELDING BOT (125.7*94.4*0.5t) (OCEAN 20)	1

12	MYLAR BLACK FOR SHIELDING TOP (57.3*50*0.2t) (OCEAN 20)	1
13	MAIN SHIELDING(OCEAN 20 P22 G5 & P22H G5) ASS'Y	1
14	DISPLAY BD ASS'Y HP OCEAN20	1
15	OSD KEY EXTERNAL PARTS (ABS+85% recycle ABS /JACK BACK (6009-0337)) (OCEAN 20 P22 G5)	1
16	OSD KEY INTERNAL PARTS (ABS+85% recycle ABS /JACK BACK (6009-0337))(OCEAN 20 P22 G5)	1
17	WALL MOUNT BKT(SGCC 1.2t)(VX2363)	2
18	REAR COVER (ABS+85% recycle ABS /JACK BACK (6009-0337))(OCEAN 20 P22H G5)	1
19	VESA COVER (ABS+85% recycle ABS /JACK BACK (6009-0337))(OCEAN 20 P22 G5)	1
20	NECK(OCEAN 20 P22H G5)	1
21	BASE(OCEAN 20 P22 G5)	1
22	MAC. SCREW-MF M3.0*4.0L,NI	9
23	TAP. SCREW-TF #3.0*6.0L,Ni	2
24	TAP. SCREW-TB #2.5*5.0L,Ni	2
25	TAP.SCREW-T1 M2.0*3.0L,NI	3
26	MAC. SCREW-MI M3.0*4.0L,BLK-ZnNi	2
27	MAC. SCREW-MI M4.0*10 ,Blk-Zn	4
28	MAC. SCREW-MRF M3.0*6.0L, BLK-Ni	7
29	MAC.SCREW-PH-LWM4*6L NI	1
30	MAC. SCREW-MH #4-40*5.0L,Ni	2

- P24 G5

item	Description	Qty
1	23.8 LCM for HP Ocean'20	1
2	FRONT DECO (ABS+85% recycle ABS /JACK BACK (6009-0337))(OCEAN 20 P24 G5)(LHD) ASS'Y	1
2-1	FRONT DECO (ABS+85% recycle ABS /JACK BACK (6009-0337))(OCEAN 20 P24 G5)	1
2-2	GASKET(L526*W4*0.6)	1
2-3	POWER LENS (PC/TRANSPARENT)(OCEAN 20)	1
3	MID FRAME (ABS+85% recycle ABS /JACK BACK (6009-0337))(OCEAN 20 P24 G5)	1
4	MAC. SCREW-MF M3.0*4.0L,NI	11
5	MAC. SCREW-MI M3.0*4.0L, BLK-Ni	3
7	WH A1007H00-6P/KY1251HS05-06 #28 W/B HF	1
8	WH FFC 8P(0.5mm) 600mm(2FOLD+1PRO) 60V G/F (A8+A5) HF	1
9	WH FFC 30P(1.0mm) 380mm(2FOLD) 60V G/F W/CONN (A15+BC)+AL(AA) HF	1
10	MYLAR BLACK FOR SHIELDING TOP (57.3*50*0.2t) (OCEAN 20)	1
11	Power BD ASS'Y (HP Ocean 20 25W POWER BD)	1
12	MYLAR BLACK FOR SHIELDING BOT (125.7*94.4*0.5t) (OCEAN 20)	1
13	MAIN BD ASS'Y HP P24h G5	1
14	MAC.SCREW-PH-LWM4*6L NI	1
15	MAC. SCREW-MH #4-40*5.0L,Ni	2
16	TAP. SCREW-TB #2.5*5.0L,Ni	2
17	MAC. SCREW-MI M3.0*4.0L,BLK-ZnNi	3
18	TAP. SCREW-TF #3.0*6.0L,Ni	2
19	REAR COVER (ABS+85% recycle ABS /JACK BACK (6009-0337))(OCEAN 20 P24H G5) ASS'Y	1
19-1	REAR COVER (ABS+85% recycle ABS /JACK BACK (6009-0337))(OCEAN 20 P24 G5)	1
19-2	POWER KEY (ABS+85% recycle ABS /JACK BACK (6009-0337)) (OCEAN 20)	1
19-3	OSD KEY EXTERNAL PARTS (ABS+85% recycle ABS /JACK BACK (6009-0337)) (OCEAN 20 P24 G5)	1

19-4	OSD KEY INTERNAL PARTS (ABS+85% recycle ABS /JACK BACK (6009-0337))(OCEAN 20 P24 G5)	1
20	DISPLAY BD ASS'Y HP OCEAN20	1
21	TAP.SCREW-T1 M2.0*3.0L,NI	3
22	MAC. SCREW-MI M4.0*10 ,Blk-Zn	4
23	VESA COVER (ABS+85% recycle ABS /JACK BACK (6009-0337))(OCEAN 20 P24 G5)	1
24	NECK(OCEAN 20 P24 G5)	1
25	BASE(OCEAN 20 P22 G5 & P24 G5) CX	1
26	MAIN SHIELDING(OCEAN 20 P24 G5) ASS'Y	1
27	MAC. SCREW-MRF M3.0*6.0L, BLK-Ni	7

- P24h G5

item	Description	Qty
1	23.8 LCM for HP Ocean'20	1
2	FRONT DECO (ABS+85% recycle ABS /JACK BACK (6009-0337))(OCEAN 20 P24 G5)(LHD) ASS'Y	1
2-1	FRONT DECO (ABS+85% recycle ABS /JACK BACK (6009-0337))(OCEAN 20 P24 G5)	1
2-2	GASKET(L526*W4*0.6)	1
2-3	POWER LENS (PC/TRANSPARENT)(OCEAN 20)	1
3	MID FRAME (ABS+85% recycle ABS /JACK BACK (6009-0337))(OCEAN 20 P24 G5)	1
4	MAC. SCREW-MF M3.0*4.0L,NI	11
5	MAC. SCREW-MI M3.0*4.0L, BLK-Ni	3
6	SPK BOX 2W 4ohm 80*65.18*20.75mm (R450mm/L200mm) SNC for HP Ocean20 24' & 27' HF	1
7	WH A1007H00-6P/KY1251HS05-06 #28 W/B HF	1
8	WH FFC 8P(0.5mm) 600mm(2FOLD+1PRO) 60V G/F (A8+A5) HF	1
9	WH FFC 30P(1.0mm) 380mm(2FOLD) 60V G/F W/CONN (A15+BC)+AL(AA) HF	1
10	MYLAR BLACK FOR SHIELDING TOP (57.3*50*0.2t) (OCEAN 20)	1
11	Power BD ASS'Y (HP Ocean 20 25W POWER BD)	1
12	MYLAR BLACK FOR SHIELDING BOT (125.7*94.4*0.5t) (OCEAN 20)	1
13	MAIN BD ASS'Y HP P24h G5	1
14	MAC.SCREW-PH-LWM4*6L NI	1
15	MAC. SCREW-MH #4-40*5.0L,Ni	2
16	TAP. SCREW-TB #2.5*5.0L,Ni	2
17	MAC. SCREW-MI M3.0*4.0L,BLK-ZnNi	3

18	TAP. SCREW-TF #3.0*6.0L,Ni	2
19	REAR COVER (ABS+85% recycle ABS /JACK BACK (6009-0337))(OCEAN 20 P24H G5) ASS'Y	1
19-1	REAR COVER (ABS+85% recycle ABS /JACK BACK (6009-0337))(OCEAN 20 P24 G5)	1
19-2	POWER KEY (ABS+85% recycle ABS /JACK BACK (6009-0337)) (OCEAN 20)	1
19-3	OSD KEY EXTERNAL PARTS (ABS+85% recycle ABS /JACK BACK (6009-0337)) (OCEAN 20 P24 G5)	1
19-4	OSD KEY INTERNAL PARTS (ABS+85% recycle ABS /JACK BACK (6009-0337))(OCEAN 20 P24 G5)	1
20	DISPLAY BD ASS'Y HP OCEAN20	1
21	TAP.SCREW-T1 M2.0*3.0L,NI	3
22	MAC. SCREW-MI M4.0*10 ,Blk-Zn	4
23	VESA COVER (ABS+85% recycle ABS /JACK BACK (6009-0337))(OCEAN 20 P24 G5)	1
24	NECK(OCEAN 20 P24H G5 LHD) FFT	1
25	BASE(OCEAN 20 P24H G5)	1
26	MAIN SHIELDING(OCEAN 20 P24H G5) ASS'Y	1
27	MAC. SCREW-MRF M3.0*6.0L, BLK-Ni	7

- P27h G5
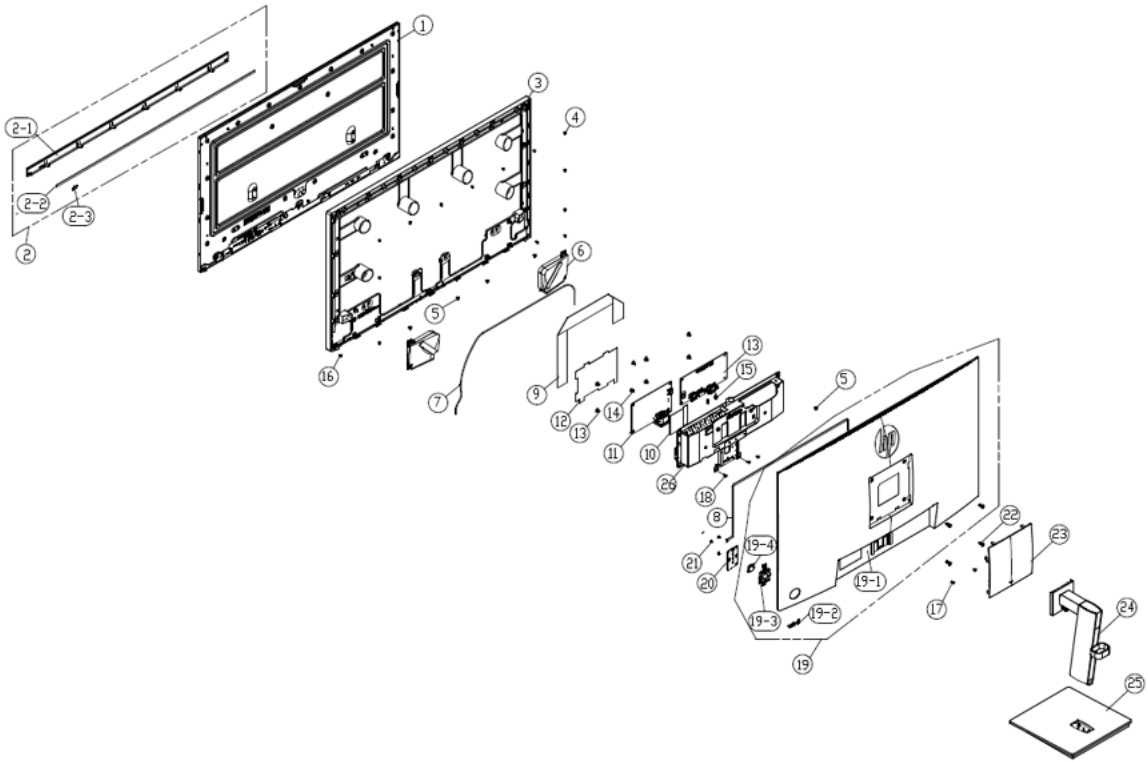
Item	Description	Qty
1	27 LCM for HP Ocean'20 LGD	1
2	FRONT DECO (ABS+85% recycle ABS/JACK BACK (6009-0337))(OCEAN 20 P27h G5) ASS'Y	1
2-1	FRONT DECO (ABS+85% recycle ABS/JACK BACK (6009-0337))(OCEAN 20 P27h G5)	1
2-2	SPONGE(AEPE/L600*W4*0.6t)(BLK)	1
2-3	POWER LENS (PC/TRANSPARENT)(OCEAN 20)	1
3	MID FRAME (ABS+85% recycle ABS/JACK BACK (6009-0337))(OCEAN 20 P27h G5)	1
4	MAC. SCREW-MF M3.0*4.0L,NI	13
5	MAC. SCREW-MI M3.0*4.0L, BLK-Ni	7
6	SPK BOX 2W 4ohm 80*65.18*20.75mm (R450mm/L200mm) SNC for HP Ocean20 24' & 27' HF	1
7	WH A1007H00-6P-2L/KY1251HS05-06 #28 450mm W/B HF	1
8	WH FFC 8P(0.5mm) 720mm(6FOLD+1PRO) 60V G/F (A12+A8) HF	1
9	WH FFC 30P(1.0mm) 380mm(2FOLD) 60V G/F W/CONN (A15+BC)+AL(AA) HF	1
10	MYLAR BLACK FOR SHIELDING TOP (57.3*50*0.2t) (OCEAN 20)	1

