

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

**NuMicro® Family**  
**NANO100BN Series CMSIS BSP**  
**Revision History**

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**Revision 3.04.001** (Released 2023-03-07)

1. Add sample code SYS\_PowerDown\_MinCurrent

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**Revision 3.04.000** (Released 2023-01-10)

1. Fixed USB\_D\_VCOM\_UART\_TX control issue
2. Modify USB\_D\_HID\_bInterval to 10
3. Fix USB\_D\_CDROM Linux/MAC compatible issue
4. Add timeout to infinite loops in drivers
5. Minor bug fix.

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**Revision 3.03.002** (Released 2020-10-08)

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

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**Revision 3.03.001** (Released 2019-11-07)

1. Added ISP related samples.
2. Added sample USB\_D\_MassStorage\_SDCard.
3. Minor bug fix.

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**Revision 3.03.000** (Released 2018-05-30)

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

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**Revision 3.02.002** (Released 2017-03-10)

1. Fixed INTR\_T structure base address definition error.
2. Fixed smartcard driver and library behaviors that do not comply with EMV2000 spec.
3. Fixed CCID sample bug that incorrect error code is returned.
4. Fixed the bug that time-out interrupt flag is cleared at wrong time in I2C\_Loopback sample code.
5. Fixed USB\_D\_Audio\_Speaker sample code interrupt control error.
6. Added Interface Association Descriptor(IAD) in USB\_D\_Audio\_Speaker\_And\_HID\_Transfer sample code.
7. Updated SC\_ReadSimPhoneBook sample code to support SIM card with CHV1 disabled.

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**Revision 3.02.001** (Released 2016-07-28)

1. Updated CMSIS to v4.5.0.
2. Added sample codes including USB\_D\_HID\_Transfer\_CTRL, USB\_D\_Vendor\_LBK, and USB\_D\_Mass\_Storage\_SDCard.
3. Fixed the HIDTransferTest.exe bug to use correct sector size to compare data.
4. Updated HIDTransferTest.exe to support the connection of the composite device with HID interface number other than 0.
5. Fixed the USB\_D\_VCOM\_SerialEmulator, USB\_D\_VCOM\_DualPort, USB\_D\_VCOM\_And\_Mass\_Storage, USB\_D\_VCOM\_And\_HID\_Transfer, and USB\_D\_VCOM\_And\_HID\_Keyboard samples bug to ensure SET\_LINE\_CODE command is properly handled.
6. Minor bug fixes.

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**Revision 3.02.000** (Released 2015-08-07)

1. Removed FMC driver's  
FMC\_SetBootSource(),FMC\_DisableAPUpdate(),FMC\_DisableConfigUpdate(),FMC\_DisableLDUpdate(),FMC\_EnableAPUpdate(),FMC\_EnableConfigUpdate(),FMC\_EnableLDUpdate() in fmc.h, because there exist functionally identical macros.
2. Removed SYS\_IRCTRIMCTL\_SEL\_MASK, SYS\_IRCTRIMCTL\_LOOP\_MASK and SYS\_IRCTRIMCTL\_RETRY\_COUNT in sys.h.
3. Removed SPI\_ENABLE\_DUAL\_MODE() in spi.h.
4. Modified SPI\_ENABLE\_DUAL\_INPUT\_MODE() and SPI\_ENABLE\_DUAL\_OUTPUT\_MODE() to enable dual I/O with direction.
5. Modified USB driver to pass USB Command Verify test in usbd.c and usbd.h.
6. Modified UART\_SelectIrDAMode() to reload UART clock before calculating baudrate, in uart.c.
7. Modified SD card clock speed from 24 MHz to 5 MHz to make SPI operations stable in SDCard.c.
8. Modified MMC\_FLASH\_Init() to retry SD CMD0 command until success in SDCard.c.
9. Modified TIMER\_Open() to not start timer in timer.c.
10. Updated TIMER\_Open() and TIMER\_Delay() to support extreme high clock input, in timer.c.
11. Renamed sample CRC to CRC\_CCITT in StdDriver.
12. Renamed sample GPIO to GPIO\_IOTest in StdDriver.
13. Renamed sample PDMA to PDMA\_Memory in StdDriver.
14. Renamed sample SYS to SYS\_Control in StdDriver.
15. Renamed SYS\_Int\_xxx\_Msk to SYS\_xxx\_Msk in sys.h.
16. Renamed GP\_DBNCECON\_PUEN\_\* to GP\_DBNCECON\_DBCLKSEL\_\* in Nano100Series.h.
17. Renamed SYS\_IRCTRIMINT\_32KERR\_ENNT to SYS\_IRCTRIMINT\_32KERR\_INT in sys.h.
18. Fixed the bug that RTC\_AER enable flow may be interrupted by interrupt service routine in rtc.c.
19. Fixed the bug that PWM\_ENABLE\_OUTPUT\_INVERTER() does not clear register field before writing input parameter to it in pwm.h.
20. Fixed the bug that TIMER\_Delay() sets prescale to wrong register in timer.c.
21. Fixed SCUART\_Open() and SCUART\_SetLineConfig() baudrate calculation prescale setting error in scuart.c.
22. Fixed bugs of SPI\_EnableAutoSS () and SPI\_SetBusClock () in spi.c, and cleared bit mask of register field before writing input parameter to it.
23. Fixed the CLK\_SysTickDelay() bug that continuously calling CLK\_SysTickDelay() may imply an incorrect delay time by clearing control register on each call in clk.c.
24. Fixed implementation errors of CLK\_PLLCTL\_FB\_DV\_Msk and CLK\_APBCLK\_I2C0\_EN in Nano100Series.h.
25. Fixed SYS\_CLEAR\_RST\_SOURCE implementation error in sys.h.
26. Fixed CLK\_WK\_INTSTS\_IS implementation error in clk.h.
27. Fixed "GPIO\_DISABLE\_DOUT\_MASK" and "GPIO\_ENABLE\_DOUT\_MASK" implementation errors in gpio.h.
28. Fixed SC\_SET\_STOP\_BIT\_LEN implementation error in sc.h.
29. Fixed PDMA\_IS\_CH\_BUSY implementation error in pdma.h.
30. Fixed LCD\_CPUMP\_DIV128 implementation error in lcd.h.
31. Fixed RTC\_CLEAR\_TAMPER\_FLAG() implementation bug in rtc.h.
32. Fixed ADC\_SET\_DMOF() implementation error in adc.h.
33. Fixed CRC\_SET\_SEED ()implementation error in crc.h.
34. Disabled Rx before raising RST high during cold reset in SmartCardLib library.

35. Checked SC\_RST and SC\_DAT\_O pin status during deactivation in SmartCardLib library.
36. Added SYS\_PA\_H\_MFP\_PA9\_MFP\_LCD\_S7 macro in sys.h.
37. Added I2C\_ClearIntFlag() and I2S\_SetFIFO() functions in i2c.c.
38. Added bit definitions of MCLKO (Module Clock CKO) register in clk.h.
39. Added LCD\_MODULE and DAC\_MODULE macro sets in clk.c.
40. Added CLK\_EnableSysTick() and CLK\_DisableSysTick() in clk.c.
41. Added macros CLK\_PLLCTL\_\*MHz\_HXT and CLK\_PLL\_\*MHz\_HIRC for setting PLLCTL value in clk.c.
42. Added SYS\_EnableIRCTrim() and SYS\_DisableIRCTrim() functions in sys.c, and added macros SYS\_GET\_IRCTRIM\_INT\_FLAG() and SYS\_CLEAR\_IRCTRIM\_INT\_FLAG() in sys.h.
43. Added UART\_SelectLINMode() in uart.c, and added UART\_FUNC\_SEL\_LIN in uart.h.
44. Added a sample USB\_D\_Audio\_Speaker\_And\_HID\_Transfer to Nu-LB-NANO130.
45. Added samples SYS\_MCLKO, SYS\_PLLClockOutput, and SYS\_TrimIRC to StdDriver.
46. Added a sample Timer\_Wakeup to StdDriver.
47. Added samples USB\_D\_HID\_Keyboard, USB\_D\_HID\_MouseKeyboard, USB\_D\_HID\_Touch, USB\_D\_HID\_Transfer\_And\_Keyboard, USB\_D\_HID\_Transfer\_And\_MSC, USB\_D\_Mass\_Storage\_CDRom, USB\_D\_Micro\_Printer, USB\_D\_Printer\_And\_HID\_Transfer, USB\_D\_VCOM\_And\_HID\_Keyboard, USB\_D\_VCOM\_And\_HID\_Transfer, USB\_D\_VCOM\_And\_Mass\_Storage, USB\_D\_VCOM\_DualPort, and USB\_D\_VCOM\_SerialEmulator to StdDriver.

#### Revision 3.01.000 (Released 2014-09-19)

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1. Renamed register TESTCLK to MCLKO.
2. Renamed registers PDSSR0 and PDSSR1 to DSSR0 and DSSR1.
3. Renamed USB\_D\_ENABLE\_INT() to USB\_D\_ENABLE\_INT().
4. Renamed I2S\_Enable\_MCLK()/I2S\_Disable\_MCLK() to I2S\_EnableMCLK()/I2S\_DisableMCLK().
5. Renamed  
CLK\_CLKSEL1\_PWM1\_CH01\_S\_Msk/CLK\_CLKSEL1\_PWM1\_CH23\_S\_Msk to  
CLK\_CLKSEL2\_PWM1\_CH01\_S\_Msk/CLK\_CLKSEL2\_PWM1\_CH23\_S\_Msk.
6. Renamed RTC\_RIIR\_SNOOPIS\_Msk to RTC\_RIIR\_SNOOPIF\_Msk.
7. Renamed PDMA\_IER\_BLKD\_IE\_Msk to PDMA\_IER\_TD\_IE\_Msk.
8. Modified PWM\_EnablePDMA() function prototype, and added one more parameter to select captured edge.
9. Modified PWM capture interrupt flag relative macro definitions to improve performance.
10. Added ADC clock source bit position and mask definition.
11. Added ADC\_SET\_REF\_VOLTAGE() macro and RES/REF definitions.
12. Added DAC driver.
13. Added ADC\_Compare, ADC\_TimerTrigger, ADC\_PDMA, DAC\_PDMATrigger, DAC\_SoftwareTrigger, DAC\_TimerTrigger, GPIO\_PowerDown, Hard\_Fault\_Sample, PWM\_CapturePDMA, SPI\_LoopbackPDMA, UART\_FlowCtrl, UART\_TxRxPDMA, and USB\_D\_HID\_Transfer samples.

#### Revision 3.00.000 (Released 2014-02-20)

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1. Update major version number from 2 to 3.
2. Renamed RTC\_GetDatAndTime() to RTC\_GetDateAndTime().

**Revision 2.00.000** (Released 2014-01-11)

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1. Primary release version.

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