

ESP32-C3 AT Release v2.3.0.0

Documentation for Release v2.3.0.0 is available at 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

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+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+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+BLEGATTCPINCLSRV`: GATTC discovers included services.
- `AT+BLEGATTCPCHAR`: GATTC discovers characteristics.
- `AT+BLEGATTCPRD`: GATTC reads characteristics.
- `AT+BLEGATTCPWR`: 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`.