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# 产品碳足迹核查意见书

授予

## 高德（江苏）电子科技股份有限公司

必维认证（北京）有限公司（以下简称“必维”）受高德（江苏）电子科技股份有限公司的委托，对高德（江苏）电子科技股份有限公司报告的产品碳足迹进行独立的第三方核查，本核查意见适用于下文所述工作范围内的相关信息。

### 核查边界：

- 产品名称：印制电路板
- 公司地址：中国江苏省无锡市锡山区云林街道春晖中路 32 号
- 声明单位：1 array WPF3A6923N500 的印制电路板，其转化系数为 0.043 m<sup>2</sup>/ array
- 系统边界：高德（江苏）电子科技股份有限公司生产的 1 array WPF3A6923N500 的印制电路板生命周期内（从摇篮到工厂大门）的相关过程，包括上游原材料获取、原材料运输、产品生产（含产生的废弃物处理）
- 查证数据期限：2024 年 01 月 01 日 - 2024 年 12 月 31 日

**重新核查条件：**产品生命周期内温室气体排放量发生5%或5%以上计划内的变化或发生10%以上计划外的变化，并且持续超过3个月时，应申请重新核查。

### 核查标准：

- ISO 14067:2018 温室气体 - 产品碳足迹 - 量化要求和指南
- ISO 14064-3:2019 温室气体 - 第3部分：温室气体声明核查和审定规范及指南

### 保证等级：

- 合理保证

### 核查方法：

- 访谈相关人员；
- 评审提供的文件证据；
- 评估用于数据收集、汇总、分析和检查的量化方法和信息系统；
- 核查抽样场所和数据源。

### 核查结论：

- 1 array WPF3A6923N500 的印制电路板的生命周期内（从摇篮到工厂大门）的温室气体的排放量为：8.33 公斤二氧化碳当量。

基于核查工作实施过程和核查发现，高德（江苏）电子科技股份有限公司报告的 1 array WPF3A6923N500 的印制电路板的碳足迹量化方法和结果，与 ISO 14067:2018 温室气体 - 产品碳足迹 - 量化要求和指南是相符的。

### 独立、公正和胜任能力声明：

必维集团是一家拥有 190 多年历史，在质量、环境、职业健康安全和社会责任领域提供独立验证服务的机构。必维核查团队与高德（江苏）电子科技股份有限公司及其管理人员不存在其它的商业关系，核查团队的核查活动是独立的、公正的，不存在任何利益冲突。必维集团在整个业务范围内实施商业道德准则，以确保员工在日常业务活动中保持最高的道德标准。

核查组长：卞琳玲

核查日期：2025年8月15日

编号：EMI27833779

签发日期：2025年8月18日

版本号：No.01

有效日期：2027年8月17日

必维认证（北京）有限公司授权代表

认证机构地址：中国北京市东城区东长安街1号东方广场西一办公楼9层902室，邮编：100738  
需进一步澄清本意见书的核查范围，可直接向本意见书持有者查询  
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## 产品碳足迹核查意见书附件

本核查意见是由高德（江苏）电子科技股份有限公司委托第三方核查机构必维认证（北京）有限公司对该1 array WPF3A6923N500的印制电路板的碳足迹进行核查事宜，核查的关键信息如下：

- 生命周期各阶段温室气体排放量：

生命周期阶段	温室气体排放 (公斤二氧化碳当量/声明单位)	占比
上游原材料获取	2.99	35.91%
原材料运输	0.02	0.30%
产品生产（含产生的废弃物处理）	5.31	63.79%
总计	8.33	100.00%



认证机构地址：中国北京市东城区东长安街1号东方广场西一办公楼9层902室，邮编：100738  
需进一步澄清本意见书的核查范围，可直接向本意见书持有者查询  
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# Product Carbon Footprint Verification Opinion

is awarded to

## GULTECH (JIANGSU) ELECTRONICS TECHNOLOGIES CO., LTD.

Bureau Veritas Certification (Beijing) Co., Ltd. was engaged by Gultech (Jiangsu) Electronics Technologies Co., Ltd. to conduct an independent verification of its product carbon footprint. This verification opinion applies to the related information included within the scope of work described below.

