

Arm® Cortex®-M0
32-bit Microcontroller

NUC121/NUC125 Series CMSIS BSP

Revision History

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Revision 3.01.011 (Released 2025-02-21)

- Standard driver
 - I2C: Added STOP bit check for I2C transmission completely.
- Sample code
 - Added VSCode projects with AC6/GCC toolchain.
 - VSCode requires NuLink2 Pro ICE.
 - USB_D_HID_Mouse2: Fixed host not sleep issue.

Revision 3.01.010 (Released 2024-10-09)

- CMSIS: Upgraded to v6.1.0.
- Keil startup_NUC121.c: Instead of ASM code.
- Sample code
 - IAR projects: Upgraded for IAR v8.
 - Keil projects: Upgraded for CMSIS v6.1.0 and Arm Compiler v6.
 - Reference: [Arm Keil Application Note 298](#)
 - USCI_I2C_Wakeup_Master: Removed.

Revision 3.01.009 (Released 2024-03-21)

- Library
 - 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.
 - LDR0M.icf and LDR0M.sct: Fixed LDR0M address.
 - PWM: PWM_ConfigOutputChannel fixed duty issue.
- Sample code
 - BPWM_SwitchDuty, PWM_SwitchDuty: Fixed 100% duty issue.
 - ISP samples: Fixed LDR0M download failure in IAR and KEIL.
 - ISP_DFU: Updated Windows driver with Nuvoton vendor name.
 - SYS_PowerDown_MinCurrent: Removed LVR disable setting.
 - USB_D samples
 - Removed EP1 stall while setup error occurred.
 - Removed LPM support.
 - USB_D HID samples: Supported LED status.

Revision 3.01.008 (Released 2023-02-13)

- Standard driver
 - retarget.c: Fixed print issue with IAR EWARM V8 and above
- Sample code
 - 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.
 - SYS_PowerDown_MinCurrent: Added.
 - USB_D_HID_Mouse2: Avoided wakeup failure.

Revision 3.01.007 (Released 2022-01-26)

- Standard driver
 - Improved infinite loop prevention with timeout counter and error code.
 - TIMER: TIMER_Delay added return value.
- Sample code
 - I2C samples: Removed redundant code.
 - I2C and USCI_I2C samples: Enabled schmitt trigger of I²C pins.
 - ISP_I2C, ISP_RS485, and ISP_UART: Added GCC project.
 - ISP_MSC: Added.
 - USB_D samples: Added software boundary of USB trim.
 - USB_D HID samples: Unified INT_IN interval.
 - USB_D_MassStorage_CDROM: Fixed Linux and Mac compatibility issue.

Revision 3.01.006 (Released 2020-05-21)

- IAR startup_NUC121.s: Fixed build issue with IAR EWARM V7.5.
- Standard driver
 - UART: UART_DisableInt and UART_EnableInt removed NVIC IRQ control.
- Sample code
 - I2C_PDMA_TRX: Removed unused __ALIGNED.
 - PDMA, PDMA_Scatter_Gather: Added word alignment.
 - UART samples: Added NVIC IRQ control.
 - USB_D_MassStorage_CDROM: Removed 2KB file size limit.

- USB_D_VCOM samples: Fixed potential UART Tx FIFO overflow issue.
- USB_D_VCOM_DualPort: Fixed wrong baudrate issue.
- USCI_SPI_SlaveModeINT: Added.

Revision 3.01.005 (Released 2020-09-14)

- Added Apache-2.0 license declaration.
- Standard driver
 - retarget.c
 - _write and SendChar_ToUART fixed '\r' issue.
 - SendChar fixed uninitialized pointer.
 - SPI: SPI_DISABLE_TX_RX_PDMA and SPI_TRIGGER_TX_RX_PDMA added.
 - TIMER: TIMER_SET_OPMODE added.
 - UART: UART_PDMA_DISABLE and UART_PDMA_ENABLE added.
- Sample code
 - I2C_Wakeup_Slave: Improved wakeup robustness.
 - UART samples and USCI_UART_TxRx_Function: Fixed '\r' issue.
 - USB_D_VCOM_DualPort: Fixed only one VCOM port in Linux.

Revision 3.01.004 (Released 2019-10-02)

- Standard driver
 - TIMER: TIMER_Open fixed return value.
 - USCI_SPI: USPI_SET_SS_HIGH fixed implementation.
- Sample code
 - I2C_PDMA_TRX, ISP_DFU, ISP_I2C, ISP_RS485, and ISP_SPI: Added.
 - FMC_ExecInSRAM: Added IAR and GCC projects.
 - UART_TxRx_Function: Fixed data lost.

Revision 3.01.003 (Released 2019-06-19)

- Standard driver
 - I2C: Added error handling for new transfer.
 - TIMER: TIMER_GetModuleClock used correct PCLK.
 - USB_D: Fixed potential issue.
- Sample code
 - ISP samples: Added.
 - TIMER_Delay: Used correct PCLK.

