

ARM® Cortex®-M0 32-bit Microcontroller

NuMicro® Family Mini51DE Series CMSIS BSP Revision History

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Revision 3.03.000 (Released 2024-10-18)

1. Update drivers and sample code to support Keil compiler v6.

Revision 3.02.004 (Released 2023-02-24)

- 1. Add sample code SYS PowerDown MinCurrent
- 2. Add timeout check to drivers to prevent from infinite loop

Revision 3.02.003 (Released 2021-12-16)

1. Minor bug fix.

Revision 3.02.002 (Released 2020-10-6)

- 1. Added Apache-2.0 license declaration into driver source code.
- 2. Minor bug fix.

Revision 3.02.001 (Released 2019-11-6)

1. Added ISP related samples.

Revision 3.02.000 (Released 2018-11-15)

- Added Eclipse project support.
- 2. Minor bug fix.

Revision 3.01.002 (Released 2017-3-10)

1. Updated CLK_Idle() to clear CLK_PWRCON_PWR_DOWN_EN_Msk flag before entering idle mode.

Revision 3.01.001 (Released 2016-6-15)

- 1. Updated CMSIS to v4.5.0.
- 2. Added sample codes including SPI MasterFIFOMode and SPI SlaveFIFOMode.
- 3. Minor bug fixes.

Revision 3.01.000 (Released 2015-10-8)

- 1. Removed PLL related API declarations in clk.h.
- 2. Removed DID related functions and macros in fmc.c and fmc.h.
- 3. Removed FMC_SetBootSource(), FMC_DisableAPUpdate(), FMC_DisableConfigUpdate(), FMC_DisableLDUpdate(), FMC_EnableAPUpdate(), FMC_EnableConfigUpdate(), FMC_EnableLDUpdate() functions in fmc.c and fmc.h because there exist functionally identical macros.
- 4. Removed SPI_GET_RX_FIFO_FULL_FLAG() macro in spi.h.
- 5. Removed CHIP_RST and CPU_RST definitions in sys.h.
- 6. Updated startup_Mini51Series.s and retarget.c to implement a Hard Fault handler that dumps register value before going to an infinite loop.
- 7. Updated return type of CLK WaitClockReady() function from void to uint32 t in clk.c.
- 8. Updated SPI Close() to remove the code that disable SPI peripheral clock in spi.c.
- 9. Updated all IAR samples to set Reset_Handler() as application entry point.
- 10. Updated fmc_ld_iap sample to reduce code size by replacing retarget.c with ldrom retarget.c.
- 11. Updated I2C_Interrupt_EEPROM sample to poll STOP bit after STOP command.



- Updated DeepSleep sample so that CPU is in unlock state before entering Powerdown mode.
- 13. Fixed CLK SysTickDelay() bug that delay time is sometimes incorrect in clk.c.
- 14. Fixed FMC_Erase() bug that modifies irrelevant register bits in fmc.c.
- 15. Fixed GPIO_DISABLE_DOUT_MASK() and GPIO_ENABLE_DOUT_MASK() error that sets and clear wrong bits in gpio.h.
- 16. Fixed I2C_GetBusClockFreq() bug that reports wrong clock frequency in i2c.c.
- 17. Fixed PWM_FB1_ACMP0 definition error in pwm.h.
- 18. Fixed PWM ENABLE OUTPUT INVERTER() bug that set wrong bit in pwm.h
- 19. Fixed SPI_EnableAutoSS() register setting error in spi.c.
- 20. Fixed SPI SetBusClock() clock calculation error in spi.c.
- 21. Fixed SYS_DISABLE_BOD() and SYS_CLEAR_RST_SOURCE() implementation error in sys.h
- 22. Fixed UART_EnableFlowCtrl() register setting error in uart.c.
- 23. Fixed UART_Open() and UART_SetLine_Config() baud rate calculation error in uart.c while UART peripheral clock divider is not 1.
- 24. Fixed UART_SelectIrDAMode() error that only supports 12MHZ crystal as clock source in uart.c.
- 25. Fixed UART_CLEAR_RTS() implementation error in uart.h.
- 26. Fixed sample code bug that XTL is enabled before configuring multi-function pins.
- 27. Fixed CMSIS path setting error in some sample codes.
- 28. Fixed UART RS485 samples that set RTS pin and RS485 mode incorrectly.
- 29. Added I2C0, SPI0, and UART0 definition which is the same with I2C, SPI, and UART in Mini51Series.h.
- 30. Added ACMP driver acmp.c and acmp.h.
- 31. Added CLK_EnableSysTick() and CLK_DisableSysTick() in clk.c.
- 32. Added CLK_PWRCON_XTL12M, CLK_PWRCON_HXT, CLK_PWRCON_LXT, CLK_CLKSEL0_HCLK_S_LIRC, CLK_CLKSEL0_HCLK_S_HIRC, CLK_CLKSEL1_WDT_S_LIRC, CLK_CLKSEL1_ADC_S_HIRC, CLK_CLKSEL1_TMR0_S_LIRC, CLK_CLKSEL1_TMR0_S_HIRC, CLK_CLKSEL1_TMR1_S_LIRC,
 - CLK_CLKSEL1_TMR1_S_HIRC, CLK_CLKSEL1_UART_S_HIRC,
 - CLK_CLKSEL2_FRQDIV_HXT, CLK_CLKSEL2_FRQDIV_LXT,
 - CLK CLKSEL2 FRQDIV HIRC definitions in clk.h.
- 33. Added FMC_CLR_FAIL_FLAG() macro in fmc.h.
- 34. Added FMC GetVectorPageAddr() function in fmc.c.
- 35. Added SPI_GET_RX_FIFO_FULL_FLAG() and SPI_GET_RX_FIFO_FULL_FLAG() macros in spi.h.
- 36. Added SYS MFP P32 CPP1 definition in sys.h.
- 37. Added Hard Fault Sample.
- 38. Added RegBased samples including ACMP_TriggerTimerCompare, ADC_Compare, , GPIO_Debounce, GPIO_Interrupt, GPIO_Toggle, GPIO_Wakeup, I2C_Master, I2C_Slave, PWM_DeadZone, SPI_MasterMode, SPI_SlaveMode, Timer_EventCounter, Timer_FreeCountingMode, Timer_ToggleOut, Timer_Wakeup, and WDT_Wakeup.
- 39. Added StdDriver samples including ACMP, ADC_Convert, GPIO_Debounce, GPIO_Interrupt, GPIO_Toggle, GPIO_Wakeup, I2C_Master, I2C_Slave, PWM_DoubleBuffer, SPI_MasterMode, SPI_SlaveMode, Timer_Periodic, Timer_TriggerCountingMode, Timer_Wakeup, and WDT_Polling.



Revision 3.00.002 (Released 2014-02-27)

- 1. Renamed PWM_*FaultBreak*() functions to PWM_*FaultBrake*().
- 2. Renamed I2C_GetClockBusFreq() to I2C_GetBusClockFreq().
- 3. Renamed I2C_SetClockBusFreq() to I2C_SetBusClockFreq().
- 4. Renamed I2C_SetSlaveMask() to I2C_SetSlaveAddrMask().
- 5. Added I2C FIFO mode sample
- 6. Minor bug fixes.

Revision 3.00.001 (Released 2013-10-31)

1. Minor bug fixes

Revision 3.00.000 (Released 2013-10-08)

1. Initial release.



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