



iPad Pro 11-inch (4th generation) Wi-Fi

iPad Pro 11-inch (4th generation) Cellular mmW

iPad Pro 11-inch (4th generation) Cellular 5G

iPad Pro 12.9-inch (6th generation) Wi-Fi

iPad Pro 12.9-inch (6th generation) Cellular mmW

iPad Pro 12.9-inch (6th generation) Cellular 5G

Apple Recycler Guide

May 2023

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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.

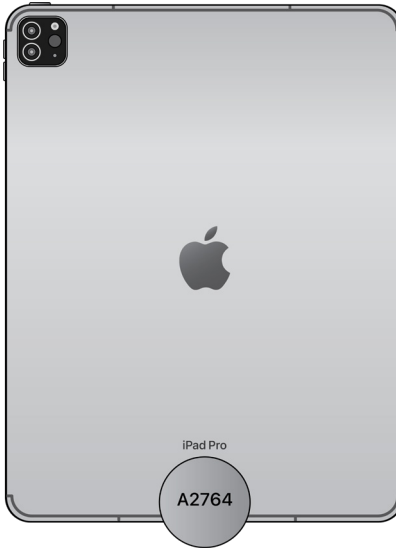
Disassembly procedures are intended to be performed only by trained electronics recycling professionals. The recycler is responsible for independently evaluating and ensuring compliance with all applicable environmental, health, and safety laws related to the work. These include but are not limited to 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.

Note: This guide may show images from other similar models, but the procedures are the same.

Identification

You can find the model number on the back of the iPad Pro.



Model numbers:

(iPad Pro 11-inch, 4th generation) A2435, A2759, A2761, A2762

(iPad Pro 12.9-inch, 6th generation) A2436, A2437, A2764, A2766

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	Display logic board, main logic board	Follow steps 1–14
External electric cables	Power adapter, charge cable	Follow step 1
Battery	Lithium-ion polymer batteries	Follow steps 1–6
Cover glass and organic light-emitting diode (OLED) display if the surface is greater than 100 square centimeters	OLED display	Follow steps 1–5
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 eye protection



Wear foot protection



Wear hand protection



Wear a mask



Wear protective clothing

Battery Safety

This product uses a lithium-ion polymer battery. Before beginning any disassembly work, ensure that a safe working procedure for handling lithium-ion batteries has been established, which could include discharging the batteries so that they can be more safely managed. The following considerations may also be included:

- Remove anything from your person that could conduct energy, such as jewelry and watches, to avoid electric shock to yourself or the logic board.
- To avoid the potential for thermal runaway and the release of potentially noxious fumes, don't puncture, strike, or crush lithium-ion polymer batteries or devices powered by them.
- Don't throw, drop, or bend the battery.
- Don't expose the battery to excessive heat or sunlight.
- Don't use tools that are sharp or conduct electricity.
- Keep your workspace clear of foreign objects and sharp materials.
- Dispose of batteries according to local environmental laws and guidelines.

Workspace safety guidelines

- Use heat-resistant gloves and safety glasses.
- Keep a sand dispenser within arm's reach (2 feet or 0.6 m) on one side of the workstation, not above the workstation. The dispenser should be a wide-mouthed, quick-pour metal container with a flip-top lid or tray that contains 8–10 cups (1.9–2.4 L) of clean, dry, untreated sand.
- Keep the battery at least 2 feet (0.6 m) from paper and other combustible materials.
- Work in an area with adequate ventilation.

Handling a thermal runaway

If you notice any of the following signs, a thermal runaway is likely underway, and you should act immediately:

- The lithium-ion polymer battery or a device containing one begins to smoke or emit sparks or soot.
- The battery pouch suddenly and quickly puffs out.
- You hear hissing or popping sounds.

Don't use water or an ABC/CO₂ fire extinguisher on a thermal runaway battery or a device containing one. Water and ABC/CO₂ fire extinguishers will not stop the reaction.

Do smother the battery or device immediately with plenty of clean, dry sand, dumped all at once. Timing is critical; the faster you pour all the sand, the faster the thermal runaway will stop.

Do leave the room for 30 minutes if the thermal runaway causes any irritation.

Do wait 30 minutes before touching the battery. Wear heat-resistant gloves and safety glasses to remove the battery from the sand, or use a touchless thermometer to measure the battery temperature. Only touch the battery when the event has finished.

Do dispose of the damaged battery or device (including any debris removed from the sand) according to local environmental laws and guidelines.

