



# **Pro Display XDR**

## **Recycler Guide**

March 2021

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# About This Guide

Apple Recycler Guides provide guidance for electronics recyclers on how to safely disassemble products to maximise 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](mailto:contactesci@apple.com).

# Identification



*Model number:*  
*A1999*

# Components Requiring Selective Treatment

The following substances and components should be removed for selective treatment in accordance with Annex VII of Directive 2012/19/EU.

Substance/Component	Location	Removal Instructions
Printed circuit board if the surface is greater than 10 square centimetres	Main logic boards, display logic boards, LED array logic boards	Follow steps 1-7
Cover glass and LCD cell if the surface is greater than 100 square centimetres	Cover glass and LCD cell	Follow steps 1-3
External electric cables	Thunderbolt 3 Pro cable, AC 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.

## Hazard Warning



Broken glass hazard



Danger of harming your hands



Chemical inhalation hazard



Sharp element

## Personal Protective Equipment

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



Wear hand protection



Wear a mask



Wear eye protection



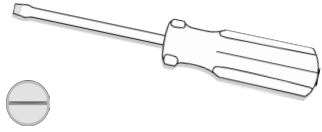
Wear foot protection



Wear protective clothing

## Recommended Tools

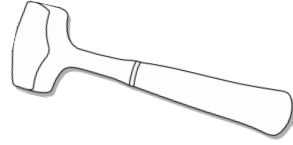
Flat-blade screwdriver



Flat surface scraper



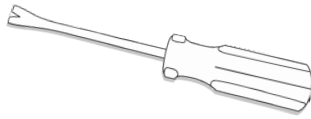
Hammer



Heavy chisel



Nail-pulling screwdriver



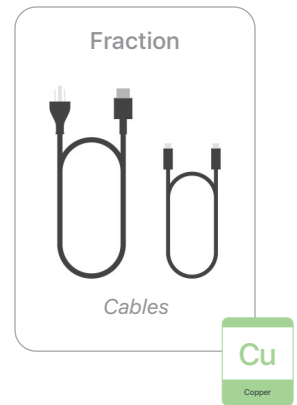
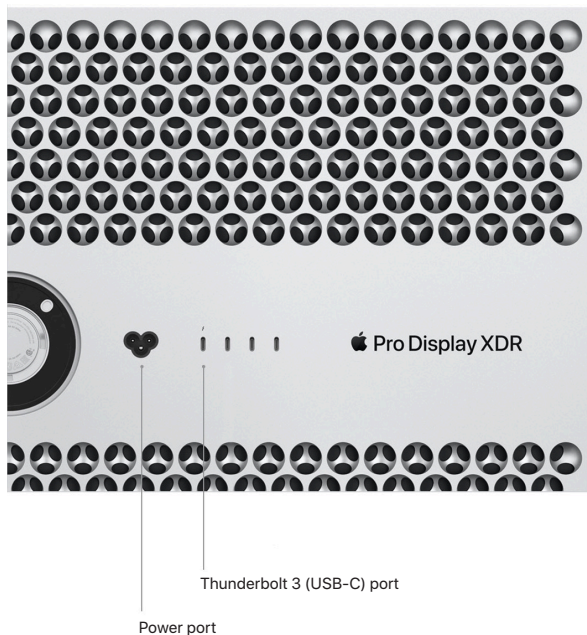
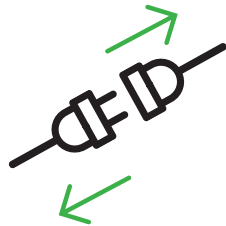
# Disassembly Instructions

1. Remove the display power cable and the Thunderbolt 3 Pro cable from the device.

» Turn off the display.



