Introduction of GD25Q64ESIG as an alternative 8 MB flash source of Espressif ESP32 Modules

1. Affected Product Name

ESP32-WROOM-32(M103QH6400PH3Q0) / ESP32-WROOM-32D(M113DH6400PH3Q0) 
ESP32-WROOM-32U(M113DH6400UH3Q0) / ESP32-WROVER-B(M213DH6464PH3Q0)  
ESP32-WROVER-IB(M213DH6464UH3Q0) / ESP32-WROVER-E(M213EH6464PH3Q0) 
ESP32-WROVER-IE(M213EH6464UH3Q0) / ESP32-WROOM-32E(M113EH6400PH3Q0)  
ESP32-WROOM-32UE(M113EH6400UH3Q0) / ESP32-DU1906(M403EH6464PH3Q0)  
ESP32-DU1906-U(M403EH6464UH3Q0) 

2. Reason for Change

Recently, GigaDevice Semiconductor Inc. (GD), 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: GD25Q64ESIG provided by GigaDevice Semiconductor Inc.(GD) as the new alternative source for Espressif modules listed in Para 1.

3. Description of Change

Introducing the 8 MB, -40℃ ~ 85℃ flash, Part Number: GD25Q64ESIG as an alternative source for the Espressif modules listed in para1.

4. Change Comparison

Please refer to Appendix I: Change Information.
Please refer to Appendix I: Change Information.

5. 变更影响/Impact of Change
1) 品质和性能/Quality & Performance:
   Flash Part Number GD25Q64ESIG has completed qualification test of ESP32 series modules. Espressif confirms it fully meets the requirements for quality and performance on Espressif ESP32 series modules.

2) 交期/Delivery:
   There is no impact to delivery performance of the affected Espressif modules. The introduction of a new source of flash for the modules will improve the robustness of their supply chain.

3) 生产料号/Material Part Numbers (MPN):
   There is no change to the MPN of the affected Espressif modules. Customers can continue to use existing MPN to place orders.

4) 认证/Certification:
   The change does not affect the Wifi and BT performance of the modules and does not affect the validity of their existing Wifi and BT certifications.

5) 其他/Others:
   NA

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-2021-016
   - Material Qualification Report #35662 GD25Q64ESIG on ESP32 series module;
   - Environment Related Report (RoHS / REACH / HF etc.) GD25Q64ESIG Environment Compliance Information
### Appendix I  变更信息/Change Information

<table>
<thead>
<tr>
<th>变更前/Before Change</th>
<th>变更后/After Change</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Flash Part Number</strong></td>
<td></td>
</tr>
<tr>
<td>XXX</td>
<td>Add GD25Q64ESIG</td>
</tr>
<tr>
<td><strong>Spec</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Flash Operating Voltage</strong></td>
<td></td>
</tr>
<tr>
<td>2.7V~3.6V</td>
<td>2.7V ~ 3.6V</td>
</tr>
<tr>
<td>All of the affected modules should work at 3.0V ~ 3.6V, so both types of Flash meet the requirements.</td>
<td></td>
</tr>
<tr>
<td><strong>Typical Power Supply Voltage (No Changes)</strong></td>
<td></td>
</tr>
<tr>
<td>3.3V</td>
<td>3.3V</td>
</tr>
<tr>
<td><strong>Flash Capacity (No Changes)</strong></td>
<td></td>
</tr>
<tr>
<td>8 MB</td>
<td>8 MB</td>
</tr>
<tr>
<td><strong>Flash Temperature Range (No Changes)</strong></td>
<td></td>
</tr>
<tr>
<td>-40℃ ~ 85 ℃</td>
<td>-40℃ ~ 85 ℃</td>
</tr>
<tr>
<td><strong>Product Name/MPN (No Changes)</strong></td>
<td></td>
</tr>
<tr>
<td>See in Para 1</td>
<td>See in Para 1</td>
</tr>
</tbody>
</table>
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 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 date of issue of the PCN constitutes acceptance of the proposed changes.

客户通知/ Customer Notification:

a) 客户须在乐鑫发出 PCN 后 14 天内通知乐鑫收到该 PCN。如客户未在收到 PCN 后的 14 天内反馈乐鑫，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
                                     □ 需要进一步分析/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: