

文件编号 Document No.	ESP-07-2-007-03	文件名称 Document Name	产品/工艺变更通知 Product/Process Change Notice (PCN)
文件版本 Document Version	1.4	保存期限 Retention Period	5 年 5 years

ESP32-U4WDH 及对应模组产品叠封 Flash 物料变更 Change Embedded Flash Material on ESP32-U4WDH and Related Module Products													
PCN 编号 PCN No.	PCN20220803	提出日期 Issue Date of PCN	2022/09/05										
变更日期 Proposed Date of Change	2022/09/19	预计变更后产品首次出货日期 Proposed Date of First Shipment After Change	2022/12/05										
PCN 类型/ PCN Category	<input checked="" type="checkbox"/> 客户需要批准/ Customer Approval Required <input type="checkbox"/> 客户通知/ Customer Notification												
<b>1. 影响产品名称/ Affected Product Name</b> 1) 芯片产品/ Chip Product: ESP32-U4WDH 2) 模组产品/ Module Products: <table border="1" data-bbox="188 1070 1090 1328"> <thead> <tr> <th>Product Name</th> <th>Product MPN</th> </tr> </thead> <tbody> <tr> <td>ESP32-MINI-1</td> <td>ESP32-MINI-1-N4</td> </tr> <tr> <td>ESP32-MINI-1</td> <td>ESP32-MINI-1-H4</td> </tr> <tr> <td>ESP32-MINI-1U</td> <td>ESP32-MINI-1U-N4</td> </tr> <tr> <td>ESP32-MINI-1U</td> <td>ESP32-MINI-1U-H4</td> </tr> </tbody> </table>				Product Name	Product MPN	ESP32-MINI-1	ESP32-MINI-1-N4	ESP32-MINI-1	ESP32-MINI-1-H4	ESP32-MINI-1U	ESP32-MINI-1U-N4	ESP32-MINI-1U	ESP32-MINI-1U-H4
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<b>2. 变更原因/ Reason for Change</b> 为保证供货稳定性, 计划变更段落 1 列出的芯片产品的叠封 flash 物料。由于段落 1 中列出的模组产品的主芯片为段落 1 列出的芯片产品, 因此段落 1 中的模组产品也发生相应变更。 In order to ensure the stability of supply, Espressif will introduce new embedded flash material for the chip products listed in Para 1. The modules listed in Para 1 are based on chip products listed in Para 1, and thus will change accordingly.													
<b>3. 变更描述/ Description of Change</b> 变更段落 1 列出芯片产品的叠封 flash 物料。由于段落 1 中列出的模组产品的主芯片为段落 1 列出的芯片产品, 因此段落 1 中的模组产品也发生相应变更。 Espressif will introduce new embedded flash material for the chip products listed in Para 1. The modules listed in Para 1 are based on chip products listed in Para 1, and thus will change accordingly.													
<b>4. 变更对比/ Change Comparison</b> 请见附录 I: 变更对比。 Please refer to Appendix I: Change Comparison.													

**5. 变更影响/ Impact of Change**

1) 品质和性能/ Quality & Performance: 无影响/ No impact

2) 交期/ Delivery: 无影响/ No impact

3) 生产料号/ Manufacturer Part Number (MPN):

如采购段落 1 中列出的产品, 可使用原名称下单。

If customer purchases the product listed in para 1, please place an order with the exist product name.

4) 认证/ Certification: 无影响/ No impact

**6. 变更前后产品处理/ How to Deal with Products**

FIFO

**7. 相关报告/ Report(s) Attached:**

Related ECN No.                      ECN-2022-020

物料验证信息/ Material Qualification Information:

编号 No.	测试项目 Test Item	测试结果 Test Result
1	运行模式测试 Operation Mode Test	Pass
2	Deep Sleep 唤醒测试 Wake up from Deep Sleep Test	Pass
3	掉电测试 Powerdown Test	Pass
4	模拟常规 OTA 测试 Simulated General OTA Test	Pass
5	高低温读写测试 High-Low Temp. Read/Write	Pass
6	高温批量读写测试 High Temp. Read/Write (Batch)	Pass

环境测试报告/ Environment Related Report (RoHS/REACH/HF etc.):

更新后的产品符合 RoHS 标准和 REACH 标准。

Product after change meet the RoHS requirements and the REACH requirements.

## Appendix I 变更对比/ Change Comparison

Item	变更前/ Before Change	变更后/ After Change
<b>Description</b>	NA	Use new flash as embedded flash material for Espressif chip products listed in Para 1. The modules listed in Para 1 are based on chip products listed in Para 1, and thus will change accordingly.
<b>Flash PN</b>	Old	New
<b>Product Name (No Changes)</b>	See Product List in Para 1	See Product List in Para 1
<b>Flash Operating Voltage (No Changes)</b>	2.3V ~ 3.6V	2.3V ~ 3.6V
	Note: All affected products should work at 3.0V ~ 3.6V, so this flash meets the requirement.	
<b>Chip&amp;Module Typical Power Supply Voltage (No Changes)</b>	3.3V	3.3V
<b>Flash Capacity (No Changes)</b>	4 MB	4 MB
<b>Flash Temperature Range (No Changes)</b>	-40℃ ~ 105 ℃	-40℃ ~ 105 ℃
<b>Sector Erase Time (4KB) (Typ. / Max)</b>	50 ms / 500 ms	50 ms / 500 ms
<b>Block Erase Time (32KB) (Typ. / Max)</b>	0.15 s / 1.4 s	0.15 s / 1.4 s
<b>Block Erase Time (64KB) (Typ. / Max)</b>	0.3 s / 1.8 s	0.3 s / 1.8 s
<b>Chip Erase Time (Typ. / Max)</b>	20 s / 60 s	20 s / 60 s

**邮件订阅****Espressif Email Notifications**

乐鑫为注册用户提供电子邮件通知服务，用户可通过[乐鑫订阅系统](#)接收技术文档更新、新闻通讯、PCN 等邮件通知。

Espressif sends email notifications of technical documentation changes, along with newsletters, PCNs and other valuable information, to subscribed customers only. If you wish to stay updated on our products and services, please subscribe [here](#).

**客户响应要求****Customer Response Requirements****需客户批准的变更/ Change Requiring Customer Approval:**

a) 客户须在乐鑫发出 PCN 后的 30 天内告知乐鑫已收到 PCN。如客户未在接收到 PCN 后的 30 天内告知已收到，则视为客户收到变更。

Customers are requested to acknowledge receipt of the PCN within 30 calendar days from the date of issue of the PCN. Customers would be considered as notified 30 calendar days after issue of the PCN if no acknowledgement is received.

b) 自发布 PCN 之日起 90 天内，客户没有任何其他反馈，则表示客户接受该 PCN。

The lack of any additional responses from customers within 90 calendar days from the date of issue of the PCN constitutes acceptance of the proposed changes.

**客户通知/ Customer Notification:**

a) 客户需在乐鑫发出 PCN 后 14 天内通知乐鑫收到该 PCN。如客户未在接收到 PCN 14 日反馈乐鑫，则视为客户确认该 PCN。

Customers are requested to acknowledge receipt of the PCN within 14 calendar days from the date of issue of the PCN. Customers would be considered as having acknowledged the PCN if no response is received after 14 calendar days.

请反馈至 [pcn@espressif.com](mailto:pcn@espressif.com)。

Please send feedback to [pcn@espressif.com](mailto:pcn@espressif.com).

**客户批准/确认信息****Customer Approval/Acknowledgement and Remarks**

客户公司全称:

Customer's Company Name:

PCN 评审结果/ PCN Review Result:

- 批准/确认 Accepted/Acknowledged  
 不批准/ Rejected  
 需要分析/ Further Analysis Required

客户意见/Comment:

公司代表人姓名  
Representative's Name:

公司代表人职责  
Representative's Job Title:

公司代表人签名  
Representative's Signature:

日期  
Date: