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 3.01.002 (Released 2021-6-25)

- system_M251.h
    1. Added redefinition check for __HXT and __LXT definition.

- Peripheral header
    1. psio_reg.h
        - Added a reserved member to GNCT_T structure.

- Standard driver
    1. SYS driver
        - Added MFP definition of PF.15.

- Library
    1. LCD library
        - Fixed display flicker, variable legality check for LCD print and putchar.
    2. TK library
        - Added all key calibration for power-down mode, store address scan, store pin selection to Flash.
        - Decreased parameters Flash size.
        - Fixed reference CB overflow, power-on fine tune.

- Sample code
    1. New sample code: SPI_SlaveFIFOModeINT, USCI_SPI_SlaveModeINT.
    2. Enhanced NuMaker-M258KE: Support CKO shielding, default calibration parameters, null frame in power-down mode.
    3. Enhanced UART_Wakeup: Provide more wake-up methods.
    4. Improved all I^2C and USCI_I2C sample codes: Enable schmitt trigger of I^2C pins.
    5. Refactored USBD_Audio_Codec.
    6. Revised BPWM_Capture: Replace PWM0 channel 0 with Timer0.
    7. Fixed ISP_HID, ISP_I2C, ISP_RS485, ISP_UART: Enable GPIO and Systick clocks.
    8. Fixed TIMER_FreeCountingMode: Save the first captured data.
    9. Fixed USBD_MassStorage_CDROM: Remove 2 KB file size limitation.
    10. Fixed USBD_VCOM_DaulPort: Power-down blocked issue, wrong baud rate issue.
    11. Fixed all USBD VCOM sample codes: Potential UART Tx FIFO overflow issue.

- Tool
    1. NuSenadj_MP: New mass production tool.
    2. NuSenadj: Moved to TK subfolder.

Revision 3.01.001 (Released 2020-11-16)

- Supported M254/M256/M258 series.
- Peripheral header
    1. New header: lcd_reg.h, tk_reg.h.
    2. eadc_reg.h
        - Removed EADC_T.OFFSETCAL, EADC_CTL_CALEN_Msk, EADC_CTL_CALEN_Pos, EADC_OFFSETCAL_OFFSETCANCEL_Msk, EADC_OFFSETCAL_OFFSETCANCEL_Pos.
- Standard driver
    1. New driver: LCD, TK.
    2. retarget.c
        - Fixed optimization level 0 of Arm Compiler 6: Program terminated issue.
    3. EADC driver
        - Fixed EADC_ENABLE_CMP0, EADC_ENABLE_CMP1, EADC_ENABLE_CMP2, EADC_ENABLE_CMP3: Other bits overwritten.
        - Removed EADC_DISABLE_OFFSETCANCEL, EADC_ENABLE_OFFSETCANCEL.
    4. QSPI driver
        - New API: QSPI_DISABLE_TX_RX_PDMA, QSPI_TRIGGER_TX_RX_PDMA.
    5. SPI driver
        - New API: SPI_DISABLE_TX_RX_PDMA, SPI_TRIGGER_TX_RX_PDMA.
    6. SYS driver
        - Improved SYS_SetPowerLevel: Power level switch stability
    7. USCI-SPI driver
        - New API: USPI_DISABLE_TX_RX_PDMA, USPI_TRIGGER_TX_RX_PDMA.
    8. USCI-UART driver
        - New API: UUART_PDMA_DISABLE, UUART_PDMA_ENABLE.
- Library
    1. New library: LCDLib, TKLib.
- Sample code
    1. New sample code: EADC_BandGapCalculateAVDD, LCD_Blinking, LCD_Pixel_OnOff, LCD_Print_Text, NK_M258KE_LCD_TK, USBD_BC12_HID_Mouse.
    2. Improved all GPIO sample codes: Enable GPIO clock.
    3. Fixed PDMA_BasicMode: Missing word alignment.
    4. Fixed USBD_Audio_Codec: Noise and I2C timeout.

5. Fixed USBD_VCOM_DualPort: Only one VCOM port in Linux.

6. Removed EADC_OffsetCancel.

Revision 3.00.005 (Released 2020-6-10)

■ Added Apache-2.0 license declaration.