Hazard Warnings



Broken glass hazard



Chemical inhalation hazard



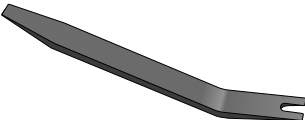
Chemical exposure hazard



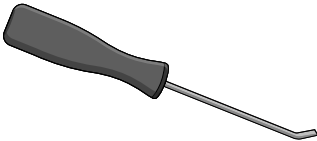
Rechargeable battery hazard

Recommended Tools

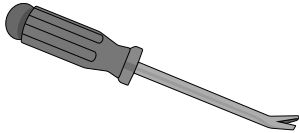
Miniature plastic pry bar



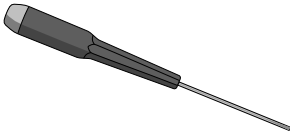
Miniature pry bar



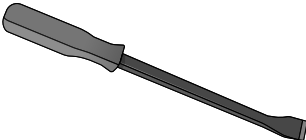
Nail-pulling screwdriver



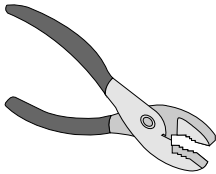
Precision slotted screwdriver



Screwdriver-handle pry bar



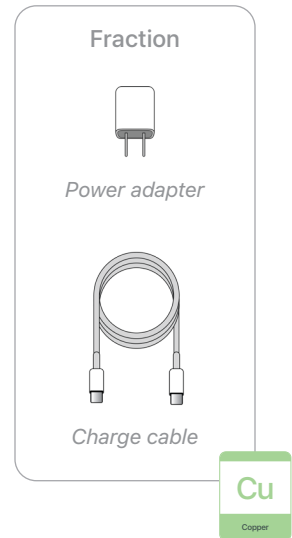
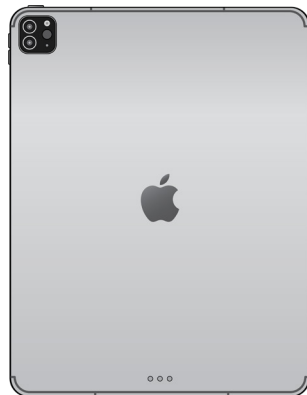
Slip-joint pliers



Disassembly Instructions

1. Remove the charge cable.

- » *Ensure that the iPad is turned off.*
- » *Unplug the power adapter. Disconnect both ends of the charge cable.*



2. Remove the display.



Broken glass hazard



Chemical exposure hazard

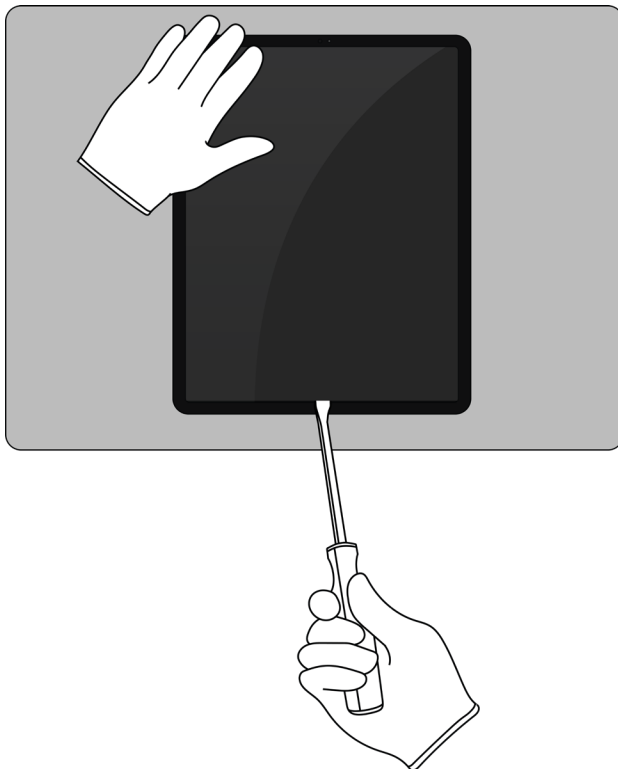


Chemical inhalation hazard

Tools Used



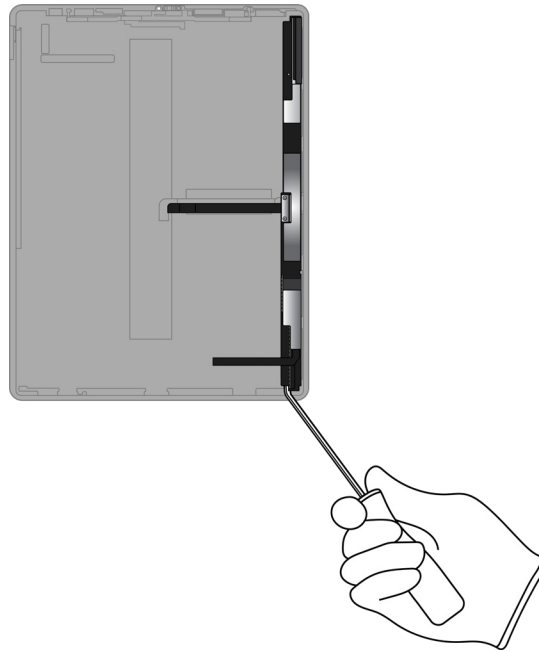
- » *Hold the iPad at the edge of a counter with the display facing up.*
- » *Insert the tool tip into the bottom of the display. Push the handle down to pry the display from the enclosure.*



