

v2.4.0.0 Release Notes

v2.4.0.0 is released for ESP32 and ESP32-C3. The changes since the previous version are as follows.

- [ESP32-AT](#)
- [ESP32C3-AT](#)

ESP32-AT

Documentation for Release v2.4.0.0 is available at <https://docs.espressif.com/projects/esp-at/en/release-v2.4.0.0/esp32/index.html> ESP32-AT v2.4.0.0 is a major update for ESP32-AT v2.2.0.0.

The firmwares:

- [ESP32-WROOM-32_AT_Bin_V2.4.0.0.zip](#)
- [ESP32-WROVER_AT_Bin_V2.4.0.0.zip](#)
- [ESP32-SOLO_AT_Bin_V2.4.0.0.zip](#)
- [ESP32-PICO-D4_AT_Bin_V2.4.0.0.zip](#)
- [ESP32-MINI-1_AT_Bin_V2.4.0.0.zip](#)

This is the list of changes since release v2.2.0.0:

Breaking Changes

- **esp-idf** version updated to release v4.3 (588436db)
- **BT A2DP**: modified default I2S_DATA_PIN from **GPIO33** to **GPIO25** (due to pin conflicts with 32 kHz crystal oscillator when using BLE light sleep)
- **AT+CWJAP**: default <pmf> parameter is modified from 0 to 1 to improve Wi-Fi security as much as possible
- **AT+RFPOWER**: default BLE tx power parameters are modified from 0 to 2

Known Issue

- Sometimes a crash occurs before restarting when implementing **AT+RST** and **AT+RESTORE** command
- The power consumption in Deep-sleep mode is larger than the previous version in the default firmware. (You can revert it by disabling CONFIG_ESP32_RTC_CLK_SRC_EXT_CRYST, if you do not use BLE light sleep)

1. Feature

1.1 Wi-Fi

- Added **AT+CWSTATE** command to query Wi-Fi state
- **AT+CWSTARTSMART**: added support for ESP-Touch
- **AT+CWLAP**: added support for WAPI authmode
- Support multiple phy data (use different RF parameters according to the country code you set)

1.2 TCP/IP

- Enlarged send size of **AT+CIPSEND** command to 8 KiB
- Added **AT+CIPSTATE** command to query connection state
- Added **AT+CIPSENDL** and **AT+CIPSENDLCFG** commands to support long data send
- Support for passthrough mode when AT works as a server with only one connection
- Enabled Mbed TLS memory alloc from external RAM for ESP32-WROVER module
- **AT+CIPTCPOPT**: Added the <keep-alive> parameter
- **AT+CIPSSLCONF**: Support more than 5 sets of ca certificates

1.3 Application Layer

- Added **AT+MQTTALPN** command to support MQTT ALPN
- Added **AT+HTTTPURLCFG** command to configure long URL
- Added **AT+HTTTPCGET** command to support HTTP GET request
- **AT+HTTTPCLIENT**: <content-type> parameter can be omitted
- Added **AT+CIPSNTPTINTV** command to configure SNTP sync interval
- Added **AT+USEROTA** command to support the upgrade of custom URL
- Added fallback DNS server. AT has two DNS servers ("208.67.222.222" and "8.8.8.8") by default.
- Added **AT+USERDOCS** command to query the ESP-AT user guide for the running firmware.

1.4 System

- Added **AT+SLEEP** query command
- Enabled external 32 kHz crystal to support BLE light sleep by default
- **AT+RFPOWER**: Wi-Fi tx power parameter can be omitted now
- Support ESP32 SDIO module

1.5 Bluetooth

- Support disabling BLE SPP auto-conn mode
- Support setting BLE HID name
- Support filtering scan result

1.6 Documentation

- Support choosing different docs depends on different targets
- Moved FAQ documents from ESP-FAQ to ESP-AT-FAQ
- Moved CSDN documentd about AT to ESP-AT
- Added more documents and improve document quality

2. Bugfix

2.1 Wi-Fi

- Fixed that **AT+CWLAP** returned ERROR sometimes.
- Fixed that **AT+CWJAP** returned wrong errno sometimes.
- Fixed an issue of auto connecting to WPA2 Enterprise AP. Users should always use **AT+CWJEAP** to connect to an WPA2 Enterprise AP.
- Fixed a potential crash when the length of SSID is 32 bytes or password is 64 bytes.

2.2 TCP/IP

- Fixed that AT+CIPSERVER=0,1 should only close clients connected to ESP TCP server.
- Fixed active write TCP data in passive mode.
- Fixed occasional crash in passthrough mode due to socket close.
- Fixed that OK and > responses were interrupted by other data.
- Fixed that AT+CIPSERVER=5 returned "Have 255 Connections".
- Fixed that AT+CIPTCPOPT send timeout parameter could not work sometimes.
- Fixed potential illegal assignment of AT+CIPTCPOPT command in multiple connection.
- AT+CIUPDATE: fixed the failure to do non-blocking OTA due to omitted parameters.
- Fixed that AT+CIPSTO did not reset the timer when data was sent
- Fixed that ssl connection was disconnected after receiving some data in passive read mode
- Fixed that AT+CIPSSLCPK command could not work
- Fixed that AT+CIPSSLCCN and AT+CIPSSLCSNI maximum parameter length cannot be set to 64

2.3 Application Layer

- AT+HTTPCPOST: Fixed that the new content-type did not take effect because the default content-type was set incorrectly.
- Removed extra space in AT+HTTPCLIENT HEAD response.
- Fixed that AT+CIPDNS query command returned wrong config.
- Fixed the crash caused by setting wrong URLs in AT+HTTPCLIENT.