### Boundaries covered by the verification:

- Verified product name: Printed Circuit Board
- Product production address: No. 32, Middle Chunhui Road, Yunlin Sub-street, Xishan District, Wuxi, Jiangsu Province, PRC.
- Declared unit: 1 array WPF3A6923N500 Printed Circuit Board, with conversion factor 0.043 m<sup>2</sup>/array
- System boundary: The life cycle (from cradle to factory gate) process GHG emission of 1 array WPF3A6923N500 PCB Printed Circuit Board produced in Gultech (Jiangsu) Electronics Technologies Co., Ltd., including raw material acquisition, raw material transportation, core process (including waste treatment).
- Time boundary for data: 2024-01-01 to 2024-12-31

**Re-verification conditions:** re-verification shall be applied when Greenhouse Gas emissions in the life cycle of the product has 5% or more than 5% planned changes or has more than 10% unplanned changes, and these changes continue for more than 3 months.

### Verification standards:

- ISO 14067:2018 Greenhouse gases - Carbon footprint of products - Requirements and guidelines for quantification
- ISO 14064-3:2019 Greenhouse gases - Part 3: Specification with guidance for the verification and validation of greenhouse gas statements

### Level of assurance:

- Reasonable assurance

### Methods of verification:

- Interview for relevant personnel;
- Review of the documentary evidence;
- Evaluation of the methodology and information systems for data collection, aggregation, analysis and review;
- Audit of sampled sites and data to verify source.

### Verification conclusion:

- Greenhouse Gas emission in the life cycle of 1 array WPF3A6923N500 Printed Circuit Board (from cradle to factory gate): 8.33 kgCO<sub>2</sub>e

Based on the verification process and findings, the quantification method and result of product carbon footprint for 1 array WPF3A6923N500 Printed Circuit Board reported from Gultech (Jiangsu) Electronics Technologies Co., Ltd. is in compliance with ISO 14067:2018 Greenhouse gases - Carbon footprint of products - Requirements and guidelines for quantification.

Certification body address: Room 02, 9 / F, West Office Building 1, Oriental Economic and Trade City, Oriental Plaza, No.1 East Chang'an Street, Dongcheng District, Beijing, China. 100738  
Further clarifications regarding the verification scope of this opinion may be obtained by consulting the organization.  
To check this opinion validity please call: +86 10 59683663



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### Statement of independence, impartiality and competence

Bureau Veritas Group is an independent professional services company that specializes in Quality, Health, Safety, Social and Environmental management with over 190 years' history in providing independent assurance services.

No member of the verification team has a business relationship with Gultech (Jiangsu) Electronics Technologies Co., Ltd. and its directors or managers beyond that required by this assignment. We conducted this verification independently and to our knowledge there has been no conflict of interest.

Bureau Veritas Group has implemented a Code of Ethics across the business to maintain high ethical standards among staff in their day-to-day business activities.

**Lead verifier:** *Fiona BIAN*

**No.:** EMI27833779

**Version No.:** No.01

**Verification date:** 2025-8-15

**Issue date:** 2025-08-18

**Expiry date:** 2027-08-17

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*Signed on behalf of  
Bureau Veritas Certification (Beijing) Co., Ltd.*





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## Appendix for Product Carbon Footprint Verification Opinion

Gultech (Jiangsu) Electronics Technologies Co., Ltd. have commissioned Bureau Veritas Certification (Beijing) Co., Ltd. to conduct a third-party verification on product carbon footprint for its 1 array WPF3A6923N500 Printed Circuit Board. Key information is listed below:

- GHG emissions in each LCA stage:

LCA Stage	GHG Emissions (kgCO <sub>2</sub> e per declared unit))	Percentage
Raw material acquisition	2.99	35.91%
Raw material transportation	0.02	0.30%
Core production (including waste treatment)	5.31	63.79%
Total	8.33	100.00%



Certification body address: Room 02, 9 / F, West Office Building 1, Oriental Economic and Trade City, Oriental Plaza, No.1 East Chang'an Street, Dongcheng District, Beijing, China. 100738  
Further clarifications regarding the verification scope of this opinion may be obtained by consulting the organization.  
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