The bin in the `ESP32-S2xxx_AT_Bin/factory` folder is the combined bin of all AT binaries, so you can only download the `factory_xxx.bin` to flash address 0 for example testing.

ESP32S2-AT v2.1.0.0 Release Notes

Documentation for Release v2.1.0.0 is available at https://docs.espressif.com/projects/esp-at/en/release-v2.1.0.0_esp32s2/

ESP32S2-AT v2.1.0.0 is the first released firmware for ESP32S2.

Feature

Basic AT Commands

- AT : Tests AT startup.
- AT+RST : Restarts a module.
- AT+GMR : Checks version information.
- 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+SYSRAM : Checks current remaining heap size and minimum heap size.
- AT+SYSMSG : Set message format.
- AT+RFPOWER : Set RF TX Power.
- AT+SYSFLASH : Set User Partitions in Flash.
- AT+SYSROLLBACK : Roll back to the previous firmware.
- AT+SYSTIMESTAMP: Set local time stamp.
- AT+SYSLOG : Enable or disable the AT error code prompt.
- AT+SYSSTORE : Config parameter store mode.

Wi-Fi AT Commands

- 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 ESP SoftAP.
- AT+CWLIF : Gets the Station IP to which the ESP SoftAP is connected.
- AT+CWQIF : Disconnect Station from the ESP SoftAP.
- AT+CWDHCP : Enables/disables DHCP.
- AT+CWDHCPS : Sets the IP range of the ESP SoftAP DHCP server.
- AT+CWAUTOCONN : Connects to the AP automatically on power-up.
- AT+CWAPPROTO : Sets the 802.11 b/g/n protocol standard of SoftAP mode.
- AT+CWSTAPROTO : Sets the 802.11 b/g/n protocol standard of station mode.
- AT+CIPSTAMAC : Sets the MAC address of ESP Station.
- AT+CIPAPMAC : Sets the MAC address of ESP SoftAP.
- AT+CIPSTA : Sets the IP address of ESP Station.
- AT+CIPAP : Sets the IP address of ESP SoftAP.
- AT+CWSTARTSMART : Starts SmartConfig.
- AT+CWSTOPSMART : Stops SmartConfig.
- AT+WPS : Enables the WPS function.
- AT+MDNS : Configurates the MDNS function
- AT+CWHOSTNAME : Configures the Name of ESP Station
- AT+CWCOUNTRY : Configures the Wi-Fi Country Code

TCP/IP AT Commands

- AT+CIPSTATUS : Gets the connection status.
- AT+CIPDOMAIN : Domain Name Resolution Function.
- AT+CIPSTART : Establishes TCP connection, UDP transmission or SSL connection.
- AT+CIPSTARTEX : Establishes TCP connection, UDP transmission or SSL connection with automatically assigned ID.
- 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.
- AT+CIPSSLCCONF : Config SSL client.

- AT+CIPRECONNINTV: Set Wi-Fi transparent transmitting auto-connect interval.
- AT+CIPRECVMODE: Set Socket Receive Mode.
- AT+CIPRECVDATA: Get Socket Data in Passive Receive Mode.
- AT+CIPRECVLEN: Get Socket Data Length in Passive Receive Mode.
- AT+PING: Ping Packets
- AT+CIPDNS : Configures Domain Name System.
- AT+CIPTCPOPT : Configurates the socket options.

MQTT AT Commands

- AT+MQTTUSERCFG : Set MQTT User Config
- AT+MQTTCLIENTID : Set MQTT Client ID
- AT+MQTTUSERNAME : Set MQTT Username
- AT+MQTTPASSWORD : Set MQTT Password
- AT+MQTTCONNCFG : Set configuration of MQTT Connection
- AT+MQTTCONN : Connect to MQTT Broker
- AT+MQTTPUB : Publish MQTT Data in string
- AT+MQTTPUBRAW : Publish MQTT message in binary
- AT+MQTTSUB : Subscribe to MQTT Topic
- AT+MQTTUNSUB : Unsubscribe from MQTT Topic
- AT+MQTTCLEAN : Close the MQTT Connection

HTTP AT Commands

- AT+HTTPCLIENT - Send HTTP Client Request
- AT+HTTPGETSIZE - Get HTTP Resource Size