- » *Remove the display by hand. Set the enclosure aside.*

3. Remove the display logic board.

- » *Lay the display facedown.*
- » *Pry off the display logic board.*



Tools Used



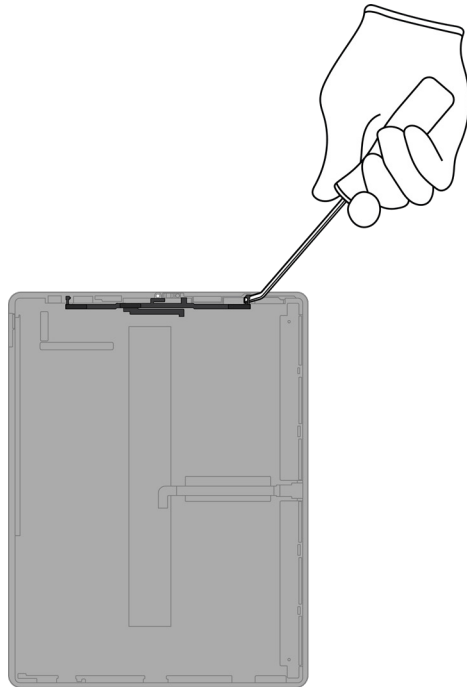
Fraction



Display logic board



4. Pry off the light sensors.



Tools Used



Fraction

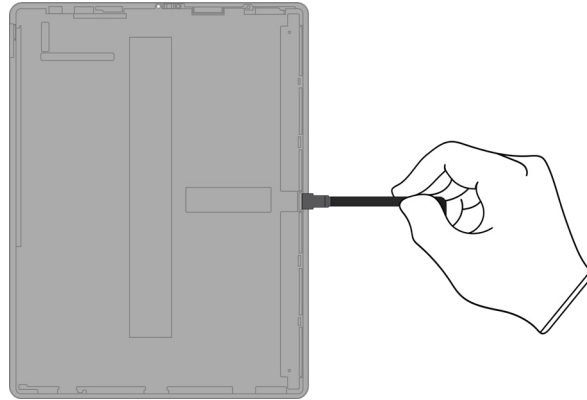


Light sensors


Cu

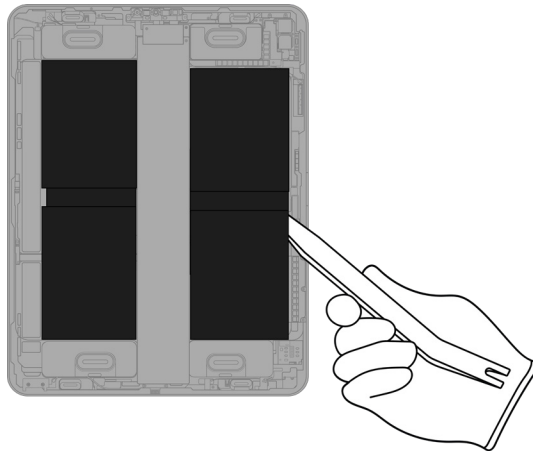
Copper

5. Pull off the ribbon cable.



6. From the enclosure, carefully remove the four lithium-ion polymer batteries.


 Rechargeable battery hazard



Tools Used



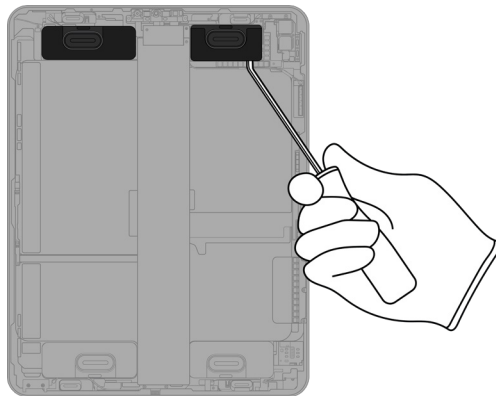
Fraction



Lithium-ion polymer batteries (x4)

BT
Battery


7. Pry off the two upper speakers.



Tools Used



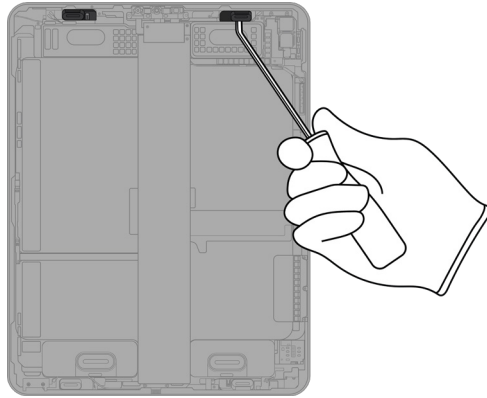
Fraction



Upper speakers (x2)

REE
Rare Earth Elements

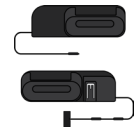
8. Pry off the two upper tweeters.



Tools Used



Fraction

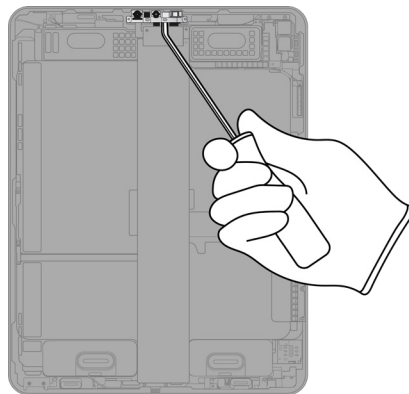


Upper tweeters (x2)

REE

Rare Earth
Elements

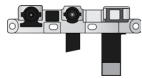
9. Pry off the front camera.



