发布 ESP32-C3-MINI-1 模组通用 AT 固件 V2.4.2.0

Release ESP32-C3-MINI-1 module Default Common AT firmware V2.4.2.0

<table>
<thead>
<tr>
<th>PCN 编号 / PCN No.</th>
<th>PCN20220902</th>
<th>提出日期 / Issue Date of PCN</th>
<th>2022/09/16</th>
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<tr>
<td>变更日期 / Proposed Date of Change</td>
<td>2022/10/15</td>
<td>预计变更后产品首次出货日期 / Proposed Date of First Shipment After Change</td>
<td>2022/12/16</td>
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<td>PCN 类型 / PCN Category</td>
<td>☑客户需要批准/Customer Approval Required</td>
<td>☐客户通知/Customer Notification</td>
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</tbody>
</table>

1. 影响产品名称 / Affected Product Name
   ESP32-C3-MINI-1-N4, ESP32-C3-MINI-1-H4

2. 变更原因 / Reason for Change
   正式发布段落 1 列出模组对应的 AT 固件。
   Officially release the AT firmware of the modules listed in Para 1.

3. 变更描述 / Description of Change
   正式发布模组默认烧写通用版本 AT 固件。
   Official release default common version AT firmware on modules 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.
   通过包装标签信息识别该变更。Identify the change by querying the Package Label Information.

5. 变更影响 / Impact of Change
   1) 品质和性能 / Quality & Performance:
      由于产品的硬件未做变更，理论上此变更对产品品质、性能及使用均无影响，实际应用中客户可基于自身应用场景进一步测试。
      Since the hardware of the product has not been changed, theoretically this change has no impact on the product quality, performance and use cases of those products listed in Para 1. In practical applications, customers can further test based on their own application scenarios.
   2) 成本 / Cost:
      对直接使用通用 AT 固件的客户，可降低后续生产环节的烧录成本。
      If you directly use the common AT firmware, the programming cost in subsequent production can be reduced.
   3) 交期 / Delivery: 无 / None
   4) 生产料号 / Material Part Numbers (MPN): 无 / None
   5) 认证 / Certification: 无 / None

6. 变更前后产品处理 / How to Deal with Products
   FIFO，针对客户特殊要求的 AT 版本，按照客户实际要求执行。
   FIFO. Please proceed as requested if customers request a particular AT firmware version.
7. 变更验证结果/ Test Verification Result

<table>
<thead>
<tr>
<th>☑ Related ECN No.</th>
<th>ECN-2022-031</th>
</tr>
</thead>
<tbody>
<tr>
<td>☑ Performance Test</td>
<td>Performance Test is Pass.</td>
</tr>
</tbody>
</table>

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

建议使用者根据实际应用场景、真实应用环境，如实际应用的网络、路由器设备、温湿度环境等，对产品用到的功能做整机测试。

It is suggested that users conduct a complete machine test of the functions used in the product according to the actual application scenarios and real application environment, such as the actual application network, routers, temperature and humidity environment, etc.
# Appendix I 变更对比/Change Comparison

## 1. ESP32-C3-MINI-1 模组变更信息

### ESP32-C3-MINI-1 Modules Change Information

<table>
<thead>
<tr>
<th>需求项</th>
<th>变更前</th>
<th>变更后</th>
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<tbody>
<tr>
<td>产品名称</td>
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</tr>
<tr>
<td>丝印</td>
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<td>No Change</td>
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### 标签信息/Label Information

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</tr>
<tr>
<td>产品料号</td>
<td>Part Number</td>
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</tr>
<tr>
<td>数量</td>
<td>Quantity</td>
<td>3250 pcs</td>
</tr>
</tbody>
</table>

### 固件/ Firmware

<table>
<thead>
<tr>
<th>固件版本</th>
<th>Firmware Ver</th>
<th>AT: NA, FW PN: NA</th>
</tr>
</thead>
</table>

### 固件查询/ Firmware Query

通过串口 AT 命令查询 AT 版本号

发送: AT+GMR 返回: V2.4.2.0
2. ESP32- C3-MINI-1 AT v2.4.2.0 发布说明
ESP32- C3-MINI-1 AT v2.4.2.0 Release Note