11	Power BD ASS'Y (HP Ocean 20 35W POWER BD)	1
12	MYLAR BLACK FOR SHIELDING BOT (125.7*94.4*0.5t) (OCEAN 20)	1
13	MAIN BD ASS'Y HP P27h G5	1
14	MAC.SCREW-PH-LWM4*6L NI	1
15	MAC. SCREW-MH #4-40*5.0L,Ni	2
16	TAP. SCREW-TB #2.5*5.0L,Ni	2
17	MAC. SCREW-MI M3.0*4.0L,BLK-ZnNi	2
18	TAP. SCREW-TF #3.0*6.0L,Ni	2
19	REAR COVER (ABS+85% recycle ABS/JACK BACK (6009-0337))(OCEAN 20 P27h G5) ASS'Y	1
19-1	REAR COVER (ABS+85% recycle ABS/JACK BACK (6009-0337))(OCEAN 20 P27h G5)	1
19-2	POWER KEY (ABS+85% recycle ABS /JACK BACK (6009-0337)) (OCEAN 20)	1
19-3	SD KEY EXTERNAL PARTS (ABS+85% recycle ABS/JACK BACK (6009-0337))(OCEAN 20 P27h G5)	1
19-4	OSD KEY INTERNAL PARTS (ABS+85% recycle ABS/JACK BACK (6009-0337))(OCEAN 20 P27h G5)	1
20	DISPLAY BD ASS'Y HP OCEAN20	1
21	TAP. SCREW-TI M3.0*5.0L,Ni	2
22	MAC. SCREW-MI M4.0*10 ,Blk-Zn	4
23	VESA COVER (ABS+85% recycle ABS/JACK BACK (6009-0337))(OCEAN 20 P27h G5)	1
24	NECK(OCEAN 20 P27H G5 FOR LHD PANEL)	1
25	BASE(OCEAN 20 P27H) CX	1
26	MAIN SHIELDING CHANGE CORE LHD(OCEAN 20 P27H G5) ASS'Y	1

- P32u G
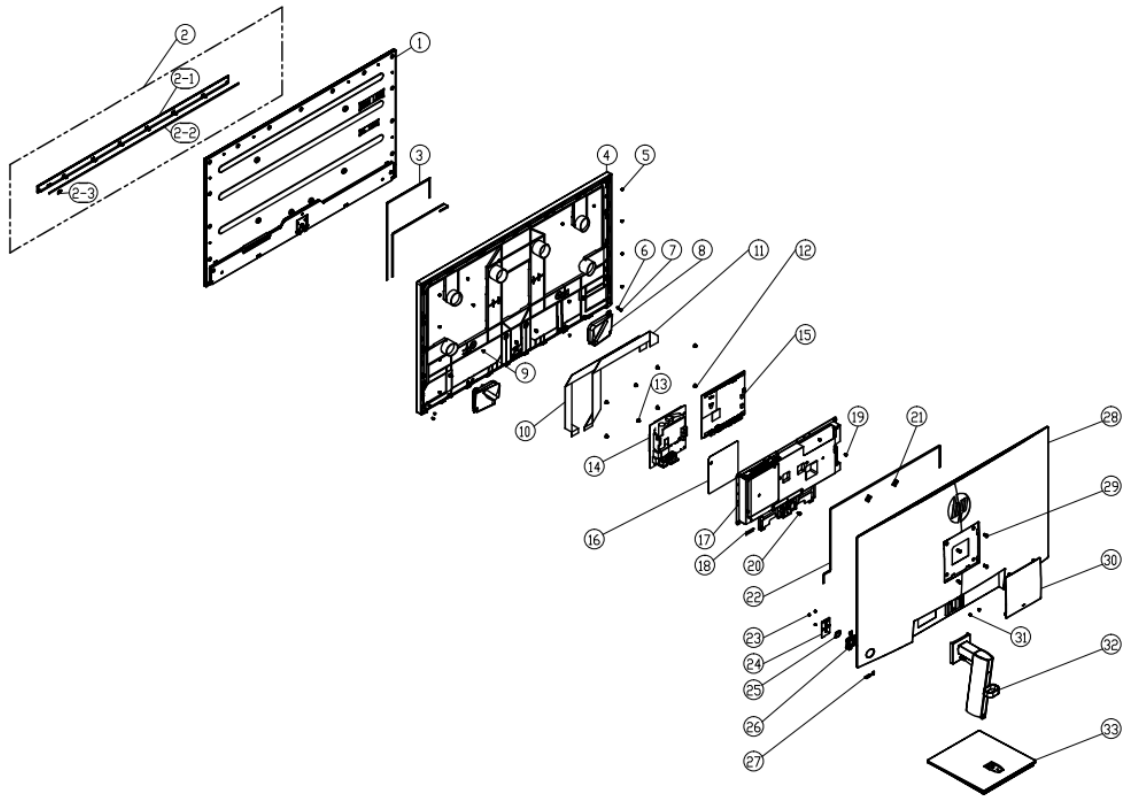
Item	Description	Qty
1	HP Ocean 31.5 LCM LM315WQ2-HSAN1	1
2	FRONT DECO (ABS+85% recycle ABS/JACK BACK(6009-0337))(OCEAN 20 P32U G5)ASS'Y	1
2-1	FRONT DECO (ABS+85% recycle ABS/JACK BACK(6009-0337))(OCEAN 20 P32U G5)	1
2-2	SPONGE(L708*W4*0.6t)(P32U G5)	1
2-3	POWER LENS (PC/TRANSPARENT)(OCEAN 20)	1
3	WH A1007H00-6P-L/KY1251HS05-06 #28 W/B HF	2
4	MID FRAME (ABS+85%%% recycle ABS)/JACK BACK (6009-0337))(OCEAN 20 P32U G5)	1
5	MAC. SCREW-MF M3.0*4.0L,NI	13

6	MAC. SCREW-MI M2.0*4.0L,NI(HEAD DIAMETER 4.0)	4
7	TAP. SCREW-TB #2.5*5.0L,Ni	2
8	SPK BOX 2W 4ohm 80*65.18*20.75mm (R600mm/L300mm) SNC for HP Ocean20 32' HF	1
9	MAC. SCREW-MI M3.0*4.0L, BLK-Ni	4
10	WH FFC 41P(0.5mm)	1
11	WH FFC 51P(0.5mm)	1
12	MAC. SCREW-MRF M3.0*6.0L, BLK-Ni	7
13	MAC.SCREW-PH-LWM4*6L NI	1
14	A-D PSU 8.43A 19V (ADP-160CF TA_139x133mmx1.6T_DC10P)	1
15	MAIN BD ASS'Y HP P32u G5	1
16	MYLAR BLACK FOR SHIELDING TOP (110.5*118.6*0.225t) (OCEAN 20 P32U)	1
17	MAIN SHIELDING (OCEAN 20 P32U G5) ASS'Y	1
18	MYLAR BLACK FOR SHIELDING(27*12*0.225t) (OCEAN 20 P32U)	1
19	TAP. SCREW-TI M3.0*5.0L,Ni	4
20	MAC. SCREW-MI M3.0*8.0L,BLK-Ni	1
21	WALL MOUNT BKT(SGCC 1.2t)(VX2363)	1
22	WH FFC 8P(0.5mm) 720mm(6FOLD+1PRO) 60V G/F (A12+A8) HF	1
23	TAP.SCREW-T1 M2.0*3.0L,NI	3
24	DISPLAY BD ASS'Y HP OCEAN20	1
25	OSD KEY INTERNAL PARTS (ABS+85% recycle ABS/JACK BACK (6009-0337))(OCEAN 20 P32U G5)	1
26	OSD KEY EXTERNAL PARTS (ABS+85% recycle ABS/JACK BACK (6009-0337))(OCEAN 20 P32U G5)	1
27	POWER KEY (ABS+85% recycle ABS /JACK BACK (6009-0337)) (OCEAN 20)	1
28	REAR COVER (ABS+85% recycle ABS/JACK BACK(6009-0337))(OCEAN 20 P32U G5)ASS'Y	1
29	MAC. SCREW-MI M4.0*10 ,Blk-Zn	4
30	VESA COVER (ABS+85% recycle ABS/JACK BACK (6009-0337))(OCEAN 20 P32U G5)	1
31	MAC. SCREW-MI M3.0*4.0L,BLK-ZnNi	2
32	NECK(OCEAN 20 P32U G5)	1
33	BASE(OCEAN 20 P32U G5)	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
25W for P22/P22h/P24/P24h	N17097-001	R352000120157
35W for P27h	N17098-001	R352000220157
160W for P32u	N17099-001 N17099-002	050005180010 050005070070

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

Farnell: Farnell UK – Electronic Components Distributor

RS Component: Capacitors | RS Components (rs-online.com)

Digi-Key Component: Digi-Key Component United Kingdom

Capacitors by distributor (P27h G5)

Component description	Location	Component distributor	Distributor part number
470uF 25V 105'C (10x12mm)	C202, C203	Digi-Key	EV1E471MP51012U

Capacitors by distributor (P32u G5)

Component description	Location	Component distributor	Distributor part number
820u_25V_105°C_Ø 10x16 for SanHua	E200C,E201C. E202C.E203C	Digi-Key	RF1E821MP51016EU
680u_25V_105°C Ø 10x14 for DELTA	C112.C113	Digi-Key	25ZL680MEFCT810X20
470u_25V_105°C Ø 10x14 for DELTA	C111.C115	Digi-Key	25ZLH470MEFCT810X12.5

Connectors by manufacturer (P22 G5/P24 G5/P22h G5, P24h G5, P27h G5)

Component description	Location	Component distributor	Distributor part number
DisplayPort	P300	Farnell	10090926-P154VLF
HDMI	P200	Farnell	RAHHD19TR
VGA	P100	Farnell	DP1RD20JQ1

Connectors by manufacturer (P32u G5)

Component description	Location	Component distributor	Distributor part number
DisplayPort	P300	Farnell	10090926-P154VLF
HDMI	P200	Farnell	RAHHD19TR
USB-C	UP100	Farnell	DP1RD20JQ1(R400)
USB-A	UP1, UP2, UP3	Digi-Key	UJ3-AH-4-TH

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:
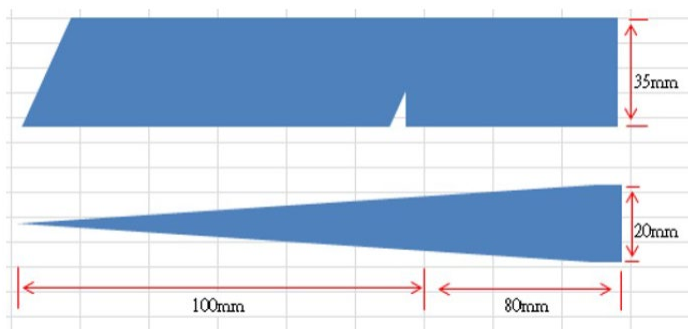
Rear Cover

Before removing the Rear Cover, follow these steps:

▲ Prepare the monitor for disassembly. See Preparation for disassembly on page 24.

Remove the Rear Cover:

For P22 G5/P22h G5/P24 G5/P24h G5

1. Lay the display on soft desk, Twist out the screw and separate base and stand.

Twist out
two screws

2. Then pull out the stand form the monitor head.
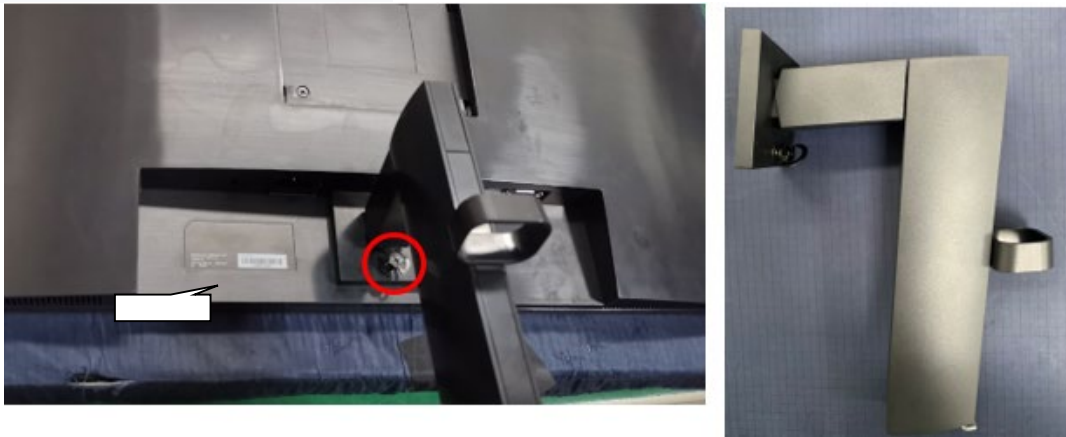
3. Remove the 6 screws from the back cover and use tools to open the back cover.

