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-S2、ESP32-S3、ESP8684、ESP8685、ESP32-C3 芯片规格书“支持外部功率放大器”功能移除
Remove "External power amplifier support" Feature in ESP32-S2, ESP32-S3, ESP8684, ESP8685, ESP32-C3 Chip Datasheets

PCN 编号 PCN No.	PCN20221102	提出日期 Issue Date of PCN	2022/12/01
变更日期 Proposed Date of Change	2022/12/14	预计变更后产品首次出货日期 Proposed Date of First Shipment After Change	NA，产品无变更 Product has no change.
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

ESP32-S2 Series
ESP32-S3 Series
ESP8684 Series
ESP8685 Series
ESP32-C3 Series

2. 变更原因/ Reason for Change

在 ESP32-S2、ESP32-S3、ESP8684、ESP8685 和 ESP32-C3 芯片规格书 > 产品特性 > Wi-Fi 部分，“支持外部功率放大器”被列为芯片的特性之一。然而，并不建议用户在这些芯片产品上外接外部功率放大器，原因如下：

这些芯片产品本身的发射功率已经非常高，例如，ESP32-S3 能达到 20 dBm，因此，没有必要使用外部功率放大器，而且增加外部功率放大器也不会显著提高性能。

In ESP32-S2, ESP32-S3, ESP8684, ESP8685 and ESP32-C3 chip datasheets > Features > Wi-Fi section, the item “External PA is supported” or “Supports external power amplifier” is listed as a feature. Yet, it is not recommended for users to use external power amplifier for these chip products for the following reason:

These chip products already have very high TX power, for example, 21 dBm for ESP32-S3. Therefore, there is no need to use external PA, and adding an external PA hardly improves the performance.

3. 变更描述/ Description of Change

在 ESP32-S2、ESP32-S3、ESP8684、ESP8685 和 ESP32-C3 芯片规格书 > 产品特性 > Wi-Fi 部分，移除“支持外部功率放大器”。

In ESP32-S2, ESP32-S3, ESP8684, ESP8685 and ESP32-C3 chip datasheets > Features > Wi-Fi section, remove the item “External PA is supported” or “Supports external power amplifier”.

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/ Material Part Numbers (MPN): 无影响/ No impact

4) 认证/ Certification: 无影响/ No impact

5) 软件/ IDF：无影响/ No impact

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

NA, 产品无变更。Product has no change.

7. 相关报告/ Related Report(s):

☑Related ECN No. ECN-2022-043

Appendix I 变更对比/ Change Comparison

1. 变更基本信息/ Change General Information

芯片系列 Chip Series	变更前数据规格书版本 Datasheet Version Before Change	变更后数据规格书版本 Datasheet Version After Change
ESP32-S2	v1.4	v1.5
ESP32-S3	v1.4	v1.5
ESP8684	v1.0	v1.1
ESP8685	v1.0	v1.1
ESP32-C3	v1.3	v1.4

注/Note：

乐鑫技术规格书可查阅技术文档。

Espressif technical Datasheet can see on Technical Documents.

2. 变更详细信息/ Change Detailed Information

以 ESP32-S3 芯片数据规格书为例：

Take ESP32-S3 Chip Datasheet as an example:

中文版本变更前与变更后：

Chinese datasheet before and after change:

产品特性

Wi-Fi

- 支持 IEEE 802.11 b/g/n 协议
- 在 2.4 GHz 频带支持 20 MHz 和 40 MHz 频宽
- 支持 1T1R 模式，数据速率高达 150 Mbps
- 无线多媒体 (WMM)
- 帧聚合 (TX/RX A-MPDU, TX/RX A-MSDU)
- 立即块确认 (Immediate Block ACK)
- 分片和重组 (Fragmentation/defragmentation)
- Beacon 自动监测（硬件 TSF）
- 4 × 虚拟 Wi-Fi 接口
- 同时支持基础结构型网络 (Infrastructure BSS) Station 模式、SoftAP 模式和 Station + SoftAP 混杂模式
  请注意，ESP32-S3 在 Station 模式下扫描时，SoftAP 信道会同时改变
- 天线分集
- 802.11 mc FTM
- 支持外部功率放大器

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- 天线分集
- 802.11 mc FTM

英文版本变更前与变更后：

English datasheet before and after change:

Features

Wi-Fi

- IEEE 802.11 b/g/n-compliant
- Supports 20 MHz, 40 MHz bandwidth in 2.4 GHz band
- 1T1R mode with data rate up to 150 Mbps
- Wi-Fi Multimedia (WMM)
- TX/RX A-MPDU, TX/RX A-MSDU
- Immediate Block ACK
- Fragmentation and defragmentation
- Automatic Beacon monitoring (hardware TSF)
- 4 × virtual Wi-Fi interfaces
- Simultaneous support for Infrastructure BSS in Station, SoftAP, or Station + SoftAP modes
  Note that when ESP32-S3 scans in Station mode, the SoftAP channel will change along with the Station channel
- Antenna diversity
- 802.11mc FTM
- External PA is supported

Bluetooth

- Bluetooth LE: Bluetooth 5, Bluetooth mesh
- High power mode (21 dBm)
- Speed: 125 Kbps, 500 Kbps, 1 Mbps, 2 Mbps
- Advertising extensions
- Multiple advertisement sets
- Channel selection algorithm #2
- Internal co-existence mechanism between Wi-Fi and Bluetooth to share the same antenna

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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:	