

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

**NuMicro® Family**  
**NUC230/NUC240 Series BSP**  
**Revision History**

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**Revision 3.01.006** (Released 2024-05-22)

1. Added timeout handler for infinite loop.
2. Added CAN\_BasicMode\_SilentMode and CAN\_NormalMode\_SilentMode sample code.
3. Added timeout handler for infinite loop.
4. Used "volatile" with the function pointer to disable compiler optimizations in I2C Sample code.
5. Updated the sc library to solve SC\_ReadATR and USBD\_CCID running fail.
6. Waited all Tx data transmission finished before changing parity setting in UART RS485 sample code.
7. Fixed inverse definition of RTS active level in UART RS485 sample code.
8. Enabled LVR in SYS\_PowerDown\_MinCurrent sample code to prevent power on/off fail.
9. Updated USBD HID keyboard sample code to support LED status.
10. Modified VendorName of Nu\_DFU.inf
11. Added SYS\_PowerDown\_MinCurrent sample code.
12. Called UART FIFO size from uart.h in USBD VCOM sample code.

**Revision 3.01.005** (Released 2022-08-17)

1. Fixed USBD\_MassStorage\_CDRom crash on Linux.
2. Added I2C hang up and recover mechanism for I2C Master and Slave sample code.
3. Updated project settings of timer capture sample code.
4. Fixed UART TX FIFO control issue in USBD\_VCOM sample code.

**Revision 3.01.004** (Released 2021-01-22)

1. Fixed SetMultiRxMsg MsgCount in Library/StdDriver/src/can.c
2. Fixed data access fail issue of USBD\_Mass\_Storage\_CDRom sample code.
3. Added SPI\_TRIGGER\_TX\_RX\_PDMA API.
4. Added to pass USB-IF CV-Chapter 9 & Class test of all USBD Sample code.
5. Fixed warnings of adc driver in Library/StdDriver/src/adc.c
6. Added Apache-2.0 license declaration in driver source.
7. Added README.md file.

**Revision 3.01.003** (Released 2019-11-11)

1. Added ISP Sample codes to bsp\SampleCode\ISP folder.
2. Supports GNU GCC.
3. Added Mass Storage sample code to support SD Card.
4. Fixed PWM\_DisableCaptureInt of PWM driver.
5. Fixed CLK\_SetHCLK() bug of CLK driver.
6. Fixed CLK\_EnablePLL() wrong PLL default setting value of CLK driver.

**Revision 3.01.002** (Released 2017-10-24)

1. Fixed PLL clock source selection bug in CLK\_SetCoreClock().
2. Fixed clear Receive Line Status interrupt flag bug in UART\_ClearIntFlag().
3. Modified to disable debug message when enabling semihost without NuLink connecting.
4. Added CAN\_SetRxMsgObjAndMsk() function.
5. Added CLK\_SysTickLongDelay() for long delay.
6. Added ADC\_MeasureVADD() sample code.

**Revision 3.01.001 (Released 2015-08-18)**


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1. Fixed the clock selection bug in SCUART\_TxRx() sample code.
2. Fixed the reset handler from \_\_iar\_program\_start to Reset\_Handler.
3. Fixed the bug of clearing wrong enable bit in UART\_SelectLINMode() of UART driver.
4. Fixed CAN\_STATUS\_LEC\_Msk from 0x03 to 0x07.
5. Fixed SC\_UACTL\_UA\_MODE\_EN\_Msk define error from (3ul << SC\_UACTL\_UA\_MODE\_EN\_Pos) to (1ul << SC\_UACTL\_UA\_MODE\_EN\_Pos).
6. Fixed the wrong SC1 and SC2 clock source select shift position in MODULE constant definitions.
7. Fixed the wrong definition bug of PS2\_DISABLE\_OVERRIDE() and PS2\_ENABLE\_OVERRIDE().
8. Fixed the bug of PS2\_Write() in PS2 driver.
9. Removed ReadDID() function from FMC driver as It is no longer supported.
10. Updated USB driver to improve reliability and compatibility.
11. Added NuEdu sample code.
12. Added INT 'MCUIRQ' and 'MCUIRQCR' bit field definitions.
13. Added CLK\_EnableSysTick() and CLK\_DisableSysTick() to control SysTick and select SysTick clock source.
14. Added SPI\_FIFO\_SIZE constant definition.
15. Added USB device sample code.
16. Improved USB driver for adding more USB sample code.

