Studio Display

Apple Recycler Guide

March 2022

Contents

About This Guide

Apple Recycler Guides provide guidance for electronics recyclers on how to disassemble products to maximize recovery of resources. The guides provide step-by-step disassembly instructions and information on the material composition to help recyclers direct fractions to the appropriate material recycler.

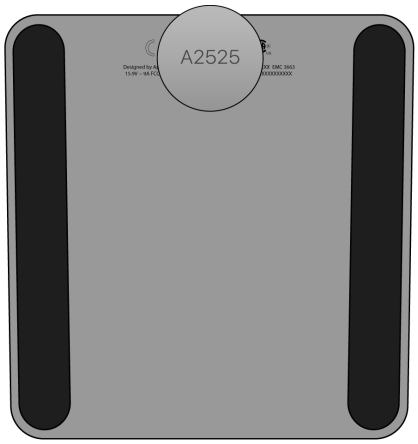
To conserve important resources, we work to reduce the materials we use and aim to one day source only recycled or renewable materials in our products. A key path to reaching that goal is resource recovery from end-of-life electronics.

Disassembly procedures are intended to be performed only by trained electronics recycling professionals. The recycler is responsible for independently evaluating and ensuring compliance with all applicable environmental, health, and safety laws related to the work. These include but are not limited to laws relating to the management, handling, shipping, and disposal of the outputs of this work as waste and laws in place to ensure the health and safety of all employees who support this work.

For questions or feedback about this guide, email contactesci@apple.com.

Identification

You can find the model number of the display on the bottom of the display stand. To view the model number, hold the sides of the display and gently lay the display face down on a soft, clean towel or cloth.



Model number:
A2525

Directive 2012/19/EU Annex VII Components

Directive 2012/19/EU Annex VII requirements apply to the following substances and components.

Substance/Component	Location	Removal Instructions
Printed circuit board if the surface is greater than 10 square centimeters	Display logic board, connector logic board, light-emitting diode (LED) logic board, power supply logic board, main logic board	Follow steps 1–24
Cover glass and liquid crystal display (LCD) cell if the surface is greater than 100 square centimeters	Cover glass and LCD cell	Follow step 1–15
External electric cables	USB-C cable and power cord	Follow step 1
No further substances or components as listed in Annex VII		

Safety Considerations

The recycler is responsible for independently evaluating all activities undertaken by its employees to perform or support the work and ensuring compliance with all applicable health and safety laws related to the work. These include but are not limited to laws relating to the health and safety of all employees who perform or support this work. The recycler is also responsible for evaluating the workspace and ensuring that the area in which the work is to be undertaken is designed using ergonomic best practices and meets all ergonomic requirements to ensure the protection of its employees.

Personal Protective Equipment

Personal protective equipment should be worn during the entire recycling process.


Wear hand protection


Wear protective clothing


Wear eye protection


Wear foot protection


Wear a mask

LED Safety

Broken LEDs must be handled properly to ensure the safety of your employees and mitigate any hazards. Package broken LEDs in an appropriate container to properly manage the hazards associated with the materials and store only with compatible materials. All waste must be properly classified, packaged, and labeled in accordance with all relevant laws and regulations.

Hazard Warnings

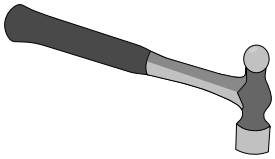

Broken glass hazard


Chemical inhalation hazard

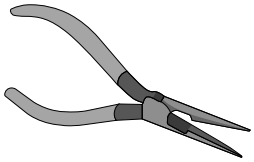

Chemical exposure hazard

Recommended Tools

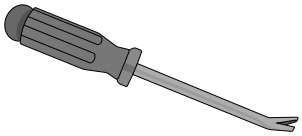
Hammer



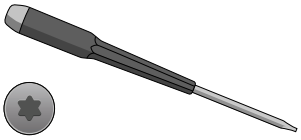
Long-nose pliers



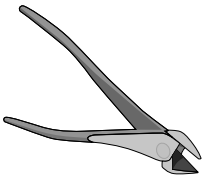
Nail-pulling screwdriver



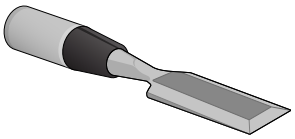
Torx® T20 screwdriver



Wire cutters



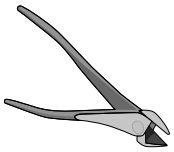
Wood chisel



Disassembly Instructions

1. Remove the cables.

Tools Used



» *Turn off the display.*

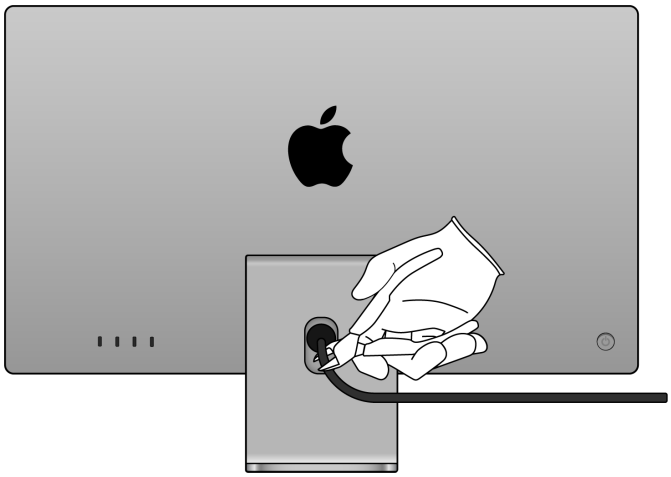
Fraction

USB-C cable

Cu
Copper

» *Unplug the USB-C cable.*

» *Cut off the power cable from the back of the display.*



Fraction

Power cable

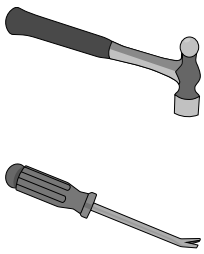
Cu
Copper

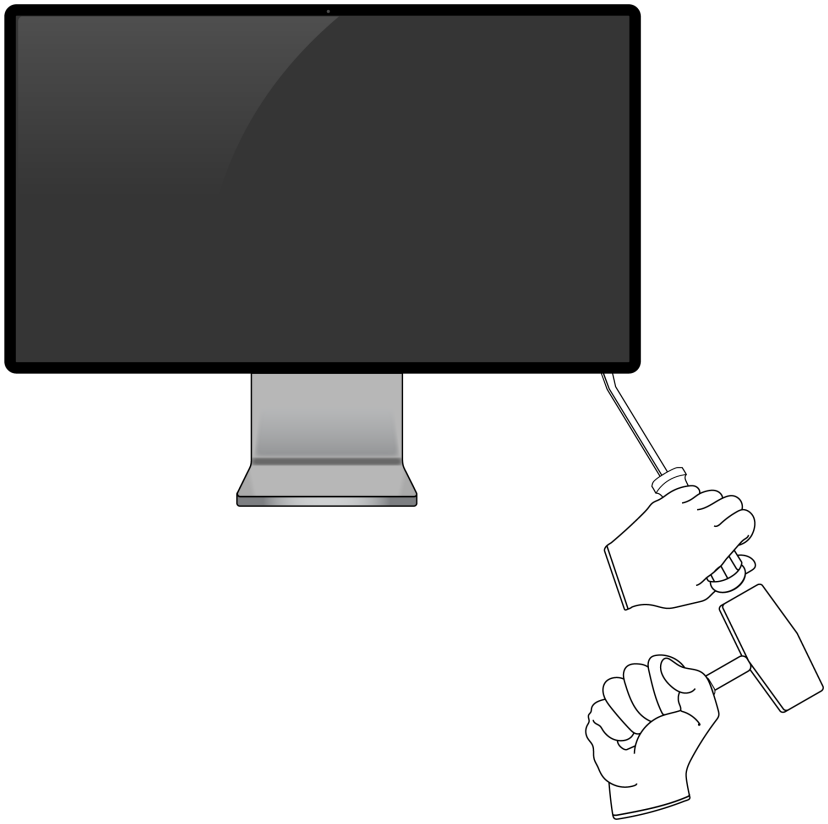
Warning: Before starting disassembly, wait 10 minutes after unplugging the device for stored energy to discharge.