■ Standard driver

1. retarget.c

   ● Fixed SendChar: Uninitialized pointer.

2. TIMER driver

   ● New API: TIMER_SET_OPMODE.

3. UART driver

   ● New API: UART_DEGLITCH_DISABLE, UART_DEGLITCH_ENABLE, UART_PDMA_DISABLE, UART_PDMA_ENABLE.

4. USCI-UART driver

   ● New API: UUART_DEGLITCH_DISABLE, UUART_DEGLITCH_ENABLE.

■ Sample code

1. New sample code: GPIO_SingleCycleIO, I2C_SMBus, MPU, SYS_PowerDownMode, Sys_PowerMode, USBD_CCID.

2. Updated CLK_ClockDetector: HCLK clock source uses HXT instead of PLL.

3. Fixed QSPI_DualMode_Flash, QSPI_QualMode_Flash, SPI_Flash: Miss the 256th byte written.

Revision 3.00.004 (Released 2019-12-31)

■ Removed CRPTO support.

■ Standard driver

1. retarget.c

   ● Fixed _write, SendChar_ToUART: '\r' issue.

2. CRC driver

   ● New API: CRC_SET_WDATA_LEN.

3. FMC driver

   ● Updated FMC_Write128: Note to run in SRAM instead of inline function.

   ● Fixed FMC_WriteConfig: Return value.

4. SYS driver

   ● Replaced SYS_PLCTL_PLSEL_PL2 with SYS_PLCTL_PLSEL_PL3.

5. TIMER_PWM driver

   ● Fixed TPWM_ConfigOutputFreqAndDuty: Wrong configuration for 1 Hz.

■ Sample code

1. New sample code: ISP_DFU.

2. Improved I2C_Wakeup_Slave: Wakeup robustness.

3. Improved all USBD samples: USB compatability.

4. Updated FMC_MultiWordProgram: Use FMC driver API.

5. Fixed UART_LIN, UART_SingleWire: '\r' issue.

Revision 3.00.003 (Released 2019-8-30)

- M251.h
    1. Included core_cm23.h instead of core_armv8mbl.h.
- Peripheral header
    1. Updated clk_reg.h, rtc_reg.h: Base on TRM.
- Standard driver
    1. I2C driver
        - Improved I2C_SetSlaveAddr, I2C_SetSlaveAddrMask: Add support of 10-bit slave address and error handling for new transfer.
    2. TIMER driver
        - Fixed TIMER_GetModuleClock: Correct PCLK.
        - Fixed TIMER_Open: Return value.
    3. TIMER_PWM driver
        - New API: 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, TPWM_GET_TRG_PDMA_STATUS.
        - Removed 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, TPWM_CLKSRC_HIRC.
    4. USCI_SPI driver
        - Fixed USPI_SET_SS_HIGH: Implementation.
- Library
    1. Smartcard library
        - New API: SCLIB_CheckCDEvent_ByVar.
- Sample code
    1. New sample code: ISP samples, QSPI_Slave3Wire, SPI_HalfDuplex
    2. Improved EADC_BandGap: Show voltage result and modify extern sample time for band-gap.
    3. Improved FMC_ExeInSRAM: Add GCC project.

4. Improved SC_ReadATR, SC_ReadSimPhoneBook: Add software card detection.

5. Improved USCI_SPI_Loopback, USCI_SPI_MasterMode, USCI_SPI_SlaveMode: Add using GPIO pin instead of SS pin.

6. Replaced I2C_Master_PDMA and I2C_PDMA, I2C_Slave_PDMA with I2C_PDMA_TRX.

7. Fixed UART_TxRx_Function: Data lost.

8. Fixed all USBD samples: Potential issue.

Revision 3.00.002 (Released 2019-2-22)

- system_M251.c

    1. Set flash access cycle to 0x03.

- Standard driver

    1. CLK driver

        - Removed CLK_SET_PCLK_DIVIDER.

- Sample code

    1. Updated all samples: Use other clock source instead of HXT.

    2. Updated SYS_TrimHIRC: Add auto trim disable.

    3. Updated USBD_Audio_Codec: Clear buffer before play / record.

Revision 3.00.001 (Released 2018-12-25)

- Initial release.

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