- USB_D samples: Fixed potential issue.
- USB_D_Audio_NAU8822 and USB_D_Audio_HID_NAU8822: Cleared FIFO before play / record.

Revision 3.01.002 (Released 2018-12-28)

- CMSIS: Upgraded to v5.1.1.
- Standard driver
 - CLK: CLK_PowerDown required HIRC / MIRC auto trim disabled.
 - PDMA: PDMA_Open supported multiple open.
- Sample code
 - Keil projects used "NULink Debugger" instead of "Nuvoton Nu-Link Debugger".
 - Semihost fixed build failure with GCC toolchain 7-2018-q2.
 - I2S_PDMA_PlayRecord: Fixed race condition.
 - TIMER_CaptureCounter: Fixed array access overflow.
 - USB_D_VCOM samples: Fixed UART baud rate calculation.
 - USB_D_VCOM_And_HID_Transfer: Fixed buffer overflow.

Revision 3.01.001 (Released 2018-06-27)

- NuMicro.h: Added.
- NUC121.h: Separated register declarations of each IP into distinct header files.
- Standard driver
 - USB_D: Fixed USB Control-In packet with the same size as endpoint limit.
- Sample code
 - Added Eclipse projects with GCC toolchain.
 - ADC samples, CLK_ClockDetector, HIRC_Trim, and UART_Wakeup_LXT: Set analog pins as input mode and disabled digital input function.
 - PDMA_ScatterGather_PingPongBuffer: Added PDMA error handling.
 - UART_PDMA: Added UART error handling.
 - USCI_I2C_Monitor: Added.

Revision 3.00.003 (Released 2017-12-13)

- NUC121.h: TIMER_CTL_TRGDAC_Pos and TIMER_CTL_TRGDAC_Msk removed.
- Standard driver
 - I2C: I2C_ReadByteTwoRegs, I2C_ReadMultiBytesTwoRegs, I2C_WriteByteTwoRegs, and I2C_WriteMultiBytesTwoRegs fixed high byte lost.
 - SPI: I2S_Open improved I2S sample rate accuracy.

- TIMER: TIMER_TRG_TO_EADC replaced by TIMER_TRG_TO_ADC.
- USB_D
 - USB_D_L1RESUME replaced by USB_D_STATE_L1RESUME.
 - USB_D_L1SUSPEND replaced by USB_D_STATE_L1SUSPEND.
- USCI-I2C: UI2C_ReadByteTwoRegs, UI2C_ReadMultiBytesTwoRegs, UI2C_WriteByteTwoRegs, and UI2C_WriteMultiBytesTwoRegs fixed high byte lost.
- USCI-UART: UART_Open and UART_SetLine_Config fixed wrong baud rate.

Revision 3.00.002 (Released 2017-03-09)

- NUC121.h: BPWM0_IRQn and BPWM1_IRQn added.
- Standard driver
 - BPWM: BPWM_ConfigOutputChannel fixed 100% duty issue.
 - CLK
 - CLK_CLKSEL1_ADCSEL_HIRC_DIV2 replaced by CLK_CLKSEL1_ADCSEL_HIRC.
 - GPIOA_MODULE, GPIOB_MODULE, GPIOC_MODULE, GPIOD_MODULE, GPIOE_MODULE, and GPIOF_MODULE fixed.
 - I2C: I2C_CLEAR_WAKEUP_WR_STATUS removed.
 - PWM: PWM_ConfigOutputChannel fixed 100% duty issue.
 - SYS
 - SYS_GPF_MFPL_PF0MFP_XT1_OUT, SYS_GPF_MFPL_PF0MFP_X32_OUT, SYS_GPF_MFPL_PF1MFP_XT1_IN, and SYS_GPF_MFPL_PF1MFP_X32_IN added.
 - SYS_GPD_MFPL_PD3MFP_UART0_CTS replaced by SYS_GPD_MFPL_PD3MFP_UART0_nCTS.
 - SYS_GPD_MFPL_PD3MFP_UART0_RTS replaced by SYS_GPD_MFPL_PD3MFP_UART0_nRTS.
- Sample code
 - BPWM_DutySwitch: Fixed 100% duty issue.
 - FMC_IAP: Fixed Wrong project setting.
 - LED_Toggle, UART_Wakeup_LXT: Added.
 - PWM_DutySwitch: Fixed 100% duty issue.
 - USB_D samples: Replied USB 2.1 version only if SUPPORT_LPM defined.
 - USB_D_Audio_HID_NAU8822: Fixed PD11 issue.
 - USCI_UART_TxRx_Function: Fixed compilation error.

Revision 3.00.001 (Released 2016-10-07)

- Initial release.

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