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-C2（ESP8684） 系列产品由芯片版本：v1.0 升级为芯片版本：v1.1
Upgrade ESP32-C2 (ESP8684) Series from Chip Revision v1.0 to Chip Revision v1.1

PCN 编号 PCN No.	PCN20230701	提出日期 Issue Date of PCN	2023/08/24
变更日期 Proposed Date of Change	2023/10/24	预计变更后产品首次出货日期 Proposed Date of First Shipment After Change	2023/11/24
PCN 类型 / PCN Category	☑客户需要批准/ Customer Approval Required ☐客户通知/ Customer Notification		

1. 影响产品名称/ Affected Product Name

   1）芯片产品/ Chip Products：

     ESP8684H2，ESP8684H4

   2）模组产品/ Module Products：

     (Note: 以下模组都搭载 26 MHz 晶振/ Those modules as below are made with 26 MHz crystal)

Product Name	Chip on board	MPN
ESP8684-MIN-1	ESP8684H2	ESP8684-MIN-1-H2
	ESP8684H4	ESP8684-MIN-1-H4
ESP8684-MIN-1U	ESP8684H2	ESP8684-MIN-1U-H2
	ESP8684H4	ESP8684-MIN-1U-H4
ESP8684-WROOM-01C	ESP8684H2	ESP8684-WROOM-01C-H2
	ESP8684H4	ESP8684-WROOM-01C-H4
ESP8684-WROOM-02C	ESP8684H2	ESP8684-WROOM-02C-N2
	ESP8684H4	ESP8684-WROOM-02C-N4
	ESP8684H4	ESP8684-WROOM-02C-H4
ESP8684-WROOM-02UC	ESP8684H2	ESP8684-WROOM-02UC-N2
	ESP8684H4	ESP8684-WROOM-02UC-N4
	ESP8684H2	ESP8684-WROOM-02UC-H2
	ESP8684H4	ESP8684-WROOM-02UC-H4
ESP8684-WROOM-03	ESP8684H2	ESP8684-WROOM-03-H2

	ESP8684H4	ESP8684-WROOM-03-H4	
ESP8684-WROOM-04C	ESP8684H2	ESP8684-WROOM-04C-H2	
	ESP8684H4	ESP8684-WROOM-04C-H4	
ESP8684-WROOM-05	ESP8684H2	ESP8684-WROOM-05-H2	
	ESP8684H4	ESP8684-WROOM-05-H4	
ESP8684-WROOM-06C	ESP8684H2	ESP8684-WROOM-06C-H2	
	ESP8684H4	ESP8684-WROOM-06C-H4	
ESP8684-WROOM-07	ESP8684H2	ESP8684-WROOM-07-H2	
	ESP8684H4	ESP8684-WROOM-07-H4	

3）开发板产品 / Developement Board Products：

(Note: 以下开发板都搭载 26 MHz 晶振/ The modules inside are made with 26 MHz crystal)

Product Name	MPN
ESP8684-DevKitM-1	ESP8684-DevKitM-1-H4
	ESP8684-DevKitM-1U-H4

2. 变更原因/ Reason for Change

ESP32-C2（ESP8684）系列芯片版本 v1.0 及之前版本的芯片，仅支持搭配 26 MHz 晶振使用。为使其支持 26 MHz 和 40 MHz 晶振，乐鑫升级 ESP32-C2（ESP8684）系列至 v1.1 版本芯片。段落 1 列出的模组和开发板中使用的主芯片为 ESP32-C2（ESP8684）系列芯片，因此段落 1 列出的模组和开发板产品也会使用升级后的芯片版本。

The revision v1.0 and earlier versions of ESP32-C2 (ESP8684) series of chips only support 26 MHz crystal. To enable support for both 26 MHz and 40 MHz crystal, Espressif upgraded ESP32-C2 (ESP8684) series to chip revision v1.1. The upgraded chip revision will be installed in modules and development boards from ESP32-C2 (ESP8684) series listed in Para 1.

3. 变更描述/ Description of Change

将 ESP32-C2（ESP8684）系列的芯片版本 v1.0 升级为 v1.1。v1.0 及之前版本的芯片仅支持 26 MHz 晶振，升级后 v1.1 的芯片可支持 26 MHz 和 40 MHz 晶振，变更详情见 ESP8684 系列芯片勘误表。

段落 1 列出的模组和开发板产品中使用的主芯片为 ESP32-C2（ESP8684）系列芯片，因此段落 1 列出的模组和开发板产品搭载的芯片进行相应的更新，但模组上的晶振无变化，仍是 26MHz 晶振。

ESP32-C2 (ESP8684) series of chips has been upgraded from chip revision v1.0 to chip revision v1.1. The chip revision v1.0 and earlier versions only support 26 MHz Crystal. Chip Revision v1.1 can support both 26 MHz and 40 MHz crystal. For more detailed information about these changes, please refer to ESP8684 Series SoC Errata.