Features

Base AT command

• AT: Test AT startup.
• AT+RST: Restart a module.
• AT+GMR: Check version information.
• AT+CMD: List all AT commands and types supported in current firmware.
• AT+GSLP: Enter Deep-sleep mode.
• ATE: Configure AT commands echoing.
• AT+RESTORE: Restore factory default settings of the module.
• AT+UART_CUR: Current UART configuration, not saved in flash.
• AT+UART_DEF: Default UART configuration, saved in flash.
• AT+SLEEP: Set the sleep mode.
• AT+SYSRAM: Query current remaining heap size and minimum heap size.
• AT+SYMSMG: Query/Set System Prompt Information.
• AT+SYSFLASH: Query/Set User Partitions in Flash.
• AT+FS: Filesystem Operations.
• AT+RFPOWER: Query/Set RF TX Power.
• AT+SYSROLLBACK: Roll back to the previous firmware.
• AT+SYSTIMESTAMP: Query/Set local time stamp.
• AT+SYSLOG: Enable or disable the AT error code prompt.
• AT+SLEEPWKCFG: Query/Set the light-sleep wakeup source and awake GPIO.
• AT+SYSSTORE: Query/Set parameter store mode.
• AT+SYSREG: Read/write the register.
• AT+SYSTEMP: Read the internal chip Celsius temperature value.

Wi-Fi command

• AT+CWMODE: Set the Wi-Fi mode (Station/SoftAP/Station+SoftAP).
• AT+CWSTATE: Query the Wi-Fi state and Wi-Fi information.
• AT+CWJAP: Connect to an AP.
• AT+CWRECONNCFG: Query/Set the Wi-Fi reconnecting configuration.
• AT+CWLAPOPT: Set the configuration for the command AT+CWLAP.
• AT+CWLAP: List available APs.
• AT+CWQAP: Disconnect from an AP.
AT+CWSAP: Query/Set the configuration of an ESP32-C3 SoftAP.
AT+CWLIF: Obtain IP address of the station that connects to an ESP32-C3 SoftAP.
AT+CWXIF: Disconnect stations from an ESP32-C3 SoftAP.
AT+CWDHCP: Enable/disable DHCP.
AT+CWDHCP: Query/Set the IP addresses allocated by an ESP32-C3 SoftAP DHCP server.
AT+CWAUTOCONN: Connect to an AP automatically when powered on.
AT+CWAPPROTO: Query/Set the 802.11 b/g/n protocol standard of SoftAP mode.
AT+CWSTAPROTO: Query/Set the 802.11 b/g/n protocol standard of station mode.
AT+CIPSTAMAC: Query/Set the MAC address of an ESP32-C3 station.
AT+CIPAPMAC: Query/Set the MAC address of an ESP32-C3 SoftAP.
AT+CIPSTA: Query/Set the IP address of an ESP32-C3 station.
AT+CIPAP: Query/Set the IP address of an ESP32-C3 SoftAP.
AT+CWSTARTSMART: Start SmartConfig.
AT+CWSTOPSMART: Stop SmartConfig.
AT+WPS: Enable the WPS function.
AT+MDNS: Configure the mDNS function.
AT+CWJEAP: Connect to a WPA2 Enterprise AP.
AT+CWHOSTNAME: Query/Set the host name of an ESP32-C3 station.
AT+CWCOUNTRY: Query/Set the Wi-Fi Country Code.

TCP/IP command

AT+CIPV6: Enable/disable the network of Internet Protocol Version 6 (IPv6).
AT+CIPSTATE: Obtain the TCP/UDP/SSL connection information.
AT+CIPSTATUS (deprecated): Obtain the TCP/UDP/SSL connection status and information.
AT+CIPDOMAIN: Resolve a Domain Name.
AT+CIPSTART: Establish TCP connection, UDP transmission, or SSL connection.
AT+CIPSTARTEX: Establish TCP connection, UDP transmission, or SSL connection with an automatically assigned ID.
[Data Mode Only] +++: Exit from the data mode.
AT+CIPSEND: Send data in the normal transmission mode or Wi-Fi normal transmission mode.
AT+CIPSENDL: Send long data in parallel in the normal transmission mode.
AT+CIPSENDLCFG: Set the configuration for the command AT+CIPSENDL.
AT+CIPSENDEX: Send data in the normal transmission mode in expanded ways.
AT+CIPCLOSE: Close TCP/UDP/SSL connection.
AT+CIFSR: Obtain the local IP address and MAC address.
AT+CIPMUX: Enable/disable the multiple connections mode.
AT+CIPSERVER: Delete/create a TCP/SSL server.
AT+CIPSERVERMAXCONN: Query/Set the maximum connections allowed by a server.
- AT+CIPMODE: Query/Set the transmission mode.
- AT+SAVETRANSLINK: Set whether to enter Wi-Fi normal transmission mode on power-up.
- AT+CIPSTO: Query/Set the local TCP Server Timeout.
- AT+CIPSNTPCFG: Query/Set the time zone and SNTP server.
- AT+CIPSNTPTIME: Query the SNTP time.
- AT+CIPSNTPINTV: Query/Set the SNTP time synchronization interval.
- AT+CIPUPDATE: Upgrade the firmware through Wi-Fi.
- AT+CIPDINFO: Set “+IPD” message mode.
- AT+CIPSSLCCONF: Query/Set SSL clients.
- AT+CIPSSLCCN: Query/Set the Common Name of the SSL client.
- AT+CIPSSLCSNI: Query/Set SSL client Server Name Indication (SNI).
- AT+CIPSSLCPSK: Query/Set SSL client Pre-shared Key (PSK).
- AT+CIPRECONNINTV: Query/Set the TCP/UDP/SSL reconnection interval for the Wi-Fi normal transmission mode.
- AT+CIPRECVMODE: Query/Set socket receiving mode.
- AT+CIPRECVDATA: Obtain socket data in passive receiving mode.
- AT+CIPRECVLEN: Obtain socket data length in passive receiving mode.
- AT+PING: Ping the remote host.
- AT+CIPDNS: Query/Set DNS server information.
- AT+CIPTCPOPT: Query/Set the socket options.

BT&BLE command

- AT+BLEINIT: Bluetooth LE initialization.
- AT+BLEADDR: Query/Set Bluetooth LE device address.
- AT+BLENAME: Query/Set Bluetooth LE device name.
- AT+BLESCANPARAM: Query/Set parameters of Bluetooth LE scanning.
- AT+BLESCAN: Enable Bluetooth LE scanning.
- AT+BLESCANRSPDATA: Set Bluetooth LE scan response.
- AT+BLEADVPARAM: Query/Set parameters of Bluetooth LE advertising.
- AT+BLEADVDATA: Set Bluetooth LE advertising data.
- AT+BLEADVDATAEX: Automatically set Bluetooth LE advertising data.
- AT+BLEADVSTART: Start Bluetooth LE advertising.
- AT+BLEADVSTOP: Stop Bluetooth LE advertising.
- AT+BLECONN: Establish Bluetooth LE connection.
- AT+BLEDISCONN: End Bluetooth LE connection.
- AT+BLEDATALEN: Set Bluetooth LE data packet length.
- AT+BLECFCFGMTU: Set Bluetooth LE MTU length.
- AT+BLEGATTSSRVCRE: Generic Attributes Server (GATT) creates services.
- AT+BLEGATTSSRVSTART: GATT starts services.
- AT+BLEGATTSSRVSTOP: GATT Stops Services.
- AT+BLEGATTSSRV: GATT discovers services.
- AT+BLEGATTSCHAR: GATT discovers characteristics.
- AT+BLEGATTSNFTFY: Notify a client of the value of a characteristic value from the server.
- AT+BLEGATTSIND: Indicate the characteristic value from the server to a client.
- AT+BLEGATTSSETATTR: GATT sets characteristics.
- AT+BLEGATTCPRIMSRV: Generic Attributes Client (GATTC) discovers primary services.
- AT+BLEGATTINCINCLSRV: GATTC discovers included services.
- AT+BLEGATTCCHAR: GATTC discovers characteristics.
- AT+BLEGATTCWR: GATTC writes characteristics.
- AT+BLESPPOCFG: Query/Set Bluetooth LE SPP parameters.
- AT+BLESPP: Enter Bluetooth LE SPP mode.
- AT+BLESPPC: Query/Set Bluetooth LE encryption parameters.
- AT+BLEENC: Initiate Bluetooth LE encryption request.
- AT+BLEENCService: Respond to the pairing request from the peer device.
- AT+BLEKEYREPLY: Reply the key value to the peer device.
- AT+BLECONFREPLY: Reply the confirm value to the peer device in the legacy connection stage.
- AT+BLEENCDEV: Query bonded Bluetooth LE encryption device list.
- AT+BLEENCCCLEAR: Clear Bluetooth LE encryption device list.
- AT+BLESETKEY: Set Bluetooth LE static pair key.
- AT+BLEHIDINIT: Bluetooth LE Human Interface Device (HID) profile initialization.
- AT+BLEHIDKB: Send Bluetooth LE HID keyboard information.
- AT+BLEHIDMUS: Send Bluetooth LE HID mouse information.
- AT+BLEHIDCONSUMER: Send Bluetooth LE HID consumer information.
- AT+BLUFI: Start or Stop BluFi.
- AT+BLUFNAME: Query/Set BluFi device name.
- AT+BLEPERIODICDATA: Set Bluetooth LE periodic advertising data.
- AT+BLEPERIODICSTART: Start Bluetooth LE periodic advertising.
- AT+BLEPERIODICSTOP: Stop Bluetooth LE periodic advertising.
- AT+BLESYNCSTART: Start to synchronize with periodic advertising.
- AT+BLESYNCSTOP: Stop synchronizing with periodic advertising.
- AT+BLEREADPHY: Query the current transmitter PHY.
- AT+BLESETPHY: Set the current transmitter PHY.
MQTT command