Special tools
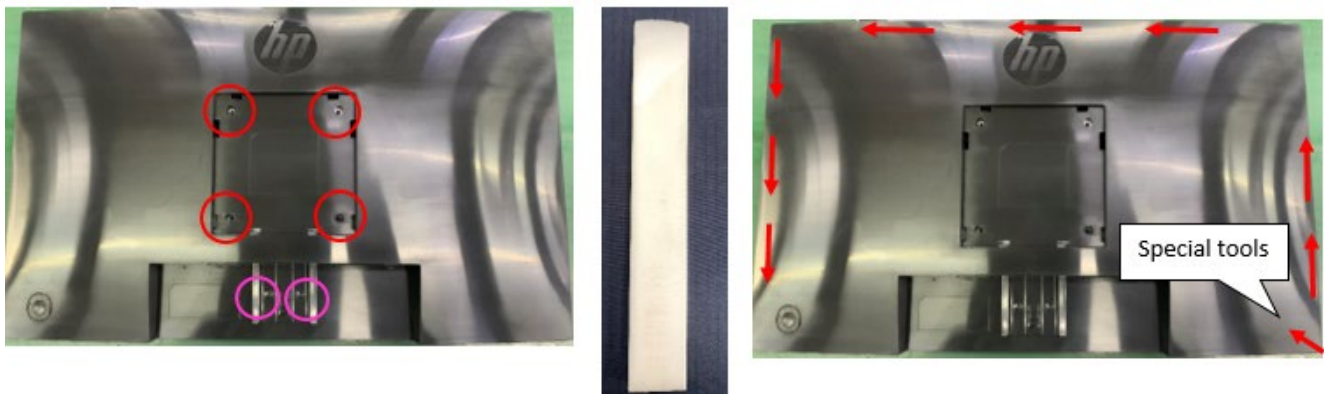
4. Remove the 8pin FFC from main board then remove rear cover
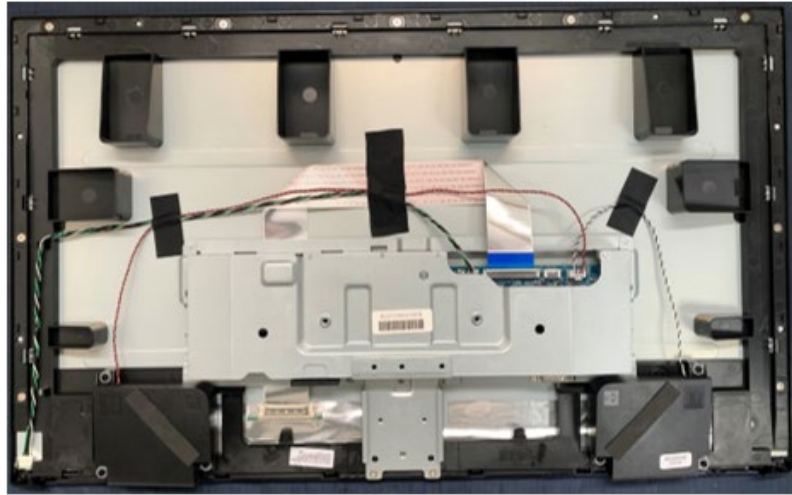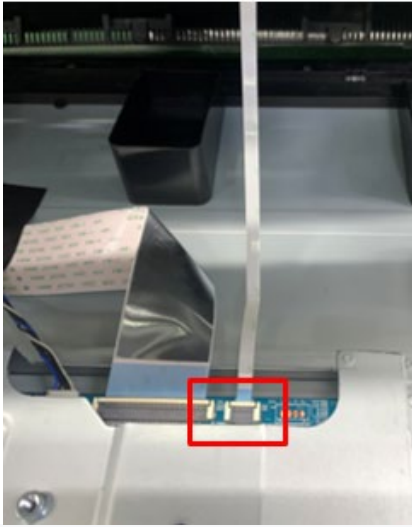
5. Remove three acetate tapes from the LVDS/ LED cable
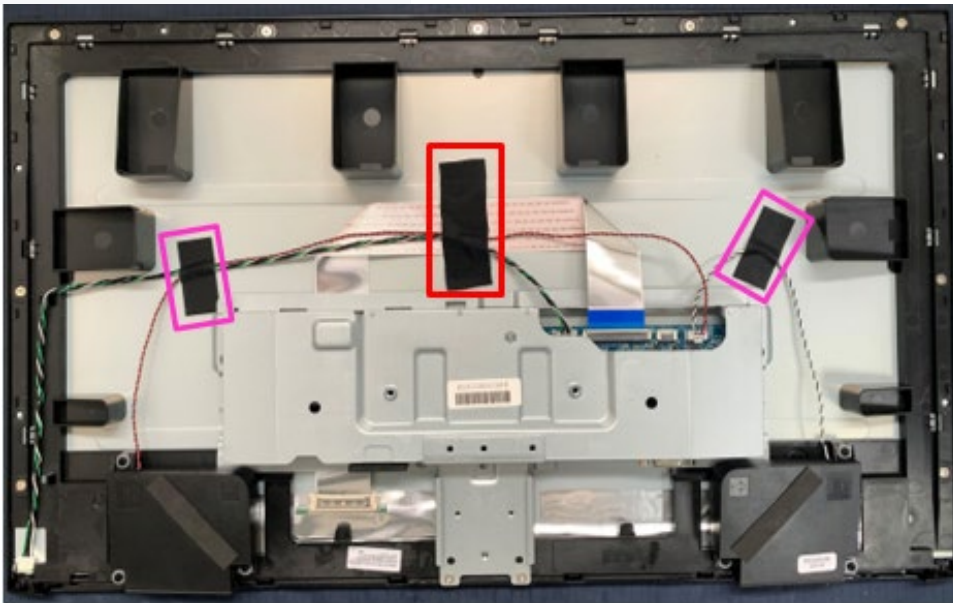
6. Pull out the LVDS/ LED/speaker cable to panel, then take off the SPK box.
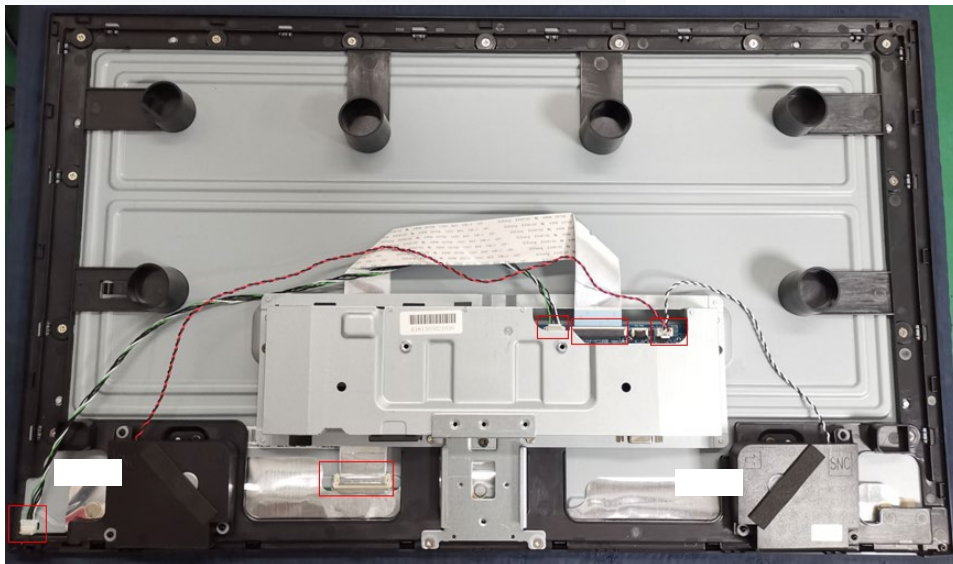
7. Strip nine screws from the Deco and the shielding.
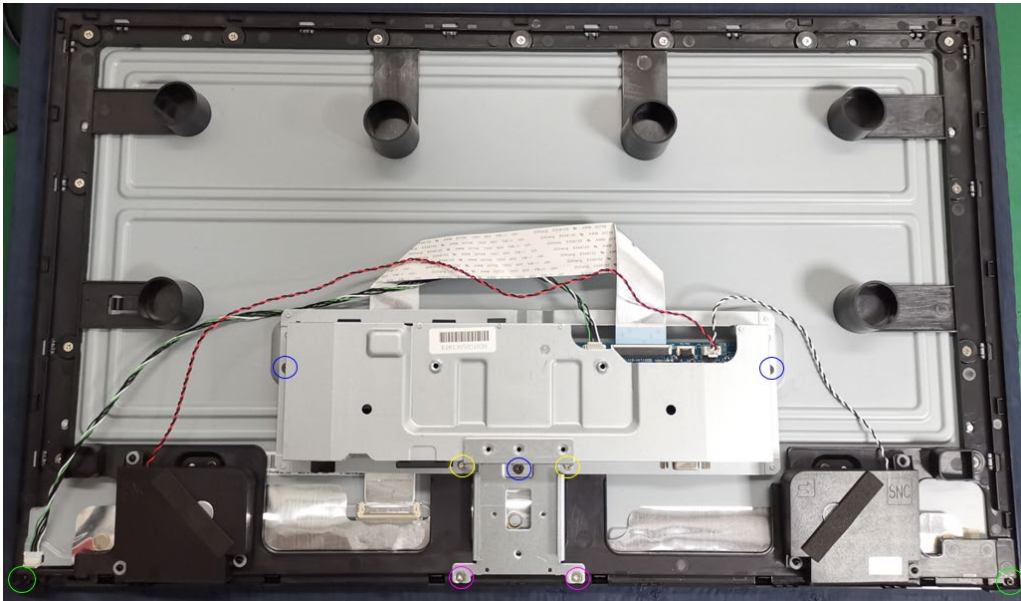
8. Remove the Deco.
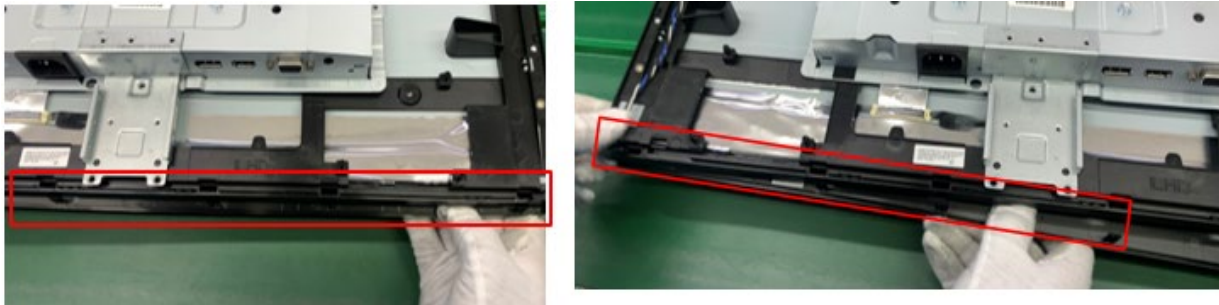
9. Strip seventeen screws from the middle frame.
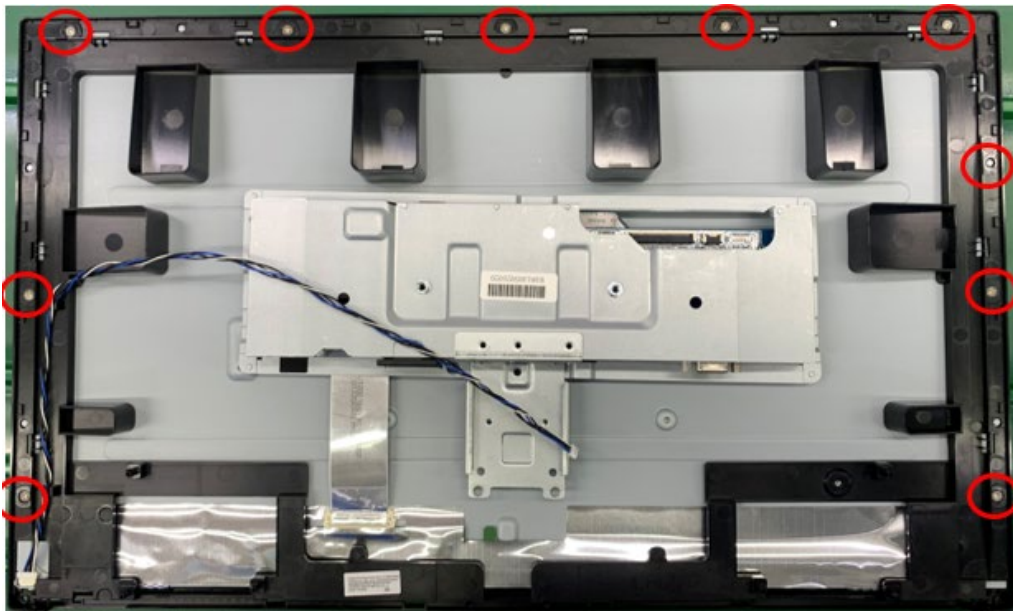
10. Remove the middle frame
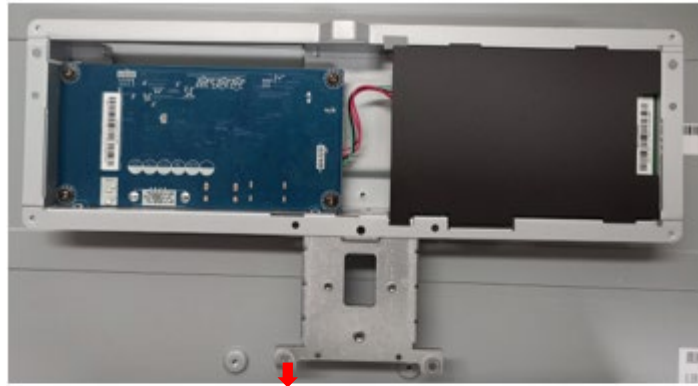
For P27h G5

1. Lay the display on soft desk and along the red arrow, then pull out the stand form the monitor head.
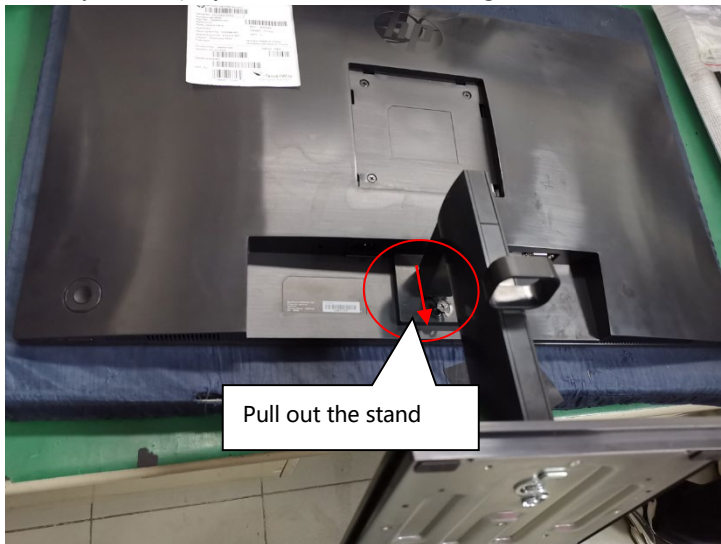
Pull out the stand

2. Twist out two screws and separate base and stand.

Twist out two screws

3. Strip six screws from the rear cover , then move rear cover follow the below way

Remove the screws with **Screwdriver**

Dismantle the rear cover first from the two marked position

Remove the 8pin FFC from main board then remove rear cover
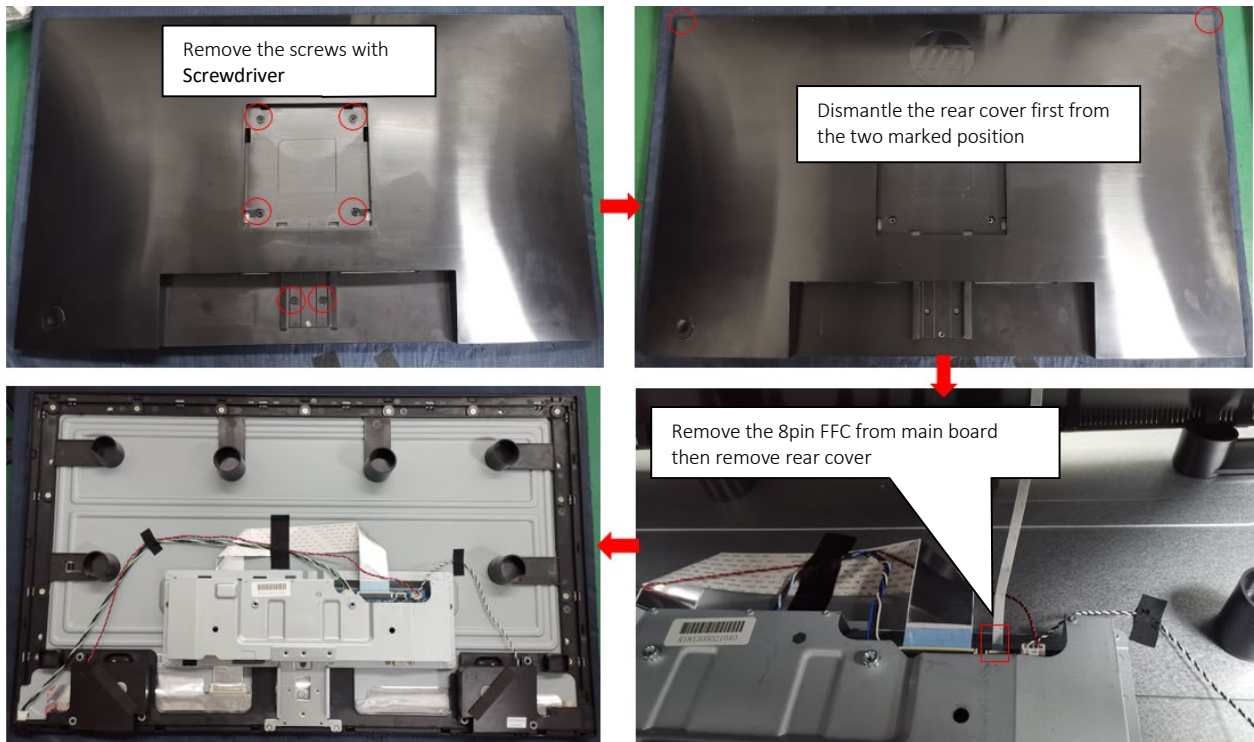
4. Remove three acetate tapes from the LVDS/ LED cable.
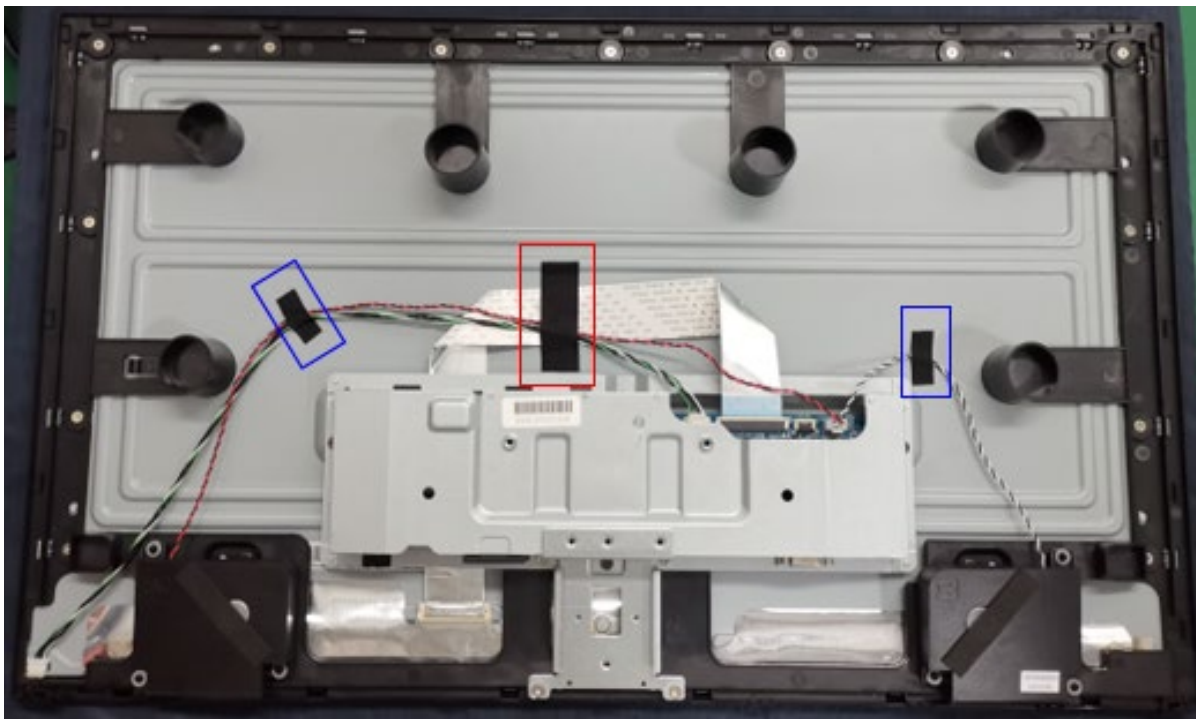
5. Strip nine screws from the Deco and the shielding.
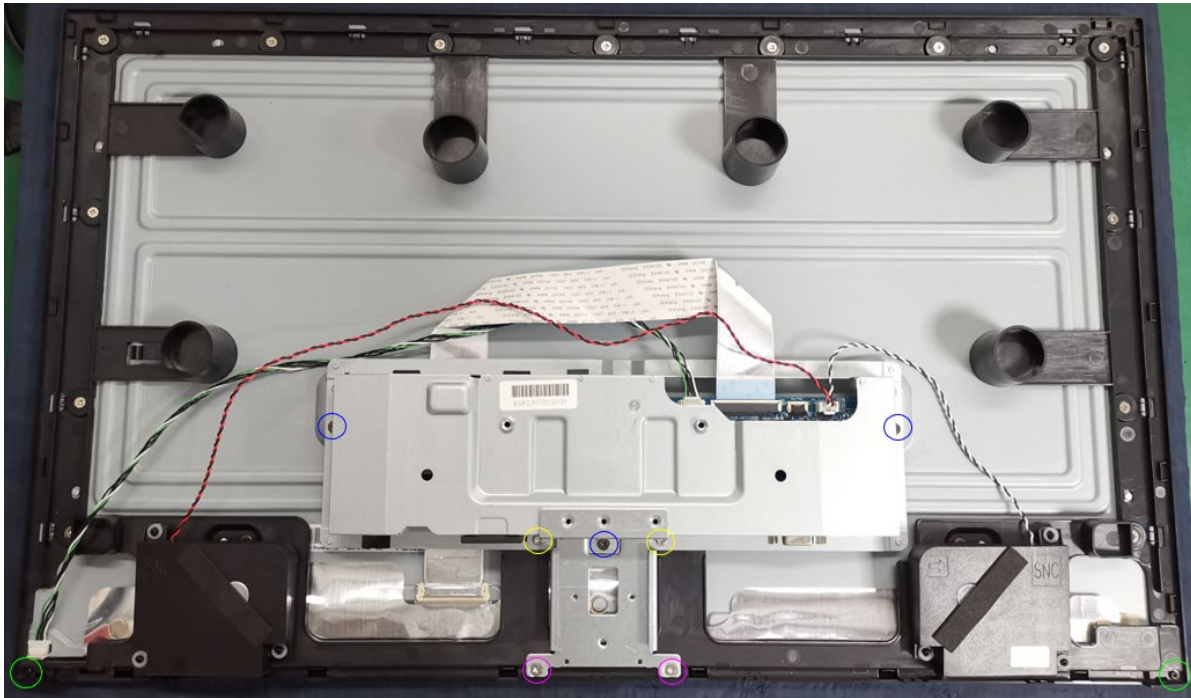
6. Pull out the LVDS/ LED/speaker cable to panel.

