

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

**引入 GD25Q128ESIG 作为 ESP32 系列模组的备选 16 MB flash 物料**

**Introduction of GD25Q128ESIG as alternative 16 MB flash source for ESP32 Series of Modules**

PCN 编号 PCN No.	PCN20221002	提出日期 Issue Date of PCN	2022/10/21
变更日期 Proposed Date of Change	2022/12/21	预计变更后产品首次出货日期 Proposed Date of First Shipment After Change	2023/01/21
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		

**1. 影响产品名称/ Affected Product Name**

1) 模组产品/ Module Products:

Product Name	Product MPN
ESP32-WROVER-B	ESP32-WROVER-IB(M213DH2864UH3Q0)
	ESP32-WROVER-IB-N16R8
ESP32-WROOM-32	ESP32-WROOM-32(M103QH2800PH3Q0)
	ESP32-WROOM-32-N16
ESP32-WROOM-32SE	ESP32-WROOM-32SE(M123DH2800PH3QC)
	ESP32-WROOM-32SE-N16
ESP32-WROOM-32U	ESP32-WROOM-32U(M113DH2800UH3Q0)
	ESP32-WROOM-32U-N16
ESP32-DU1906	ESP32-DU1906(M403EH2864PH3Q0)
	ESP32-DU1906-N16R8
SP32-DU1906-U	ESP32-DU1906-U(M403EH2864UH3Q0)
	ESP32-DU1906-U-N16R8
ESP32-WROOM-DA	ESP32-WROOM-DA-N16

2) 开发板产品/ Development Board Products:

Product Name	Product MPN
ESP32-Korvo-DU1906	ESP32-Korvo-DU1906
ESP32-Korvo	ESP32-Korvo
ESP32-DevKitC	ESP32-DevKitC-32U28
ESP32-DevKitC	ESP32-DevKitC-SE28

ESP32-DevKitC	ESP32-DevKitC-32UE28
ESP32-DevKitC	ESP32-DevKitC-32E28

## 2. 变更原因/ Reason for Change

目前, 我司使用的 GD25QXXC 系列 flash 产品的生产工艺为 65nm, 供应商优化生产工艺为 55nm Flash 生产工艺, 产品系列为 GD25QXXE。

为提高供应稳定性, 料号为 GD25Q128ESIG 的 flash 通过了乐鑫的物料验证测试, 因此乐鑫决定引入该 flash 作为段落 1 列出模组产品的备选物料。

Recently, Espressif's supplier for GD25QXXC series of flash (which uses the 65nm process technology), has launched GD25QXXE series of flash (which uses the more advanced 55nm process technology).

Under this background, to ensure a robust and diversified module supply, Espressif has qualified flash Part Number: GD25Q128ESIG as the new alternative source for Espressif modules listed in Para 1.

## 3. 变更描述/ Description of Change

引入料号为 GD25Q128ESIG 的 16 MB, -40°C ~ 85°C flash 作为段落 1 列出产品的备选 flash 物料。

Introducing the 16 MB, -40°C ~ 85°C flash, Part Number: GD25Q128ESIG as an alternative source for the Espressif modules listed in Para1.

## 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: 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

5) 软件/ IDF:

当前的乐鑫 IDF 版本兼容段落 1 列出的变更后的产品, 客户可继续使用现有的软件版本进行变更后产品的生产。

Changed products listed in Para 1 are compatible with the current version of ESP-IDF. Customers can still use the current version.

## 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-2022-033

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

### 1. Basic Product Change Information

Item	变更前/ Before Change	变更后/ After Change
Product Name (No Changes)	See Product List in Para 1	See Product List in Para 1
Product Typical Power Supply Voltage (No Changes)	3.3V	3.3V
Flash Source: PN1 (No Changes)	PN1	PN1
Flash Source: PN2	GD25Q127CSIG	GD25Q128ESIG

### 2. Flash Change Information

Item	变更前/ Before Change	变更后/ After Change
Flash Source: PN2	GD25Q127CSIG	GD25Q128ESIG
Flash Operating Voltage (No Changes)	2.7V~3.6V	2.7V~3.6V
	All the affected modules should work at 3.0V ~ 3.6V, so all types of flash meet the requirements.	
Module Typical Power Supply Voltage (No Changes)	3.3V	3.3V
Flash Capacity (No Changes)	16 MB	16 MB
Flash Temperature Range (No Changes)	-40°C ~ 85 °C	-40°C ~ 85 °C
Sector Erase Time (4KB) (Typ. / Max)	50 ms / 400 ms	45 ms / 300 ms
Block Erase Time (32KB)	0.16 s / 0.8 s	0.15 s / 1.2 s
Block Erase Time (64KB)	0.3 s / 1.2 s	0.25 s / 1.6 s
Chip Erase Time (Typ. / Max)	50 s / 120 s	50 s / 100 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: