ESP8266_NonOS_AT_V1.7.2_20_01_20 Release Notes

GitHub:

[ESP8266_NonOS_SDK_and_AT_Bin_on_GitHub](#)

Feature

- feat: Update to SDK version 3.0.2 and AT version 1.7.2.0
- feat(phy): Update to phy version 1155
- feat(mbedtls): Support SSL cipher suites SSL3.0
- feat(wifi): Add Wi-Fi fast connect feature
- feat(system): Enhance the mac crc check
- feat(at): Remove SSL size check when parsing AT command
- feat(sc): Add broadcast for smartconfig
- feat(net80211): Add wme info to stay compatible to some APs
- feat(pp): Change wdt timeout to 3 seconds
- feat(system): Store Wi-Fi parameter only when it is different from the one in flash

Bug Fix

- fix(system): will not clear mac address when calling system_restore
- fix(net80211): disable greenfield option
- fix(system): incorrect parameter in flash may cause system crash
- fix: TCP data lost when the link disconnected
- fix(wpa2): fix wpa2_enterprise vulnerability issues
- fix(at): AT core may not read data in the buffer in some cases
- fix(net80211): fix the incorrect ecn parameter scanned when the router is wpa2_enterprise mode
- fix(main): fix the Wi-Fi mode change when calling set*opmode*current
- fix(at): fix wdt issue when keep sending data in high performance mode
- fix(dns): Fix the seq number overflow issue
- fix(dhcp): fix the system crash issue when Wi-Fi sta got IP by DHCP and set static IP, and DHCP release time out

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ESP8266_NonOS_AT_V1.7.1_19_07_15 Release Notes

Feature

- De-swap uart before system restart.
- Remove system_phy_freq_trace_enable and disable freq trace in AT project by default.
- Add vendor class id option in LwIP.

- Update libphy to version 1143.
- Support broadcast packets in ESP-NOW.

Bug Fix

SDK

- Remove WME info by default.
- Fix a memory leak issue when scanning in softAP+station mode.
- Fix an issue that CCMP encryption was incompatible with some AP.
- Fix an incompatibility issue that the device may fail to connect to some AP in 11b only mode.
- Fix an incompatibility issue that some AP does not support status code 37 in ADDBA response.
- Fix an issue of possible incorrect phy mode when connecting to AP.
- Fix a seqno issue when sending auth packet to AP.
- Fix an issue of connecting to a wrong AP when there is some special hidden ssid AP around.
- Prohibit sending probe request in passive scan mode.
- Fix a crash issue with fake beacon frame.
- Revise the DHCP behavior according to protocol.
- Fix an issue of sntp_setservername.
- Fix an issue of setting mDNS information
- Fix an issue of incorrect jsonparse_strcmp_value return value.
- Fix an issue of calloc (pvPortCallocIram) failure.
- Fix an issue of the default hostname.
- Fix an issue of returning ERR_MEM when calling espconn_gethostbyname.

AT

- Fix an issue that fail to create AT SSL connection without cert or ca partition.
- Fix an issue that it may take a long time to get a ping result.
- Fix an issue that AT should return error directly when domain length is 64.

ESP8266_AT_V1.7.0_18_08_24 Release Notes

Major Changes

SDK

- Memory optimization: iram can be used as memory, thus **saving about 17KB memory** for user application.

AT

- Update AT's version to 1.7.0.0.
- Limited by the size of the AT bin files, only `1024+1024 flash map` is supported by default. Therefore, please

choose `16Mbit/32Mbit-C1 flash size` when flashing these AT bin files with Espressif's Flash Download Tools.

New Features and Optimizations

SDK

- Add partition table to manage flash partition, more details are in `ESP8266_NONOS_SDK/documents/readme`.