2. Remove the display.

» *Pry in between the cover glass and aluminum enclosure.*

Tools Used

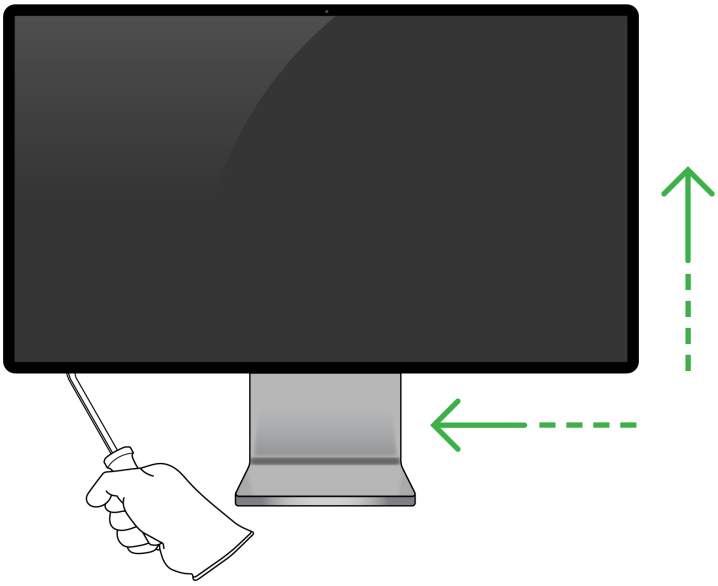




» *Once under the display, slide the nail-pulling screwdriver along the right vertical edge and then along the bottom horizontal edge.*

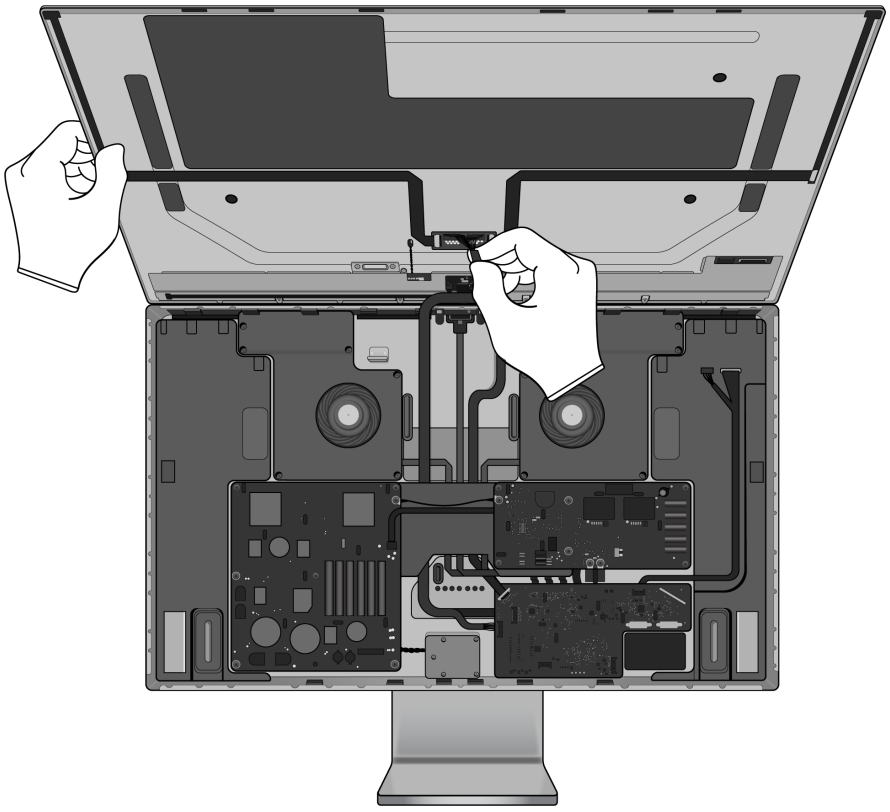
Broken glass hazard

Chemical exposure hazard

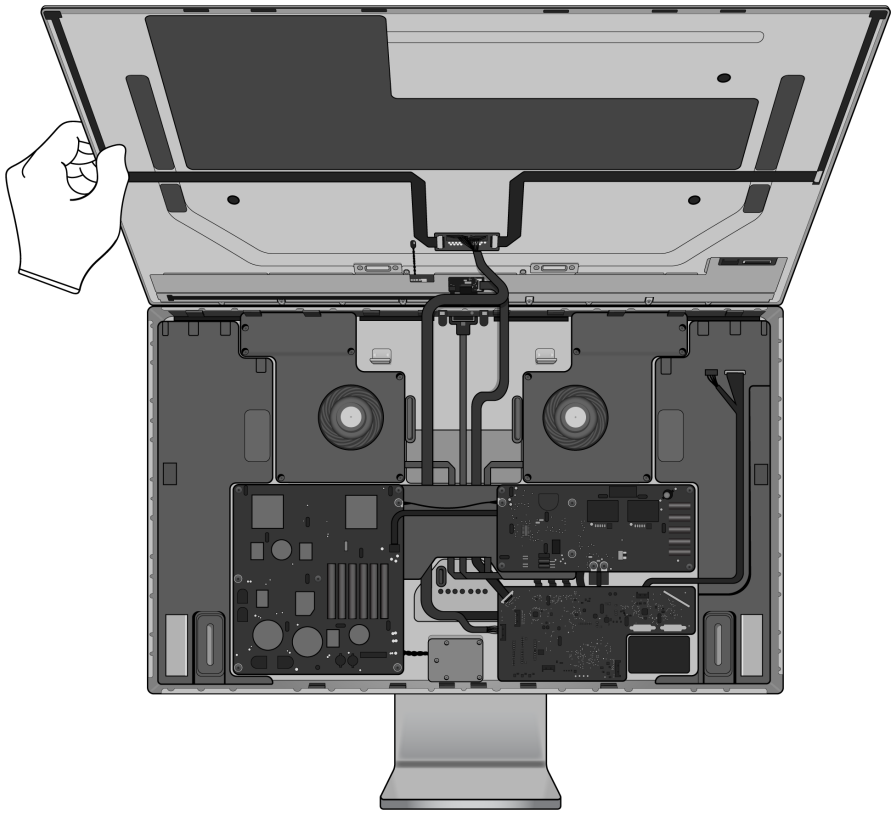


3. Separate the display and enclosure.

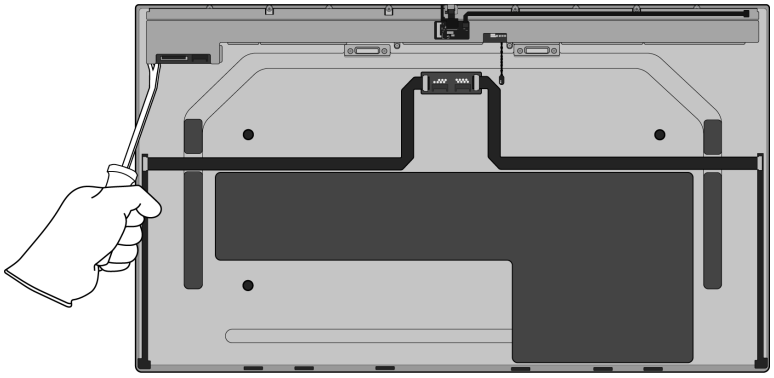
» *Lift up the display from the enclosure.*



