iMac 24-inch (M1, 2021)

Apple Recycler Guide

June 2023

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.

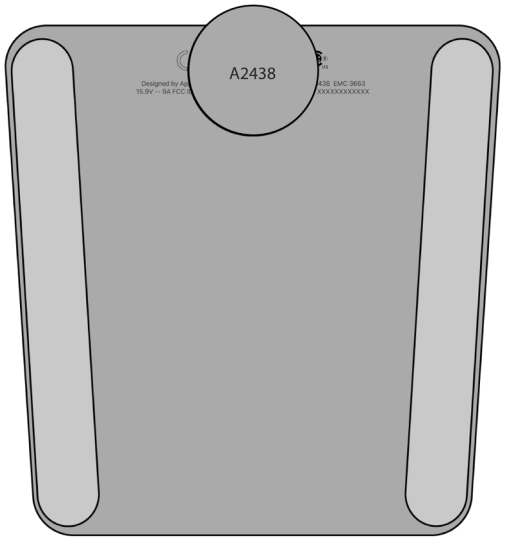
To conserve important resources, we work to reduce the materials we use and aim to one day source only recycled or renewable materials in our products. A key path to reaching that goal is resource recovery from end-of-life electronics.

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 iMac on the bottom of the stand.



Model numbers:

A2438, A2439

Directive 2012/19/EU Annex VII Components

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

Substance/Component	Apple Part Name	Removal Instructions
Printed circuit board if the surface is greater than 10 square centimeters	Main logic board, power supply logic board, display logic board, light-emitting diode (LED) logic board	Follow steps 1–24
External electric cables	Power cord	Follow step 1
Battery	Coin cell batteries	Follow steps 1–14
Cover glass and liquid crystal display (LCD) cell if the surface is greater than 100 square centimeters	Display, bottom glass panel	Follow steps 1–15
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

