ESP32-H2FH4S 系列产品新增备选内置 flash 物料
Introduce Alternative In-package Flash Source for ESP32-H2FH4S Series Products

PCN 编号 **PCN No.**	PCN202601701	**提出日期** **Issue Date of PCN**	2026/10/15
变更日期 **Proposed Date of Change**	2026/12/30	**预计变更后产品首次出货日期** **Proposed Date of First Shipment After Change**	2027/01/30
PCN 类型 **PCN Category**	☐客户需要批准/ Customer Approval Required ☑ 客户通知/ Customer Notification		

1. 影响物料编码/ Affected Part Number

产品类型 Product Type	物料编码 Part Number	Chip on Board
Chip	ESP32-H2FH4S	/
Module	ESP32-H2-MINI-1-H4S	ESP32-H2FH4S
Module	ESP32-H2-MINI-1U-H4S	ESP32-H2FH4S
Module	ESP32-H2-WROOM-02C-H4S	ESP32-H2FH4S
Module	ESP32-H2-WROOM-07-H4S	ESP32-H2FH4S

2. 变更原因/ Reason for Change

为避免单一原材料的供货风险，提升供应稳定性，乐鑫完成了新内置 flash 在 ESP32-H2FH4S 芯片的物料验证测试，测试通过，因此决定导入新内置 flash 作为上述产品内置 flash 备选物料。

To reduce single-source supply risk and improve supply stability, Espressif has qualified a new flash source for the ESP32-H2FH4S series products, confirming that it meets product specifications. The new flash will be introduced as an alternative in-package flash option for these products.

3. 变更描述/ Description of Change

段落 1 列出的产品新增内置 flash 物料。

Add new additional in-package flash material for the products listed in Para 1.

4. 变更对比/ Change Comparison

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:

新内置 flash 已经通过了物料验证测试，乐鑫确认该 flash 的品质和性能满足乐鑫的要求。

A new in-package flash has completed the qualification test. Espressif confirms it fully meets Espressif's requirements for quality and performance.

2) 交期/ Delivery: 无影响/ No impact

3) 物料编码/ Part Number: 无影响/ No impact

4) 软件/ Software:

变更后产品基于通用 ESP-IDF 可正常使用。

默认情况下，ESP32-H2FH4S 产品 SPI flash 不支持自动暂停功能。如需要 flash 自动暂停功能，或者使用第三方 SDK 或自定义 SPI flash 驱动的，请联系乐鑫。

The product after the change can work normally with ESP-IDF.

By default, the SPI flash on ESP32-H2FH4S product does not support the auto suspend feature. If you need the auto suspend feature, or if you are using a third-party SDK or a custom SPI flash driver, please contact Espressif.

5) 认证/ Certification: 无影响/ No impact

6) 技术规格书/ Datasheet: 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/ Related Report(s)

☑Material Qualification Report

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	Wi-Fi OTA 测试 Wi-Fi 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

☑Environment Related Report (RoHS / REACH)

更新后的产品符合 RoHS 标准和 REACH 标准。

Products after change meet the RoHS and REACH requirements.

Appendix I 变更对比/ Change Comparison

项目/ Item	变更前/ Before Change	变更后/ After Change
In-package Flash	Flash A	Add Flash B
Part Number (No Changes)	See Affected Part Number list in Para 1	See Affected Part Number list in Para 1
Flash Operating Voltage	2.7 V~3.6 V	2.3 V~3.6 V
	All the affected products should work at 3.0 V ~ 3.6 V, so all types of flash meet the requirements.	
Product Typical Power Supply Voltage (No Changes)	3.3 V	3.3 V
Flash Capacity (No Changes)	4 MB	4 MB
Flash Page Program Time (Typ. / Max)	0.5 ms / 4 ms	0.25 ms / 2 ms
Flash Sector Erase Time (4KB) (Typ. / Max)	45 ms / 500 ms	25 ms / 300 ms
Flash Block Erase Time (32KB) (Typ. / Max)	0.15 s / 1.6 s	0.1 s / 0.8 s
Flash Block Erase Time (64KB) (Typ. / Max)	0.25 s / 3.0 s	0.15 s / 1.0 s
Flash Chip Erase Time (Typ. / Max)	12 s / 60 s	5 s / 50 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。
Please send feedback to 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	