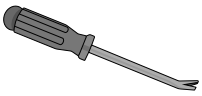
» *Unplug the ribbon cables by hand. Set the enclosure aside.*



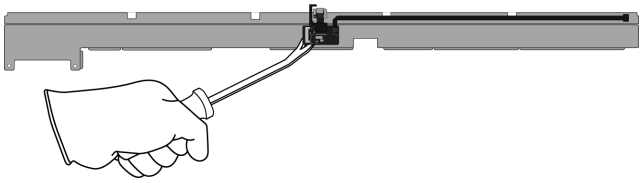
4. Pry off the display logic board cover. Set the display aside.



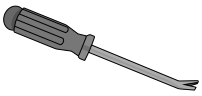
Tools Used



5. On the back side of the display logic board cover, pry off the camera logic board and ribbon cable.



Tools Used



Fraction

Camera logic board with ribbon cable

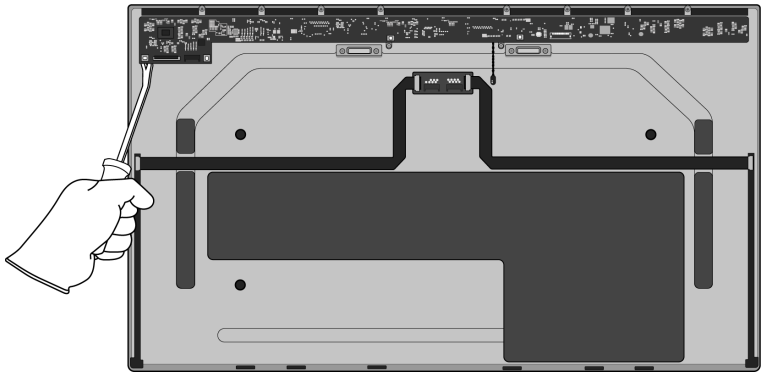
PMs
Precious Metals

Fraction

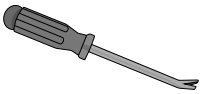
Logic board cover

Fe
Ferrous

6. On the display, pry off the display logic board.



Tools Used

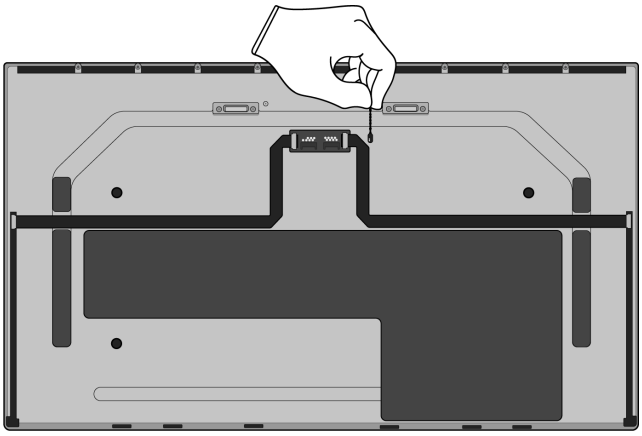


Fraction

Display logic board

PMs
Precious Metals

7. Pull off the flex cable and the two ribbon cables by hand.



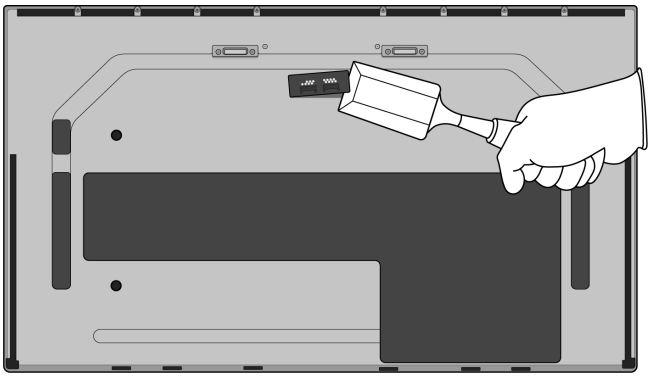
Fraction

Flex cable

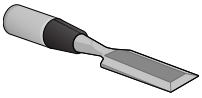
Ribbon cables

Cu
Copper

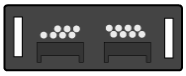
8. Pry off the connector logic board.



Tools Used



Fraction



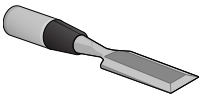
Connector logic board

PMs
Precious Metals

9.

Pry up the edge of the plastic sheet. Remove it by hand.