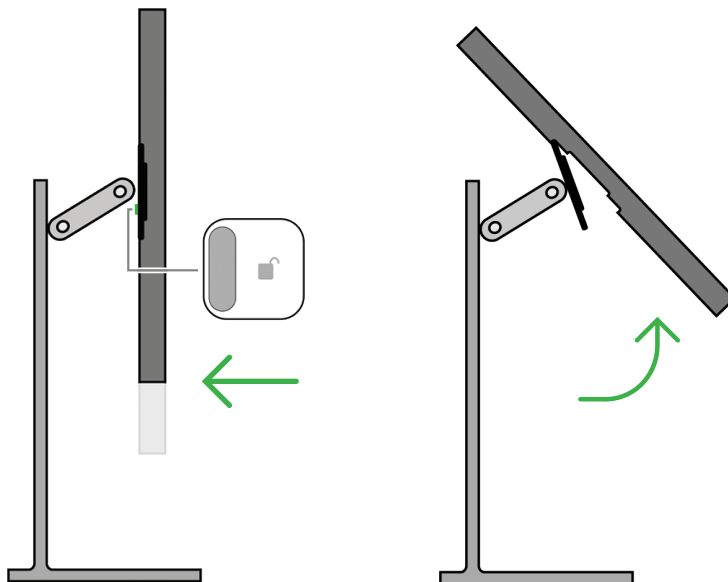
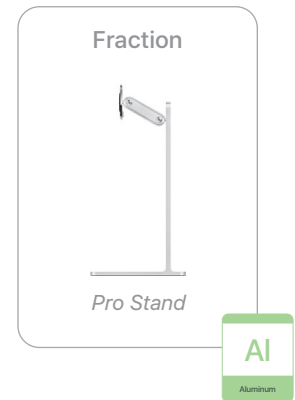
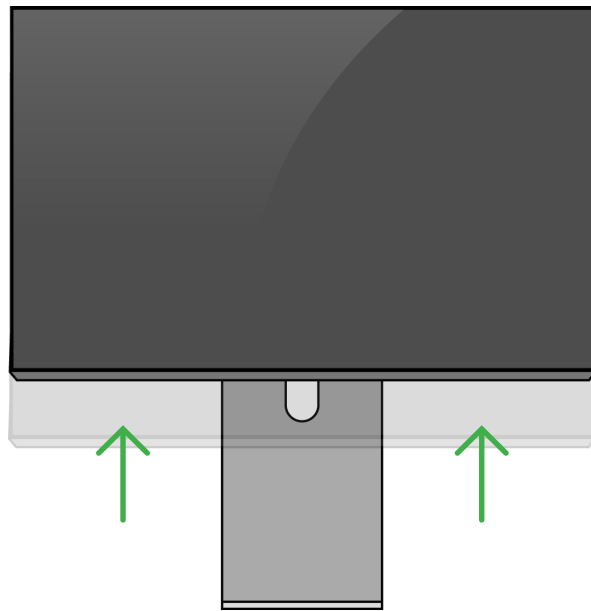
» Unplug the cables.