  - `system_partition_table_regist`
  - `system_partition_get_ota_partition_size`
  - `system_partition_get_item`

- Add WiFi APIs to set sleep level of modem sleep and light sleep.
  - `wifi_set_sleep_level`
  - `wifi_get_sleep_level`
  - `wifi_set_listen_interval`
  - `wifi_get_listen_interval`

- Add signalling measurement feature
  - `wifi_enable_signaling_measurement`
  - `wifi_disable_signaling_measurement`

- Support random DHCP transaction id
- Add libhal.a for the new compiler

AT

- Add command `AT+SYSMSG_DEF` and `AT+SYSMSG_CUR` to instead of `AT+SYSMSG`.
- Add `AT+CIPCLOSEMODE` to select TCP close mode.
- Add a parameter in `AT+CWJAP_CUR` and `AT+CWJAP_DEF` to disable the connection to open/wep router
- Add `AT+CIPRECVLEN` to get the length of received data in passive receiving mode.
- Add `AT+CIPRECVMODE` to set TCP receive mode.
- Add commands to configure SSL client authentication
  - `AT+CIPSSLCCONF?`
  - `AT+CIPSSLCCONF=<ssl_mode>`

- Replace ssl with mbedtls in AT
- Make SmartConfig optional, users can disable it in application for smaller bin size and more memory.
- Disable `AT+RFAUTOTRACE` command.

Bug Fix

SDK

- Fix issue that system crashes when calling `os_printf_plus` in interrupt handler.

- fix issue that mbedtls cannot set the fragment to be 2048.
- fix issue that OTA may crash with some server.
- Fix issue that beacon info does not update after `wifi_station_scan`.
- Fix softAP compatibility issue.
- Fix issue that fails to scan hidden AP in station mode.

AT

- Fix issue that GPIO related commands always return OK even without GPIO number.
- Fix issue that extra 0x0A displayed in SNTP time string

ESP8266_AT_V1.6.2_18_06_08 Release Notes

1. Fix station connecting behavior after upgrading from an old version.
2. Fix wrong SSID query when the length of SSID is 32 bytes.
3. Optimize AT+CIUPDATE behavior.

ESP8266_AT_V1.6.1_18_02_13 Release Notes

1. Fix an issue that light sleep current is larger than before.

ESP8266_AT_V1.6.0_18_02_06 Release Notes

1. Update AT version to 1.6.0.0;
2. Add a new command `AT+SYSMSG` to enable some report information;
3. Add a new command `AT+CWCOUNTRY`;

   - `AT+CWCOUNTRY=<country_policy>,"country_code",<start_channel>,<total_channel_number>`

4. Add new command `AT+CIPSERVERMAXCONN`;

   - `AT+CIPSERVERMAXCONN=<num>`

5. Update command `AT+CWLAP`;

   - `AT+CWLAP =<ssid>[,<mac>,<ch>,<scan_type>,<scan_time_min>,<scan_time_max>]`

6. Update command `AT+CWLAPOPT`;

   - Mask changes from 0x7F to 0x7FF

7. Optimize tcp server by using new `espconn_recv`;

8. Fix an issue that getting error irom string when print messages after upgrade;

9. Fix an issue that baudrate is not correctly set when it was set at 1,200;

10. Fix an issue that it should return error if the link id is wrong;

11. Fix an issue that DNS auto mode is used by default;

12. Fix a wrong link id issue when client connection number reaches maximum;

13. Fix an issue that error will be reported when the maximun connection number is more than 5;

14. Fix the message is incorrect when creating UDP if ip is a domain name;

15. Fix GSLP too long time error;

16. Fix that `AT+CIPSTART` causes busy if the server is connected at the same time;

ESP8266_NONOS_SDK_V2.2.0_18_02_06 Release Notes

System

1. Add APIs to ensure flash erasing safe;
   - `bool spi_flash_erase_protect_enable(void)`;
   - `bool spi_flash_erase_protect_disable(void)`;

2. Add `-DUSE_OPTIMIZE_PRINTF` in third_party/Makefile;
3. Update libc.a & libgcc.a;
   - libc.a from newlib 2.0.0, libgcc.a from gcc 4.8.5
     - Strip the functions which are already in rom code
     - Add a readme in lib folder to show how to strip the origin libraries

4. Update scripts to generate SSL related binaries;
5. Put libm.a into .irom0.text;
6. Compile some libraries with `-ffunction-sectons -fdata-sections`;

   - Modify ld to put this.text.* into .irom0.text

7. Remove `time()` function from libmain;
8. Fix issues of deep-sleep sleep 0 or sleep for a long time;
9. Fix an issue about driver compiling;
10. Fix `ets_delay_us` declaration;
11. Fix `os_calloc` declaration;

Examples

1. Add an example for WPA2 enterprise;
2. Update IoT_Demo project, fix user sector error;
3. Update mqtt demo project;

LWIP & espconn

1. [LWIP] Add LWIP source codes in the third_party folder;
2. [LWIP] Redefine err_t in lwip;
3. [LWIP] Fix the sequence number error of RST+ACK;
4. [LWIP] Fix an issue that two or more pbuf will be used when sending one TCP packet with `LWIP_NETIF_TX_SINGLE_PBUF` enabled;
5. [LWIP] Fix the length of TCP data in one packet is more than 1460;
6. [espconn] Fix an issue that duplicate UDP packet may be sent by espconn_sendto;
7. [espconn] Enable block option for fetching the proactive data;
8. [espconn] Manual fetch the receive data after the communication ends;

mbedTLS

1. Add mbedTLS source codes in the third_party folder;
2. Fix an issue that mbedTLS may memory leak in some cases when ESP8266 running as SSL/TLS client;
3. Fix an issue that the sent callback may not be called in some cases;
4. Fix load cert failure if the private key is in front of the cert in the esp_cert_private_key.bin;
5. Fix disconnect callback function never be called;
6. Speed up mbedtls handshake process;
7. Fix `already freed` and exception when esp8266 acts as SSL/TLS server;

Wi-Fi

1. Update libphy.a to version 1136;
2. Add APIs to set WPA2 Enterprise identity;
   - `int wifi_station_set_enterprise_identity(u8* identity, int len)`;
   - `void wifi_station_clear_enterprise_identity(void)`;

3. Add an example for WPA2 Enterprise;
4. Add support for passive scan;
5. Add support for scan threshold and dwell time;
6. Add APIs to set country code;
7. Add support for recording more information of scanned AP;
8. Fix the WPA/WPA2 PTK/GTK reinstallation vulnerability issue;
9. Fix softAP wrong behavior after calling `system_timer_reinit`;
10. Update esp_init_data_default.bin to v08;
    - Adjusted the default target power, from the 34th byte to the 39th byte of esp_init_data_default.bin, lower the target power of each level, optimized the frequency spectrum Mask and the EVM.

11. Add keep connection for station to keep connection with AP;
12. Add softAP distributes station ip event;

History Info.

ESP8266_AT_V1.5.1_17_11_06 Release Notes

1. Fixed the WPA2 KRACK issue.

2. Fixed the issue of wrong messages being displayed after upgrading the firmware.

ESP8266_NONOS_SDK_V2.1.0_17_05_05 Release Notes

System

1. Fix and update the license;
2. Add definitions of ROM functions;
3. Add efuse mac crc, save efuse mac into the system parameter area of flash, as a backup mac;
4. Implement uart_div_modify, which can support a 32-bit DivLatchValue in the SDK instead of the ROM one, and also remove uart*div*modify from the ld file;
5. Reduce iRAM usage by transferring some functions to flash；
    ○ add weak function void user_spi_flash_dio_to_qio_pre_init(void). If the dio to qio flash mode is not used, users can add an empty user_spi_flash_dio_to_qio_pre_init on the application side to reduce iRAM usage;

6. Fix WDT in system_restart;
7. Fix Write & Read issue in SPI overlap mode;
8. Support 8MB & 16MB spi flash;
9. Update boot v1.7;
10. Support 8MB & 16MB spi flash;
11. Try boot the first bin for 3 times. If it fails, then boot the backup bin;
12. Fix http packet error, BBP301;
13. Support long periods of deep sleep;
14. Fix NMI handle crash on unaligned memory access, BBP309;