Tools Used



Fraction

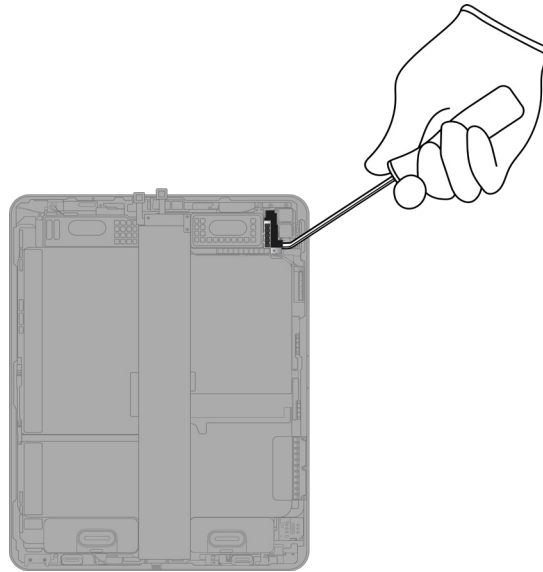


Front camera

PMs

Precious
Metals

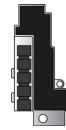
10. Pry off the LiDAR Scanner cover.



Tools Used



Fraction

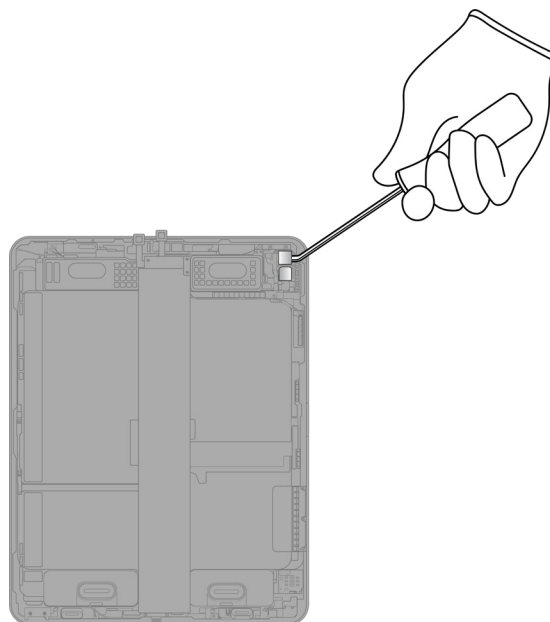


LiDAR Scanner cover

Fe

Ferrous

11. Pry off the two rear camera covers.



Tools Used



Fraction

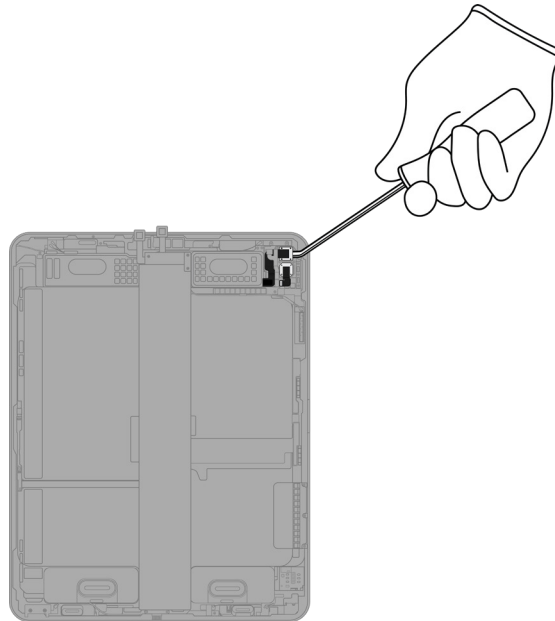


Rear camera covers

Fe

Ferrous

12. Pry off the two rear cameras.



Tools Used



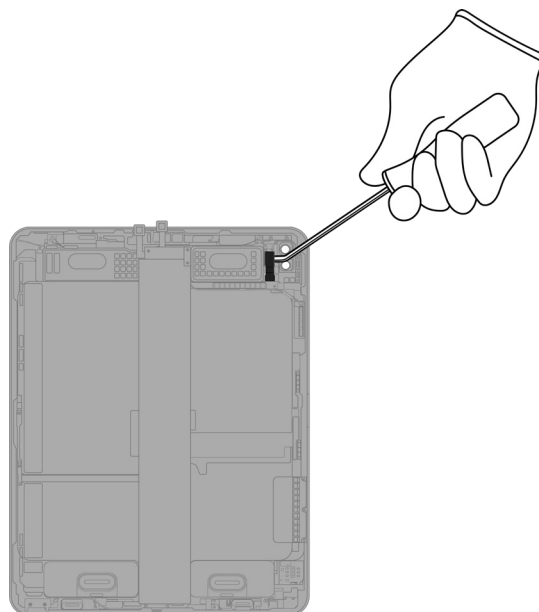
Fraction



Rear cameras



13. Pry off the LiDAR Scanner.



Tools Used



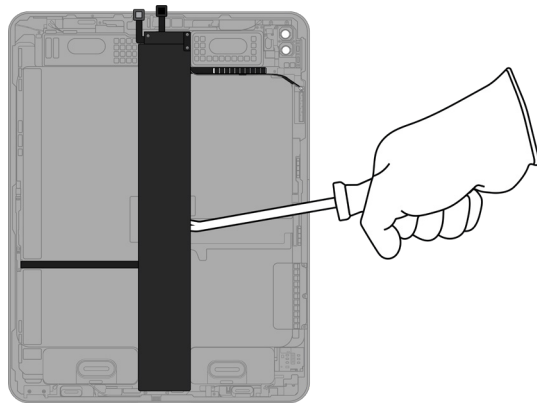
Fraction