2.4 System

- Fixed a potential "busy p" issue.
- Fixed the issue of high power consumption after power on when set AT+CWMODE=0.
- Fixed the crash caused by setting the invalid GPIO wakeup config
- Fixed UART data blocks when the UART event notify is missing
- Fixed that socket interface of AT always returned busy p
- Fixed that UART1 printed extra chars during light sleep

2.5 Bluetooth

- Fixed BLE service discovery failure
- Fixed Classic Bluetooth build failure
- Fixed the failure to initiate BLE connection
- Fixed the format of response returned by AT+BLENCDEV
- Fixed send indication failure
- Fixed the crash caused by BLE connection failure
- Fixed losing data over BLE SPP
- Fixed BT SPP memory leak

2.6 Tools

- Added utility tool at.py to modify the parameter configuration of factory firmware

3. Optimization

- Simplified esp-at build. Now, you can use `./build.py install` to install all environments, and use `./build.py build` to build the project.
- Added parameter check for AT+WPS command.
- Added parameter check for AT+CIPSERVER command.
- Added parameter check for AT+CIPTCPOPT command.
- Reduced potential NVS write at startup when NVS read the dirty data.

ESP32C3-AT

Documentation for Release v2.4.0.0 is available at <https://docs.espressif.com/projects/esp-at/en/release-v2.4.0.0/esp32c3/index.html> ESP32C3-AT v2.4.0.0 is a major update for ESP32C3-AT v2.3.0.0.

The firmwares:

- [ESP32-C3-MINI-1_AT_Bin_V2.4.0.0.zip](#)

This is the list of changes since release v2.3.0.0:

Breaking Changes

- `esp-idf` version updated to release v4.3 (588436db)
- `AT+CWJAP`: default `<pmf>` parameter is modified from 0 to 1 to improve Wi-Fi security as much as possible
- `AT+RFPOWER`: default BLE tx power parameters are modified from 0 to 2
- The `AT+BLEADVPARAM` command must be set before the `AT+BLEADVPARAM` command (previous version does not have such a limit)

Known Issue

- The power consumption in Deep-sleep mode is larger than the previous version in the default firmware. (You can revert it by disabling `CONFIG_ESP32_RTC_CLK_SRC_EXT_CRYST`, if you do not use BLE light sleep.)

1. Feature

1.1 Wi-Fi

- Support multiple phy data (use different RF parameters according to the country code you set)

1.2 TCP/IP

- `AT+CIPTCPOPT`: Added the `<keep-alive>` parameter
- `AT+CIPSSLCONF`: Support more than 5 sets of ca certificates

1.3 Application Layer

- Added `AT+USERDOCS` command to query the ESP-AT user guide for the running firmware.

1.4 System

- AT+RFPOWER: Wi-Fi tx power parameter can be omitted now
- Support ESP32-C3 SPI module

1.5 Bluetooth

- Support disabling BLE SPP auto-conn mode
- Support setting BLE HID name
- Support filtering scan result
- Support BLE 5.0 features

1.6 Documentation

- Support choosing different docs depends on different targets
- Moved the FAQ document from ESP-FAQ to ESP-AT-FAQ
- Moved CSDN documents about AT to ESP-AT
- Added more documents and improve document quality

2. Bugfix

2.1 Wi-Fi

- No bugfix

2.2 TCP/IP

- Fixed that AT+CIPSTO did not reset the timer when data was sent
- Fixed occasional failure when AT+CIPSERVERMAXCONN=5 was set
- Fixed that ssl connection was disconnected after receiving some data in passive read mode
- Fixed that AT+CIPSSLCPK command could not work
- Fixed occasional print of 0, CONNECT in passthrough mode
- Fixed potential illegal assignment of AT+CIPTCPOPT command in multiple connection
- Fixed that extra data output if tcp client reconnected when esp-at works as a tcp server in passthrough mode
- Fixed that AT+CIPSSLCCN and AT+CIPSSLCSNI maximum parameter length cannot be set to 64

2.3 Application Layer

- No bugfix

2.4 System

- Fixed the crash caused by setting the invalid GPIO wakeup config
- Fixed that socket interface of AT always returned busy p
- Fixed the crash when an invalid parameter was set for AT+DRVADV command
- Fixed that UART1 printed extra chars during light sleep

2.5 Bluetooth

- Fixed BLE service discovery failure

- Fixed the failure to initiate BLE connection
- Fixed the format of response returned by AT+BLENCDEV command
- Fixed send indication failure
- Fixed the crash caused by BLE connection failure
- Fixed losing data over BLE SPP

2.6 Tools

- Added utility tool `at.py` to modify the parameter configuration of factory firmware

3. Optimization

- Simplified esp-at build. Now, you can use `./build.py install` to install all environments and use `./build.py build` to build the project.
- Added the coexistence check for AT+CIPMODE, AT+CIPSTART, and AT+CIPSERVER command.