

**Arm® Cortex®-M0**  
**32-bit Microcontroller**

# **NUC121/NUC125 Series CMSIS BSP**

## **Revision History**

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### Revision 3.01.005 (Released 2020-9-14)

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- Added Apache-2.0 license declaration
- Standard driver
  1. retarget.c
    - Fixed \_write, SendChar\_ToUART: '\r' issue.
    - Fixed SendChar: Uninitialized pointer.
  2. SPI driver
    - New API: SPI\_DISABLE\_TX\_RX\_PDMA, SPI\_TRIGGER\_TX\_RX\_PDMA.
  3. TIMER driver
    - New API: TIMER\_SET\_OPMODE.
  4. UART driver
    - New API: UART\_PDMA\_DISABLE, UART\_PDMA\_ENABLE
- Sample code
  1. Improved I2C\_Wakeup\_Slave: Wakeup robustness.
  2. Fixed USB\_D\_VCOM\_DualPort: Only one VCOM port in Linux.
  3. Fixed USCI\_UART\_TxRx\_Function, all UART samples: '\r' issue.

### Revision 3.01.004 (Released 2019-10-2)

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- Standard driver
  1. TIMER driver
    - Fixed TIMER\_Open: Return value.
  2. USCI\_SPI driver
    - Fixed USPI\_SET\_SS\_HIGH: Implementation.
- Sample code
  1. New sample code: I2C\_PDMA\_TRX, ISP\_DFU, ISP\_I2C, ISP\_RS485, ISP\_SPI.
  2. Improved FMC\_ExecInSRAM: Add IAR and GCC projects.
  3. Fixed UART\_TxRx\_Function: Data lost.

### Revision 3.01.003 (Released 2019-6-19)

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- Standard driver
  1. I2C driver
    - Added error handling for new transfer.
  2. TIMER driver
    - Fixed TIMER\_GetModuleClock: Correct PCLK.
  3. USB\_D driver

- Fixed potential issue.
- Sample code
  1. New sample code: ISP samples.
  2. Updated USB\_D\_Audio\_NAU8822, USB\_D\_Audio\_HID\_NAU8822: Clear FIFO before play / record.
  3. Fixed TIMER\_Delay: Correct PCLK.
  4. Fixed all USB\_D samples: Potential issue.

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**Revision 3.01.002** (Released 2018-12-28)

- CMSIS
  1. Upgraded to v5.1.1.
- Standard driver
  1. CLK driver
    - Updated CLK\_PowerDown: Require HIRC / MIRC auto trim disabled.
  2. PDMA driver
    - Improved PDMA\_Open: Support multiple open.
- Sample code
  1. Updated all samples: Keil projects use “NULink Debugger” instead of “Nuvoton Nu-Link Debugger”.
  2. Fixed all samples: Semihost build failure with GCC toolchain 7-2018-q2.
  3. Fixed I2S\_PDMA\_PlayRecord: Race condition.
  4. Fixed TIMER\_CaptureCounter: Array access overflow.
  5. Fixed USB\_D\_VCOM samples: UART baud rate calculation.
  6. Fixed USB\_D\_VCOM\_And\_HID\_Transfer: Buffer overflow.

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**Revision 3.01.001** (Released 2018-06-27)

- NuMicro.h
  1. New header file.
- NUC121.h
  1. Separated register declarations of each IP into distinct header files.
- Standard driver
  1. Fixed USB\_D driver: USB Control-In packet with the same size as endpoint limit.
- Sample code
  1. New sample code: USCI\_I2C\_Monitor.
  2. Improved PDMA\_ScatterGather\_PingPongBuffer: Add PDMA error handling.
  3. Improved UART\_PDMA: Add UART error handling.

4. Updated all samples: Add Eclipse projects for GCC toolchain.
5. Updated CLK\_ClockDetector, HIRC\_Trim, UART\_Wakeup\_LXT, ADC samples: Set analog pins as input mode and disabled digital input function.

### Revision 3.00.003 (Released 2017-12-13)

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- NUC121.h
  1. Removed TIMER\_CTL\_TRGDAC\_Pos, TIMER\_CTL\_TRGDAC\_Msk.
- Standard driver
  1. I2C driver
    - Fixed I2C\_ReadByteTwoRegs, I2C\_ReadMultiBytesTwoRegs, I2C\_WriteByteTwoRegs, I2C\_WriteMultiBytesTwoRegs: High byte lost.
  2. SPI driver
    - Improved I2S\_Open: I2S sample rate accuracy.
  3. TIMER driver
    - Replaced TIMER\_TRG\_TO\_EADC with TIMER\_TRG\_TO\_ADC.
  4. USB driver
    - Replaced USBD\_L1RESUME with USBD\_STATE\_L1RESUME.
    - Replaced USBD\_L1SUSPEND with USBD\_STATE\_L1SUSPEND.
  5. USCI-I2C driver
    - Fixed UI2C\_ReadByteTwoRegs, UI2C\_ReadMultiBytesTwoRegs, UI2C\_WriteByteTwoRegs, UI2C\_WriteMultiBytesTwoRegs: High byte lost.
  6. USCI-UART driver
    - Fixed UART\_Open, UART\_SetLine\_Config: Wrong baud rate.

### Revision 3.00.002 (Released 2017-03-09)

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- NUC121.h
  1. New definition: BPWM0\_IRQn, BPWM1\_IRQn.
- Standard driver
  1. BPWM driver
    - Fixed BPWM\_ConfigOutputChannel: 100% duty issue.
  2. CLK driver
    - Replaced CLK\_CLKSEL1\_ADCSEL\_HIRC\_DIV2 with CLK\_CLKSEL1\_ADCSEL\_HIRC.
    - Fixed definition: GPIOA\_MODULE, GPIOB\_MODULE, GPIOC\_MODULE, GPIOD\_MODULE, GPIOE\_MODULE, GPIOF\_MODULE.
  3. I2C driver
    - Removed I2C\_CLEAR\_WAKEUP\_WR\_STATUS.

4. PWM driver
  - Fixed PWM\_ConfigOutputChannel: 100% duty issue.
5. SYS driver
  - New definition: SYS\_GPF\_MFPL\_PF0MFP\_XT1\_OUT, SYS\_GPF\_MFPL\_PF0MFP\_X32\_OUT, SYS\_GPF\_MFPL\_PF1MFP\_XT1\_IN, SYS\_GPF\_MFPL\_PF1MFP\_X32\_IN.
  - Replaced SYS\_GPD\_MFPL\_PD3MFP\_UART0\_CTS with SYS\_GPD\_MFPL\_PD3MFP\_UART0\_nCTS.
  - Replaced SYS\_GPD\_MFPL\_PD3MFP\_UART0\_RTS with SYS\_GPD\_MFPL\_PD3MFP\_UART0\_nRTS.
- Sample code
  1. New sample code: LED\_Toggle, UART\_Wakeup\_LXT.
  2. Updated all USB samples: Reply USB 2.1 version only if SUPPORT\_LPM defined.
  3. Fixed BPWM\_DutySwitch: 100% duty issue.
  4. Fixed FMC\_IAP: Wrong project setting.
  5. Fixed PWM\_DutySwitch: 100% duty issue.
  6. Fixed USBD\_Audio\_HID\_NAU8822: PD11 issue.
  7. Fixed USCI\_UART\_TxRx\_Function: Compilation error.

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**Revision 3.00.001** (Released 2016-10-07)

- Primary release version.

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