Release Notes for AT32F435_437 Firmware Library

V2.2.2-2025/1/20

1. Updated some SPI demos.

2. Updated USB driver and some demos.

3. Updated IAP_Programmer.exe.

4. Updated LDO output level settings.

5. Added video decoding demo for F437 SURF board.

6. Updated some notes.

V2.2.1-2024/12/13

1. Updated core DSP library.

2. Updated CAN driver.

3. Updated EMAC wake_on_lan demo.

4. Updated SDIO protocol layer driver, and added emmc_card demo.

5. Added support for AT32IDE project in SLIB demo.

6. Updated USB driver.

7. Updated I2C eeprom demo and added multi-page write logic.

8. Optimized PWR driver and demo.

9. Optimized QSPI driver in XIP mode.

10. Added picture demo in surf board.

11. Updated some notes.

V2.2.0-2024/08/08

1. Updated msc iap demo for better compatibility.

2. Updated initialization configuration process of I^2C DMA related demos.

3. Updated QSPI interface initialization in QSPI demo.

4. Updated some notes.

V2.1.9-2024/04/30

1. Updated SDIO bus clock frequency in SDIO demo.

2. Renamed the QSPI dma fifo threshold enumeration parameter from
    "QSPI_DMA_FIFO_THOD_WORD32" to "QSPI_DMA_FIFO_THOD_WORD24".

3. Added link file for xD model in IAR/GCC environment.

4. Updated XMC lcd related demos, and added the id read process.

5. Fixed AC6 compilation warning issue/error of some demos.

V2.1.8-2024/04/08

1. Updated some qspi demos, and added the "qspi_auto_ispc_enable" function.

2. Changed the USB host out stall state assignment method.

V2.1.7-2024/03/01

1. Added "run_in_qspi_flash" demo.

2. Updated "qspi" demo.

3. Updated the method of calling the sys_check_timeouts in "EMAC" demo.

V2.1.6-2024/01/26

1. Updated the description that the usbd_core_type 4 must be 4-byte aligned.

2. Updated USB hid report descriptor.

3. Updated some notes.

V2.1.5-2024/01/05

1. Updated the counter counting mode in the input_capture demo timer.

2. Fixed the issue of the HID in USB demo that is slow to be identified.

3. Updated the systick initialization function in the systick interrupt demo.

4. Added winusb demo.

5. Added ADC loop_transfer demo.

6. Added the xx_interrupt_flag_get function in all demos.

V2.1.4-2023/10/26

1. Updated QSPI demo.

2. Updated QSPI download algorithm demo.

3. Updated some notes and readme.

V2.1.3-2023/08/04

1. Added AT32IDE project to demons under utilities.

2. Added CRC polynomial support.

3. Added AT32F435/437 Flash size 448 KB.

4. Updated USB driver and demo, improved data alignment and code process.

5. Improved redirecting compatibility while using printf in IAR9.

6. Added macro definitions regarding Flash size and Flash demo.

7. Updated related notes.

V2.1.2-2023/02/16

1. Improved AC6 compiling issue in the freertos demo of utilities.

2. Improved EMAC demo, updated cc.h file to solve AC6 compiling issue (alignment error), and lwip assert information can be output from a serial interface.

3. Updated lwip lower-level package interface in EMAC demo to support multiple-packet transfer.

4. Added LEXT_VALUE definition in the at32f435_437_conf.h.

5. Added section SPIM descriptions in the *.ld file to better support SPIM address linking in GCC.

6. Adjusted the location in which the function crm_reset is called in the system_clock_config, with the aim to avoid error to occur during system clock switching.

7. Adjusted the time when USB address needs to be set, and modified the process of handling USB host emulation timeout.

8. Added XMC pc_card demo.

9. Updated the function qspi_data_write process in the QSPI flash demo to resolve write data error when the incoming Flash start address is not page aligned.