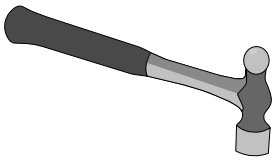

Broken glass hazard


Chemical inhalation hazard

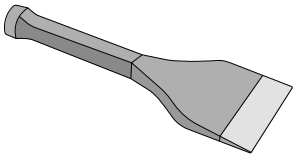

Chemical exposure hazard

Recommended Tools

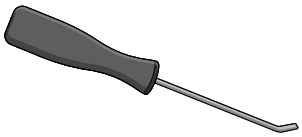
Hammer



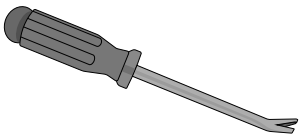
Heavy chisel



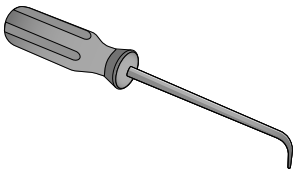
Miniature pry bar



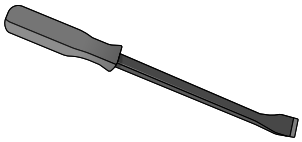
Nail-pulling screwdriver



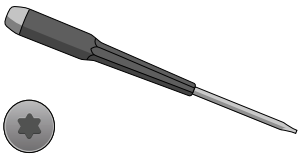
Precision pick



Screwdriver-handle pry bar



Torx T10 screwdriver

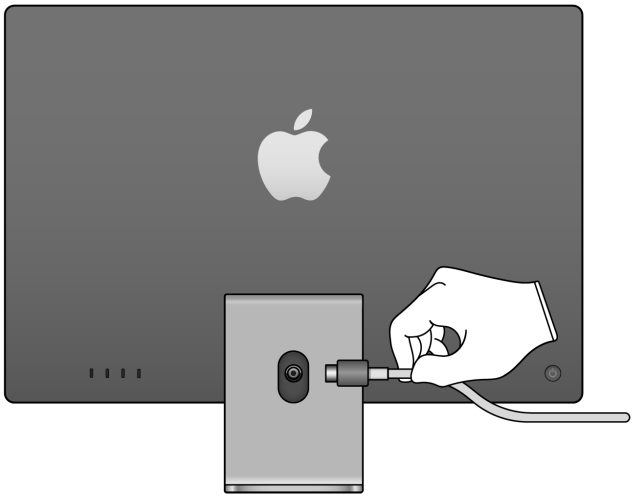


Disassembly Instructions

1. Remove the power adapter and the power cord.

» *Ensure that the iMac is turned off.*

» *Unplug the power adapter. Unplug the power cord from the back of the iMac.*



Fraction

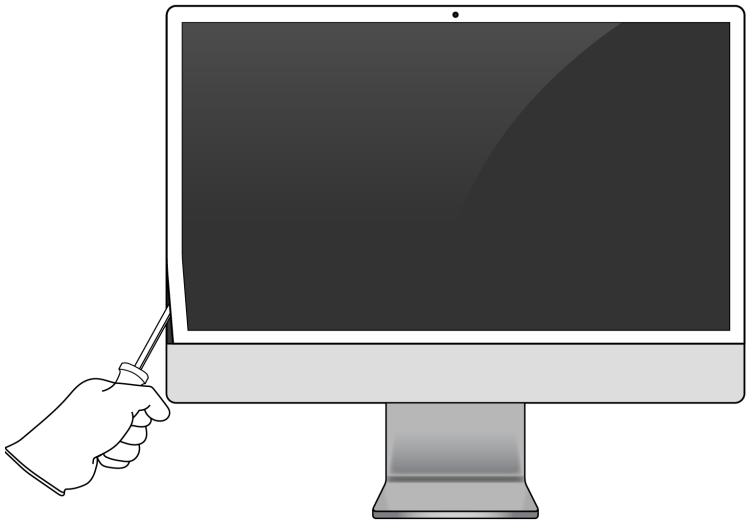
Power adapter and power cord

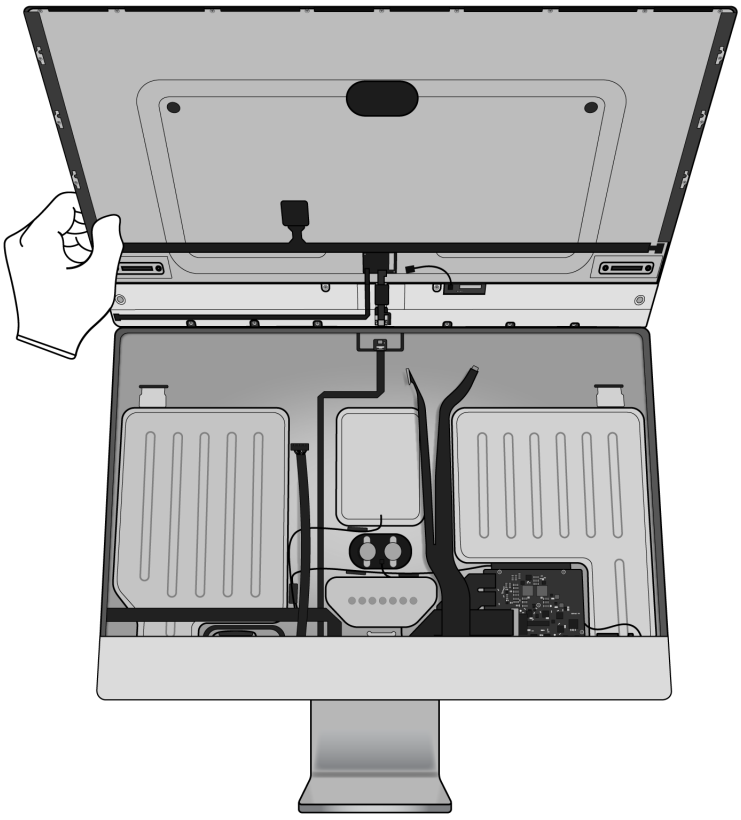
Cu
Copper

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

2. Pry the display away from the housing. Lay the display facedown. Set the housing aside.

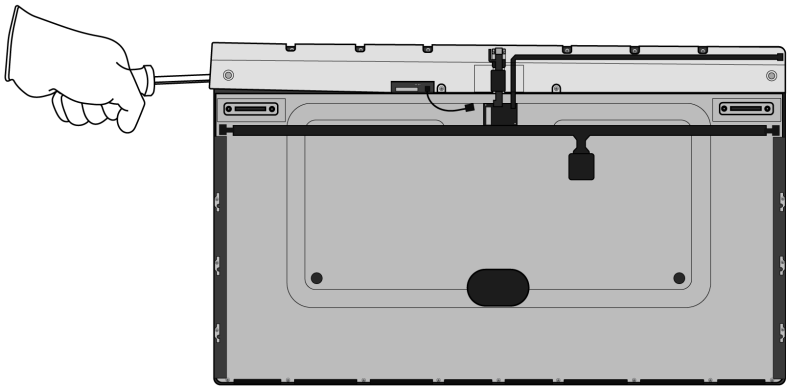
Broken glass hazard



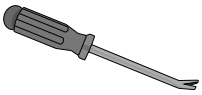


3. Remove the display logic board cover.

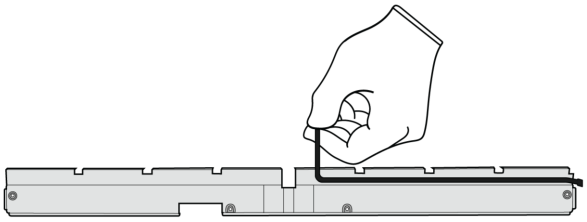
» *Pry the display logic board cover off the display.*



Tools Used



» *Pull the ribbon cable off the display logic board cover.*



Fraction

Ribbon cable

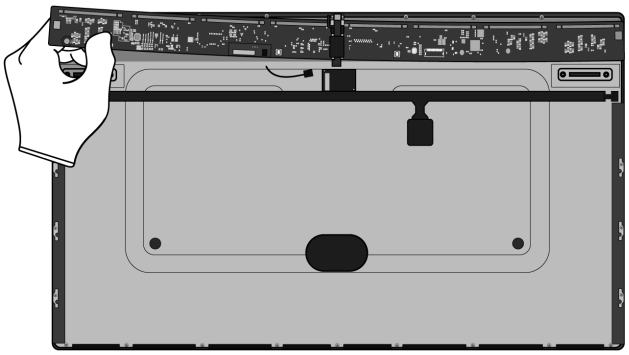
Cu
Copper

Fraction

Display logic board cover

Fe
Ferrous

4. Pull off the display logic board.

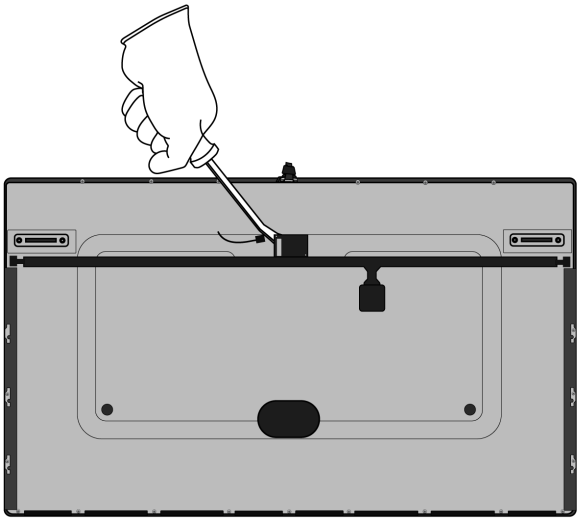


Fraction

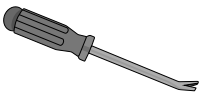
Display logic board

PMs
Precious Metals

5. Pry off the camera logic board.



Tools Used



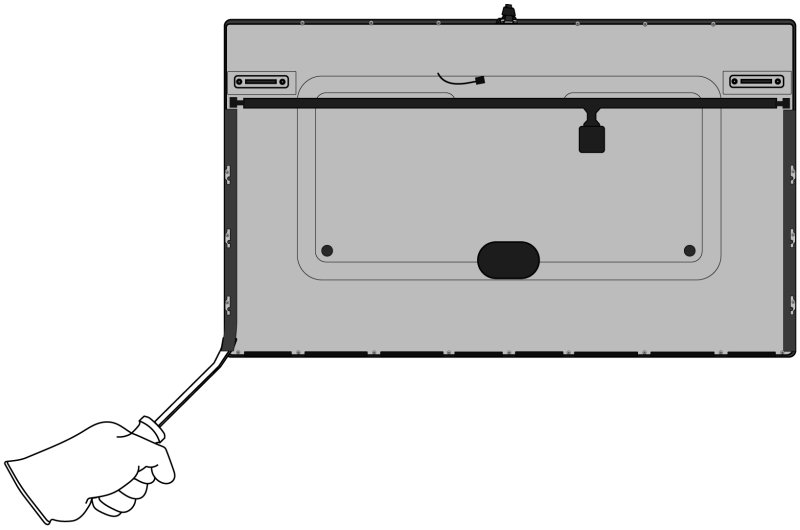
Fraction

Camera logic board

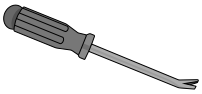
PMs
Precious Metals

6. Remove the ribbon cables.

» *Pry off the left ribbon cable.*



Tools Used

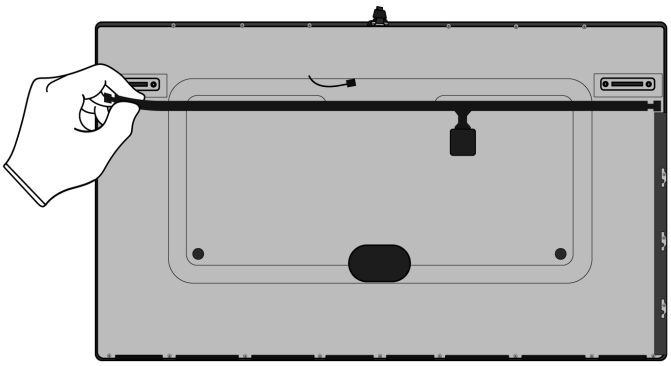


Fraction

Ribbon cable

Cu
Copper

» *Pull off the middle ribbon cable by hand.*

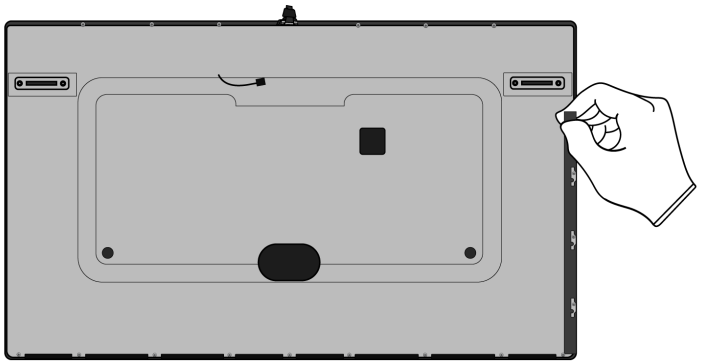


Fraction

Ribbon cable

Cu
Copper

» *Pull off the right ribbon cable by hand.*

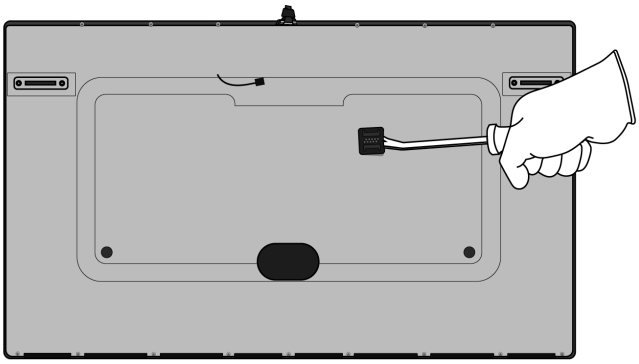


Fraction

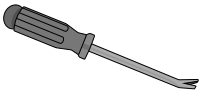
Ribbon cable

Cu
Copper

7. Pry off the backlight logic board.



Tools Used

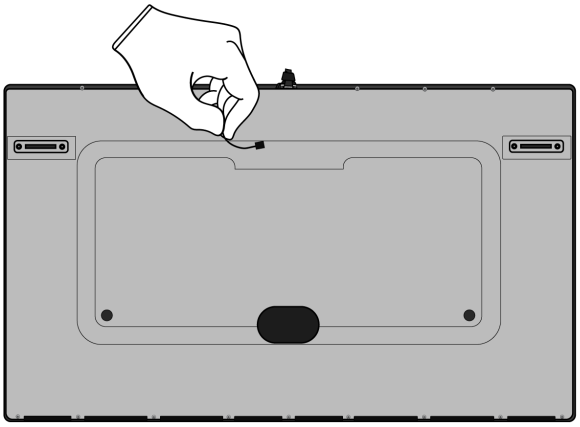


Fraction

Backlight logic board

PMs
Precious Metals

8. Pull off the flex cable.



Fraction

Flex cable

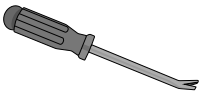
Cu
Copper

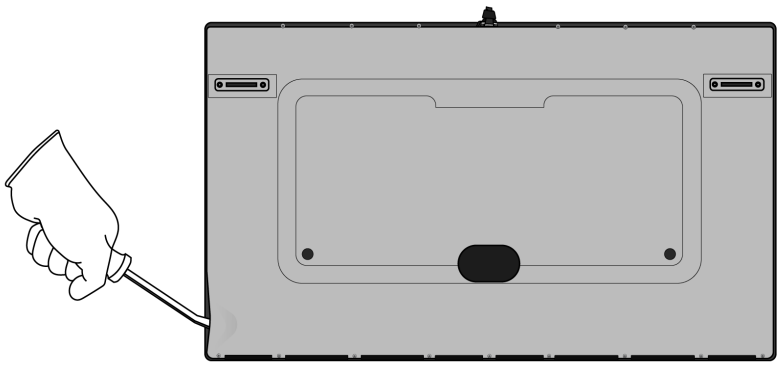
9. Pry the mid plate off the LCD cell.

Broken glass hazard

Chemical exposure hazard

Tools Used



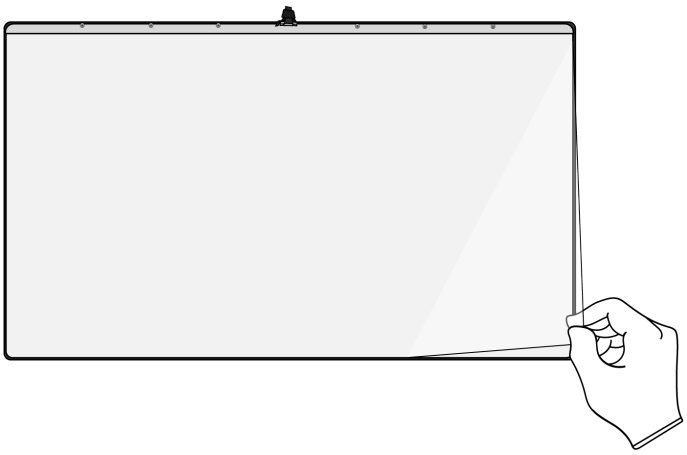


Fraction

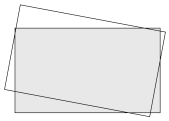
LCD cell

GL
Glass

10. Flip over the mid plate. Remove the display films from the mid plate.



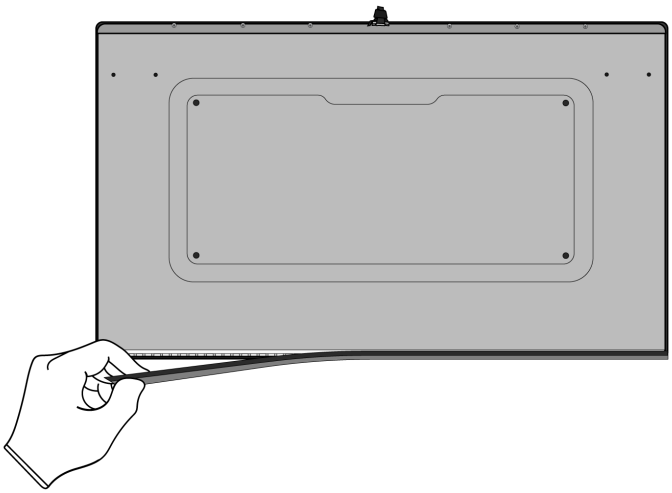
Fraction



Display films

PL
Plastics

11. Pull off the data board assembly.



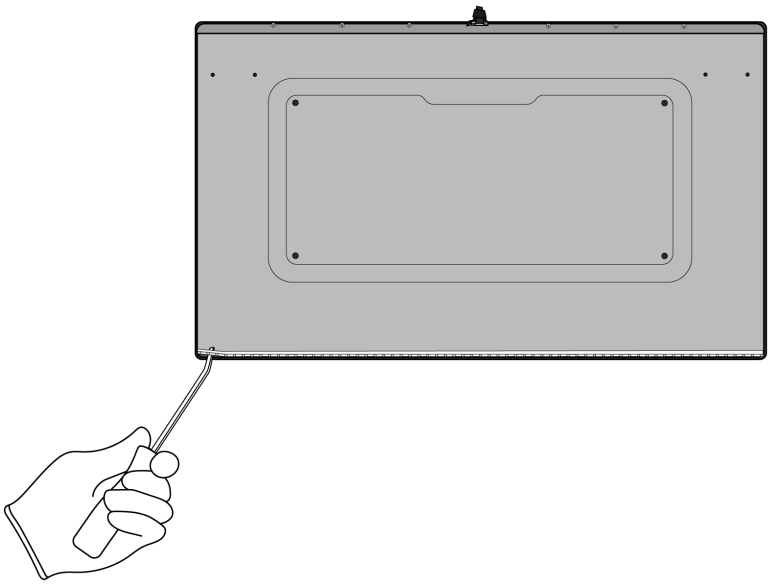
Fraction

Data board assembly

Cu
Copper

12. Pry off the LED logic board.

Chemical inhalation hazard



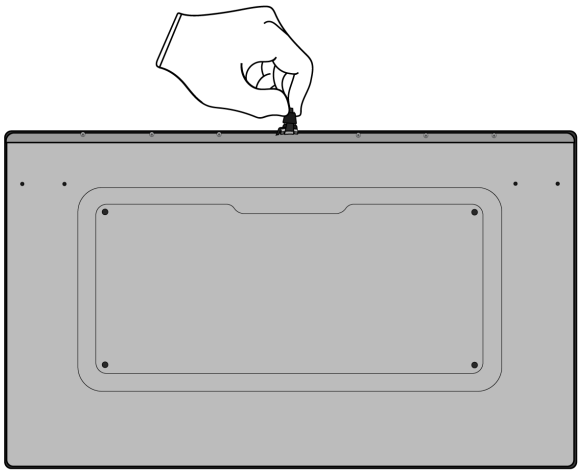
Tools Used

Fraction

LED logic board

PMs
Precious Metals

13. Pull off the camera.

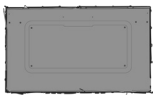


Fraction

Camera

PMs
Precious Metals

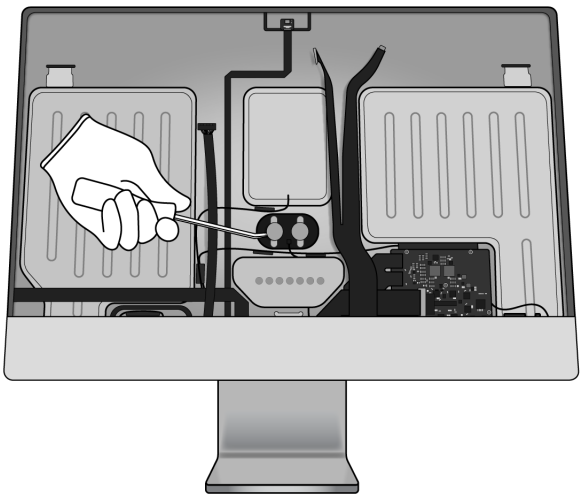
Fraction



Mid plate

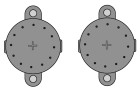
Al
Aluminum

14. Pry the two coin cell battery compartments and the two coin cell batteries off the housing.



Tools Used

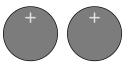
Fraction



Coin cell battery compartments

Fe
Ferrous

Fraction

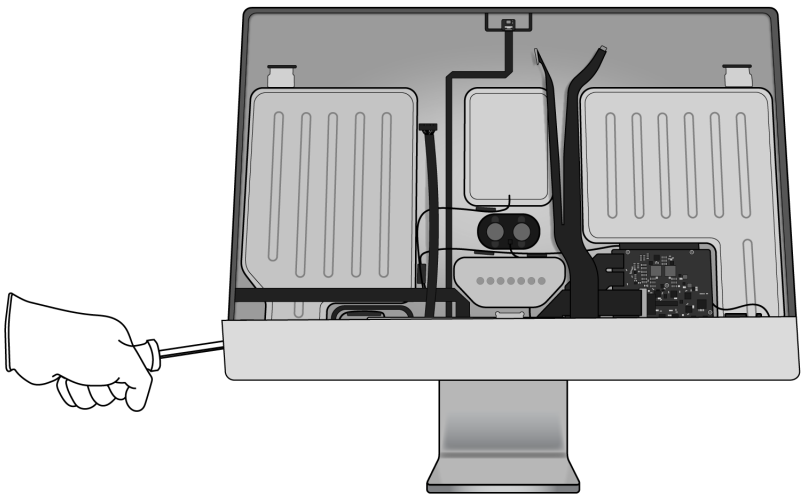


Coin cell batteries

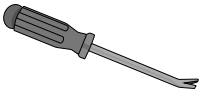
BT
Battery

15. Pry off the bottom glass panel.

Broken glass hazard



Tools Used

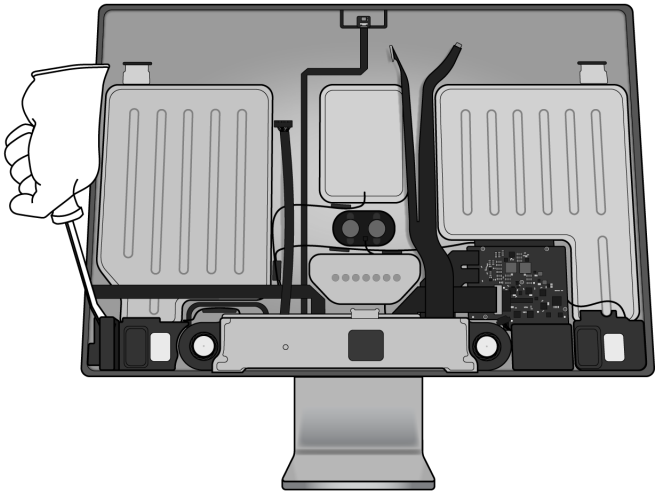


Fraction

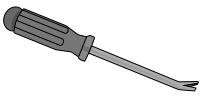
Bottom glass panel

GL
Glass

16. Pry off the left speaker.



Tools Used

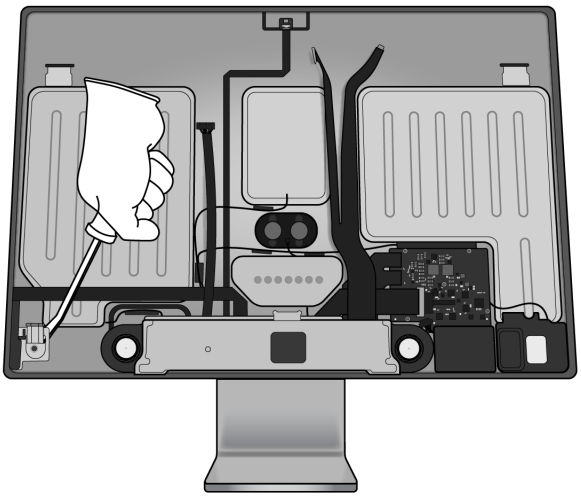


Fraction

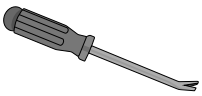
Left speaker

REE
Rare Earth Elements

17. Pry off the headphone jack and power button assembly.



Tools Used

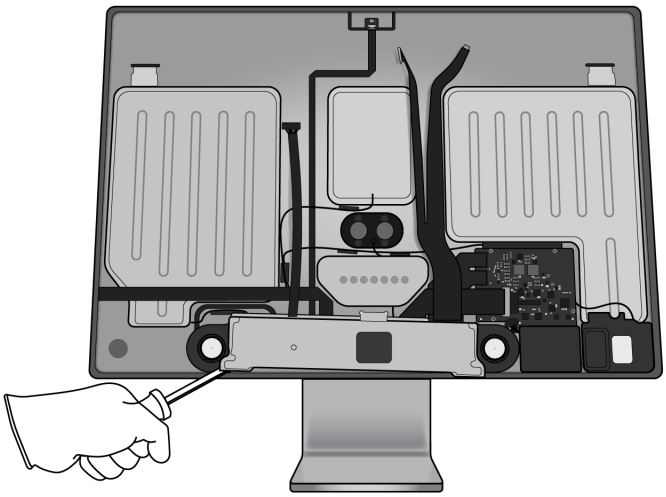


Fraction

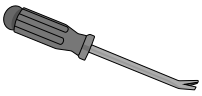
Headphone jack and power button assembly

Cu
Copper

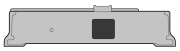
18. Pry off the main logic board cover.



Tools Used



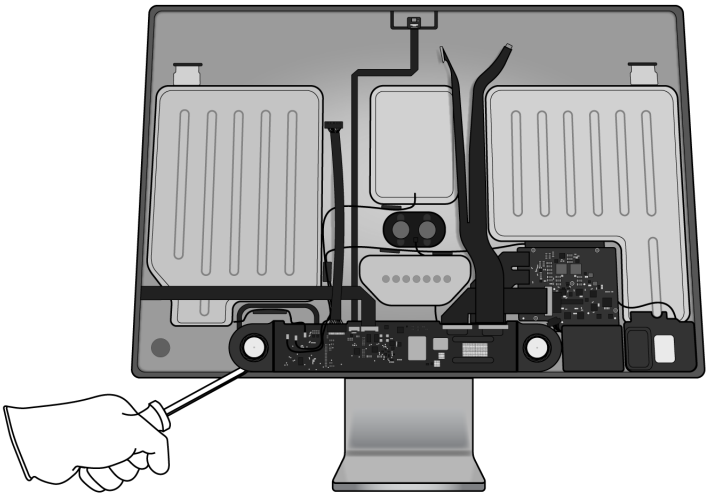
Fraction



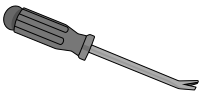
Main logic board cover

Al
Aluminum

19. Pry off the left fan.



Tools Used

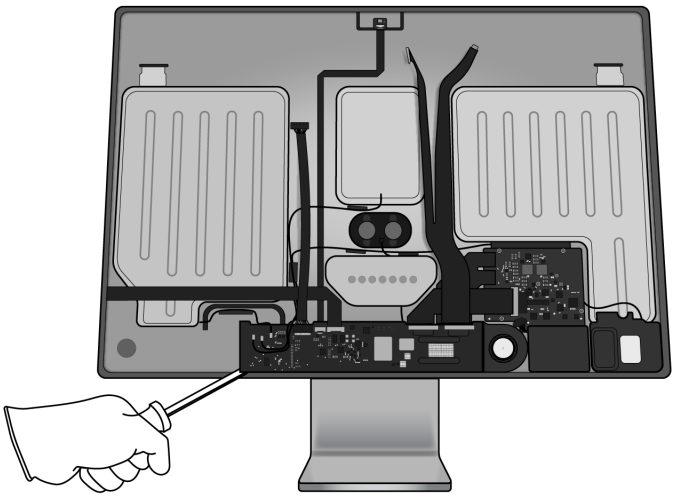


Fraction

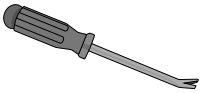
Left fan

Cu
Copper

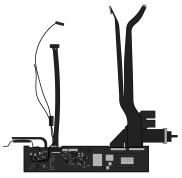
20. Pry off the main logic board and the attached cables.



Tools Used



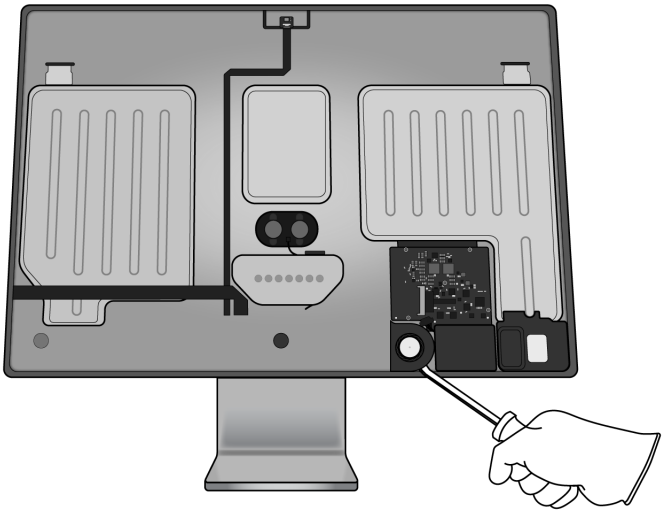
Fraction



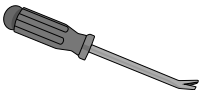
Main logic board with cables

PMs
Precious Metals

21. Pry off the right fan.



Tools Used

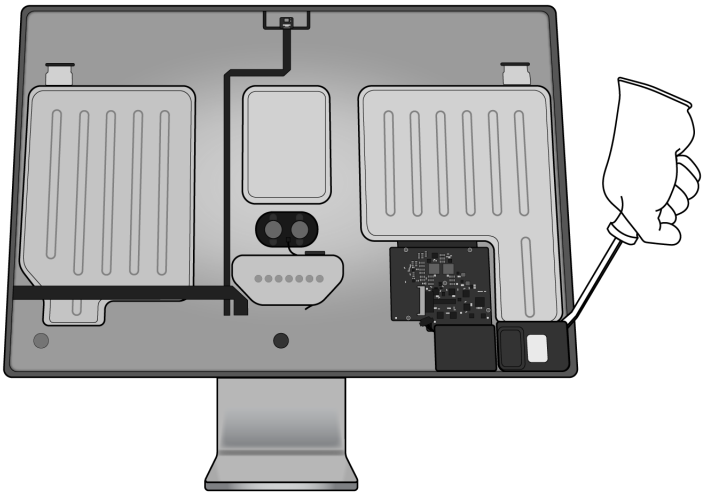


Fraction

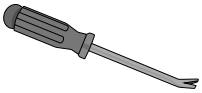
Right fan

Cu
Copper

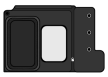
22. Pry off the right speaker.



Tools Used



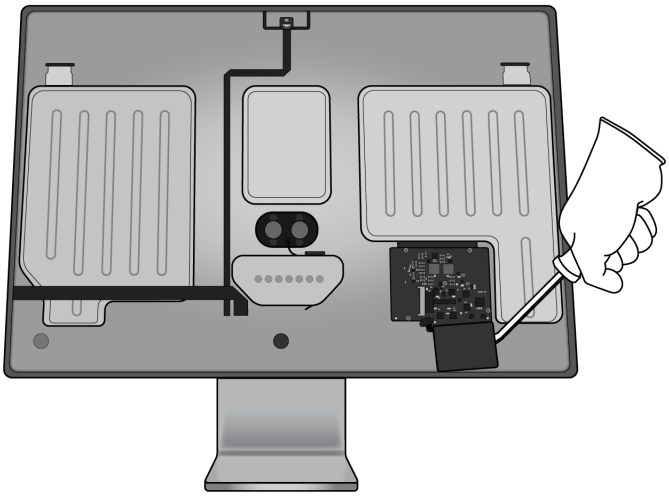
Fraction



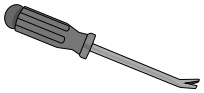
Right speaker

REE
Rare Earth Elements

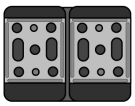
23. Pry off the USB-C ports.



Tools Used



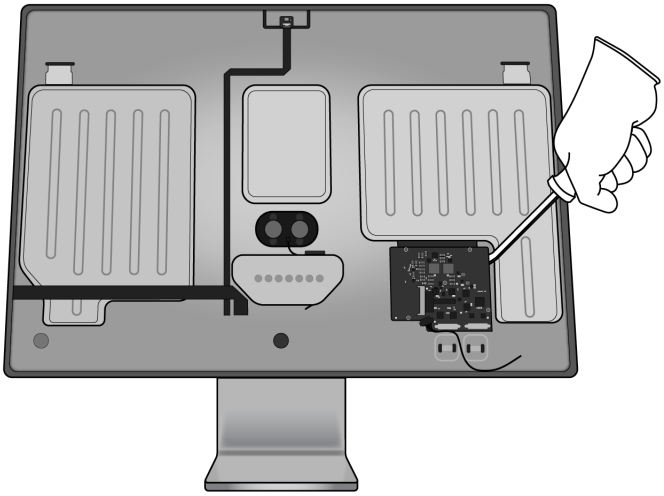
Fraction



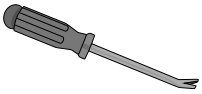
USB-C ports

Cu
Copper

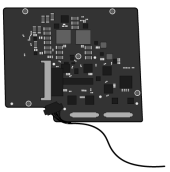
24. Pry off the power supply logic board.



