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carboncalcpcf.com

Comprehensive analysis adhering to GHG Protocol & 2026 LSR standards.

Total Carbon Footprint: **37.253 kgCO2e**

Total Footprint

37.253 kgCO2e

per unit

Carbon Intensity

37.253 kgCO2e

per unit of wrssmknmwn

Top Material Hotspot

Aluminum Casing

3.75 kgCO2e

Primary Emission Scope

Scope 3 (Downstream)

Use Phase dominates

Lifecycle Stage Breakdown

Use Phase

Material Acquisition & Production

Manufacturing

Transport

End-of-Life (Net Saving)

Top Material Carbon Impact

Aluminum Casing

Silicon Chip

Plastic Enclosure (ABS)

Circuit Board (PCB)

Other Materials

Highlights & Key Insights

- The **Use Phase** accounts for the vast majority of the product's carbon footprint, contributing approximately 78.6% of total emissions.
- **Material Acquisition** is the second largest contributor (19.5%), with Aluminum Casing and Silicon Chips identified as primary material hotspots.
- The **End-of-Life** stage demonstrates a net carbon saving of 0.9045 kgCO2e per unit, highlighting the positive impact of robust recycling and take-back programs.

How to Reduce Your Footprint

- **Enhance Energy Efficiency:** Implement design improvements to significantly reduce energy consumption during the product's use phase.
- **Sustainable Material Sourcing:** Prioritize sourcing alternative materials with lower inherent carbon footprints, especially for high-impact components like Aluminum and Silicon.
- **Strengthen Circular Economy:** Expand and promote existing circular/take-back programs to maximize product collection and material recovery rates.
- **Supply Chain Collaboration:** Engage with key suppliers to identify and implement emission reduction opportunities in their manufacturing processes.

- **Promote Renewable Energy:** Encourage end-users to power the product with renewable energy or provide options for offsetting use-phase emissions.