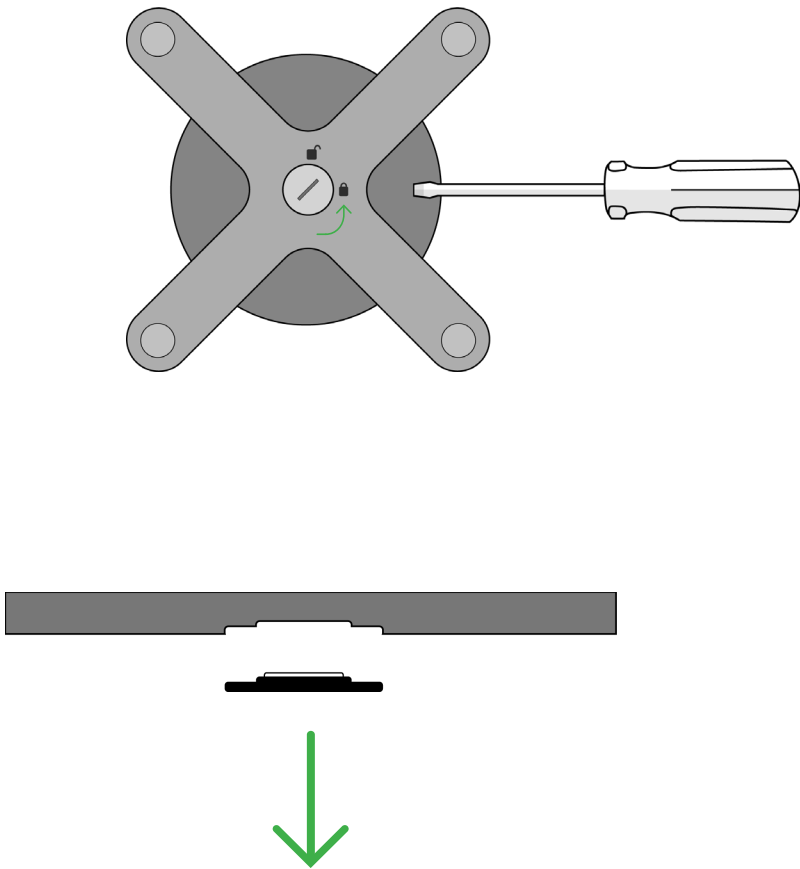


2. Remove the stand. If you have a Pro Stand, follow the first set of instructions. For a VESA mount adapter, follow the second set of instructions.

» Detach the Pro Display XDR from the Pro Stand.



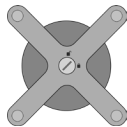
» Detach the Pro Display XDR from the VESA mount adapter.



Tools Used



Fraction



VESA mount  
adapter

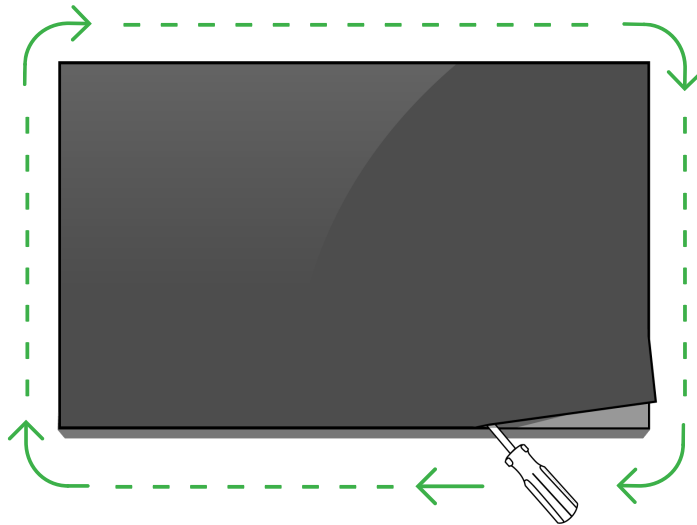
AI

Aluminum

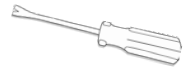
### 3. Remove the cover glass and LCD cell.



Broken glass hazard



#### Tools Used



#### Fraction

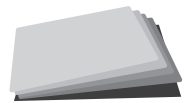


Cover glass  
and LCD cell

GL

Glass

#### Fraction



Films

PL

Plastics

#### 4. Remove the two logic boards attached to the display.



Sharp element



Fraction

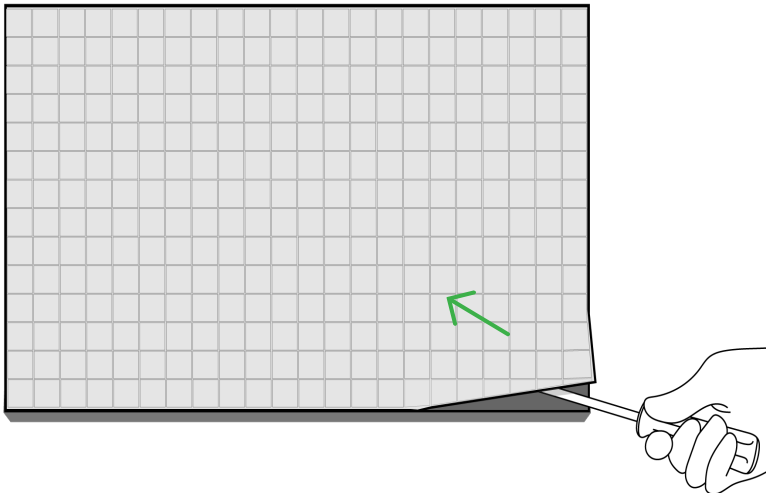


Display logic  
board (x2)

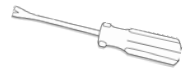
PMs

Precious  
Metals

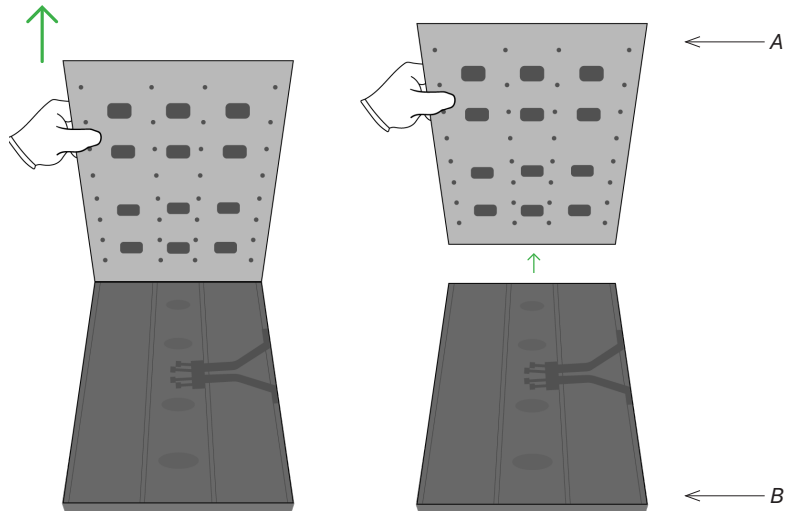
#### 5. Remove the LED array.



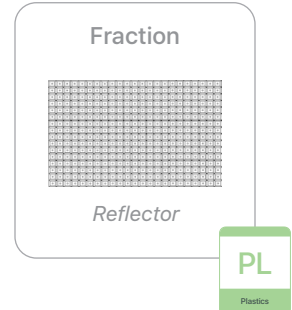
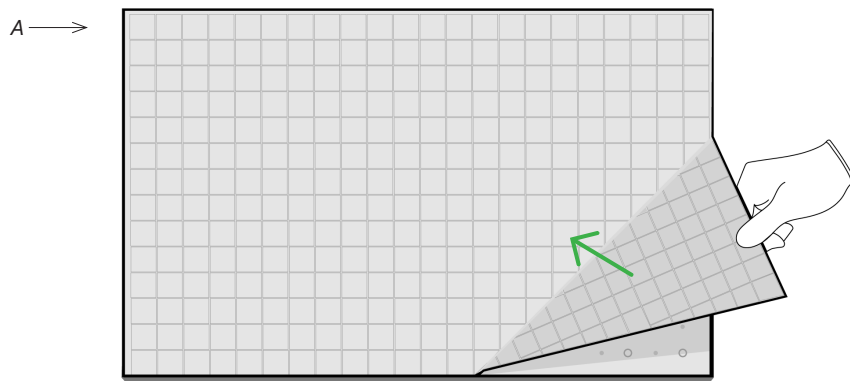
Tools Used



» Pull the LED array away from the base. Set the base aside for the next step.



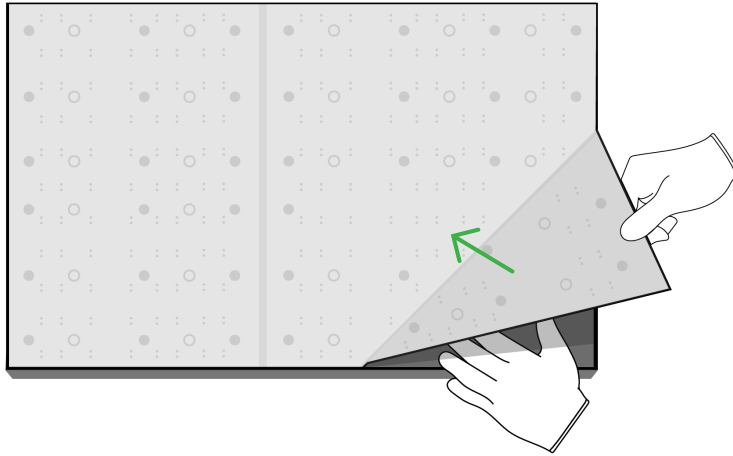
» Remove the reflector.



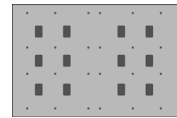
» Remove the two LED array logic boards.