7. Remove the Deco.

Dismantle the deco first from the two yellow marked position
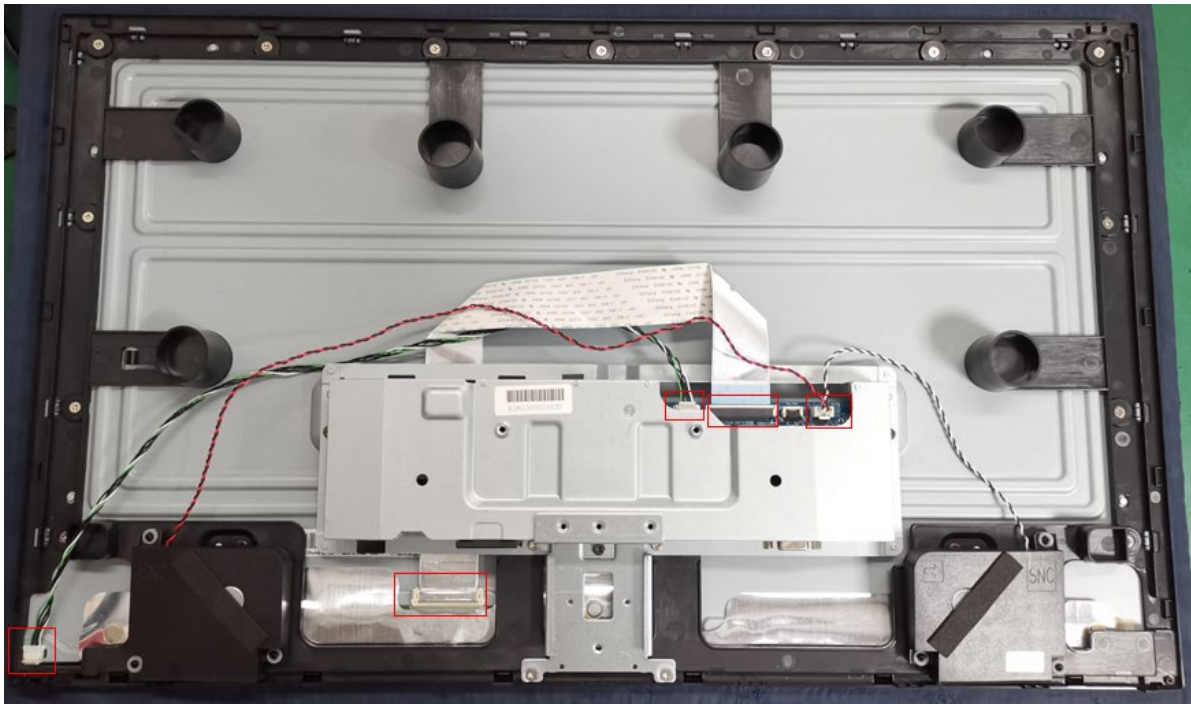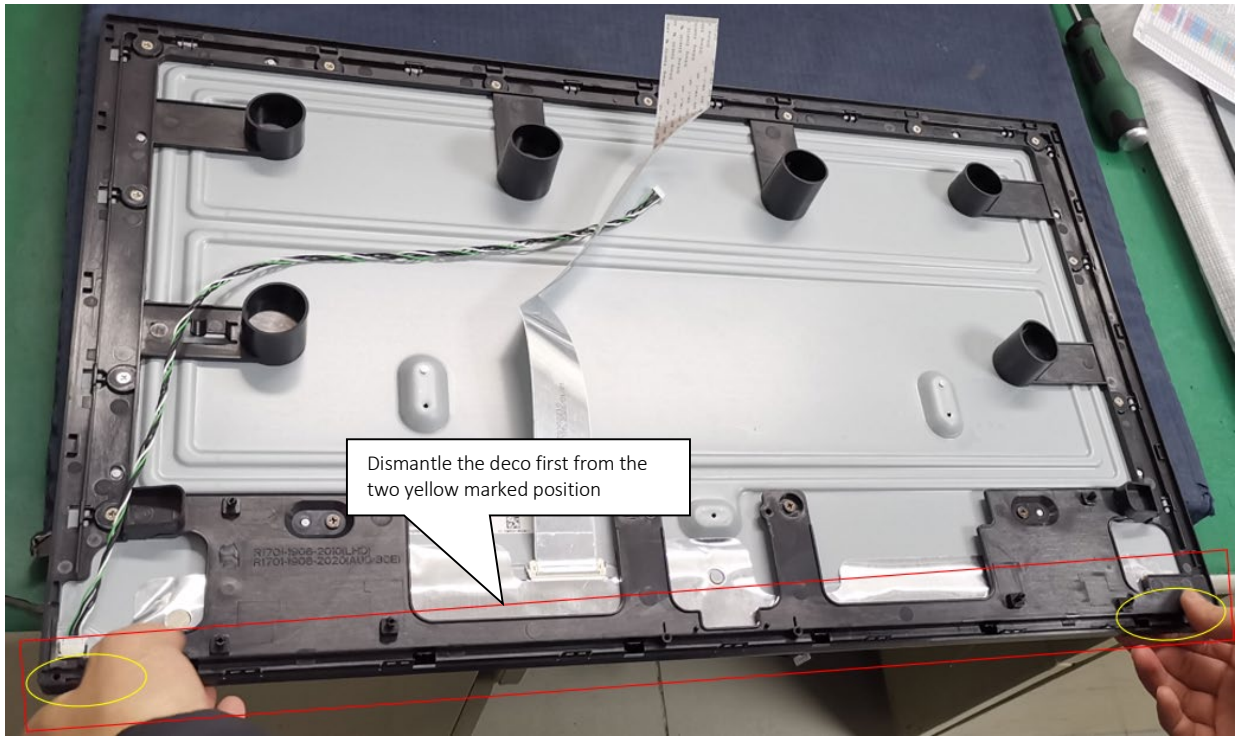
8. Strip seventeen screws from the middle frame.

9. Remove the middle frame.

Remove the middle frame
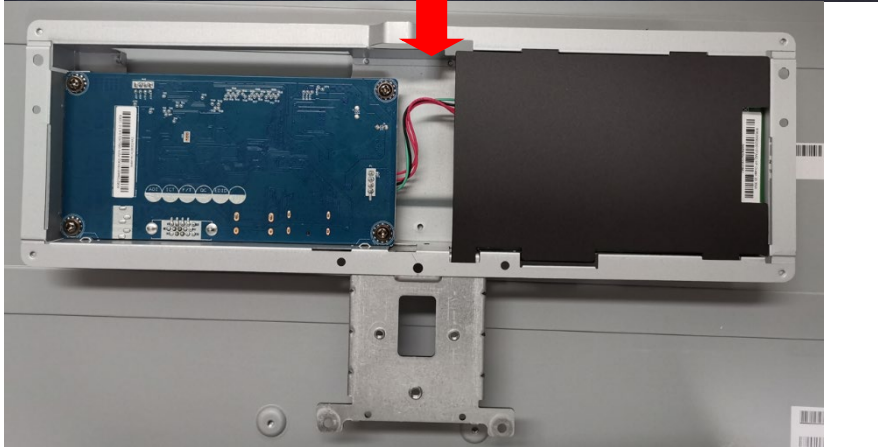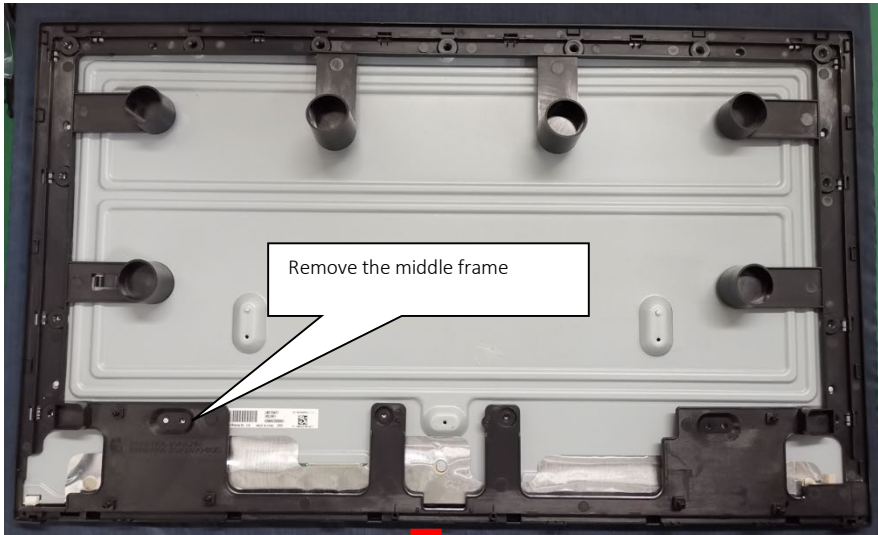
For P32u G5

1. Lay the display on soft desk and push the button of stand to unlock the stand, then pull out the stand form the monitor head.

Pull out the neck

2. Twist out the screw and separate base and stand.

Twist out the screw
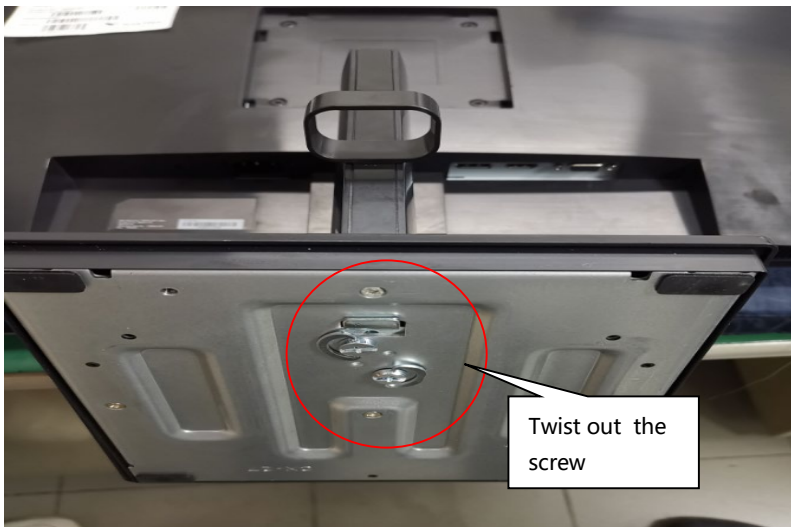
3. Move rear cover follow the below way.
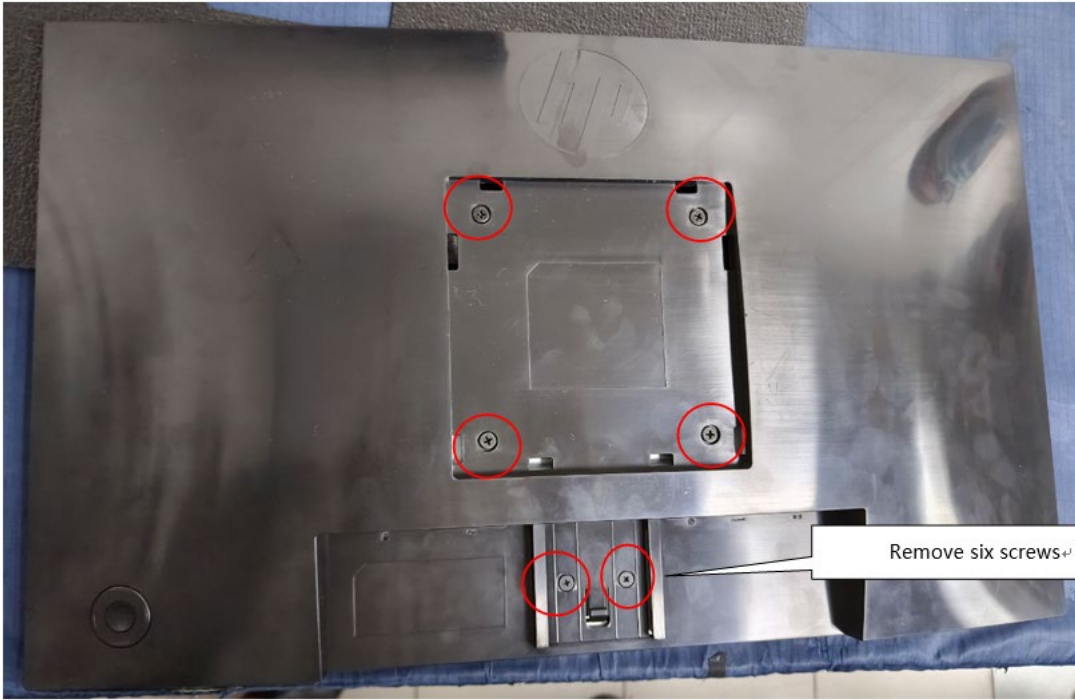
Remove six screws
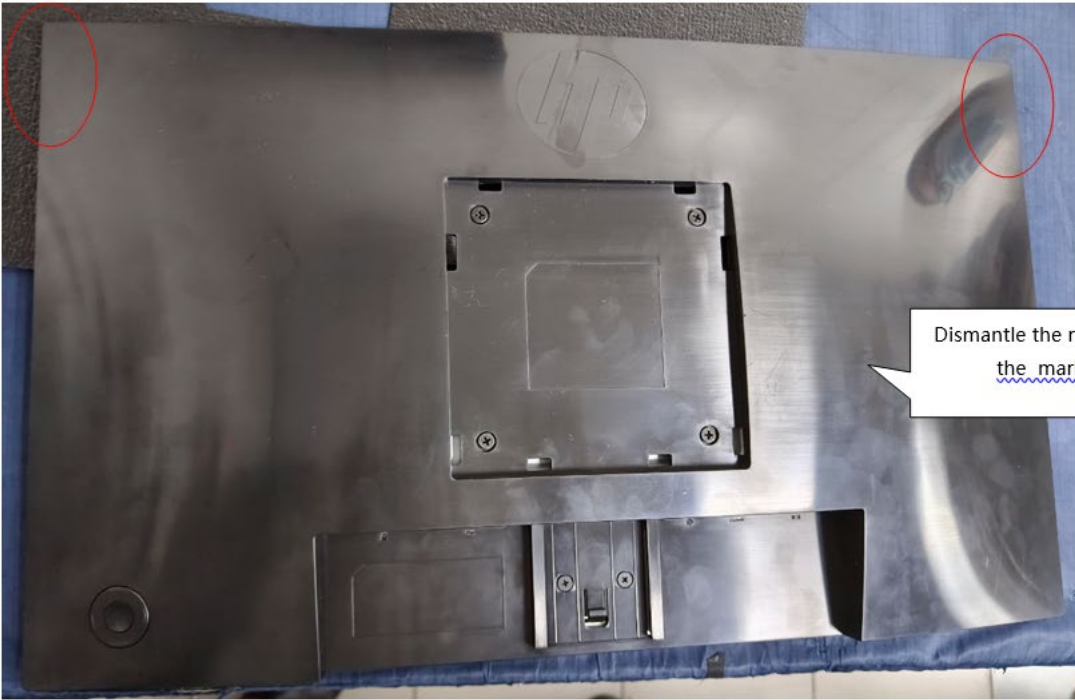
Dismantle the rear cover first from the marked position