The embedded chips of the modules and development boards listed in Para 1 will be upgraded accordingly,

as they belong to the ESP32-C2 (ESP8684) series. However, there is no change to the integrated crystal on the modules, which will remain at 26 MHz.

4. 变更对比/ Change Comparison

请见附录 I：变更对比。

Please refer to Appendix I: Change comparison.

识别方式/Identification Method:

芯片产品通过 eFuse , 产品丝印。

模组产品通过主芯片的 eFuse，产品丝印的产品规格标识位，或产品外箱标签中的 PW 号。

开发板产品通过主芯片的 eFuse，模组丝印的产品规格标识位，或产品外箱标签中的 PW 号。

Chip products: Identified by eFuse bits, chip marking.

Module products: Identified by the chip eFuse, module marking or PW No. on carton box.

Development board product: Identified by the chip eFuse, module marking or PW No. on carton box.

5. 变更影响/ Impact of Change

1) 品质和性能/ Quality & Performance:

   变更后的 ESP32-C2 系列芯片可兼容使用 26 MHz 和 40 MHz 晶振。

   After change, ESP32-C2 chip revision v1.1 supports both 26 MHz and 40 MHz crystal.

2) 交期/ Delivery: 无影响/No impact

3) 生产料号/ Material Part Numbers (MPN):

   客户可以继续使用原有的芯片产品订购型号下单;

   段落 1 中列出的模组的 MPN 不变更，客户可以继续使用原有的模组 MPN 进行下单。

   Customers can continue using the existing chip ordering codes to place orders.

   There is no change to the MPN of the affected Espressif modules listed in para 1. Customers can continue to use existing MPN to place orders.

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。

   The current ESP-IDF version is compatible with the changed products listed in Para 1, customers can continue to use the current IDF version when using changed products on production and no ESP-IDF upgrade is required.

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

FIFO

7. 相关报告/ Related Report(s):

☑Related ECN No.   ECN-2022-042

☑Errata   [ESP8684 系列芯片勘误表](#)/ [ESP8684 Series SoC Errata](#)
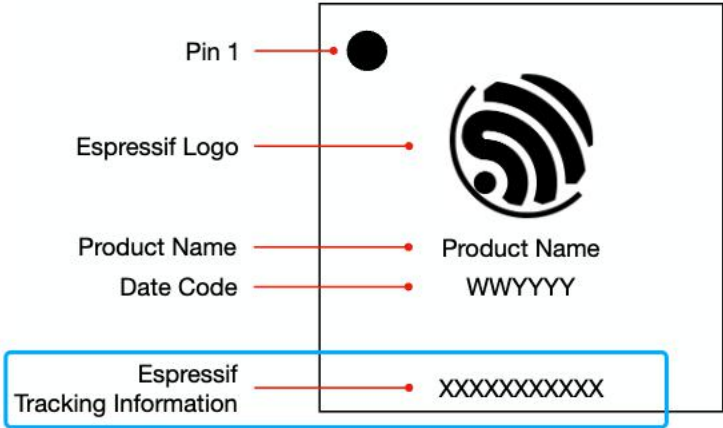
☑RF Performance Test   Pass

8. 给使用者的验证建议/ Verification Suggestion To Users

建议客户结合实际应用场景进行验证。

Suggest customer can do the verification with practical application scenarios.

Appendix I 变更对比/ Change Comparison

No.	项目/ Item	变更前/ Before Change	变更后/ After Change
1	Chip Revision	v1.0	v1.1
2	eFuse 标识位/ eFuse Identification Bits		
	EFUSE_BLK2_DATA1_REG[21]	0	0
	EFUSE_BLK2_DATA1_REG[20]	1	1
	EFUSE_BLK2_DATA1_REG[19]	0	0
	EFUSE_BLK2_DATA1_REG[18]	0	0
	EFUSE_BLK2_DATA1_REG[17]	0	0
	EFUSE_BLK2_DATA1_REG[16]	0	1
3	ESP32-C2 Series Chip Marking (Main Die Line)		
		xAAxxxxxxx	xBxxxxxxxx
4	ESP32-C2 Series Module MPN	No change	
5	ESP32-C2 Series Module Marking（Specification Marking Line）		
		XAXXXX	XBXXXX

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:	