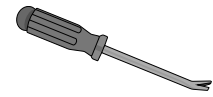
LiDAR Scanner



14. Pry off the main logic board.



Tools Used



Fraction



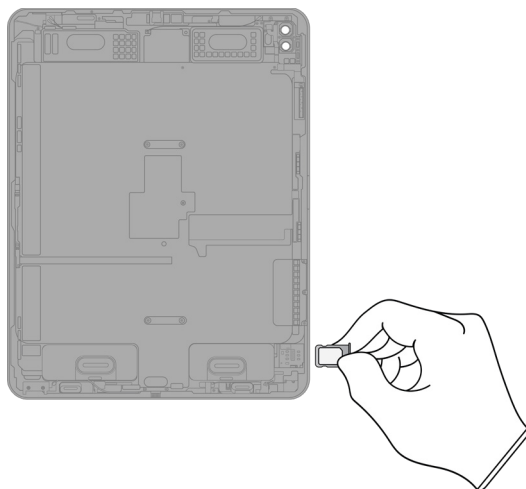
Main logic board

PMs

Precious Metals

15. (Model numbers A2737, A2762, A2766 only) Remove the SIM card, SIM tray, and SIM reader.

» Remove the SIM tray by hand.



Tools Used



Fraction

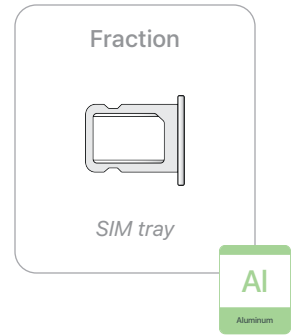
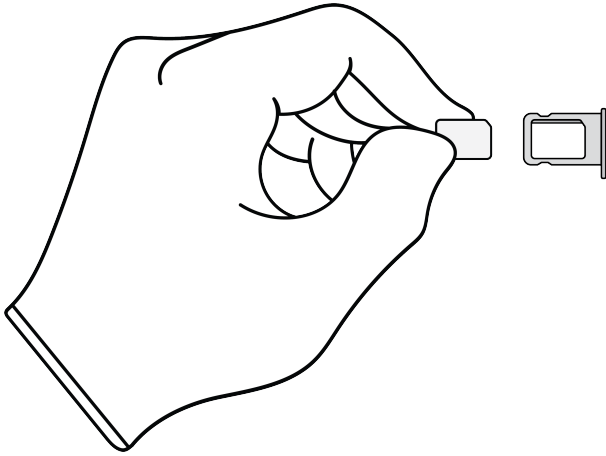


SIM card

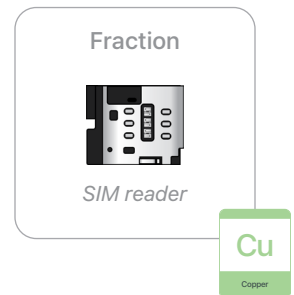
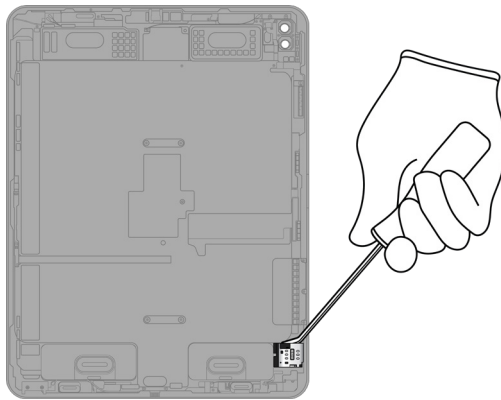
PMs

Precious Metals

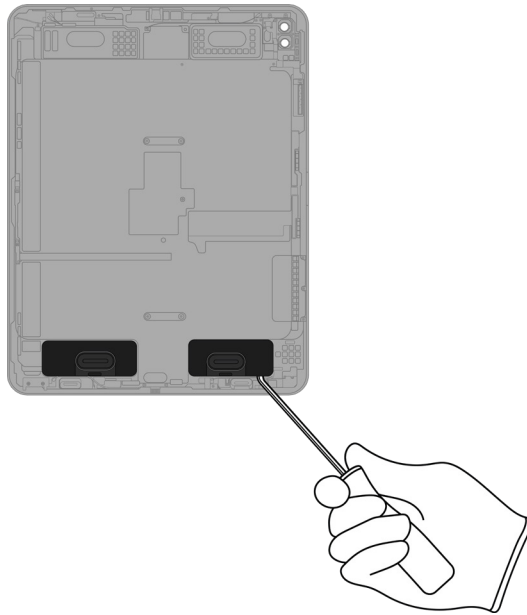
» Separate the SIM card from the SIM tray by hand.



