



Ameba Release Note

SDK release note

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1 Release v3.0

1.1 v3.0a

- First release for 8195a

1.2 v3.0c

- Fix WPS and long PassPrhase issue

2 Release v3.1

2.1 v3.1a

- Support EVB 2V0

2.2 v3.1b

- add examples: crypto, i2s, flash, nfc, pw_deepsleep
- update flash layout document: UM0034

3 Release v3.2

3.1 v3.2a

- add examples: pw_deepstandby, pw_sleep, watchdog, timer, adc(analog_in), uart_irq,
- wlan: support concurrent mode. support fast reconnect.
- evb: support 8195a 3v0 evaluation board (jlink).

3.2 v3.2b

- Fix SPI clock rate issue
- Update example of disabling uart log before entering deep Sleep Mode
- Update I2C block read api

3.3 v3.2c

- Modify heap size from 75KB to 70KB

3.4 v3.2d

- Update for tool chain

4 Release v3.3

4.1 v3.3a

- Add peripheral example :
 - gtimer_rtc,
 - spi_stream_twoboard: SPI DMA mode
 - uart_clock: use uart to generate clock
- Add peripehral device examples:
 - i2c_epl2197_heartrate: heart rate sensor
 - i2c_epl2590_light: light Sensor
 - i2c_epl2590_proximity: proximity Sensor
 - i2c-shtc1: humidity and temperature Sensor
 - pwm-buzzer: PWM buzzer
- Add application example
 - wlan_fast_connect example
 - multicast example
 - mdns example
- I2S: api is modified in order to enhance performance.
- Wlan:
 - enhance AP mode throughput
 - support unassociated idle, associated idle power save
- LwIP: upgrade to LwIP 1.4.1
 - Standard library: update standard library

4.2 v3.3b

- Fix issue of cannot load image

4.3 v3.3c

- Fix WPS library
- Add simple config wizard lost library

5 Release v3.4

5.1 v3.4a

- Power Save
 - Provide power save mode to switch system between ON and Sleep dynamically and automatically.
 - example: pm_tickless
 - Doc: AN0045 for detail discussion
- WLAN
 - Connection Indication
 - ◆ Support indication event of a STA association to Ameba AP
 - ◆ Please check wext_wlan_indicate, Running as AP mode.
 - Auto Connection after disconnect
 - ◆ Add an API for developer to decide retry time and timeout if wlan is disconnected.
 - ◆ API: wifi_config_autoreconnect
 - Fast Connect
 - ◆ Fix AES connect fail if key length is 13
 - ◆ Fix WEP connect fail for different key id
 - ◆ Change fast-connect flash area to prevent confliction with OTA address. (this address should finally be customized by developer according to their flash layout)
 - LWIP
 - ◆ Fix LwIP issue to solve hardfault issue.
- USB Video
 - Support USB camera software stack. It is able to use VLC on Windows/Android/iPhone to get video stream from Ameba.
 - Doc: AN0050
 - **It requires special guide** to turn on this function in SDK. Please contact FAE or agent for help.
 - Only several camera modules are included in supported vendor list, please contact FAE or agent for help. Before activation, please contact agent to apply for USB camera.
- Wi-Fi RS232, UART Adapter application
 - Support putting system in sleep mode and can be wake up by UART RX.

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- It is required to use PA_7/PA_6, which is different from previous SDK.
 - Doc: AN0046 and AN0045

 - WiGadget Application
 - Provide an example to setup a sensor/control application quickly.
 - Sample code for both device code and Android app are provided.
 - Sample code for both local control and remote control are provided.
 - Doc: AN0049

 - mDNS lib
 - In previous version, mDNS lib is located in SDRAM by default. For this version, developers can locate it in SRAM is required by modifying linker. Please check document in detail
 - Doc: AN0043

 - Simple Config
 - Improve successful rate
 - Both library for Ameba device and Android/iOS app are updated
 - Fix Hardfault if running wifi_connect and simple config at the same time. (although it is not correct control flow)
 - Fix the issue of simple config fail in open mode with under certain flow.

 - Efuse
 - Add example for using efuse. There are limited efuse storage, so
 - Please be caution when you decide to test efuse function. It is suggested to make a plan at first.
 - Example : example_sources\efuse_user\

 - Google Nest
 - Google Nest Server changes its behavior, so modify implementation accordingly.

 - GPIO
 - GPIO and Jtag
 - ◆ Add an example to disable jtag and config it as general gpio pin
 - ◆ Example: example_sources\gpio_jtag

 - Boot
 - Fix flash calibration fail under some special condition

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- Change start address of image 2
 - Application Example
 - SSL download large file (such as firmware)
 - ◆ It is usually used in OTA procedure
 - ◆ Example: component\common\example\ssl_download
 - Socket Select
 - ◆ Example: component\common\example\socket_select
 - XML parser/generator
 - ◆ Example: component\common\example\xml
 - Crypto Engine
 - AES
 - ◆ Support AES-CBC and DES-CBC larger than 16000
 - OTA
 - Add checksum feature
 - When using IAR to generate ota.bin, it appends checksum information at the end of image. Program downloads ota.bin from the internet and compares checksum value at the end.
 - UART
 - UART socket
 - ◆ Use select function for UART send and receive
 - ◆ Example: component\common\utilities\uart_socket.[c/h]

5.2 v3.4b

- Wlan
 - Provide interface to control wi-fi power save mode and adjust DTIM time slot. Please check wifi_set_power_mode, wifi_set_lps_dtim.
 - Provide proper api for regulatory domain setting.
 - Fix long run disconnect issue in 3.4a
 - Fast Connect
 - ◆ Fix the issue of non-initialized content of channel field in flash causes scan fail.
 - ◆ Enable auto connect after fast connect.
 - Adaptivity
 - ◆ Add api to enabling adaptivity.
 - Isolate wlan and wps library to be os independent

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- System power save
 - Log uart tx should be pulled up before entering sleep mode to prevent from the receiving peer misunderstanding this kind of situation as TX start.
 - Support option for do not disable log uart during system sleep.
 - GPIO
 - Fix the issue of gpio port is disabled if the gpio share same pin with corresponding peripheral and the peripheral is disabled.
 - Add gpio level trigger example to represent how to detect both high and low triggered gpio
 - ◆ `example_sources/gpio_level_irq`
 - I2C
 - Update peripheral example to allow reading data more than 16 bytes.
 - USB camera
 - Separate USB camera stack to several libraries.
 - Support more sets of USB camera
 - OTA
 - Fix the issue of unable to do ota under the configuration of older bootloader and new ota image.
 - Update image checksum execution code for both winx86 and winx64 platform.
 - File checksum tool
 - Provide a md5 file check sum tool
 - `tools\file_check_sum.c`
 - Flash
 - Support new type of flash.
 - Application
 - UART Adapter
 - ◆ Fix compiler error.
 - Other
 - Fix hardfault caused by reusing of GPIO control related memory as heap space.
 - Fix compiler warning under IAR 7.40.
 - Do not show sdram init warning message for 8711AF
 - Document
 - UM0014: Fix some typo.
 - UM0023: Add description for how to disable CMSIS-DAP.
 - UM0034: Add instruction for how to place data in sdram.

5.3 v3.4b2

- Wlan
 - Patch: **lib_wlan.a**, **lib_wlan_mp.a**
 - Patch: **wifi_conf.c**, **wifi_util.[c/h]**. (only if adaptivity feature is required)
 - Compatibility issue with one AP under AES mode
 - Add API for adaptivity mode and threshold.
 - Revise channel plan to improve tx power of channel 12, 13 in WW13.(Excluding FCC power limit for channel 12, 13)
 - Add Channel plan FCC2, MKK2 and Global.
 - Fix RX packet fail if RDU happened.
 - Fix TPLINK AP disconnect issue in power save mode.

5.4 v3.4b3

- Wlan
 - Patch: **lib_wlan.a**, **lib_wlan_mp.a**
 - Fix memory leak when continuously connect to encrypt AP.
 - Improve stability of wlan long run under power save. RF is off under some condition.
 - Improve stability of wlan long run under power save. One Netgear AP send deauth to STA under low traffic.
 - Update PHY parameter from v19 to v21.
 - CCK FA counter in MP mode. (wlan mp lib)
 - Fix ping loss in concurrent mode because PHY ODM excute twice in 2 seconds.
 - Add channel plan "Global"
- FreeRTOS
 - Patch: **osdep_service.h** [MUST]
 - Should open USE_MUTEX_FOR_SPINLOCK in freertos_service.c to enable spinlock protect for wlanlib.
- Toolchain
 - Patch: **platform_lib.a**
 - Support IAR 7.5
- OTA tool
 - Patch **checksum.exe**
 - Fix image checksum calculation incorrect that may lead to OTA fail