Chemical inhalation hazard



Fraction

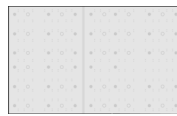


Mid plate

Al

Aluminum

Fraction



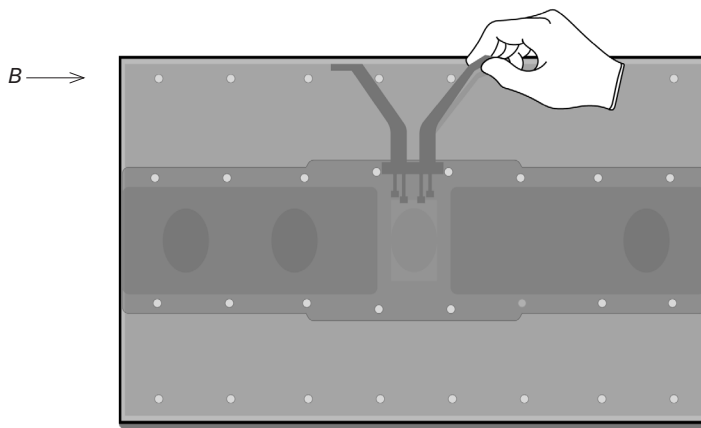
LED array  
logic board (x2)

PMs

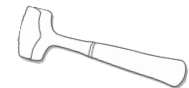
Precious  
Metals

## 6. Remove the dust plates.

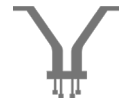
» Remove the ribbon wire.



Tools Used



Fraction



Ribbon wire

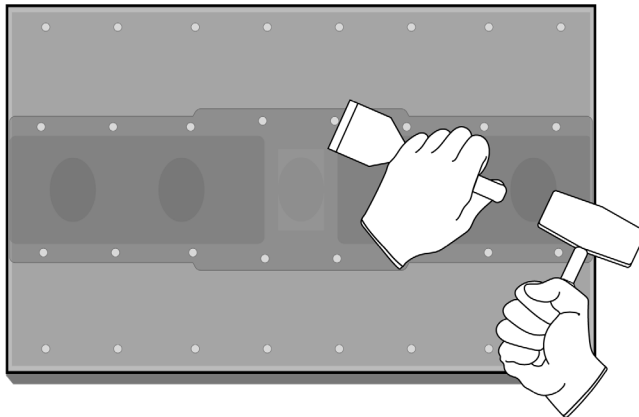
Cu

Copper

» Use the chisel to remove the fasteners.



Danger of harming your hands



Fraction

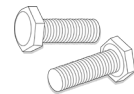


Centre dust plate

Al

Aluminum

Fraction

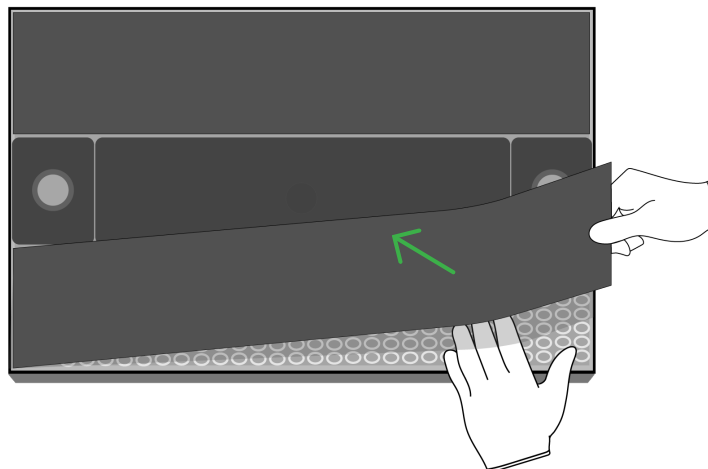


Fasteners (x35)

Fe

Ferrous

» Remove the side dust plates.



Fraction

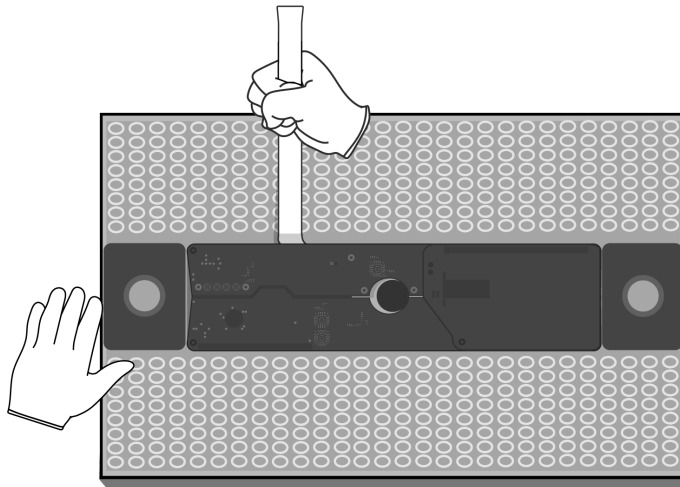


Side dust plates

Fe

Ferrous

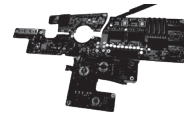
## 7. Remove the four main logic boards.



### Tools Used



### Fraction

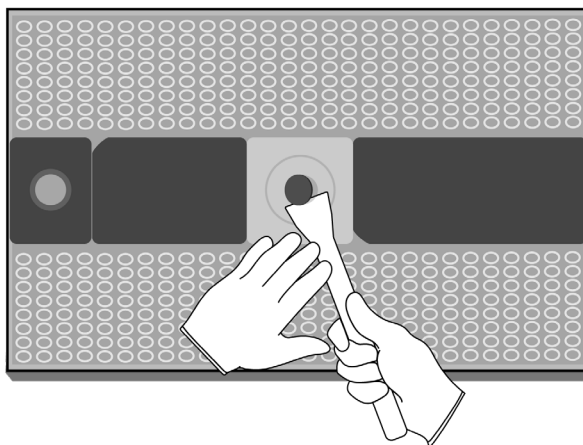


Main logic board (x4)

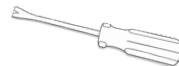


## 8. Remove the magnets.

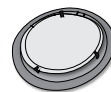
» Remove the centre magnet.



### Tools Used



### Fraction

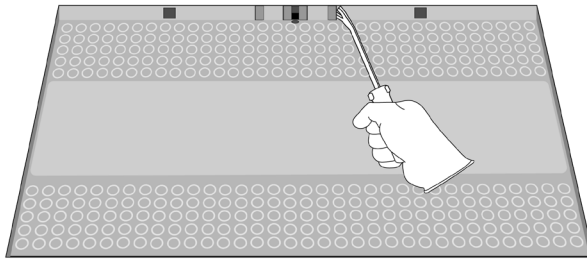


Magnet





» Remove the side magnets.



Fraction

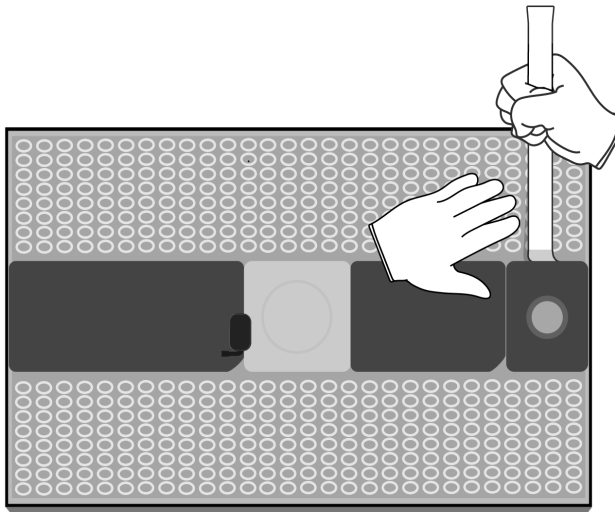


Magnets

REE

Rare Earth  
Elements

9. Remove the fans and AC power inlet.



Tools Used



Fraction



Fans

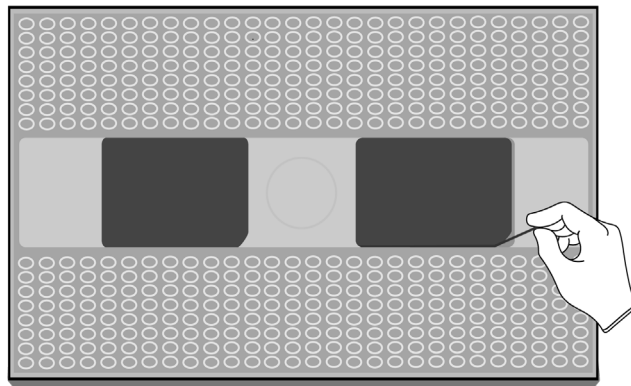
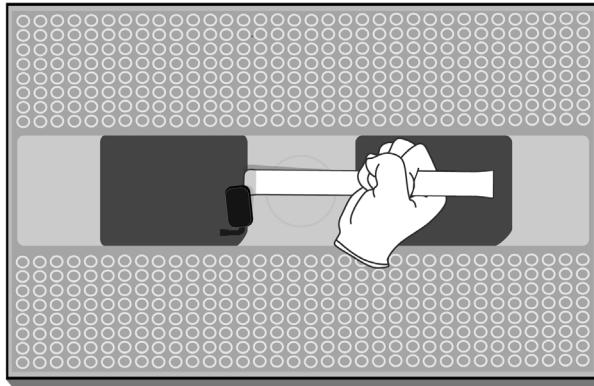


AC power inlet

Cu

Copper

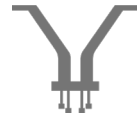
## 10. Remove the final ribbon wires and cables.



### Tools Used



### Fraction



Ribbon wires  
and cable

Cu

Copper

### Fraction




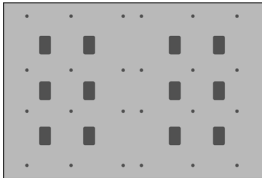
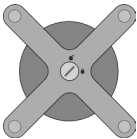




Aluminium enclosure

Al

Aluminum

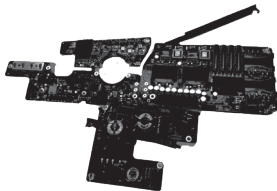
# Treatment of Output Fractions

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.

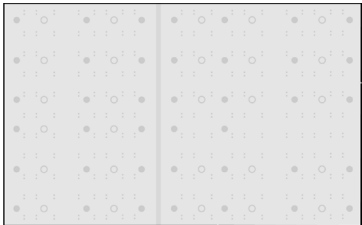
Fraction	Downstream Processing
<b>Aluminium</b>  <i>Centre dust plate</i>  <i>Mid plate</i>  <i>VESA mount adapter</i>  <i>Pro Stand</i>  <i>Aluminium enclosure</i>	<b>Primary Target Material</b>  <b>Potential Additional Materials</b> 

Fraction	Downstream Processing
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Logic Boards



Main logic boards



LED array logic boards



Display logic boards

Primary Target Material



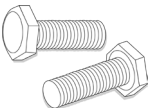
Potential Additional Materials



Ferrous







Side dust plates


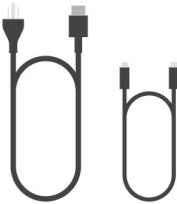
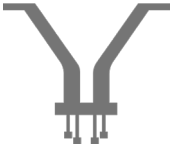






Fasteners

Primary Target Material

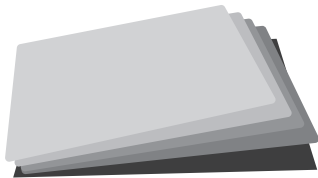


Fraction	Downstream Processing
<p><b>Cover Glass and LCD Cell</b></p>  <p><i>Cover glass and LCD cell</i></p>	<p><b>Primary Target Material</b></p>  <p><b>Potential Additional Materials</b></p> <div>   </div>

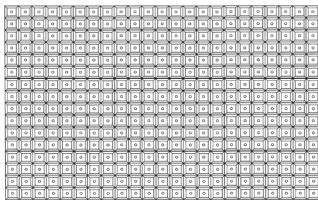
<p><b>Mixed Electronics</b></p>  <p><i>Fans and AC power inlet</i></p>  <p><i>Cables</i></p>  <p><i>Ribbon wires</i></p>	<p><b>Primary Target Material</b></p>  <p><b>Potential Additional Materials</b></p> <div>   </div> <div>  </div>
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Fraction	Downstream Processing
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Mixed Plastics



Films

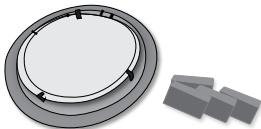


Reflector

Primary Target Material



Rare Earth Magnets



Magnets

Primary Target Material

