Nano100BN CMSIS BSP Directory

Directory Introduction for 32-bit NuMicro® Family

Directory Information

Document	Driver reference manual and revision history.
Library	Driver header and source files.
SampleCode	Driver sample code.

For additional information or questions, please contact: Nuvoton Technology Corporation.

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1 Document Information

CMSIS.html	Document of CMSIS version 4.5.0
NuMicro Nano100BN Series CMSIS BSP Revision History.pdf	This document shows the revision history of Nano100BN BSP.
NuMicro Nano100BN Series Driver Reference Guide.chm	This document describes the usage of drivers in Nano100BN BSP.

2 Library Information

CMSIS	Cortex® Microcontroller Software Interface Standard (CMSIS) V4.5.0 definitions by ARM® Corp.
Device	CMSIS compliant device header file.
LCDLib	Library for controlling LCD module.
NuEdu	Library for NuEdu board.
SDCardLib	Library for accessing a SD Card via SPI interface.
SmartcardLib	Library for accessing a smartcard.
StdDriver	All peripheral driver header and source files.

3 Sample Code Information

CardReader	Smartcard reader sample code.
Hard_Fault_Sample	Show hard fault information when hard fault happened.
NuEdu	Sample code for Nano130 NuEdu Evaluation Board.
Nu-LB-NANO130	Sample code for Nano130 Learning Board.
NUTINY-EVB-NANO130	Sample code for Nano130 Tiny Board.
PowerDown_Chk	Sample code which implements a function to test system state before entering power-down mode. If a system consumes more power than expected in power-down mode, this function can be used to check if there is any system setting that may cause power leakage.
Semihost	Show how to print and get character with IDE console window.
StdDriver	Demonstrate the usage of Nano100BN series MCU peripheral driver APIs.
Template	A project template for Nano100BN series MCU.

4 \SampleCode\CardReader

USBD_CCID	CCID (Circuit card interface device) smart card reader sample code.

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Smpl_Basic01_ADC_Knob	Demonstrate how to use ADC to measure variable resistor and change the LED brightness with PWM according to the ADC conversion results.
Smpl_Basic01_FMC_IAP	Demonstrate a simple IAP function to show three independent programs including main routine, independent interrupt handler and updating or switching to another program with IAP function.
Smpl_Basic01_FMC_ISP	Demonstrate LDROM updated through ISP function by branching to LDROM by software reset, and show debug messages via UART.
Smpl_Basic01_I2C_EEPROM	Demonstrate how to access EEPROM through I_2C interface and print the test results on PC via NUCOM1 port of the NuEdu-Basic01 board.
Smpl_Basic01_PWM_IrDA_NEC	Demonstrate remote control function based on NEC IR protocol and changes LED display via NuEdu-EVB-Nano130 and NuEdu-Basci01 boards when system receives data of NEC IR.
Smpl_Basic01_RTC	Demonstrate RTC application and wake-up function, and print the results on the LCD glass via NuEdu-EVB-Nano130 and NuEdu-TNLCD boards.
Smpl_Basic01_SPI_Flash	Demonstrate how to access SPI Flash through SPI interface and print the test results on both 7-Segments and PC via NUCOM1 port of NuEdu-Basic01 board.
Smpl_Basic01_SPI_Flash_w_PDMA	Demonstrate how to access SPI Flash through a SPI interface with combing PDMA function and print the test results on both 7-Segments and PC via NUCOM1 port of the NuEdu-Basic01 board.
Smpl_Basic01_StartKit	Demonstrate RTC function and display the results on the LCD glass via NuEdu-EVB-Nano130 and NuEdu-TNLCD boards.
Smpl_Basic01_Timer	Demonstrate the timer periodic mode application

	and increase the number display on 7-segments from 0 to 99 via NuEdu-EVB-Nano130 and NuEdu-Basci01 boards when timer interrupt occurs.
Smpl_Basic01_UART_printf	Demonstrate a simple printf function to replace the standard printf library for reducing the code size issue.
Smpl_Basic01_USBD_HID_Mouse	Demonstrate how to implement a USB mouse device. The button on NuEdu-Basic01 can control the cursor when the mouse device is connected to PC by USB.
Smpl_Basic01_WDT_WWDT	Demonstrate the WDT and WWDT application via NuEdu-EVBNano130 and NuEdu-Basci01 boards. The buzzer will beep when WDT interrupt or WWDT interrupt occurs.

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FATFS_SDCard	Access a SD card formatted in FAT file system.
I2C_EEPROM	Read/write EEPROM via an I²C interface.
I2S_NAU8822	An I²S demo using NAU8822 audio codec, used to play back the input from line-in or MIC interface.
PWM_Capture	Demonstrate PWM Capture function by using PWM0 channel 2 to capture the output of PWM0 channel 0.
SC_ReadSimPhoneBook	Demonstrate how to read phone book information in the SIM card.
SPI_FIFO_Flash	Access SPI Flash using FIFO mode.
Timer_WDT_RTC	Demonstrate the timer, WDT, and RTC function.
USBD_Audio_Speaker	Demonstrate how to implement a USB audio class device. NAU8822 is used in this sample code to play the audio data from Host. It also supports to record data from NAU8822 to Host.
USBD_Audio_Speaker_And_HID_Transfer	Demonstrate how to implement a USB audio class device and HID transfer. NAU8822 is used in this sample code to play the audio data from Host. It also supports to record data from NAU8822 to Host. Transfer data between USB device and PC through USB HID interface. A windows tool is also included in this sample code to connect with a USB device.
USBD_Mass_Storage_SDCard	Use SD card as back end storage to implement a USB Mass-Storage device.