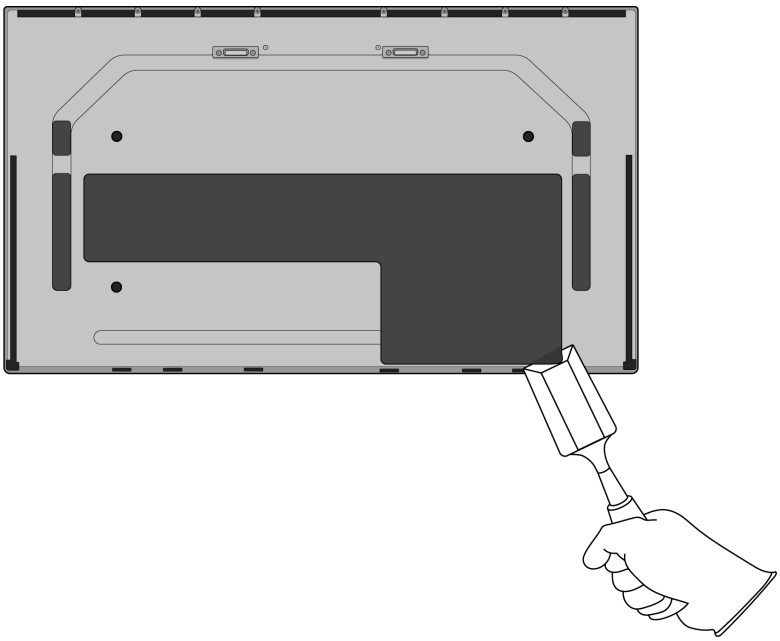
Tools Used

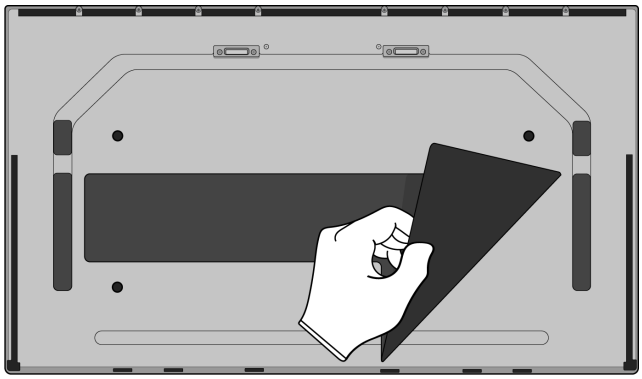


Fraction

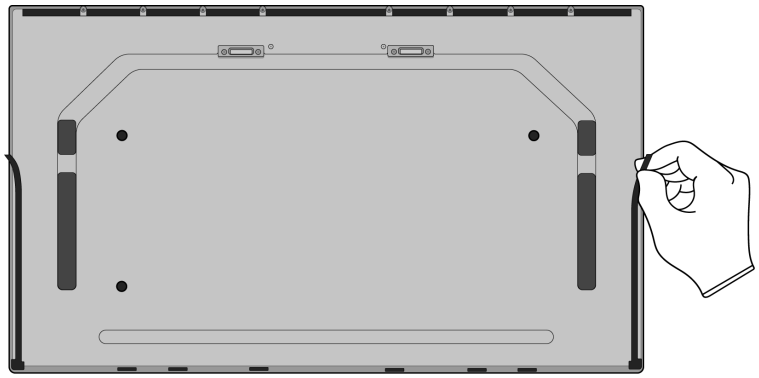
Plastic sheet

PL
Plastics





10. Peel off the two remaining ribbon cables by hand.



Fraction

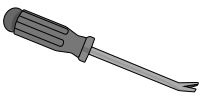
Ribbon cables

Cu

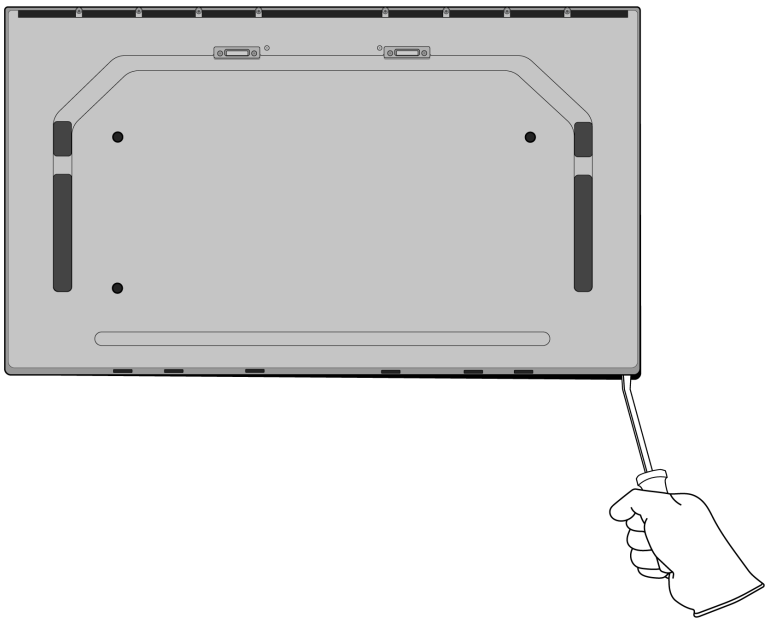
Copper

11. Remove the display cover.

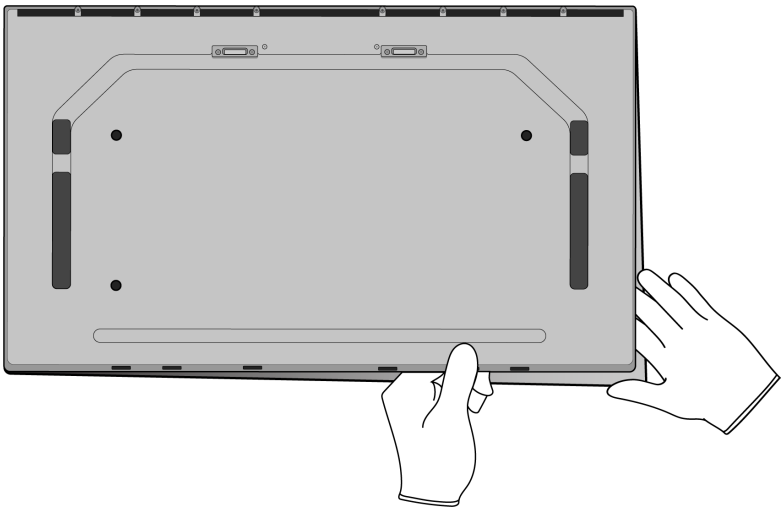
Tools Used



» *Pry up the corner of the display cover.*

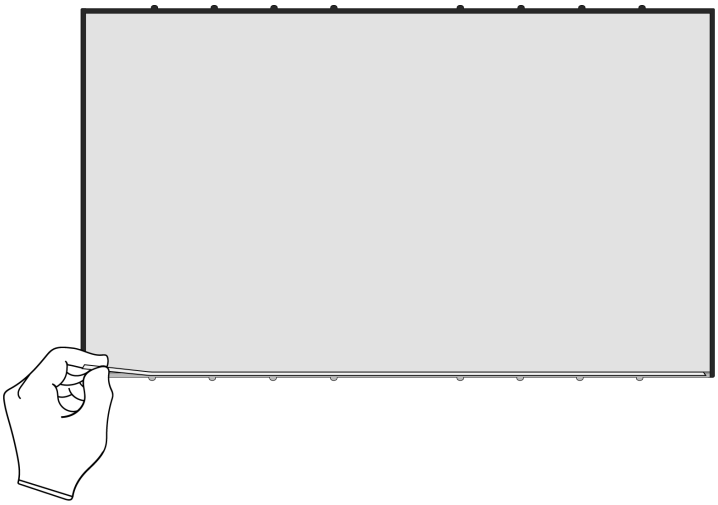


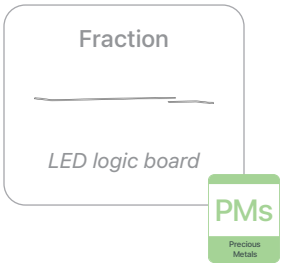
» *Lift off the display cover by hand. Set the LCD cell aside.*



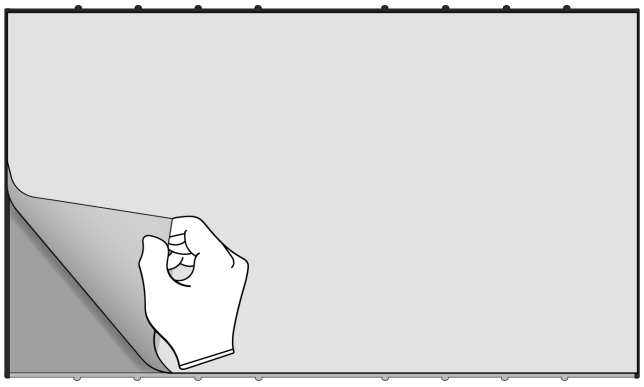
12. Turn the display cover over and remove the LED logic board by hand.

