Since the ESP8266 AT v2.0, we implement the AT firmware based on the new IDF style ESP8266_RTOS_SDK. Some of the AT commands are different with the old ESP8266 NonOS AT. Considering these major changes may cause significant impact on existing projects, it's recommended that this version is **only used for the implementation of new projects, instead of being used as an upgrade for any existing mass-production projects**.

To run the ESP8266 AT, you can download the binary in ESP8266-IDF-AT/factory to address 0x0. The ESP8266 IDF AT sends AT commands through the following pins.

- GPIO13 is RXD
- GPIO15 is TXD
- GPIO1 is RTS (Optional)
- GPIO3 is CTS (Optional)

We will keep maintaining the old ESP8266 NonOS AT (bug fix only) for a certain but long term. But for the new AT customers, it is suggested to use the new ESP8266 IDF AT.

ESP8266-AT Release v2.1.0.0

Documentation for Release v2.1.0.0

Click to download the official firmware ESP8266-IDF-AT_V2.1.0.0.zip

ESP8266-AT v2.1.0.0 is a major update for ESP8266-AT v2.0.0.0.

This is the list of changes since ESP8266-AT Release v2.0.0.0.

SDK Update and Known issue

- `ESP8266_RTOS_SDK` updates to release v3.3(b6e861a).

1. New Feature & Change List

1.1 Wi-Fi

- AT+CWCOUNTRY: set and query the Wi-Fi country code.
- AT+CWSTAPROTO: set and query the 802.11 b/g/n protocol standard of station mode.
- AT+CWAPPROTO: set and query the 802.11 b/g/n protocol standard of SoftAP mode.
- AT+FACTPLCP: send with long or short PLCP.
- Support scan mode configuration in the command AT+CWJAP.

- Support automatically connect to the previous AP when station mode is enabled again by AT+CWMODE.

1.2 TCP/IP

- AT+CIPTCPOPT: set and query TCP socket options.
- AT+CIPSSLCCN: set and query SSL client common name.
- AT+CIPSSLCSNI: set and query SSL client server name indication.
- AT+CIPSSLCALPN: set and query SSL client application layer protocol negotiation.
- AT+CIPSSLCPSK: set and query SSL client pre-shared key.
- Support multicast in the command AT+CIPSTART.
- Support two-way authentication when create SSL.

1.3 MQTT

- AT+MQTTUSERCFG: set and query MQTT user configuration.
- AT+MQTTCLIENTID: Set and query MQTT client ID.
- AT+MQTTUSERNAME: set and query MQTT username.
- AT+MQTTPASSWORD: set and query MQTT password.
- AT+MQTTCONNCFG: set and query configuration of MQTT Connection.
- AT+MQTTCONN: Connect to MQTT Broker.
- AT+MQTTPUB: Publish MQTT Data in string format.
- AT+MQTTPUBRAW: Publish MQTT message in binary-coded format.
- AT+MQTTSUB: Subscribe MQTT Topic.
- AT+MQTTUNSUB: Unsubscribe from MQTT Topic.
- AT+MQTTCLEAN: Close the MQTT Connection.

1.4 HTTP

- AT+HTTPCLIENT: send HTTP client request.
- AT+HTTPGETSIZE: get HTTP resource size.

1.5 System

- AT+SYSLOG: enable or disable the AT error code prompt.
- AT+SYSSTORE: configure parameter store mode.
- AT+SYSTIMESTAMP: Set local timestamp.
- AT+SYSROLLBACK: roll back to the previous firmware.
- AT+SYSFLASH: set and query user partitions in Flash.
- Support `make SILENCE=1` to disable log for saving flash space.
- Support ESP8266 power save management.
- Support ESP8266 1MB module without OTA.

- Adjust partition table for more features.
- Adjust AT+RFPOWER command.