» Pry off the SIM reader.



16. Pry off the two lower speakers.



Tools Used



Fraction

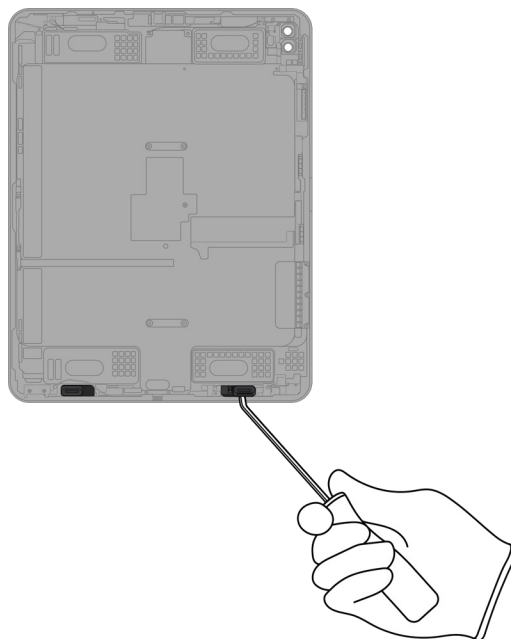


Lower speakers

REE

Rare Earth Elements

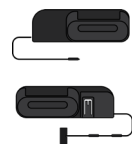
17. Pry off the two lower tweeters.