Tools Used



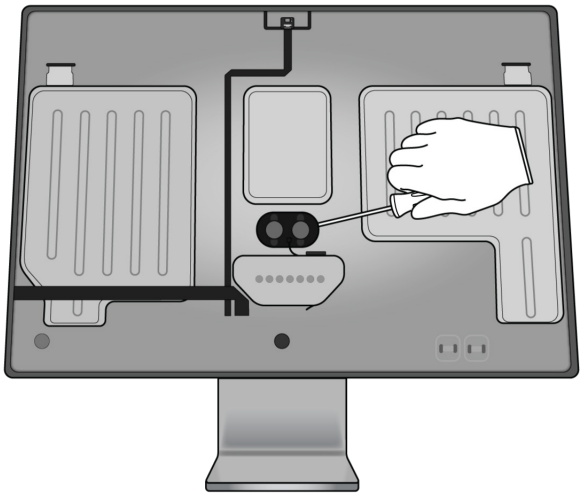
Fraction



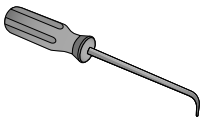
Power supply logic board

PMs
Precious Metals

25. Pry off the battery board.



Tools Used

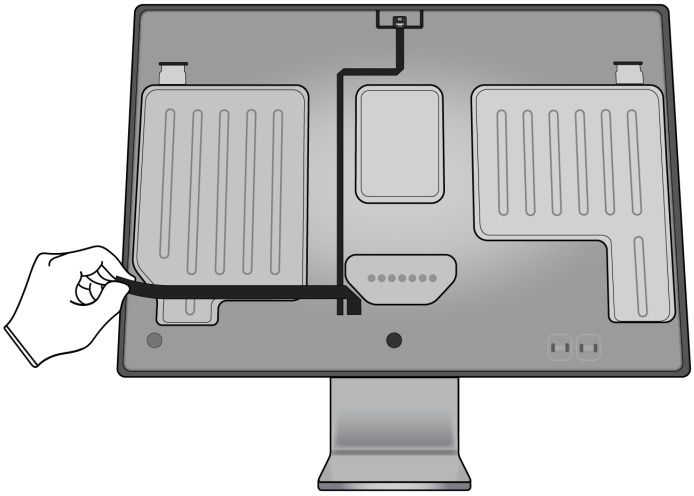


Fraction

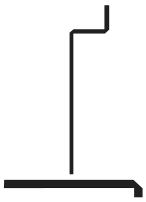
Battery board

PMs
Precious Metals

26. Pull off the remaining ribbon cables.



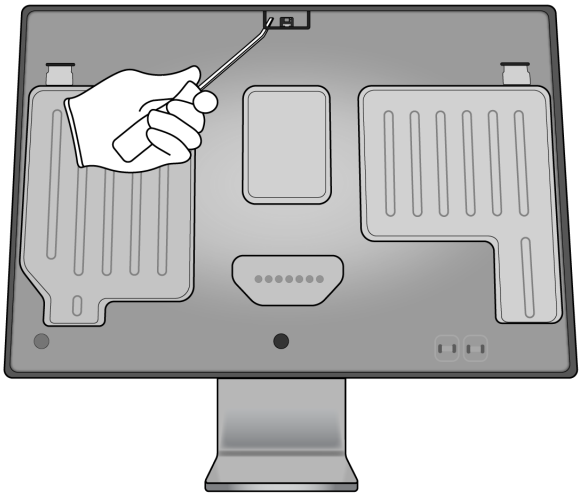
Fraction



Ribbon cables

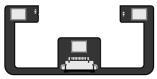
Cu
Copper

27. Pry off the microphone.



Tools Used

Fraction

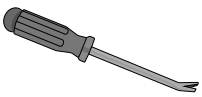


Microphone

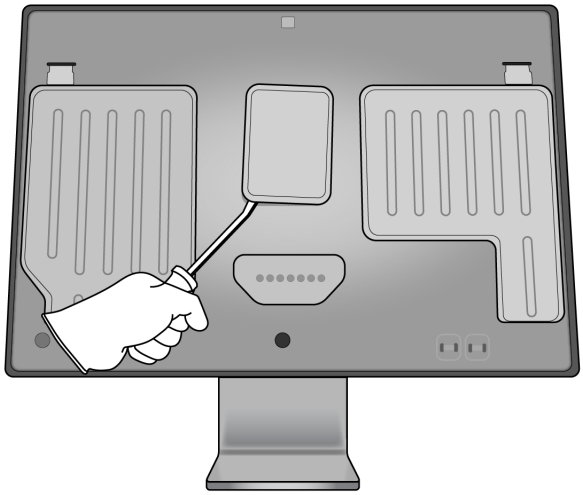
Cu
Copper

28. Remove the antenna cover and the Wi-Fi antenna.

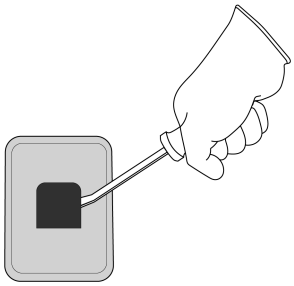
Tools Used



» *Pry off the antenna cover.*



» *Pry the Wi-Fi antenna off the antenna cover.*

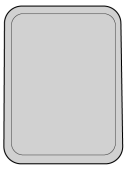


Fraction

Wi-Fi antenna

Cu
Copper

Fraction

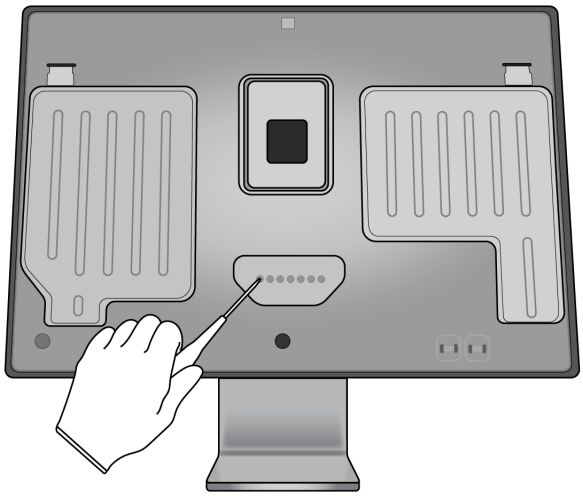


Antenna cover

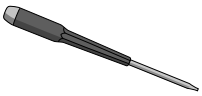
Fe
Ferrous

29. Remove the stand.

» *Unscrew the seven Torx T10 fasteners.*



Tools Used

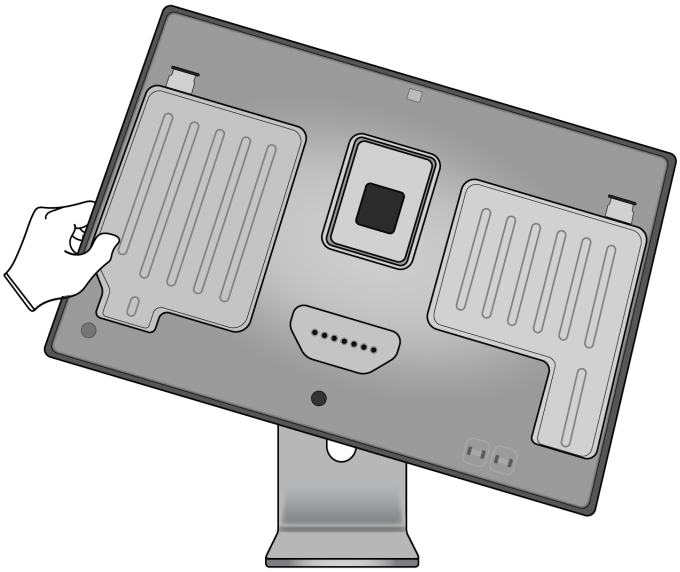


Fraction

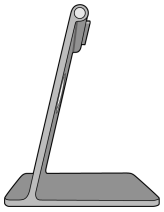
Fasteners (x7)

Fe
Ferrous

» *Pull apart the stand and the housing.*



Fraction

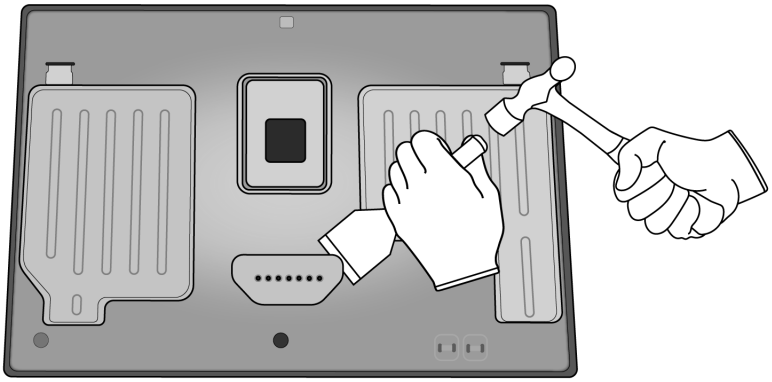


Stand

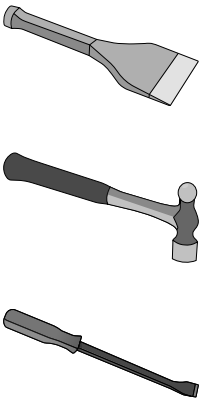
Al
Aluminum

30. Remove the stand bracket.

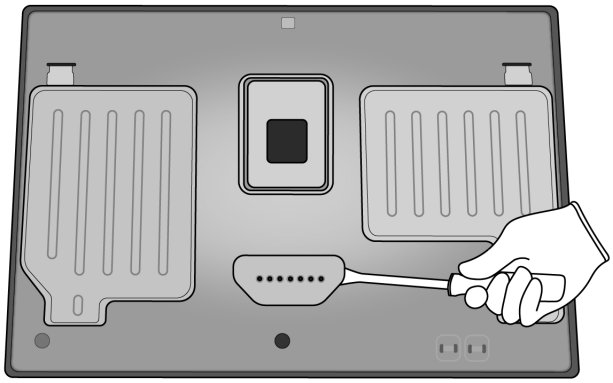
» *Lift the edge of the stand bracket.*



Tools Used



» *Pry off the stand bracket.*



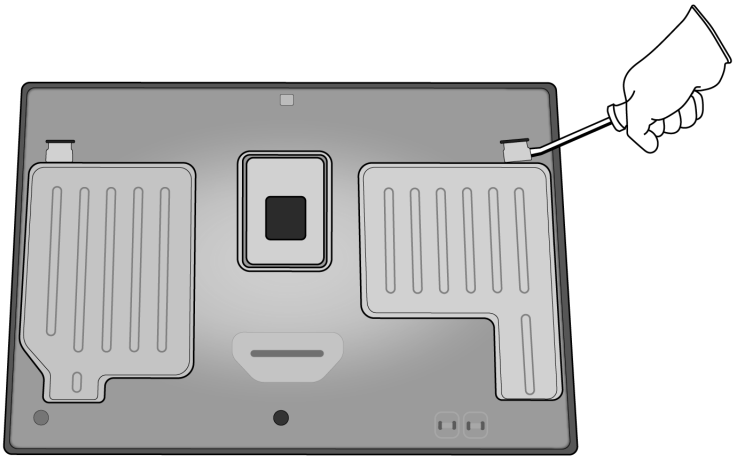
Fraction

Stand bracket

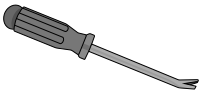
Fe

Ferrous

31. Pry off the remaining housing brackets.



Tools Used

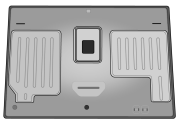


Fraction

Housing brackets

Fe
Ferrous

Fraction

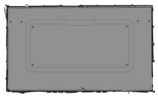
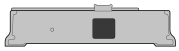
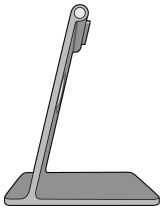
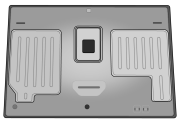
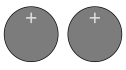


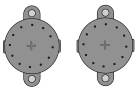
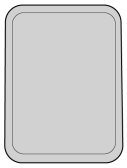
Housing

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	**Primary Target Material**
 *Mid plate*	Al Aluminum
 *Main logic board cover*	**Potential Additional Materials**
 *Stand*	PL Plastics
 *Housing*	
Batteries	**Primary Target Material**
 *Coin cell batteries*	BT Battery

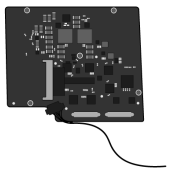
Fraction	Downstream Processing
Ferrous	**Primary Target Material**
 *Display logic board cover*	
 *Coin cell battery compartments*	
 *Antenna cover*	
 *Fasteners (x7)*	
 *Stand bracket*	
 *Housing brackets*	

Fraction	Downstream Processing
Glass	**Primary Target Material**
 *LCD cell*	GL Glass
 *Bottom glass panel*	**Potential Additional Materials** ITO Indium Tin Oxide; PL Plastics
Logic Boards	**Primary Target Material**
Display logic board	PMs Precious Metals
 *Camera logic board*	**Potential Additional Materials** Al Aluminum; Cu Copper; Fe Ferrous
 *Backlight logic board*	PL Plastics
LED logic board	
 *Camera*	

Fraction	Downstream Processing

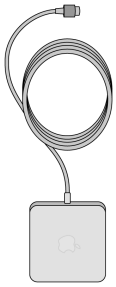
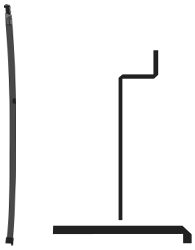
Logic Boards (cont.)

Main logic board with cables



Power supply logic board

Battery board

Fraction	Downstream Processing
Mixed Electronics	**Primary Target Material**
 *Power adapter and power cord*	Cu Copper
  *Ribbon cables*	**Potential Additional Materials** Fe Ferrous; PL Plastics; PMs Precious Metals
 *Flex cable*	
Data board assembly	

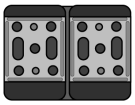
Fraction	Downstream Processing

Mixed Electronics (cont.)

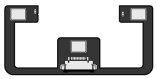
Headphone jack and power button assembly

Left fan

Right fan

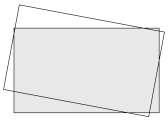
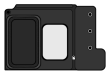


USB-C ports



Microphone

Wi-Fi antenna

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