2. Bugfix

2.1 Wi-Fi

- Fix AT+CWLAP scans fail sometimes.
- Fix the range of AT+CIPRECONNINTV to be [1, 36000].
- Fix AT+RFPOWER set fail when Wi-Fi commands are disabled.
- Fix incorrect Wi-Fi state when AT+CWJAP failed.
- Fix missing Wi-Fi status information if AT+CIPMODE=1.

2.2 System

- Fix AT responses OK even if command ends with CR.
- Fix AT+SYSMSG parameter check.
- Fix `make factory_bin` generates an incorrect bin when flash works in 80MHz mode.
- Fix UART parity configuration error.

2.3 Others

- Fix incorrect last DNS configuration in command AT+CIPDNS.
- Fix the incorrect returned value of DNS command.
- Fix the incorrect response value of SNTP command.

3. Optimization

- Optimize TCP/IP process workflow.
- Optimize Wi-Fi process workflow.

ESP8266 AT V2.0 20190715 Release Note

Basic AT Commands List

- AT : Tests AT startup.
- AT+RST : Restarts a module.
- AT+GMR : Checks version information.

- AT+GSLP : Enters Deep-sleep mode.
- ATE : Configures echoing of AT commands.
- AT+RESTORE : Restores the factory default settings of the module.
- AT+UART_CUR : Current UART configuration.
- AT+UART_DEF : Default UART configuration, saved in flash.
- AT+SLEEP : Sets the sleep mode.
- AT+SYSRAM : Checks the remaining space of RAM.
- AT+SYSMSG : Set message format.
- AT+RFPOWER : Set RF TX Power.

Wi-Fi AT Commands List

- AT+CWMODE : Sets the Wi-Fi mode (STA/AP/STA+AP).
- AT+CWJAP : Connects to an AP.
- AT+CWLAPOPT : Sets the configuration of command AT+CWLAP.
- AT+CWLAP : Lists available APs.
- AT+CWQAP : Disconnects from the AP.
- AT+CWSAP : Sets the configuration of the ESP32 SoftAP.
- AT+CWLIF : Gets the Station IP to which the ESP32 SoftAP is connected.
- AT+CWDHCP : Enables/disables DHCP.
- AT+CWDHCPS : Sets the IP range of the ESP32 SoftAP DHCP server. Saves the setting in flash.
- AT+CWAUTOCONN : Connects to the AP automatically on power-up.
- AT+CIPSTAMAC : Sets the MAC address of ESP32 Station.
- AT+CIPAPMAC : Sets the MAC address of ESP32 SoftAP.
- AT+CIPSTA : Sets the IP address of ESP32 Station.
- AT+CIPAP : Sets the IP address of ESP32 SoftAP.
- AT+CWSTARTSMART : Starts SmartConfig.
- AT+CWSTOPSMART : Stops SmartConfig.
- AT+WPS : Enables the WPS function.
- AT+MDNS : Configurates the MDNS function

TCP/IP-Related AT Commands List

- AT+CIPSTATUS : Gets the connection status.
- AT+CIPDOMAIN : DNS function.
- AT+CIPSTART : Establishes TCP connection, UDP transmission or SSL connection.
- AT+CIPSEND : Sends data.
- AT+CIPSENDEX : Sends data when length of data is , or when \0 appears in the data.
- AT+CIPCLOSE : Closes TCP/UDP/SSL connection.
- AT+CIFSR : Gets the local IP address.
- AT+CIPMUX : Configures the multiple connections mode.

- AT+CIPSERVER : Deletes/Creates TCP or SSL server.
- AT+CIPSERVERMAXCONN : Set the Maximum Connections Allowed by Server.
- AT+CIPMODE : Configures the transmission mode.
- AT+SAVETRANSLINK : Saves the transparent transmission link in flash.
- AT+CIPSTO : Sets timeout when ESP32 runs as a TCP server.
- AT+CIPSNTPCFG : Configures the time domain and SNTP server.
- AT+CIPSNTPTIME : Queries the SNTP time.
- AT+CIUPDATE : Updates the software through Wi-Fi.
- AT+CIPDINFO : Shows remote IP and remote port with +IPD.