- AT+MQTTUSERCFG: Set MQTT user configuration
- AT+MQTTCLIENTID: Set MQTT client ID
- AT+MQTTUSERNAME: Set MQTT username
- AT+MQTPASSWORD: Set MQTT password
- AT+MQTTCONNCFG: Set configuration of MQTT connection
- AT+MQTTALPN: Set MQTT Application Layer Protocol Negotiation (ALPN)
- AT+MQTTCOMP: Connect to MQTT Brokers
- AT+MQTTPUB: Publish MQTT Messages in string
- AT+MQTTPUBRAW: Publish long MQTT messages
- AT+MQTTSUB: Subscribe to MQTT topics
- AT+MQTTUNSUB: Unsubscribe from MQTT topics
- AT+MQTTCLEAN: Close MQTT connections

HTTP command

- AT+HTTPCLIENT: Send HTTP Client Request
- AT+HTTPGETSIZE: Get HTTP Resource Size
- AT+HTTPCGET: Get HTTP Resource
- AT+HTTPPCPOST: Post HTTP data of specified length
- AT+HTTPURLCFG: Set/Get long HTTP URL
Espressif Email Notifications

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](#).

Customer Response Requirements

**Need customer approval/change requiring customer approval:**

a) Customer must acknowledge receipt of the PCN within 30 calendar days from the date of issue of the PCN. If no acknowledgment is received, the PCN is considered as notified 30 calendar days after the issue of the PCN.

b) 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.

Customer Notification:

a) Customers are requested to acknowledge receipt of the PCN within 14 calendar days from the date of issue of the PCN. If no response is received after 14 calendar days, customers would be considered as having acknowledged the PCN.

Please send feedback to [pcn@espressif.com](mailto:pcn@espressif.com).

Customer Approval/Acknowledgement and Remarks

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<thead>
<tr>
<th>Customer Company Name:</th>
</tr>
</thead>
<tbody>
<tr>
<td>PCN Review Result:</td>
</tr>
<tr>
<td>□ Approved/Acknowledged</td>
</tr>
<tr>
<td>□ Rejected</td>
</tr>
<tr>
<td>□ Further Analysis Required</td>
</tr>
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</table>

Customer Comment:

Company Representative’s Name: Company Representative’s Job Title:

Company Representative’s Signature: Date: