

carboncalcpcf.com

Product Carbon Footprint Dashboard

Product: oynythqmnz (Smart Home Hub)

Company: wqeffesluz

Consultant: fjuosdegwd

15.26 kgCO₂e

Total Cradle-to-Grave Carbon Footprint

Key Metrics

Functional Unit

1.0 unit

Carbon Intensity

42.39 kgCO₂e/kg

Top Material Hotspot

PCBA

Primary Emission Scope

Scope 3

Lifecycle Stage Breakdown

Use Phase	9.05 kgCO2e (58.46%)
Materials	6.12 kgCO2e (39.53%)
Production	0.21 kgCO2e (1.36%)
Logistics	0.10 kgCO2e (0.65%)
EoL Credit	-0.22 kgCO2e (-1.42%)

Top Material Carbon Impact

PCBA (Main)	5.00 kgCO2e (81.69%)
Lithium-ion Batt.	0.60 kgCO2e (9.80%)
ABS Casing	0.38 kgCO2e (6.13%)
Other Materials	0.15 kgCO2e (2.38%)

Highlights & Key Findings

- The product's operational **Use Phase** is the dominant emission hotspot, accounting for approximately 59% of the total carbon footprint, primarily due to electricity consumption over its 5-year lifespan.
- **Materials Acquisition** is the second largest contributor (~40%), with the **PCBA (Printed Circuit Board Assembly)** and Lithium-ion Battery being significant due to their complex manufacturing and embedded emissions.
- **Circular economy initiatives**, including a manufacturer-led take-back program and high recyclability (80%), provide a **carbon credit at End-of-Life**, significantly mitigating overall lifecycle impacts.

Action Plan: Reducing Carbon Footprint

****Enhance Use Phase Efficiency:**** Focus on further reducing energy consumption during the product's operational life through hardware optimization and smart power management features.

****Sustainable Material Sourcing:**** Investigate and integrate lower-carbon and recycled material alternatives for high-impact components, particularly PCBAs and batteries.

****Logistics Optimization:**** Explore opportunities to optimize upstream and downstream transportation, including using more efficient modes and localizing supply chains where feasible.

Report Generated: May 26, 2026 | Adheres to GHG Protocol & 2026 Updates

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