Lwip

1. Add set and get dns server APIs:
    ○ espconn_dns_setserver
    ○ espconn_dns_getserver

2. Fix 2038 overflow bug in sntp_get_current_timestamp;
3. Fix MTU negotiate bug;

AT

1. Add new commands, AT+UART? and AT+UART_DEF?;
2. Add new command, AT+SYSRAM?;
3. Add new commands, AT+SYSIO series;
4. Add new command, AT+CWHOSTNAME;
5. Add new command, AT+SYSADC?;
6. Add new commands, AT+CIPSNTPCFG and AT+CIPSNTPTIME;
7. Add new commands, AT+CIPDNS_CUR and AT+CIPDNS_DEF;
8. Support a maximum of 8 stations;
9. Modify keepalive count to 3 times;
10. Fix scan hidden ssid issue in AT+CWLAP;

11. Fix the issue of the UART stop bit being 0 when queried for the first time;
12. Fix MAC addr conflict in AP+STA mode;
13. Add new commands, AT+RFAUTOTRACE;

WiFi

1. Optimize the RF frequency calibration workflow, having the frequency trace disabled by default;
   - users can call system_phy_freq_trace_enable in user_rf_pre_init to enable it;

2. Update libphy.a to version 1134_0;
3. Allow sending a broadcast ESP-NOW packet, but make sure that the packet is unencrypted;
4. Fix soft queue error;
5. Fix EVENT_STAMODE_AUTHMODE_CHANGE event mode info;
6. Fix lmac assert;
7. Fix bug in sniffer mode;
8. Fix arp loss continously issue;
9. Fix bug in WiFi event;
   - auth mode changed event cannot be throw when station is in the process of scanning;
   - error old auth mode and new auth mode;
   - op mode change process cannot be blocked, so add an event to notify the caller that op mode is changed;

10. Fix the bug in mic failure handler;
11. Fix the bug which causes failure of connection to an AP with shared WEP;
12. Fix the bug which causes failure of connection to an AP with hidden ssid;
13. Fix softAP deauth;
14. Fix reconnect policy when trying to connect to an AP that does not exist;
15. Fix scan issue;
16. Fix extra bytes in UDP broadcast packet, BBP310;

ESP8266_NONOS_SDK_V2.0.0_16_08_10 Release Notes

Optimization:

1. Changed the license of some source files to espressif MIT.
2. Updated libphy.a to 1055, fixed an issue of large current in Light-sleep.
3. Updated AT+ to 1.3.0:
   - Added Light-sleep wakeup command, AT+WAKEUPGPIO;
   - Fixed abnormal AT+CWDHCPS IP allocation;
   - Added at_sdio demo under example directory.

4. Fixed probable system default when calling cur and def interfaces.
5. Fixed the issue of high current in Deep-sleep mode without disabling SPI first.
6. Fixed an issue where the SDK would crash when switching from AP to Station mode by calling wifi_set_phy_mode.
7. Updated secondary boot loader to v1.6:
   - Supports AT + based on SDIO;
   - Supports entering testing mode through GPIO.

8. Added support for MXIC Flash QIO mode.
9. Fixed exception caused during TCP handshake and retransmission.
10. Fixed issues in ESP-NOW.
11. Added ESP-PAIR (Simple-Pair) feature, for APIs please refer to ESP8266 SDK API Guide.
12. wpa2-enterprise time function derivation and time check disable can be set by users.
13. Support for PEAP/TTLS in wpa2-enterprise, for APIs please refer to ESP8266 SDK API Guide.
14. Added mqtt demos under examples directory.
15. Other issue fixes.
16. Resolved an issue that RF_Init_data sector may be broken in stress test. Provided a function user_rf_cal_sector_set which has to be added in application by software developer. More details about user_rf_cal_sector_set refer to documentation "2C-ESP8266_SDK_API Guide". (Resolved in ESP8266_NONOS_SDK_V1.5.4.1)
17. Fix a potential risk that will cause rf not work after external reset. (Resolved in ESP8266_NONOS_SDK_V1.5.4.1)
18. Add SDIO AT support. (Resolved in ESP8266_NONOS_SDK_V1.5.4.1)
19. Fix a potential bug in espconn. (Resolved in ESP8266_NONOS_SDK_V1.5.4.1)

Notes:

esp_init_data.bin has to be downloaded into flash at least once. Download blank.bin to initialize the sector stored RF_CAL parameter (set by user_rf_cal_sector_set), and download esp_init_data.bin into flash, when the system needs to be initialized, or RF needs to be calibrated again.