**Revision 3.00.002 (Released 2015-05-11)**


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1. Fixed the wrong baud rate returned by SCUART\_SetLineConfig() in SCUART driver.
2. Fixed SCUART\_Open() of SCUART driver for wrong clock calculation and return value.
3. Fixed SC\_SET\_STOP\_BIT\_LEN define error.
4. Fixed the bug of ADC\_IS\_DATA\_OVERRUN() that the input parameter is channel number but channel bit mask.
5. Updated CAN clock setting in CAN\_Open() of CAN driver to comply with different system clocks.
6. Fixed the wrong return value bug of CLK\_SetCoreClock() in CLK driver.
7. Fixed CLK\_SetModuleClock() error for PWM clock selection in CLK driver.
8. Fixed the bug of CLK\_SysTickDelay() that COUNTFLAG may not be cleared in CLK driver.
9. Fixed the GPIO\_ENABLE\_DOUT\_MASK() and GPIO\_DISABLE\_DOUT\_MASK() implement inverse error in GPIO driver.
10. Fixed the close wrong I<sup>2</sup>C bug of I2C\_Close() in I<sup>2</sup>C driver.
11. Fixed API declare name from I2C\_SetClockBusFreq() to I2C\_SetBusClockFreq() in I<sup>2</sup>C driver.
12. Fixed the clear RS-485 address byte detection flag bug to clear one flag at one time in RS485\_HANDLE() of UART driver.
13. Added one more zero packet when BULK IN transfer is end by max packet size packet at last packet in VCOM sample code.
14. Fixed UA\_LIN\_CTL[4] bit field name as 'MUTE\_EN' not 'WAKE\_EN' in UART LIN\_CTL bit field definitions of header file.
15. Fixed the wrong mask definition of SC\_TRSR\_TX\_POINT\_F\_Msk and SC\_TRSR\_RX\_POINT\_F\_Msk in header file.
16. Fixed the wrong bit definition of WAKEUP\_EN in USB\_INTEN register of header file.

17. Fixed the channel 0 trigger disabled bug when channel 1~3 trigger enabled in PWM\_EnableADCTrigger() of PWM driver.
18. Fixed the bug that channel 0 trigger will be disabled when channel 1~3 trigger are enabled in PWM\_EnableADCTrigger() of PWM driver.
19. Fixed SCUART\_PARITY\_NONE/SCUART\_PARITY\_EVEN/SCUART\_PARITY\_ODD definition bug in SCUART driver.
20. Fixed four macro definitions of SPI driver to avoid affecting non-target SPI\_SS pin including SPI\_SET\_SS0\_HIGH() SPI\_SET\_SS1\_HIGH() SPI\_SET\_SS0\_LOW() SPI\_SET\_SS1\_LOW().
21. Fixed the clear flag bug to clear one flag at one time in UART\_ClearIntFlag(). It should be '(uart)->FSR = UART\_FSR\_RS485\_ADD\_DETF\_Msk' but '(uart)->FSR |= UART\_FSR\_RS485\_ADD\_DETF\_Msk'.
22. Fixed the clear wrong flag bug in UART\_RS485\_CLEAR\_ADDR\_FLAG().
23. Fixed UA\_LIN\_CTL[4] bit field name as 'MUTE\_EN' not 'WAKE\_EN' in UA\_LIN\_CTL constants definitions in UART driver.
24. Added SPI\_SET\_SS\_LEVEL() macro definition in SPI driver to allow user to set both SPI\_SS pins.
25. Added a lack macro SYS\_IS\_LVR\_RST() to SYS driver.

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**Revision 3.00.001** (Released 2014-05-05)

1. Supported NUC230/NUC240
2. Supported latest NuMicro Family Driver API.
3. Supported register based and driver based sample code.
4. Added USB CCID Card Reader sample code

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**Revision 1.01.001** (Released 2013-07-25)

1. Supported NUC230\_240 BN version.
2. Split driver samples into small one for easy reference.
3. Added readme file in root directory for quick reference for BSP directory and sample code.

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**Revision 1.00.002** (Released 2012-11-09)

1. Fixed CAN, Smart Card, and GPIO driver bugs.
2. Modified the unlock function to do retry when fail to unlock.

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**Revision 1.00.001** (Released 2012-08-04)

1. Initial Release.

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