Remove 8PINFFC from the MB
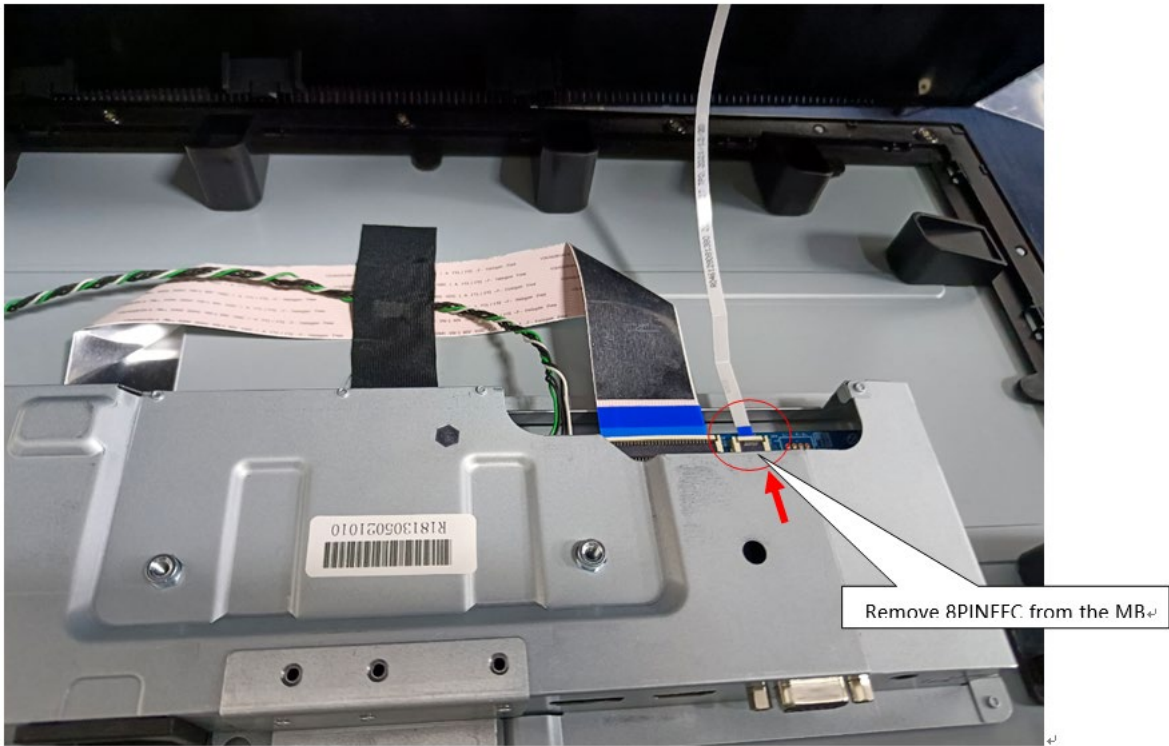
4. Remove 3 acetate cloth tape and pull out the spk/LED/30pin ffc cable ,remove Spk.
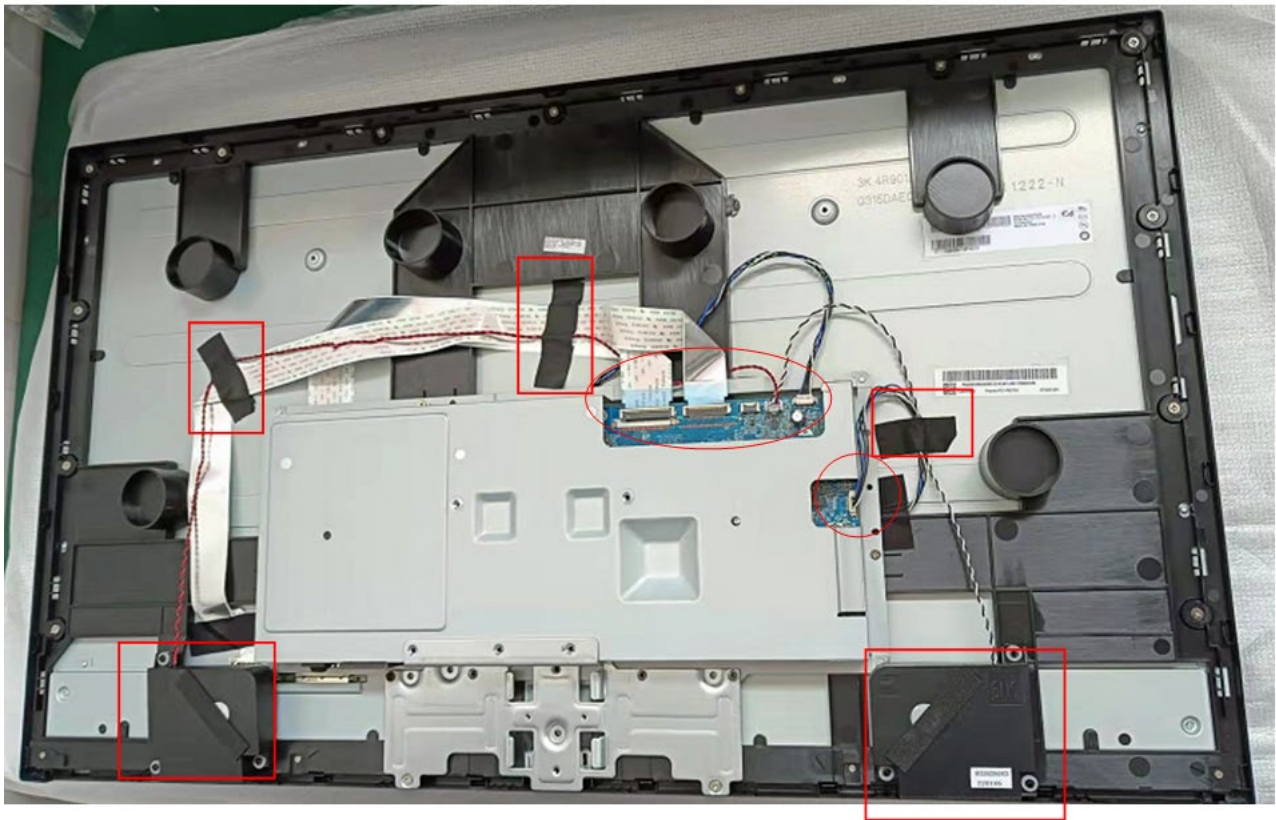
5. Remove the BKT seven screws
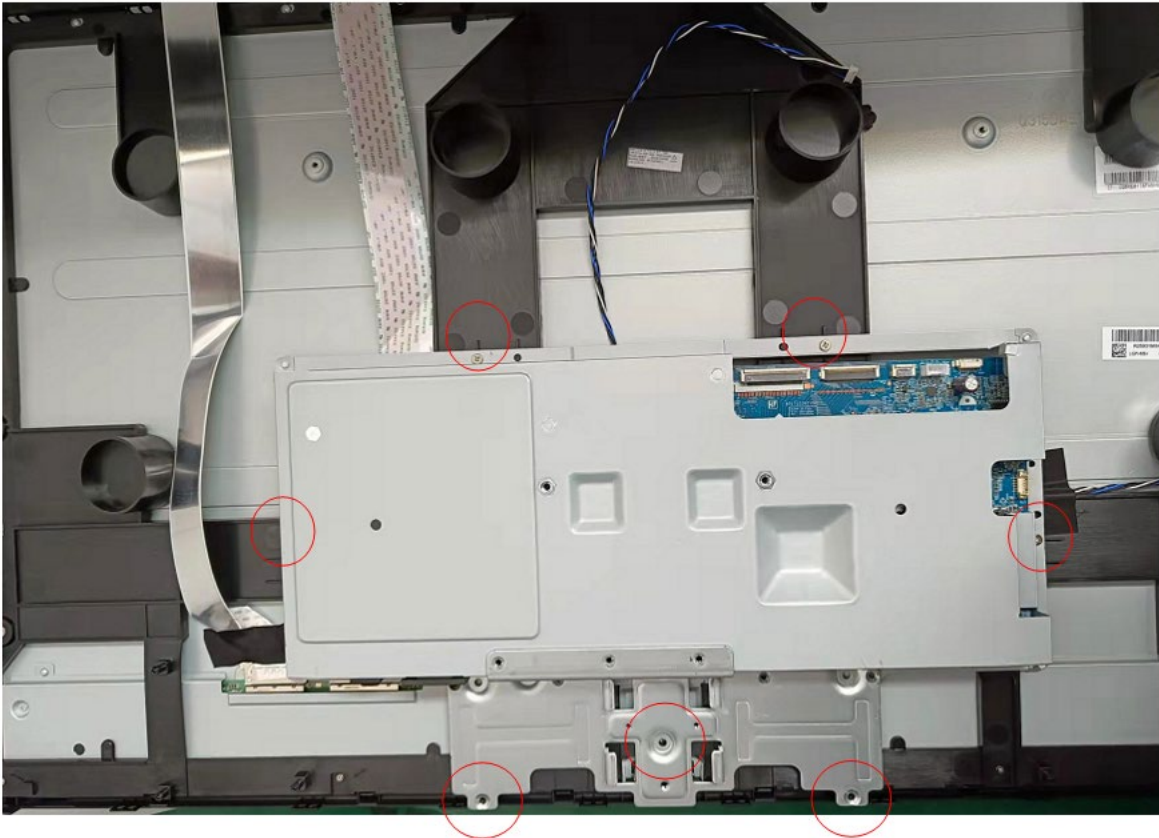
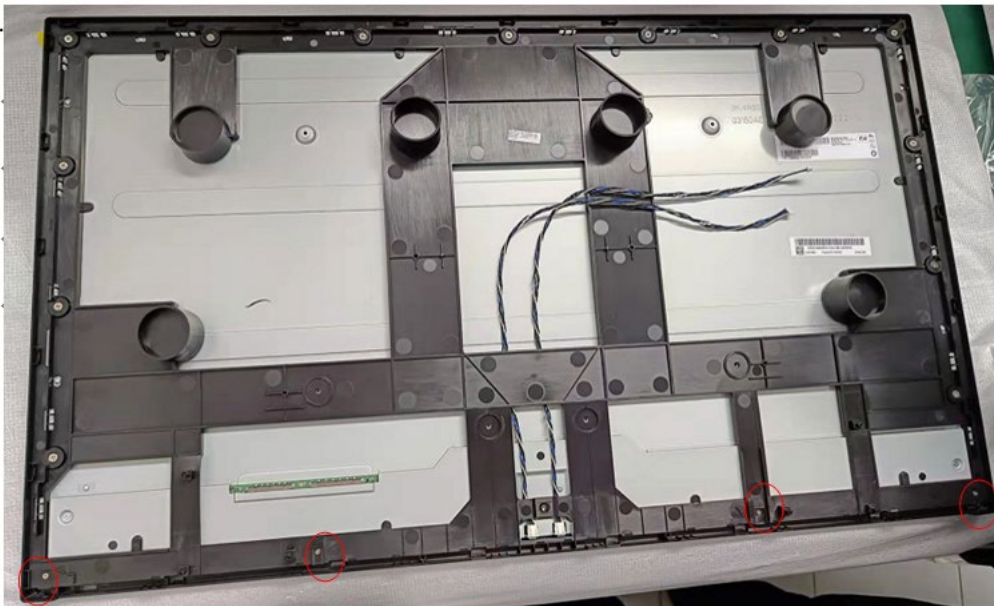6. Remove 3 acetate cloth and 2 FFC from the monitor.
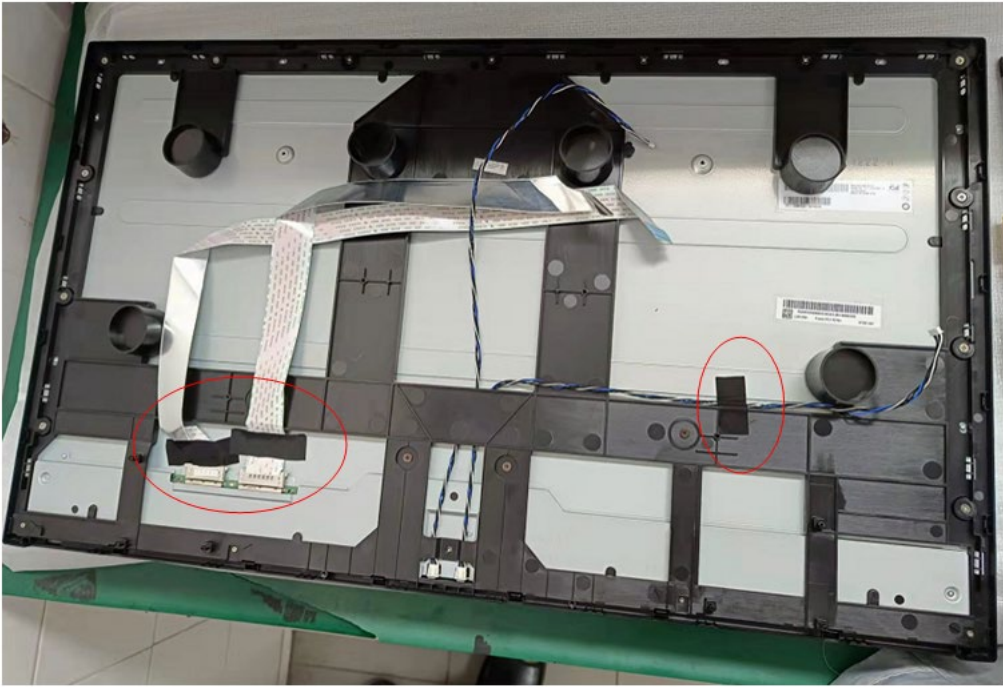
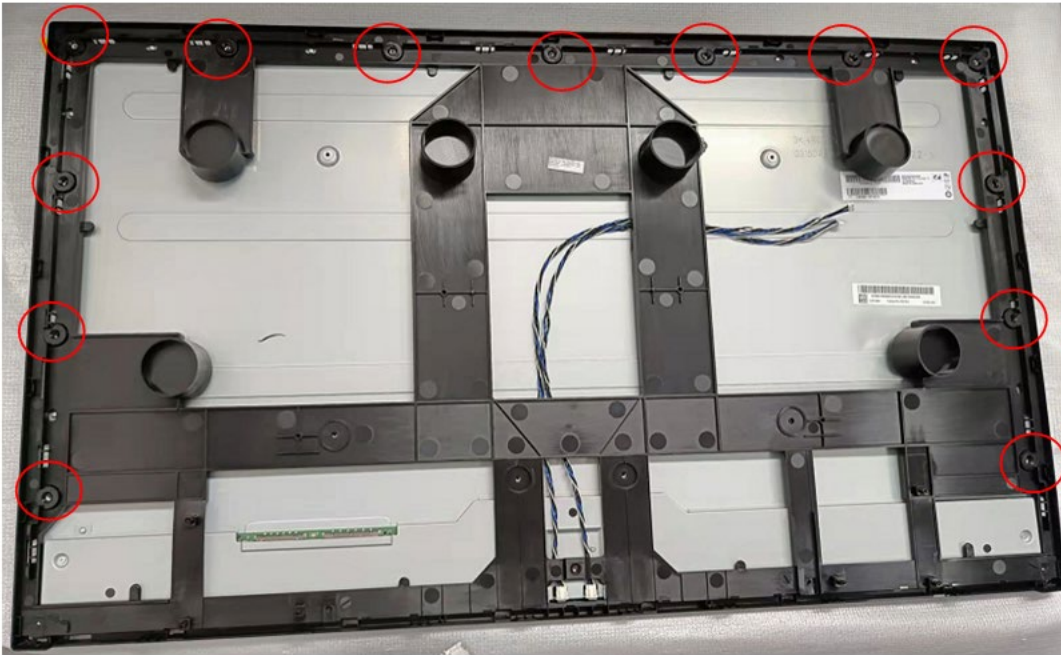7. Remove 2 deco screw, and remove deco from the monitor
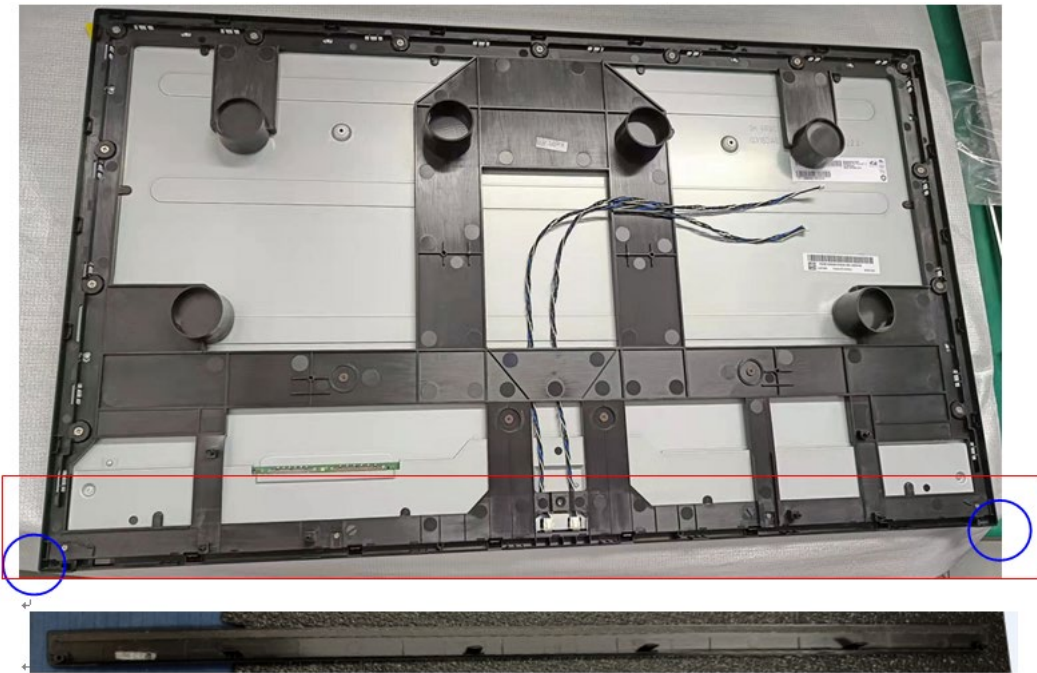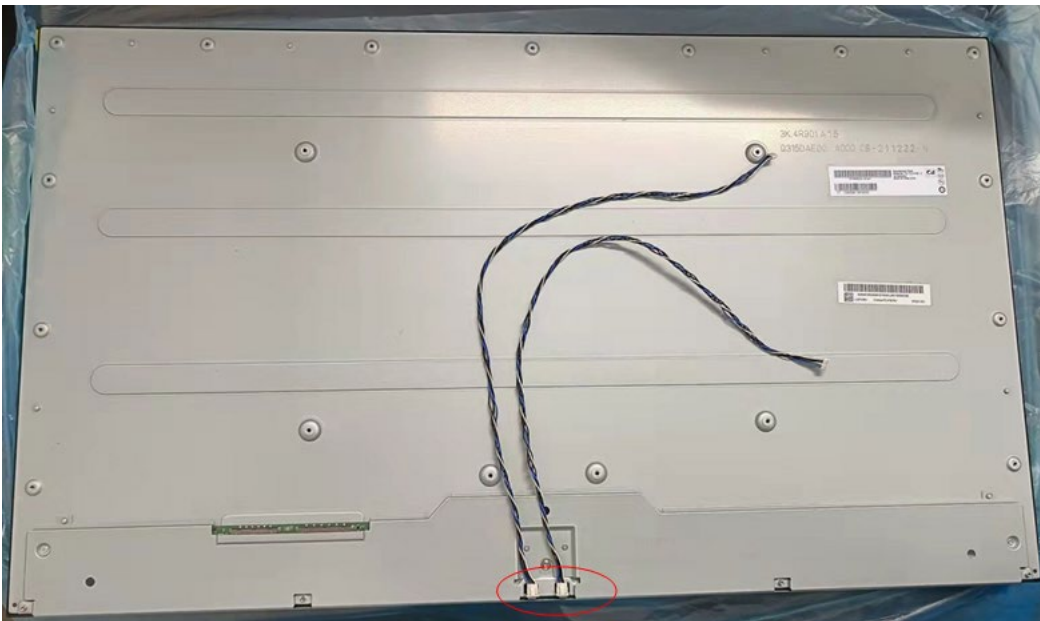
8. Remove 4 screw from the monitor.
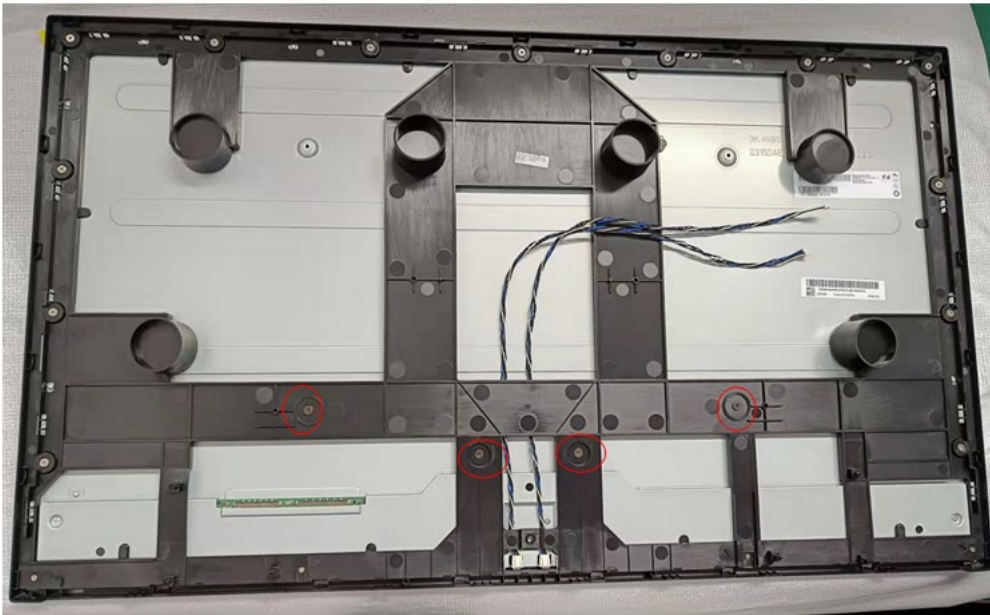
9. Remove 4 screw from the monitor.

10. Remove 13 screw from the monitor, remove mid frame.

11. Remove 2 LED CABLE

Power Board

The power board part number

| Description	HP spare Part number	Manufacturer Part number
25W for P22/P22h/P24/P24h	N17097-001	R352000120157
35W for P27h	N17098-001	R352000220157
160W for P32u	N17099-001 N17099-002	050005180010 050005070070

Before removing the power board, follow these steps:

▲ Prepare the monitor for disassembly. See

Remove the power board:

The power board connector position is as follows, part number on back side

	Front side	Back side
25W		

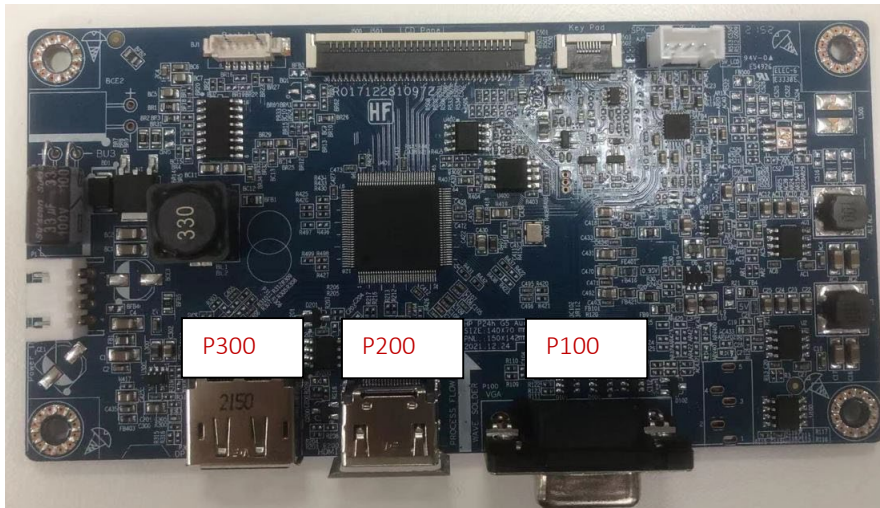|		
35W	Fuse MOSFET E/C EV	
160W		
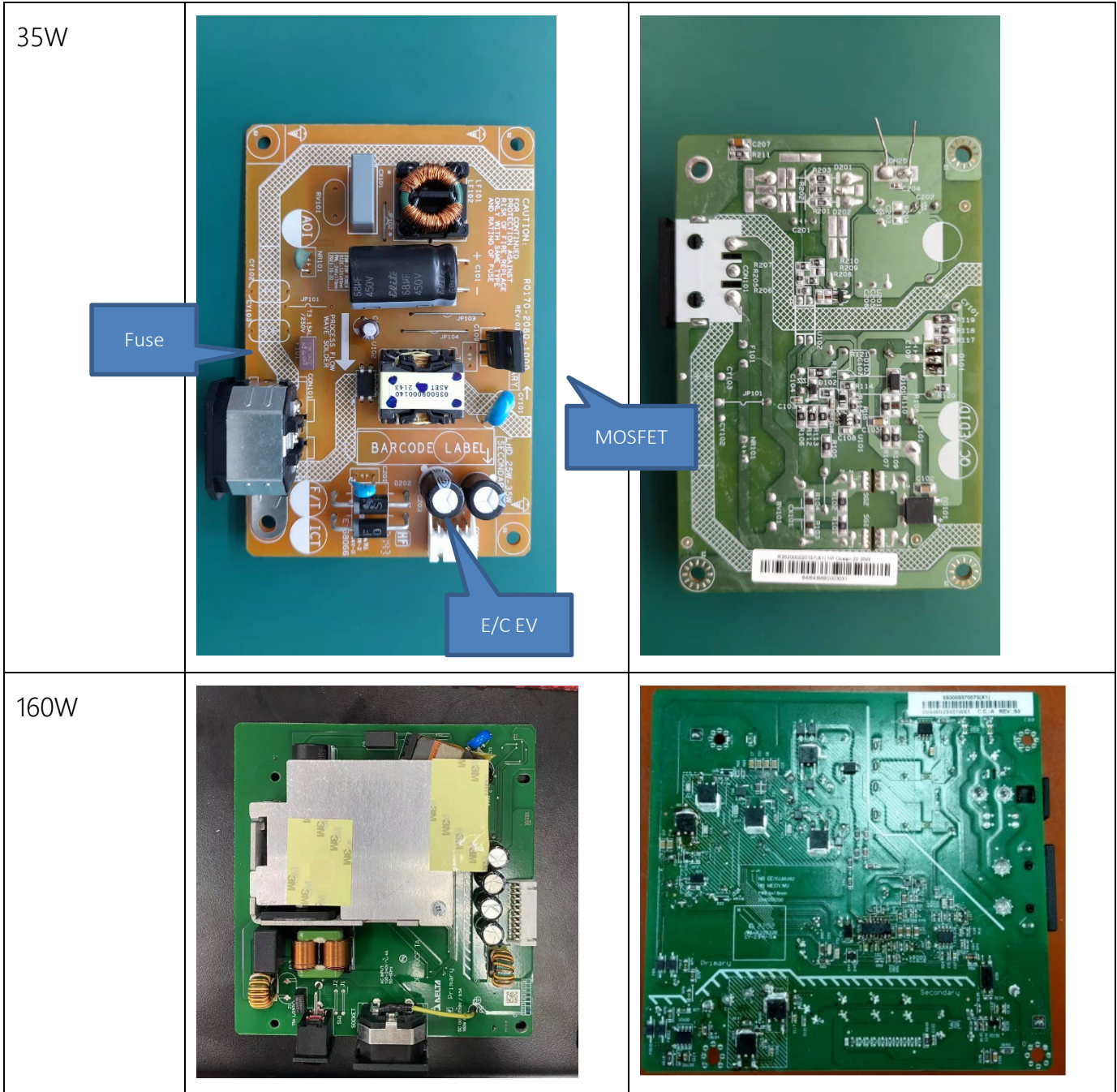
Connector repair

P22/P22h/P24/P24h/P27h G5

This procedure includes HDMI/DP and VGA connectors.

The connectors are on the main board

The connectors identifiers are as follows:

Connector	Location
VGA	P100
HDMI	P200
DP	P300

Before repairing connectors, follow these steps:

▲ Prepare the monitor for disassembly. See Preparation for disassembly on page 24.
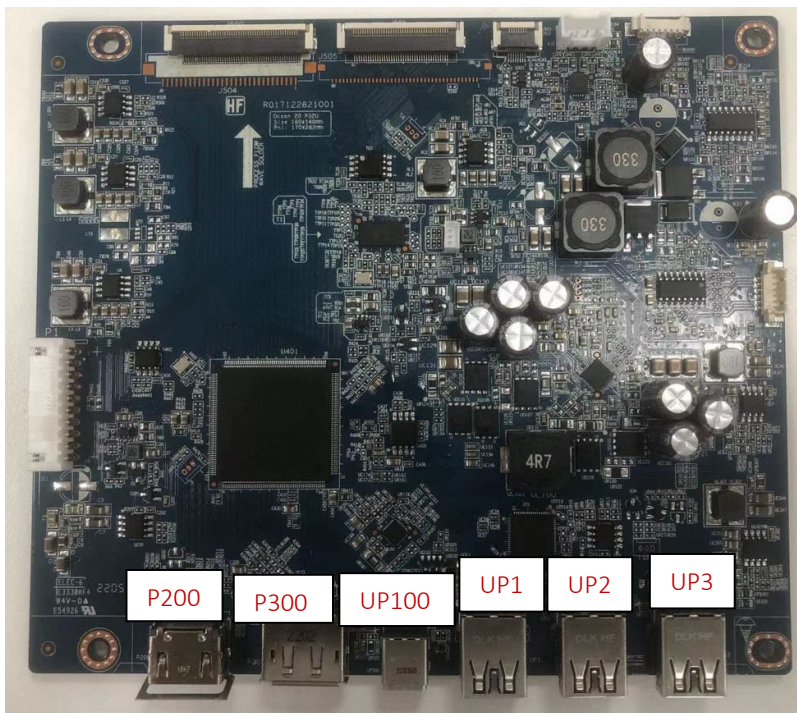
P32u G5

This procedure includes HDMI and DP connectors.

The connectors are on the main board.

The connectors identifiers are as follows:

Connector	Location
HDMI	P200
DP	P300
USB-C	UP100
USB-A	UP1, UP2, UP3

Before repairing connectors, follow these steps:

▲ Prepare the monitor for disassembly. See <u>Preparation for disassembly</u> on page 24.

VGA connector P100

P22/P22h/P24/P24h/P27h G5

Repair the VGA 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 P100 out of the through holes.
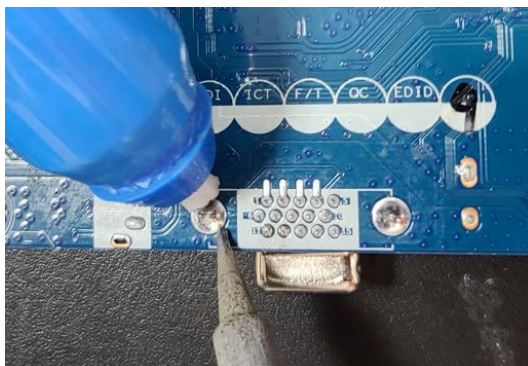
2) Lift the P100 connector from the PCB.

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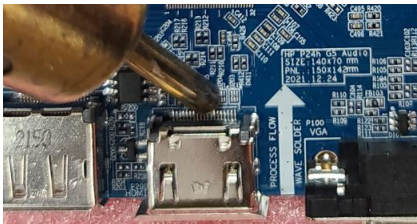
4) Solder the new component

HDMI connector P200

P22/P22h/P24/P24h/P27h G5

Repair the HDMI connector:

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

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

3) Lift the P200 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.

P32u G5

Repair the HDMI connector:

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

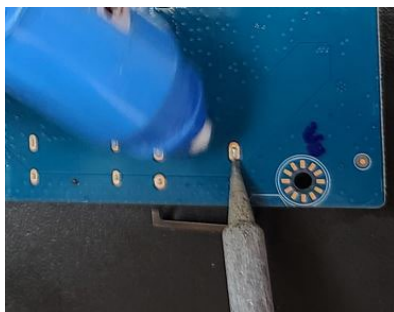2) Use a soldering iron or hot air gun to melt the solder on the pins.

3) Lift the P200 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 P300

P22/P22h/P24/P24h/P27h G5

Repair the Displayport connector:

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

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

3) Lift the P300 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.

P32u G5

Repair the Displayport connector:

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

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

3) Lift the P300 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 UP100

P32u G5

Repair the Displayport connector:

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

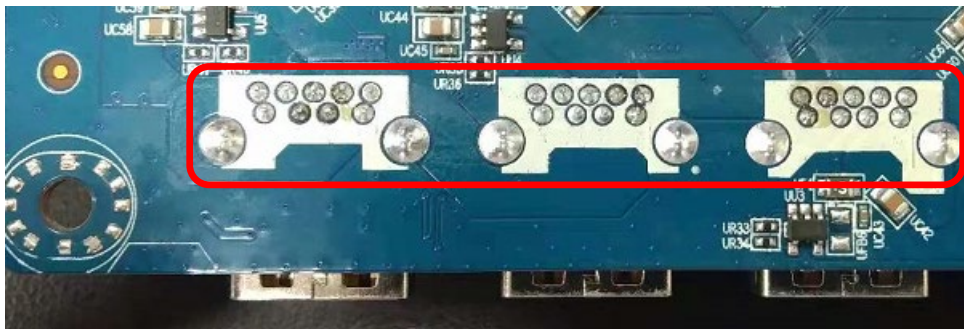2) Use a soldering iron or hot air gun to melt the solder on the pins.

3) Lift the UP100 connector from the PCB.

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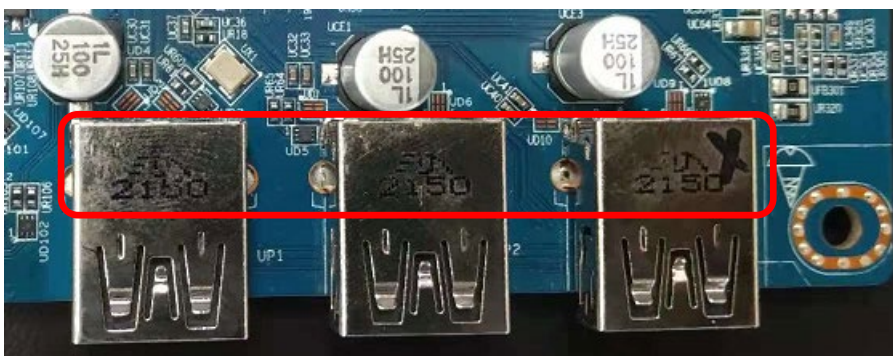
Solder the new component.

DP connector UP1, UP2, UP3

P32u G5

Repair the Displayport connector:

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

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

3) Lift the UP1, UP2, UP3 connector from the PCB.

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

Solder the new component.

Function test

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

P22/P22h/P24/P24h/P27h G5

Table 4-1: Function test

Test item	Operating description	Tool used
HDMI test	Confirm whether image displays correctly on the monitor.	Computer or DVD player
DP test	Confirm whether image displays correctly on the monitor.	Computer or DVD player
VGA test	Confirm whether image displays correctly on the monitor.	Computer or DVD player
Audio test	Change volume and balance to confirm whether volume is smooth and loud enough.	Speaker

P32u G5

Table 4-1: Function test

Test item	Operating description	Tool used
HDMI test	Confirm whether image displays correctly on the monitor.	Computer or DVD player
DP test	Confirm whether image displays correctly on the monitor.	Computer or DVD player
USB-C test	Confirm whether image displays plays correctly on the monitor.	Computer or DVD player
USB-A test	Confirm whether data read correctly.	Computer or NB
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 4-3: Solving common problems

Problem	Possible cause	Solution
Screen is blank or video is flashing.	Power cord is disconnected.	Connect the power cord.
	Monitor is off.	Power the power button. NOTE: If pressing the Power button has no effect, press and hold the power button for 10 seconds to disable the Power button lockout feature.
	Video cable is improperly connected.	Connect the video cable properly.
	System is in Sleep mode.	Press any key on the keyboard or move the mouse to exit Sleep mode.
	Video card is incompatible.	Open the OSD menu and select the Input Control menu. Set Auto-Switch Input to Off and manually select the input
Image appears blurred, indistinct, or too dark.	Brightness is too low.	Open the OSD menu and select **Brightness** to adjust the brightness scale as needed.
Check Video Cable is displayed on screen.	Monitor video cable is disconnected.	Connect the appropriate video signal cable between the computer and monitor. Be sure that the computer power is off while you connect the video cable.
Input Signal Out of Range is displayed on screen.	Video resolution and/or refresh rate are set higher than what the monitor supports.	Change the settings to a supported setting.
The monitor is off, but it did not seem to enter into Sleep mode.	The monitor's power saving control is disabled.	Open the OSD menu and select **Power Control > Auto-Sleep Mode** and set auto-sleep to **On**.

On-Screen Menus are Locked is displayed.	The monitor's OSD lock function is enabled.	Press and hold the **Menu** button on the front bezel to 10 seconds to disable the OSD lockout function.
Power Button is Locked is Displayed	The monitor's power button is locked.	Press and hold the power button for 10 seconds to disable the power button lock function.
No low-power sleep mode	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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