

# ESP32-C3 AT Release v2.3.0.0

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Documentation for Release v2.3.0.0 is available at [https://docs.espressif.com/projects/esp-at/en/release-v2.3.0.0\\_esp32c3/](https://docs.espressif.com/projects/esp-at/en/release-v2.3.0.0_esp32c3/)

ESP32-C3 AT v2.3.0.0 is a major update for ESP32-C3.

## Changelog

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

- `esp-idf` version updated to release v4.3 (98d34e5).

### Known Issue

- `AT+WPS=1` cannot join the AP if you press the WPS button first and then set the `AT+WPS=1` command.

## 1. Feature

### 1.1 Wi-Fi

- Added `AT+CWSTATE` command to query Wi-Fi state
- `AT+CWSTARTSMART`: Added ESP-Touch v2 support

### 1.2 TCP/IP

- Enlarged `AT+CIPSEND` command send size to 8 KiB
- Added `AT+CIPSTATE` command to query connection state
- Added `AT+CIPSENDL` and `AT+CIPSENDLCFG` command to support long data send
- Added passthrough mode support when AT as server but only have one connection

### 1.3 Application Layer

- Added `AT+MQTTALPN` command to support MQTT ALPN
- Added `AT+HTTURLCFG` command to configure long URL
- Added `AT+HTTPCGET` command to support HTTP GET request
- `AT+HTTPCLIENT`: `<content-type>` parameter can be omitted
- Added `AT+CIPSNTPINTV` 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

### 1.4 System

- Added `AT+SLEEP` query command
- Configured external 32 KHz crystal to support light sleep
- Modified ESP32-C3 partition for silence mode to accommodate larger firmware

## 1.6 Bluetooth

Added the following Bluetooth® Low Energy AT Commands. If you upgraded to v2.3.0.0 from v2.2.0.0, please update [ble\\_data](#) partition according the [guide](#) before you use Bluetooth LE.

- **AT+RFPOWER** command added BLE power set.
- **AT+BLEINIT**: Bluetooth LE initialization.
- **AT+BLEADDR**: Query/Set Bluetooth LE device address.
- **AT+BLENAM**: 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+BLECONNPARAM**: Query/Update parameters of Bluetooth LE connection.
- **AT+BLEDISCONN**: End Bluetooth LE connection.
- **AT+BLEDATALEN**: Set Bluetooth LE data packet length.
- **AT+BLECFGMTU**: Set Bluetooth LE MTU length.
- **AT+BLEGATTSSRVCRE**: Generic Attributes Server (GATTS) creates services.
- **AT+BLEGATTSSRVSTART**: GATTS starts services.
- **AT+BLEGATTSSRVSTOP**: GATTS Stops Services.
- **AT+BLEGATTSSRV**: GATTS discovers services.
- **AT+BLEGATTSSCHAR**: GATTS discovers characteristics.
- **AT+BLEGATTSSNTFY**: Notify a client of the value of a characteristic value from the server.
- **AT+BLEGATTSSIND**: Indicate the characteristic value from the server to a client.
- **AT+BLEGATTSSSETATTR**: GATTS sets characteristics.
- **AT+BLEGATTCPRIMSRV**: Generic Attributes Client (GATTC) discovers primary services.
- **AT+BLEGATTCCINCLSRV**: GATTC discovers included services.
- **AT+BLEGATTCCCHAR**: GATTC discovers characteristics.
- **AT+BLEGATTCCRD**: GATTC reads characteristics.
- **AT+BLEGATTCCWR**: GATTC writes characteristics.
- **AT+BLESPPCFG**: Query/Set Bluetooth LE SPP parameters.
- **AT+BLESPP**: Enter Bluetooth LE SPP mode.
- **AT+BLESECPARAM**: Query/Set Bluetooth LE encryption parameters.
- **AT+BLEENC**: Initiate Bluetooth LE encryption request.
- **AT+BLEENCRSP**: 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+BLEENCCLEAR**: 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+BLUFINAME**: Query/Set BluFi device name.

## 2. Bugfix

### 2.1 Wi-Fi

- Fixed that AT+CWLAP returned ERROR sometimes.
- Fixed that AT+CWJAP returned wrong error sometimes.
- Fixed an issue of auto connecting to WPA2 Enterprise AP. Users should always use **AT+CWJEAP** to connect to a 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 that active write TCP data in passive mode.
- Fixed occasional crash in passthrough mode due to socket close.
- Fixed that **OK** and **>** responses are interrupted by other data.
- Fixed that setup **AT+CIPSERVER=5** returned "Have 255 Connections".
- Fixed that **AT+CIPTCPOPT** send timeout parameter cannot work sometimes.
- **AT+CIUPDATE**: Fixed the failure to do non-blocking OTA due to omitted parameters.

### 2.3 Application Layer

- **AT+HTTPCPOST**: Fixed that the new content-type did not take effect due to 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**.

### 2.5 Tools

- Fixed the GitHub Actions compilation failure due to required python packages.

## 3. Optimization

- Added parameters check for **AT+WPS** command
- Added parameters check for **AT+CIPSERVER** command
- Added parameters check for **AT+CIPTCPOPT** command
- Reduced potential NVS write at startup when NVS read the dirty data.

- Use `esp-netif` and `esp-event` to layer instead of `tcpip_adapter`.