Arm® Cortex®-M23

32-bit Microcontroller

M251/M252/M254/M256/M258 Series CMSIS BSP Revision History

For additional information or questions, please contact: Nuvoton Technology Corporation.

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Revision 3.02.001 (Released 2021-1-20)

- Added CRYPTO support.
- Peripheral header
    - dac_reg.h: Fixed DAC_CTL_GRPEN_Msk.
    - lcd_reg.h: Updated base on TRM.
    - tk_reg.h: Supported up to 24 keys.
- Standard driver
    - Improved infinite loop prevention with timeout counter and error code.
    - BPWM: BPWM_ConfigCaptureChannel and BPWM_ConfigOutputChannel fixed wrong clock for chips without PLL.
    - CLK: CLK_EnableSysTick correctly used external reference clock.
    - DAC: DAC_SetDelayTime fixed calculation overflow issue.
    - GPIO: PF15 added.
    - LCD
        - LCD_GET_CHARGE_TIME and LCD_WAVEFORM_TYPE fixed.
        - LCD_SET_CONTINUOUS_FRAME and LCD_SET_NULL_FRAME_TIME removed.
        - LCD_SET_PAUSE_TIME and LCD_SET_PAUSE_TYPE added.
    - PWM: PWM_ConfigCaptureChannel and PWM_ConfigOutputChannel fixed wrong clock for chips without PLL.
    - RTC: RTC_Open added return value.
    - SCUART: SCUART_Write added return value.
    - SPI: SPI1 support added.
    - TIMER: TIMER_Delay and TIMER_ResetCounter added return value.
- Sample code
    - EADC_Timer_Trigger: Fixed wrong timer period.
    - I2C samples: Removed redundant code.
    - ISP_I2C, ISP_RS485, ISP_UART: Added GCC project.
    - ISP_MSC: Added.
    - SPI_HalfDuplex, SPI_PDMA_LoopTest: QSPI0 replaced with USPI0.
    - USBD HID samples: Unified INT_IN interval.
    - USBD_Mass_Storage_CDROM: Fixed Linux and Mac compatibility issue.
- Tool
    - NuSenadj: Updated.

Revision 3.01.002 (Released 2021-6-25)

- system_M251.h: __HXT and __LXT added redefinition check.
- Peripheral header
  - psio_reg.h: A reserved member added to GNCT_T structure.
- Standard driver
  - SYS: PF.15 MFP added.
- Library
  - LCDLib
    - Fixed display flicker.
    - Variable legality check for LCD print and putchar.
  - TKLib
    - Added all key calibration for power-down mode, store address scan, and store pin selection to Flash.
    - Decreased parameters Flash size.
    - Fixed reference CB overflow, power-on fine tune.
- Sample code
  - BPWM_Capture: Replaced PWM0 channel 0 with Timer0.
  - I2C and USCI_I2C samples: Enabled schmitt trigger of I^{2}C pins.
  - ISP_HID, ISP_I2C, ISP_RS485, ISP_UART: Enabled GPIO and Systick clocks.
  - NuMaker-M258KE: Supported CKO shielding, default calibration parameters, and null frame in power-down mode.
  - SPI_SlaveFIFOModeINT, USCI_SPI_SlaveModeINT: Added.
  - TIMER_FreeCountingMode: Saved the first captured data.
  - UART_Wakeup: Provided more wake-up methods.
  - USBD_Audio_Codec: Refactored.
  - USBD_MassStorage_CDROM: Removed 2 KB file size limitation.
  - USBD VCOM samples: Fixed potential UART Tx FIFO overflow issue.
  - USBD_VCOM_DaulPort: Fixed power-down blocked issue and wrong baud rate issue.
- Tool
  - NuSenadj: Moved to TK subfolder.
  - NuSenadj_MP: Added.

Revision 3.01.001 (Released 2020-11-16)

- Added M254/M256/M258 series support.
- Peripheral header
  - lcd_reg.h, tk_reg.h: Added.

- eadc_reg.h: EADC_T.OFFSETCAL, EADC_CTL_CALEN_Msk, EADC_CTL_CALEN_Pos, EADC_OFFSETCAL_OFFSETCANCEL_Msk, and EADC_OFFSETCAL_OFFSETCANCEL_Pos removed.

- ◼ Standard driver
    - retarget.c: Fixed program terminated issue with optimization level 0 of Arm Compiler 6.
    - EADC
        - ➢ EADC_ENABLE_CMP0, EADC_ENABLE_CMP1, EADC_ENABLE_CMP2, and EADC_ENABLE_CMP3 fixed bits overwritten issue.
        - ➢ EADC_DISABLE_OFFSETCANCEL and EADC_ENABLE_OFFSETCANCEL removed.
    - LCD, TK: added.
    - QSPI: QSPI_DISABLE_TX_RX_PDMA and QSPI_TRIGGER_TX_RX_PDMA added.
    - SPI: SPI_DISABLE_TX_RX_PDMA and SPI_TRIGGER_TX_RX_PDMA added.
    - SYS: SYS_SetPowerLevel improved power level switch stability.
    - USCI-SPI: USPI_DISABLE_TX_RX_PDMA and USPI_TRIGGER_TX_RX_PDMA added.
    - USCI-UART: UUART_PDMA_DISABLE and UUART_PDMA_ENABLE added.
- ◼ Library
    - LCDLib, TKLib: Added.
- ◼ Sample code
    - EADC_BandGapCalculateAVDD, LCD_Blinking, LCD_Pixel_OnOff, LCD_Print_Text, NK_M258KE_LCD_TK, USBD_BC12_HID_Mouse: Added.
    - EADC_OffsetCancel: Removed.
    - GPIO samples: Enabled GPIO clock.
    - PDMA_BasicMode: Fixed miss word alignment.
    - USBD_Audio_Codec: Fixed noise and I^2C timeout.
    - USBD_VCOM_DualPort: Fixed only one VCOM port in Linux.

Revision 3.00.005 (Released 2020-6-10)

- ◼ Added Apache-2.0 license declaration.
- ◼ Standard driver
    - retarget.c: SendChar fixed uninitialized pointer.
    - TIMER: TIMER_SET_OPMODE added.
    - UART: UART_DEGLITCH_DISABLE, UART_DEGLITCH_ENABLE, UART_PDMA_DISABLE, and UART_PDMA_ENABLE added.

- USCI-UART: UUART_DEGLITCH_DISABLE and UUART_DEGLITCH_ENABLE added.
- Sample code
  - CLK_ClockDetector: HCLK clock source used HXT instead of PLL.
  - GPIO_SingleCycleIO, I2C_SMBus, MPU, SYS_PowerDownMode, Sys_PowerMode, USBD_CCID: Added.
  - QSPI_DualMode_Flash, QSPI_QualMode_Flash, SPI_Flash: Fixed the 256th byte written issue.

Revision 3.00.004 (Released 2019-12-31)

- Removed CRYPTO support.
- Standard driver
  - retarget.c: _write and SendChar_ToUART fixed '\r' issue.
  - CRC: CRC_SET_WDATA_LEN added.
  - FMC
    - FMC_Write128 added note to run in SRAM instead of inline function.
    - FMC_WriteConfig fixed return value.
  - SYS: Replaced SYS_PLCTL_PLSEL_PL2 with SYS_PLCTL_PLSEL_PL3.
  - TIMER_PWM: TPWM_ConfigOutputFreqAndDuty fixed wrong configuration for 1 Hz.
- Sample code
  - FMC_MultiWordProgram: Used FMC driver API.
  - I2C_Wakeup_Slave: Improved wakeup robustness.
  - ISP_DFU: Added.
  - UART_LIN, UART_SingleWire: Fixed '\r' issue.
  - USBD samples: Improved USB compatibility.

Revision 3.00.003 (Released 2019-8-30)

- M251.h: Included core_cm23.h instead of core_armv8mbl.h.
- Peripheral header
  - clk_reg.h, rtc_reg.h: Updated base on TRM.
- Standard driver
  - I2C: I2C_SetSlaveAddr and I2C_SetSlaveAddrMask added support of 10-bit slave address and error handling for new transfer.
  - TIMER
    - TIMER_GetModuleClock used correct PCLK.
    - TIMER_Open fixed return value.

- TIMER_PWM
  - TPWM_ClearWakeupFlag, TPWM_DisableTrigger, TPWM_DisableWakeup, TPWM_EnableTrigger, TPWM_EnableWakeup, TPWM_GetWakeupFlag, TPWM_CLEAR_TRG_DAC_STATUS, TPWM_CLEAR_TRG_PDMA_STATUS, TPWM_GET_TRG_DAC_STATUS, and TPWM_GET_TRG_PDMA_STATUS added.
  - TPWM_OUTPUT_TOGGLE, TPWM_OUTPUT_NOTHING, TPWM_OUTPUT_LOW, TPWM_OUTPUT_HIGH, TPWM_CLKSRC_HXT, TPWM_CLKSRC_LXT, TPWM_CLKSRC_PCLK, TPWM_CLKSRC_TX, TPWM_CLKSRC_LIRC, and TPWM_CLKSRC_HIRC removed.
- USCI_SPI: USPI_SET_SS_HIGH fixed implementation.

■ Library
- SmartcardLib: SCLIB_CheckCDEvent_ByVar added.

■ Sample code
- EADC_BandGap: Showed voltage result and modified extern sample time for band-gap.
- FMC_ExeInSRAM: Added GCC project.
- I2C_Master_PDMA, I2C_PDMA, I2C_Slave_PDMA: Replaced with I2C_PDMA_TRX.
- ISP samples, QSPI_Slave3Wire, SPI_HalfDuplex: Added.
- SC_ReadATR, SC_ReadSimPhoneBook: Added software card detection.
- UART_TxRx_Function: Fixed data lost.
- USBD samples: Fixed potential issue.
- USCI_SPI_Loopback, USCI_SPI_MasterMode, USCI_SPI_SlaveMode: Added using GPIO pin instead of SS pin.

Revision 3.00.002 (Released 2019-2-22)

■ system_M251.c: Set flash access cycle to 0x03.
■ Standard driver
- CLK: CLK_SET_PCLK_DIVIDER removed.
■ Sample code
- Used other clock source instead of HXT.
- SYS_TrimHIRC: Added auto trim disable.
- USBD_Audio_Codec: Cleared buffer before play / record.

Revision 3.00.001 (Released 2018-12-25)

■ Initial release.

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