Tools Used



Fraction

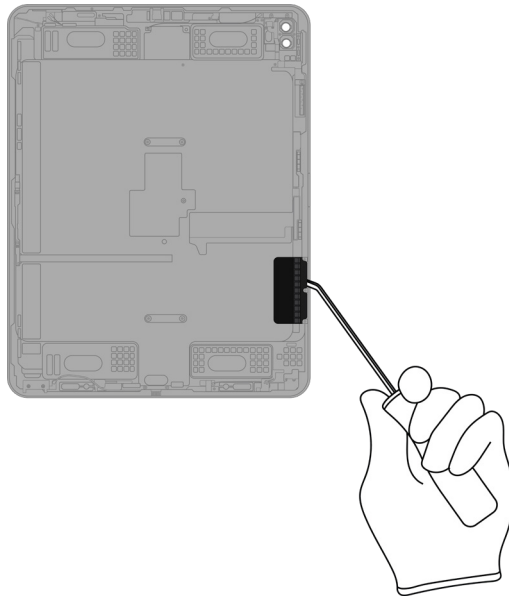


Lower tweeters

REE

Rare Earth Elements

18. Pry off the ribbon cable.



Tools Used



Fraction

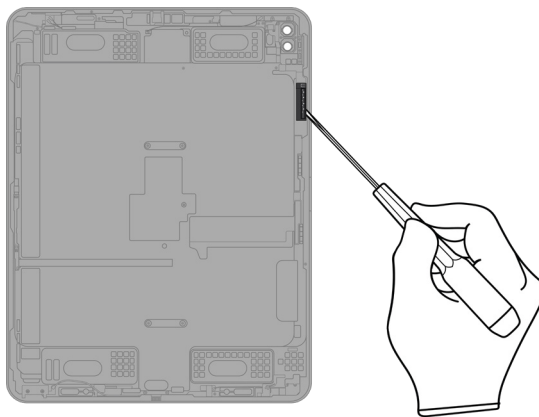


Ribbon cable

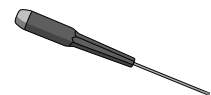
Cu

Copper

19. Pry off the Bluetooth antenna.



Tools Used



Fraction

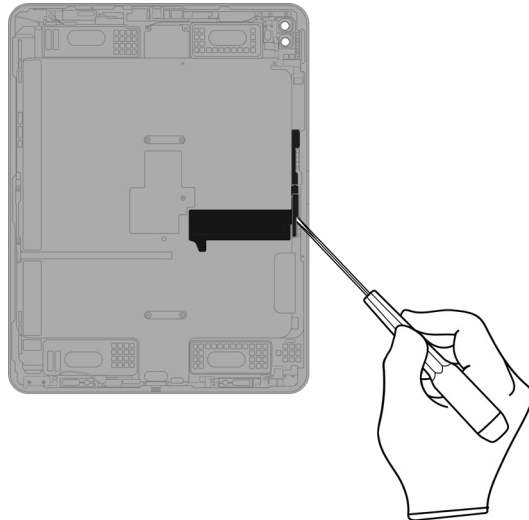


Bluetooth antenna

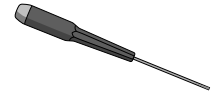
Cu

Copper

20. Pry off the Apple Pencil magnetic connector.



Tools Used



Fraction

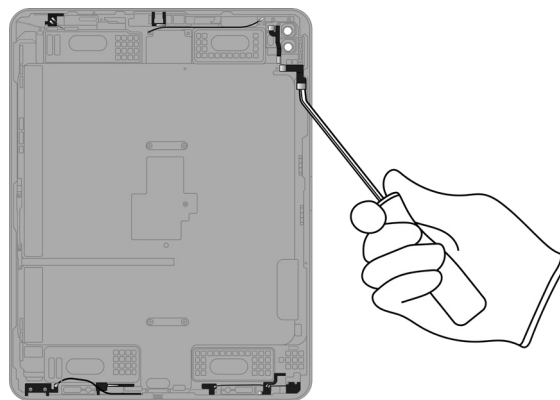


Apple Pencil magnetic connector

Cu

Copper

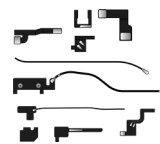
21. Pry off the remaining ribbon cables and wires.



Tools Used



Fraction

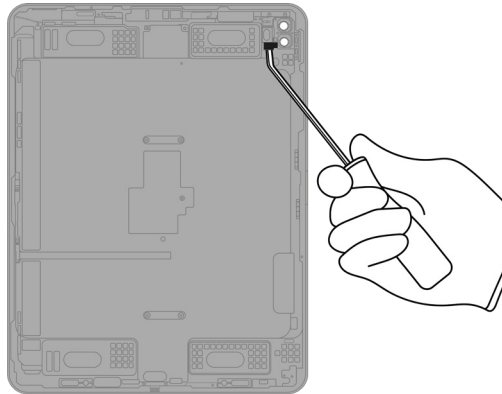


Ribbon cables and wires

Cu

Copper

22. Pry off the microphone.



Tools Used



Fraction

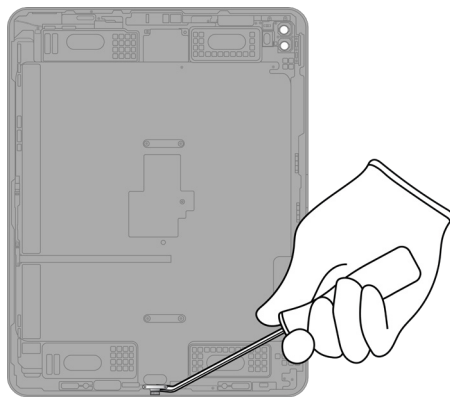


Microphone

Cu

Copper

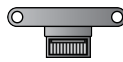
23. Pry off the USB-C port.



Tools Used



Fraction

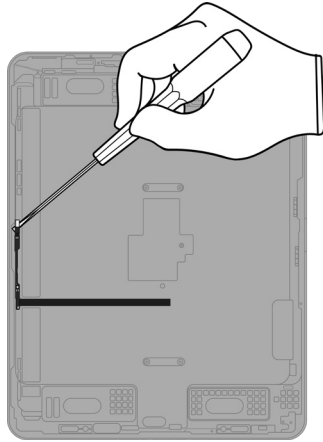


USB-C port

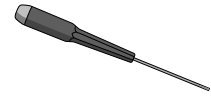
Cu

Copper

24. Pry off the microphone array.



Tools Used



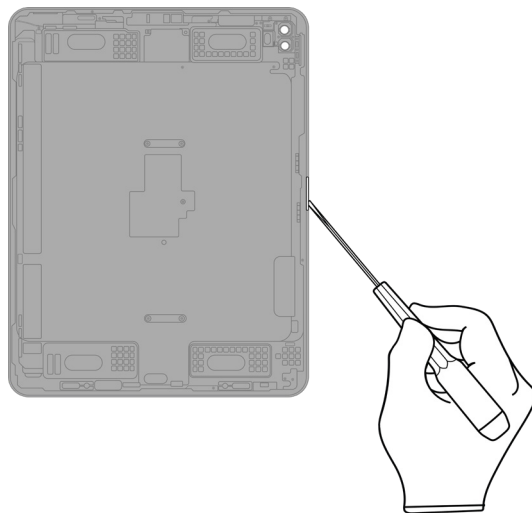
Fraction



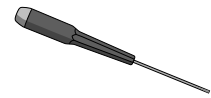
Microphone array

Cu
Copper

25. Pry off the Apple Pencil charging coil cover.



Tools Used



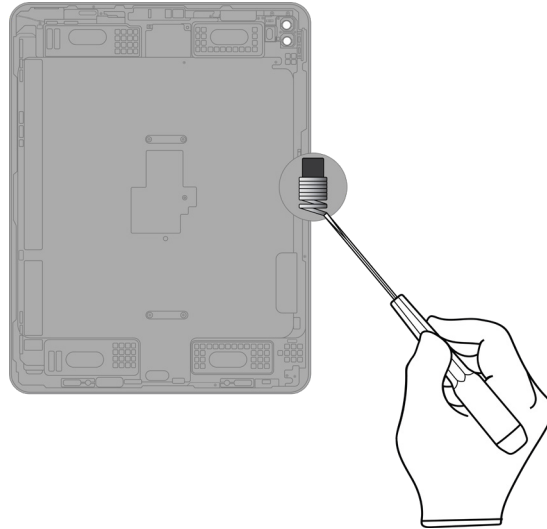
Fraction



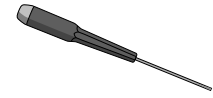
Apple Pencil charging coil cover

PL
Plastics

26. Pry off the Apple Pencil charging coil.



Tools Used



Fraction



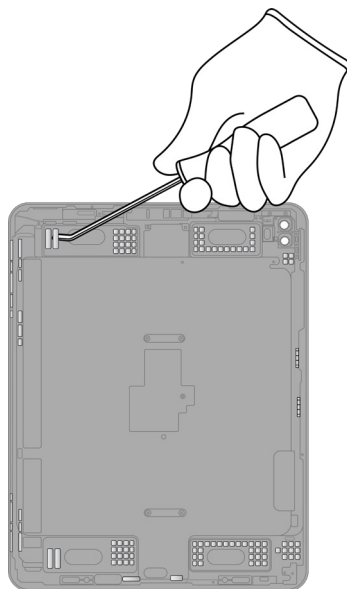
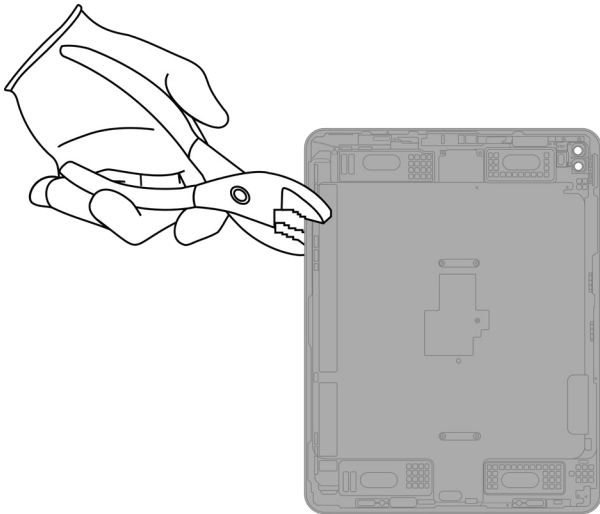
Apple Pencil charging coil

Cu

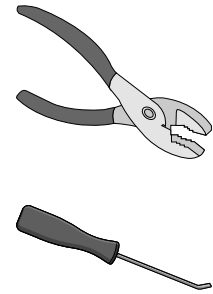
Copper

27. Remove the magnets.

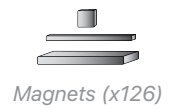
- » Bend both sides of the enclosure.
- » Pry the 126 magnets off the sides of the enclosure.



Tools Used



Fraction



Magnets (x126)

REE
Rare Earth
Elements

Fraction

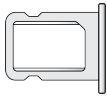








Enclosure

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
<p data-bbox="435 554 568 579">Aluminum</p>  <p data-bbox="461 758 540 783"><i>SIM tray</i></p>  <p data-bbox="451 968 550 993"><i>Enclosure</i></p>	<p data-bbox="966 554 1276 579">Primary Target Material</p>  <p data-bbox="927 779 1315 804">Potential Additional Materials</p>  

<p data-bbox="440 1094 561 1119">Batteries</p>  <p data-bbox="404 1276 597 1329"><i>Lithium-ion polymer batteries (x4)</i></p>	<p data-bbox="966 1094 1276 1119">Primary Target Material</p> 
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Fraction

Downstream Processing

Ferrous



LiDAR Scanner cover



Rear camera covers

Primary Target Material



Potential Additional Materials



Glass



OLED display

Primary Target Material



Potential Additional Materials



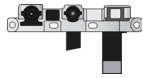
Fraction

Downstream Processing

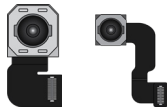
Logic Boards



Display logic board



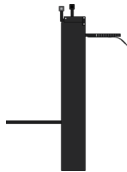
Front camera



Rear cameras



LiDAR Scanner



Main logic board



SIM card

Primary Target Material



Potential Additional Materials



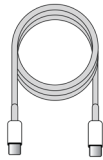
Fraction

Downstream Processing

Mixed Electronics



Power adapter



Charge cable



Light sensors



SIM reader



Bluetooth antenna



Apple Pencil magnetic connector

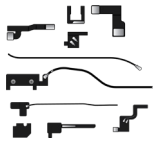
Primary Target Material



Potential Additional Materials



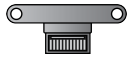
Mixed Electronics (cont.)



Ribbon cables and wires



Microphone



USB-C port



Microphone array

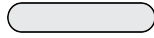


Apple Pencil charging coil

Fraction

Downstream Processing

Mixed Plastics



Apple Pencil charging coil cover

Primary Target Material



Rare Earth Magnets



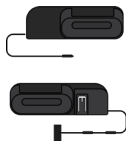
Upper speakers



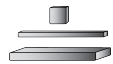
Upper tweeters



Lower speakers



Lower tweeters



Magnets (x126)

Primary Target Material



Potential Additional Materials

