Arm® Cortex®-M23

32-bit Microcontroller

M253 Series CMSIS BSP
Revision History

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

www.nuvoton.com

Revision 3.00.010 (Released 2025-10-08)

- Standard driver

  - CANFD: Added workaround to read CANFD register based on PDID check.

  - I2C: Added STOP bit check for I2C transmission completely.

  - PDMA
    - PDMA_INT_TRANS_DONE, PDMA_INT_TEMPTY, PDMA_INT_TIMEOUT, PDMA_DisableInt, PDMA_EnableInt: Supported multi-bit mask.
    - PDMA_INT_ALIGN: Added.
  - SPI: SPI_DISABLE_3WIRE_MODE and SPI_ENABLE_3WIRE_MODE added.

- Sample code

  - BPWM_DoubleBuffer: IRQ handler cleared interrupt flag at first.

  - EADC_AverageCMP: Added.

  - ISP_I2C and ISP_SPI: Fixed potential command failure.

  - USBD_HID_RemoteWakeup: Fixed host cannot sleep issue.

  - VS Code projects upgraded to use GCC 14.3.1.

Revision 3.00.009 (Released 2024-10-07)

- CMSIS: Upgraded to v6.1.0.

- Keil startup_M253.c: Instead of ASM code.

- Standard driver

  - UART: UART_RESET_RXFIFO and UART_RESET_TXFIFO added.

- Sample code

  - Added VS Code projects with AC6/GCC toolchain.

  - I2C_Loopback_10bit: Merged into I2C_Loopback.

  - I2C_Master_10bit: Merged into I2C_Master.

  - I2C_Slave_10bit: Merged into I2C_Slave.

  - ISP_UART: Reset RX FIFO after response sent.

Revision 3.00.008 (Released 2024-03-21)

- Standard driver

  - retarget.c: Fixed __ARM_use_no_argv multiple definition issue in newer KEIL versions.

  - BPWM: BPWM_ConfigOutputChannel fixed duty issue.

  - CLK

    - CLK_PowerDown cleared CPU deep sleep mode select after wakeup.

    - CLK_SysTickDelay Improved robustness.

  - I2C: I2C_WAIT_READY fixed potential blocking issue.

- Sample code
  - BPWM_SwitchDuty: Fixed 100% duty issue.
  - ISP_DFU, ISP_MSC: Reduced code size.
  - SPI_Flash: Supported more Winbond SPI flashes.
  - SYS_PowerDown_MinCurrent: Removed LVR disable setting.
  - USBD samples: Removed LPM support.
  - USBD HID samples: Supported LED status.

Revision 3.00.007 (Released 2023-08-07)

- Library
  - LDROM.icf and LDROM.sct: Fixed LDROM address.
- Standard driver
  - CANFD: Removed unused workarounds of wrong register value and wrong transmission.
- Sample code
  - BPWM_SwitchDuty, PWM_SwitchDuty: Fixed 100% duty issue.
  - CANFD_CAN_MonitorMode, CANFD_CANFD_MonitorMode: Added.
  - ISP samples: Fixed LDROM download failure in IAR and KEIL.
  - ISP_DFU: Updated Windows driver with Nuvoton vendor name.
  - USBD samples: Removed EP1 stall while setup error occurred.

Revision 3.00.006 (Released 2023-02-06)

- Sample code
  - SYS_PowerDown_MinCurrent: Added.
  - USBD samples: Avoided wakeup failure.

Revision 3.00.005 (Released 2022-07-13)

- Standard driver
  - retarget.c: Fixed print issue with IAR EWARM v9.20.
  - CANFD: Fixed potential issues of wrong register value and wrong transmission.
  - UART: UART_RX_IDEL replaced by UART_RX_IDLE.
- Sample code
  - CANFD_CANFD_Loopback, CANFD_CANFD_TxRxINT, CANFD_CAN_Loopback, and CANFD_CAN_TxRxINT: Rejected non-matched standard ID and extended ID filter.
  - FreeRTOS Blinky sample: Added.
  - I2C_Loopback_10bit, I2C_Master_10bit, and I2C_Slave_10bit: Added.

- I2C samples: Improved error handling.
- ISP_DFU, ISP_HID, and ISP_MSC: Enabled USB trim function.
- ISP_SPI: Added GCC project.
- ISP samples
  - Added IAR projects.
  - Added scatter file to check image size.
  - Enabled function section linking and image size optimization in KEIL projects.
- UART_PDMA: Fixed compiling issue of polling method.
- ThirdParty
  - FreeRTOS: Added.

Revision 3.00.004 (Released 2022-01-24)

- Standard driver
  - Improved infinite loop prevention with timeout counter and error code.
  - CANFD: CANFD_TransmitTxMsg changed return type.
  - RTC: RTC_Open added return value.
  - TIMER: TIMER_Delay and TIMER_ResetCounter added return value.
- Sample code
  - EADC_Timer_Trigger: Fixed wrong timer period.
  - I2C and USCI_I2C samples: Enabled schmitt trigger of I2C pins.
  - I2C samples: Removed redundant code.
  - ISP_I2C, ISP_RS485, and ISP_UART samples: Added GCC project.
  - ISP_MSC: Added.
  - SPI_HalfDuplex_Master and SPI_HalfDuplex_Slave: Replaced by SPI_HalfDuplex.
  - SPI_PDMA_LoopTest: QSPI0 replaced by USPI0.
  - USBD HID samples: Unified INT_IN interval.
  - USBD_Mass_Storage_CDROM: Fixed Linux and Mac compatibility issue.

Revision 3.00.003 (Released 2021-05-20)

- system_M253.h: __HXT and __LXT added redefinition check.
- Standard driver
  - TIMER: TIMER_CAPTURE_FROM_ACMP0, TIMER_CAPTURE_FROM_ACMP1, TIMER_CAPTURE_FROM_HXT, TIMER_CAPTURE_FROM_LXT, TIMER_CAPTURE_FROM_HIRC, TIMER_CAPTURE_FROM_LIRC, and TIMER_CAPTURE_FROM_MIRC added.
- Sample code
  - TIMER_FreeCountingMode: Saved the first captured data.
  - UART_Wakeup: Provided more wake-up methods.

Revision 3.00.002 (Released 2021-02-24)

- MCAN renamed to CANFD.
- Sample code
  - ISP_CAN, SPI_SlaveFIFOModeINT, and USCI_SPI_SlaveModeINT: Added.
  - ISP_HID, ISP_I2C, ISP_RS485, and ISP_UART: Enabled GPIO and Systick clocks.
  - USBD VCOM samples: Fixed potential UART Tx FIFO overflow issue.

- USBD_VCOM_DaulPort, USBD_VCOM_MultiPort, and USBD_VCOM_MultiPort_CMD: Fixed power-down blocked issue and wrong baud rate issue.

Revision 3.00.001 (Released 2020-12-25)

■ Initial release.

Important Notice

Nuvoton Products are neither intended nor warranted for usage in systems or equipment, any malfunction or failure of which may cause loss of human life, bodily injury or severe property damage. Such applications are deemed, "Insecure Usage".

Insecure usage includes, but is not limited to: equipment for surgical implementation, atomic energy control instruments, airplane or spaceship instruments, the control or operation of dynamic, brake or safety systems designed for vehicular use, traffic signal instruments, all types of safety devices, and other applications intended to support or sustain life.

All Insecure Usage shall be made at customer's risk, and in the event that third parties lay claims to Nuvoton as a result of customer's Insecure Usage, customer shall indemnify the damages and liabilities thus incurred by Nuvoton.