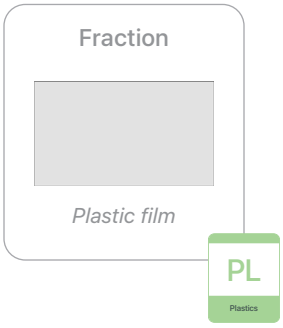
Chemical inhalation hazard



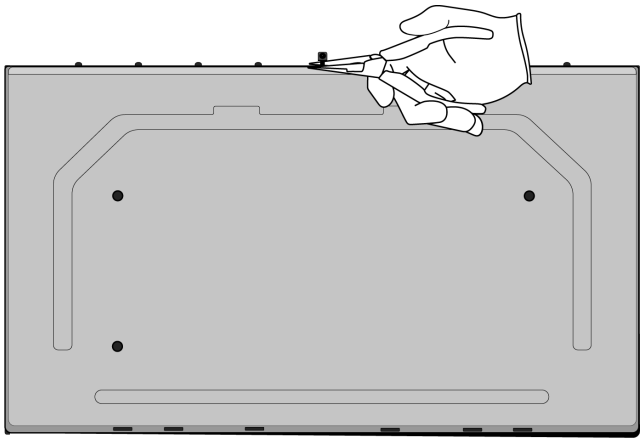


13. Pull the plastic film off the display cover by hand.

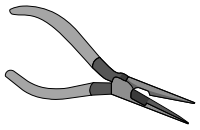




14. Pull the camera off the display cover.



Tools Used



Fraction

Camera

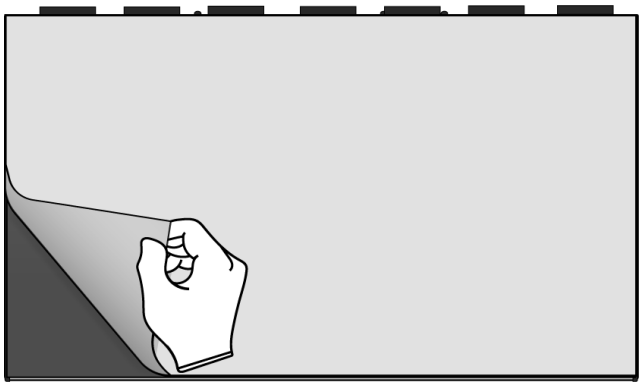
PMs
Precious Metals

Fraction

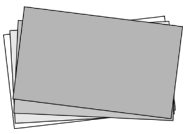
Display cover

Al
Aluminum

15. On the LCD cell, lift off the display films by hand.



Fraction



Display films

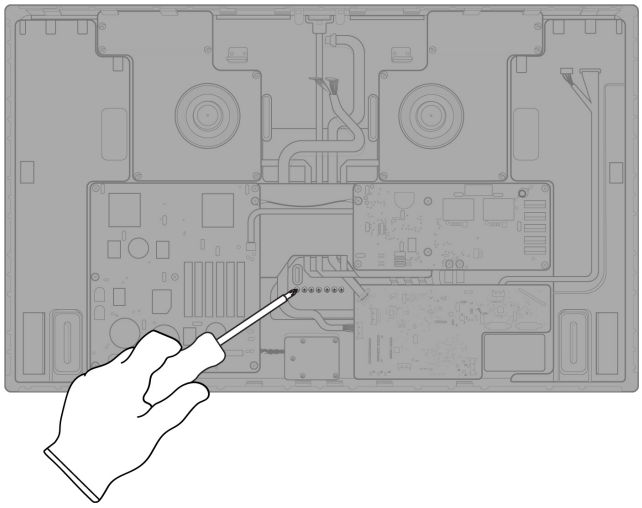
PL
Plastics

Fraction

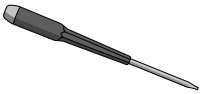
Cover glass and LCD cell

GL
Glass

16. On the enclosure, remove the seven Torx T20 fasteners from the stand bracket. Lift the enclosure from the stand.



Tools Used

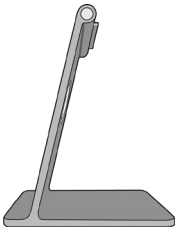


Fraction

Fasteners (x7)

Fe
Ferrous

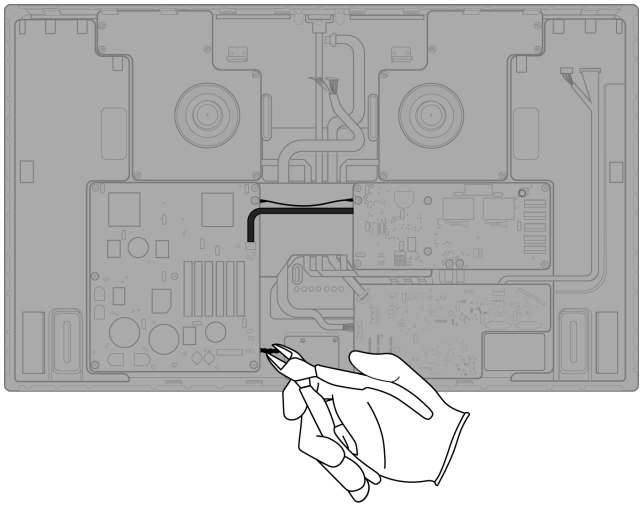
Fraction



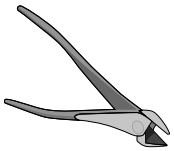
Stand

Al
Aluminum

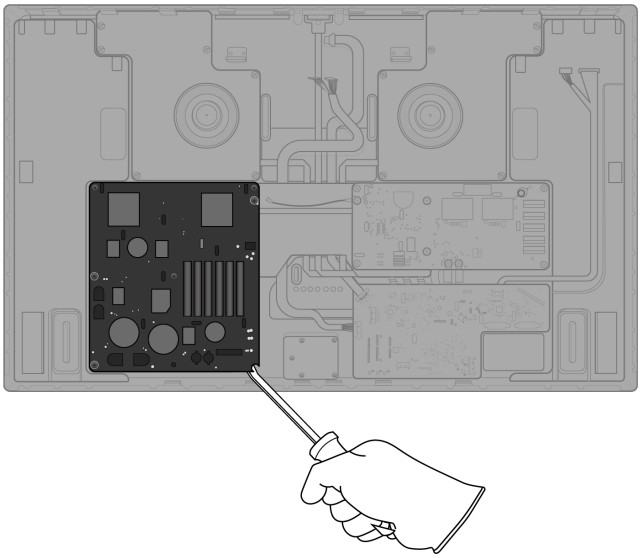
17. Cut off the three cables from the power supply logic board.



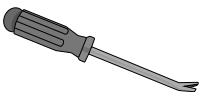
Tools Used



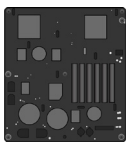
18. Pry off the left power supply logic board.



Tools Used



Fraction

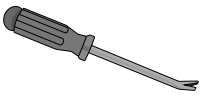


Left power supply logic board

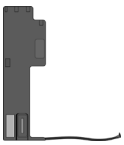
PMs
Precious Metals

19. Pry off the left speaker. Unplug the cable going back to the main logic board by hand.

Tools Used

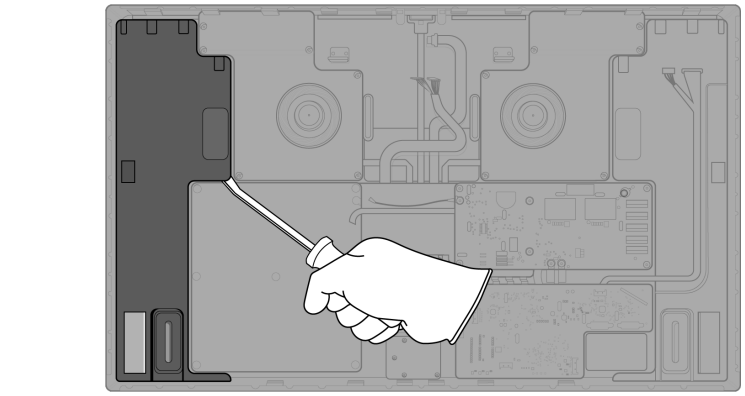


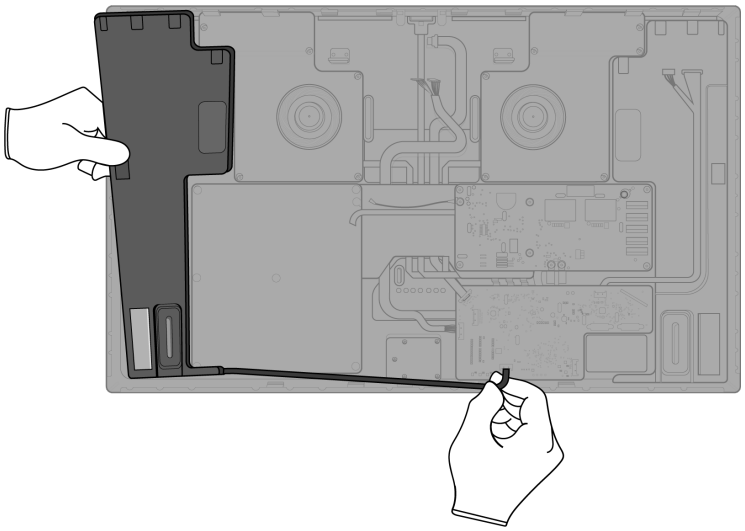
Fraction



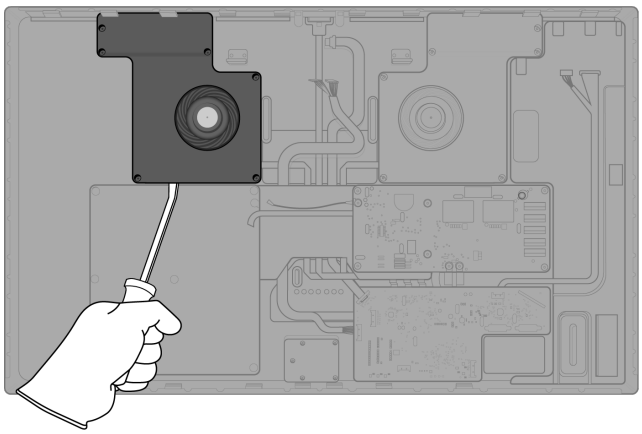
Left speaker

REE
Rare Earth Elements

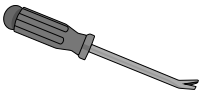




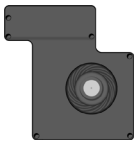
20. Pry off the left fan.



Tools Used



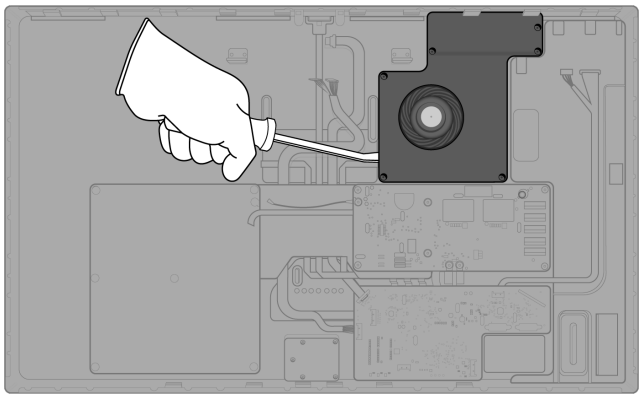
Fraction



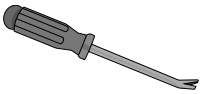
Left fan

Cu
Copper

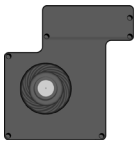
21. Pry off the right fan.



Tools Used



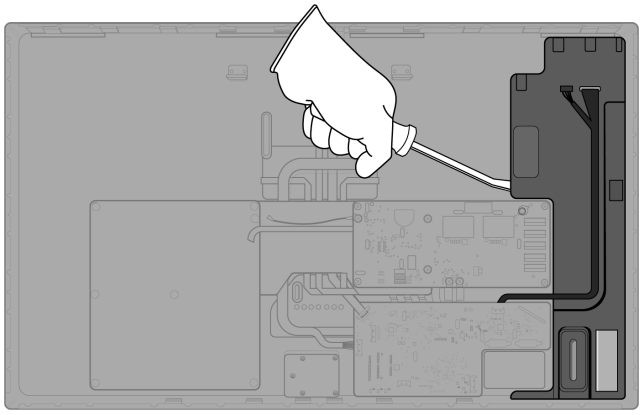
Fraction

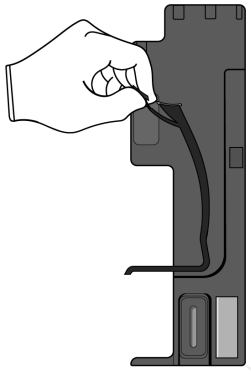


Right fan

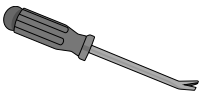
Cu
Copper

22. Pry off the right speaker. Remove the attached ribbon cables by hand.

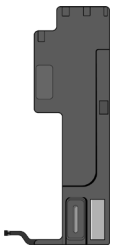




Tools Used



Fraction



Right speaker

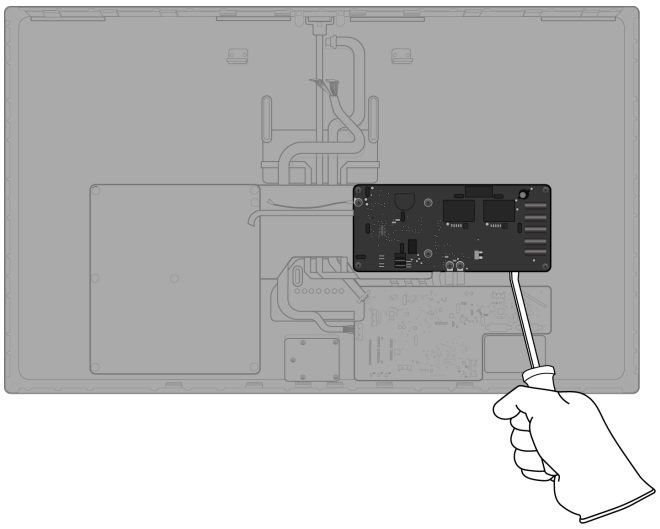
REE
Rare Earth Elements

Fraction

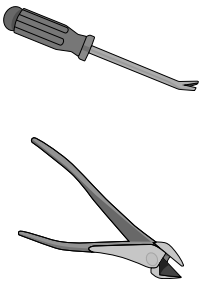
Ribbon cables

Cu
Copper

23. Pry off the right power supply logic board. Cut the two cables attached to the main logic board.



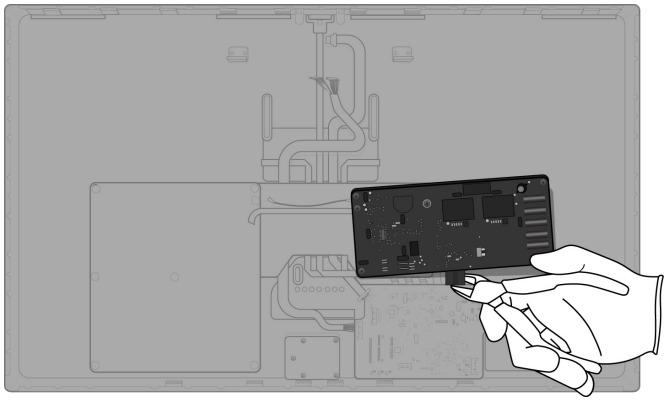
Tools Used



Fraction

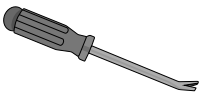
Right power supply logic board

PMs
Precious Metals



24. Pry off the main logic board with attached Thunderbolt port and USB-C ports.

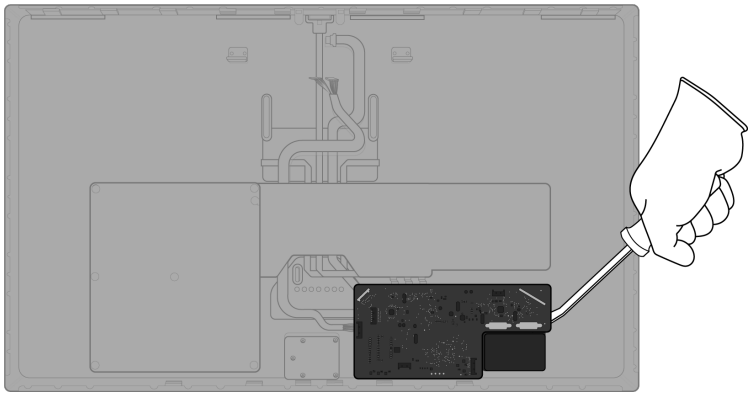
Tools Used

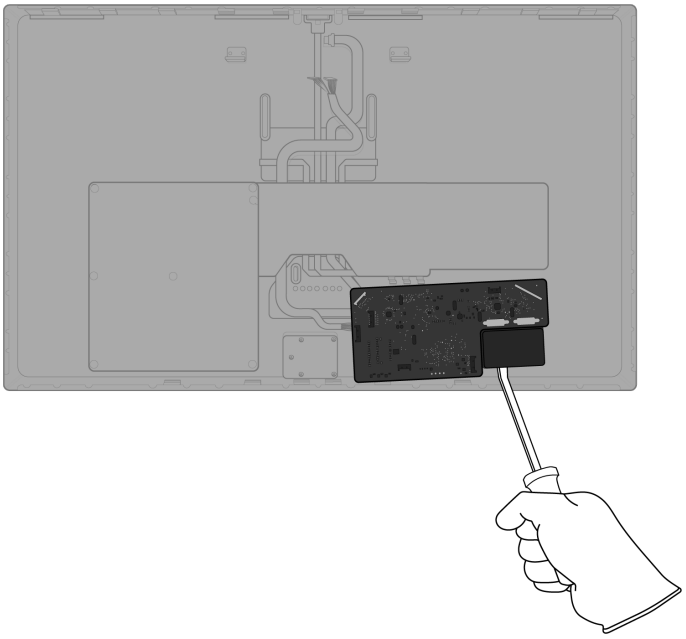


Fraction

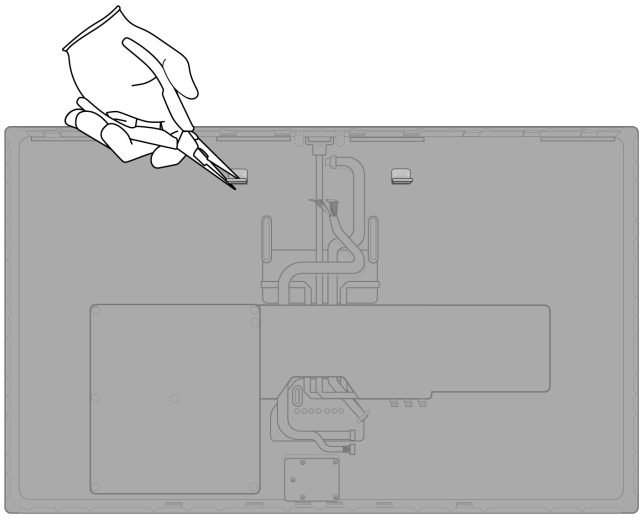
Main logic board and ports

PMs
Precious Metals

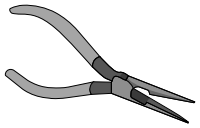




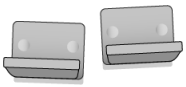
25. Remove the two display mounting tabs.



Tools Used



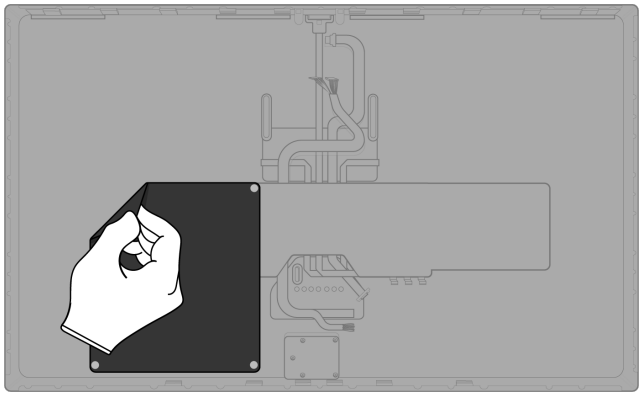
Fraction



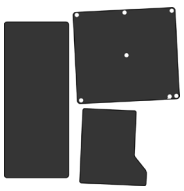
Display mounting tabs

Fe
Ferrous

26. Remove the three plastic sheets by hand.



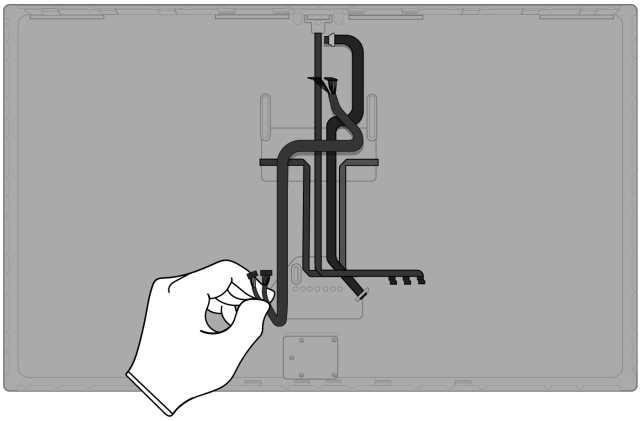
Fraction



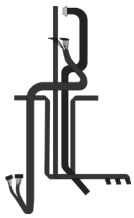
Plastic sheets

PL
Plastics

27. Pull off the remaining ribbon cables by hand.



Fraction

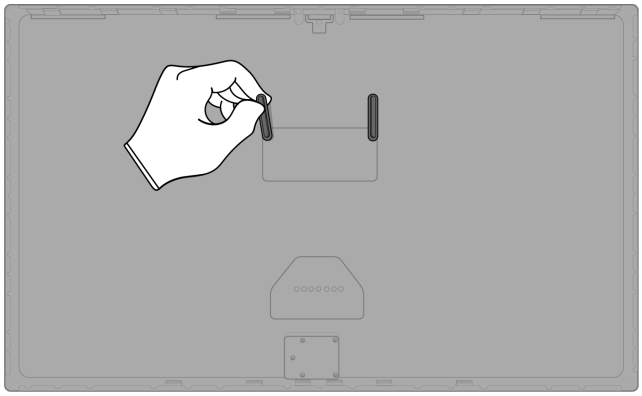


Ribbon cables

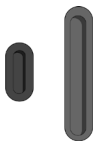
Cu

Copper

28. Pull off the two rubber bumpers and the copper sheet by hand.



Fraction



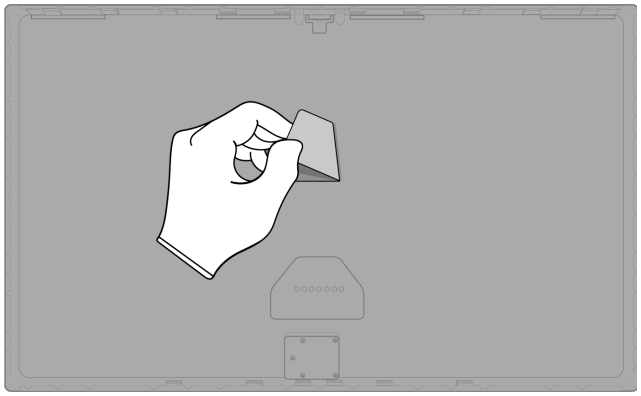
Rubber bumpers

PL
Plastics

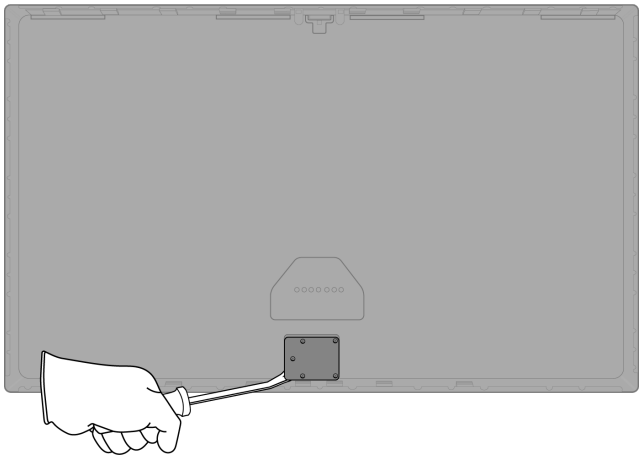
Fraction

Copper sheet

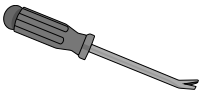
Cu
Copper



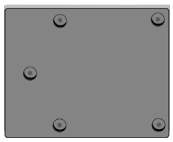
29. Pry off the power adapter.



Tools Used



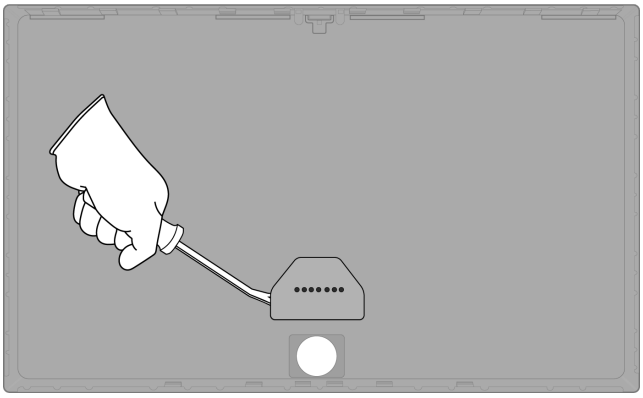
Fraction



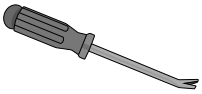
Power adapter

Cu
Copper

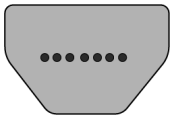
30. Pry off the stand bracket.



Tools Used



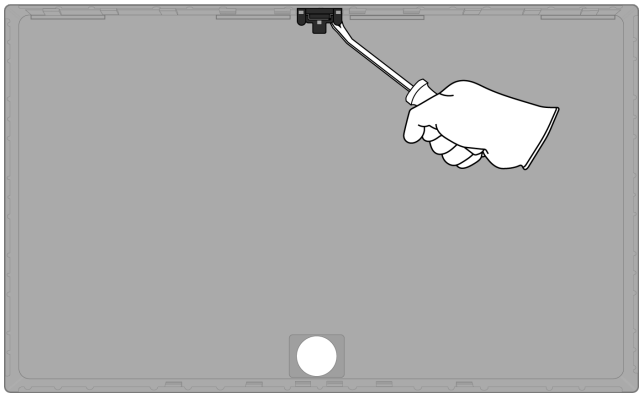
Fraction



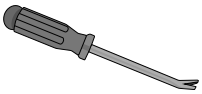
Stand bracket

Fe
Ferrous

31. Pry off the microphone array.



Tools Used



Fraction

Microphone array

Cu
Copper

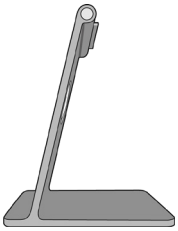
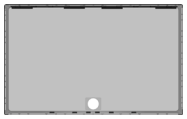
Fraction

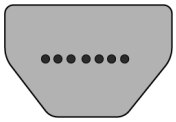
Enclosure

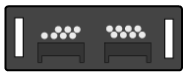
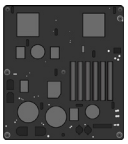
Al
Aluminum

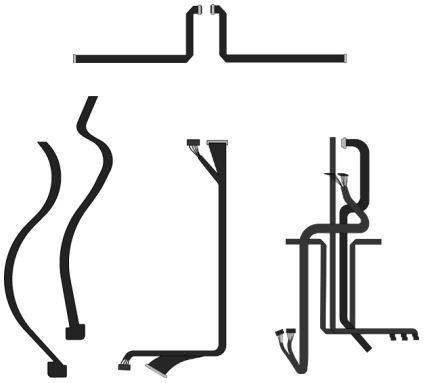
Material Categorization of Output Fractions

All outputs from this process must be managed, handled, and disposed of in accordance with applicable waste laws and regulations, including but not limited to the Waste Framework Directive and its national enactments in Europe.

Fraction	Downstream Processing
Aluminum  *Display cover*  *Stand*  *Enclosure*	**Primary Target Material**  **Potential Additional Materials** 

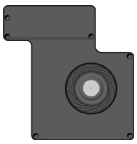
Fraction	Downstream Processing
Ferrous	**Primary Target Material**
 *Logic board cover*	Fe Ferrous
 *Fasteners*	
 *Display mounting tabs*	
 *Stand bracket*	
Glass	**Primary Target Material**
 *Cover glass and LCD cell*	GL Glass
	Potential Additional Materials
	ITO Indium Tin Oxide PL Plastics

Fraction	Downstream Processing
Logic Boards	**Primary Target Material**
 *Camera logic board with ribbon cable*	
 *Display logic board*	**Potential Additional Materials**
 *Connector logic board*	  
LED logic board	 
 *Camera*	
 *Left power supply logic board*	
 *Right power supply logic board*	
 *Main logic board and ports*	

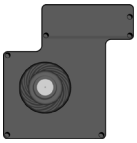
Fraction	Downstream Processing
Mixed Electronics  *USB-C cable*  *Power cable*  *Flex cable*  *Ribbon cables*	**Primary Target Material**  **Potential Additional Materials** 

Fraction	Downstream Processing

Mixed Electronics (cont.)

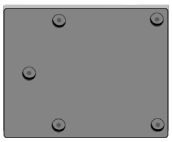


Left fan



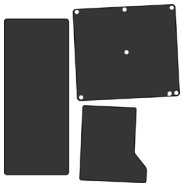
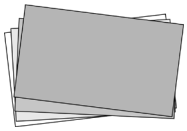
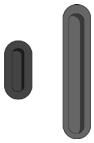
Right fan

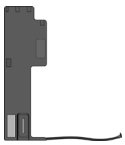
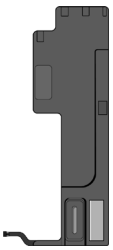
Copper sheet



Power adapter

Microphone array

Fraction	Downstream Processing
Mixed Plastics	**Primary Target Material**
	
 *Plastic sheets*	
 *Plastic film*	
 *Display films*	
 *Rubber bumpers*	

Fraction	Downstream Processing
Rare Earth Magnets  *Left speaker*  *Right speaker*	**Primary Target Material** REE Rare Earth Elements **Potential Additional Materials** Cu Copper Fe Ferrous PL Plastics