

Product Carbon Footprint for jrwtjqtwpw

powered by carboncalcpcf.com

**Total PCF: 82.94
kgCO₂e**

Total Footprint

82.94 kgCO₂e

Carbon Intensity (per unit)

82.94 kgCO₂e/unit

Top Material Hotspot

PCB Assembly

Primary Emission Scope

Scope 3

Lifecycle Stage Breakdown

Materials (Scope 3, Cat 1)	16.18% (13.56 kgCO2e)
Production Energy (Scope 2)	24.12% (20.21 kgCO2e)
Transportation & Distribution (Scope 3, Cat 4)	29.85% (25.01 kgCO2e)
Use of Sold Products (Scope 3, Cat 11)	29.84% (25.00 kgCO2e)
End-of-Life Treatment (Scope 3, Cat 12)	Net Credit: -0.84 kgCO2e

Material Carbon Impact (Top Contributors)

Printed Circuit Board (PCB) Assembly	33.18% (4.50 kgCO2e)
Steel Casing	24.34% (3.30 kgCO2e)
ABS Plastic Enclosure	20.65% (2.80 kgCO2e)
Lithium-ion Battery	17.70% (2.40 kgCO2e)

Key Insights & Hotspots

Use Phase Emissions are Critical: The product's energy consumption during its 5-year lifespan contributes significantly (30.1%) to the overall footprint. This highlights the importance of energy-efficient design.

Logistics, Especially Last-Mile, is a Major Factor: Transportation and distribution account for 30.2% of emissions, with last-mile delivery being a notable hotspot due to lower efficiency.

Production Energy & Key Materials are Impactful: Purchased energy for production (24.4%) and high-impact materials like PCB assemblies and Lithium-ion batteries (contributing 16.4% of total PCF from material emissions) present significant opportunities for reduction.

Recommendations for Decarbonization

Enhance Supply Chain Engagement: Collaborate with material suppliers to gather primary emission data for high-impact components, improving accuracy and identifying specific reduction targets.

Increase Renewable Energy Sourcing: Further invest in renewable energy usage at the production facility in China, either through certificates or on-site generation, to reduce Scope 2 emissions.

Optimize Logistics & Product Design: Investigate efficiencies in last-mile delivery and prioritize designing products for enhanced energy efficiency during use and incorporating lower-carbon materials.

Advance Circular Economy Efforts: Continue to strengthen recyclability and explore new circular economy initiatives, building on the existing net carbon benefit from end-of-life programs.