10. Updated some notes.

V2.1.1-2022/11/18

1. Removed the versions and records located in file headers.

2. Added release notes drivers which are used to record drivers update, in libraries/drivers directory.

3. Fixed the problem of USB cdc_msc failed in linux.

4. Updated USB virtual msc iap demo supporting linux.

5. Updated USB audio content to provide better compatibility.

6. Added interrupt enable judgement to flag bits in the USART interrupt demo.

7. Added repeat_conversion_loop_transfer demo to ADC, using DMA circular mode to get ADC data.

8. Increase the upper limit of VCO clock to 1200 MHz.

V2.1.0-2022/08/16

1. Updated I^{2}C eeprom demo with 16-bit address support.

2. Added USB host CDC demo.

3. Added QSPI XIP mode Flash read demo.

4. Added IARv 9.3 demo (in template).

5. Fixed the problem of being unable to output printf in gcc environment.

6. Startup file supports configuration wizard graphic configuration.

V2.0.9-2022/06/28

1. Added USART RS485 demo.

2. Added IO toggle demo.

3. Added USB composite_vcp_msc demo.

4. Added Flash access protection enable demo.

5. Updated some demos and their drive process, and revised notes.

V2.0.8-2022/04/25

1. Changed descriptors in the USB virtual msc iap demo.

2. Added EMAC-related demo about network connection status detection, and updated local_time variable.

3. Disabled cache feature of xip mode in QSPI-related demo.

4. Updated some demos and revised notes.

V2.0.7-2022/04/02

1. Added lvgl_music_player demo to the at_surf_f437 evaluation board.

2. Introduced DSP-related source codes and a new cmsis_dsp demo.

3. Updated some demos and their drive process, and revised notes.

V2.0.6-2022/03/11

1. Added wdt_standby demo.

2. Added demos related to at_surf_f437 evaluation board.

V2.0.5-2022/02/11

1. Added virtual_comport demo in USB.

2. Added dual OTG-related demos (1Host&1Device, 2Host, 2Device).

3. Improved the compatibility of USB msc iap demo across different systems.

4. Updated some demos and their drive process, and revised notes.

V2.0.4-2021/12/31

1. Revised wrong parameter definitions in the interrupt priority group.

2. Integrated the serial port initialization and redirection functions of printf into xx_board.c, and removed related contents in demo.

3. Updated some demo to support AC6 and –O3 compilation.

4. Added composite_audio_hid demo in the USB, and optimized reporting and synchronization mechanism.

5. Revised wrong definitions about speed status and duplex modes while using phy dp83848 of AT32F437 EMAC.

V2.0.3-2021/12/17

1. Revised flag clear functions of peripherals in order to avoid inappropriate bit operations.

2. Revised the 4-byte alignment problem of USB device array.

3. Updated the member name under SDRAM structure.

4. Updated the virtual space of virtual_msc_iap demo to 100 MB.

5. Revised bulk transfer complete problem of the serial port in the composite_vcp_keyboard demo.

6. Updated some contents and notes of XMC demo.

7. Updated pin initialization of DVP demo and revised instability problem.

8. Update transmit functions related to keyboard in USB demo.

9. Updated timer frequency configuration process for triggering ADC conversions in ADC demo.

10. Adjusted XMC peripheral driver structure, and updated the corresponding demo.

V2.0.2-2021/11/26

1. Updated some notes and readme.

2. Modified the sampling frequency judgement process for configuring the microphone frequency using audio codec.

3. Revised the I^{2}C communication interface configuration error of audio code.

4. Revised USB audio feedback function error.

5. Revised byte alignment problem while USB writing to fifo.

6. Added a demo of mem_map of SCFG.

7. Changed the macro definition I2Cx_SPEED in I2C demo to I2Cx_CLKCTRL.

8. Updated pwc_wakeup_pinx_enable and pin-related functions, and enable all pins to call the same interface pwc_wakeup_pin_enable.

V2.0.1-2021/11/15

1. Updated some flag_clear functions of some peripheral drivers, and revised improper operational problem when bit is w1c.

2. Added a process to judge unlock flags after unlocking USD or SLIB.

3. Modified the process of driver functions in QSPI peripheral xip/cmd modes.

4. Updated some ADC demos, and revised original configuration error.

5. Updated USB audio demo, and revised recording problem.

6. Updated SDRAM peripheral configuration parameters in sdram_dma demo.

7. Updated the notes and descriptions in some documents.

V2.0.0-2021/09/06

1. Initial release of AT32F435/437 firmware library.