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COMMON	Common files for Tiny board sample code.
LCD_DEMO	Demonstrate how to display RTC time on a LCD panel.
PWRDWN_DEMO	Demonstrate how to keep LCD display while system enters Power-down mode.
PWRDWN_LCD_RTC_DEMO	Demonstrate how to keep LCD display while system enters Power-down mode and wake up system periodically with RTC interrupt.
PWRDWN_RTC_DEMO	Demonstrate how to wake up system periodically with RTC interrupt.

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ADC_Compare	Demonstrate ADC conversion and comparison function by monitoring the conversion result of channel 0.
ADC_ContinuousScan	Convert ADC channel 0, 1, 2 in Continuous Scan mode and print conversion results.
ADC_PDMA	Use PDMA channel 1 to move ADC channel 0, 1, 2 converted data to SRAM.
ADC_Single	Convert ADC channel 0 in Single mode and print conversion results.
ADC_SingleCycleScan	Convert ADC channel 0, 1, 2 in Single Cycle Scan mode and print conversion results.
ADC_TimerTrigger	Configure Timer0 to ADC and move converted data to SRAM using PDMA.
CRC_CCITT	Calculate the CRC-CCITT checksum value by CRC DMA mode.
DAC_PDMATrigger	Demonstrate PDMA trigger DAC convert sine wave outputs.
DAC_SoftwareTrigger	Demonstrate software trigger DAC convert sine wave outputs.
DAC_TimerTrigger	Demonstrate timer trigger DAC convert sine wave outputs.
EBI_NOR	Configure EBI interface to access NOR Flash connected to EBI interface.
EBI_SRAM	Configure EBI interface to access SRAM connected to EBI interface.
FMC_RW	Show FMC read Flash IDs, erase, read, and write function.
FMC_VECMAP	Show how to branch programs between LDROM, APROM start page, and APROM other page.

GPIO_IOTest	Use GPIO driver to control the GPIO pin direction and the high/low state, and show how to use GPIO interrupts.
GPIO_PowerDown	Demonstrate how to wake system up from Power-down mode by GPIO interrupt.
I2C_Loopback	An I²C master/slave demo by connecting I²C0 and I²C1 interface.
I2C_Wakeup	Demonstrate how to wake up system from Power-down mode by I²C interrupt.
LCD_Blinking_Test	Demonstrate LCD blinking function on LCD panel of NUTINYSDK- NANO130-LQFP128_TNLCD board.
LCD_Pixel_OnOff_Test	Show how to control pixel on and off on LCD panel of NUTINY-SDK-NANO130-LQFP128_TNLCD board.
LCD_Print_Text_Test	Show how to print text on LCD panel of NUTINY-SDKNANO130-LQFP128_TNLCD board.
PDMA_Memory	Use PDMA channel 2 to demonstrate memory to memory transfer.
PWM_Capture	Demonstrate PWM Capture function by using PWM0 channel 2 to capture the output of PWM0 channel 0.
PWM_CapturePDMA	Demonstrate PWM Capture function by using PWM0 channel 2 to capture the output of PWM0 channel 0 and move captured data to SRAM with PDMA.
PWM_DeadZone	Demonstrate the dead-zone feature with PWM0.
RTC_Alarm_Test	Demonstrate the RTC alarm function which sets an alarm 10 seconds after execution.
RTC_Time_Display	Demonstrate the RTC function and display the current time to the UART console.
SC_ReadATR	Read the smartcard ATR from smartcard 0 interface.

SCUART_TxRx	Demonstrate Smartcard UART mode by connecting PA.8 and PA.9 pins.
SPI_2BIT_Loopback	Demonstrate SPI 2 bit mode loop back transfer.
SPI_TxRxLoopback_PDMA	Demonstrate SPI loop back transfer with PDMA.
SYS_Control	Demonstrate how to change different PLL settings for the system clock source, and output system clock to CLKO (PC.5) pin with the system clock / 4 frequency.
SYS_MCLKO	Demonstrate how to output module clock to PC.0.
SYS_PLLClockOutput	Demonstrate how to change system clock to different PLL frequency and output system clock from CLKO pin.
SYS_TrimIRC	Demonstrate how to use LXT to trim HIRC.
Timer_Delay	Demonstrate the usage of TIMER_Delay() API to generate a 1 second delay.
Timer_EventCounter	Use the pin PB.8 to demonstrate timer event counter function.
Timer_FreeCountingMode	Use the timer pin PC.6 to demonstrate timer free counting mode function. Also display the measured input frequency to UART console.
Timer_InterTimerTriggerMode	Use the timer pin PB.8 to demonstrate inter timer trigger mode function. Also display the measured input frequency to UART console.
Timer_Periodic	Use the timer periodic mode to generate timer interrupt every 1 second.
Timer_ToggleOut	Demonstrate the timer 0 toggle out function on pin PB.8.
Timer_TriggerCountingMode	Use the timer pin PC.6 to demonstrate timer trigger counting mode function. And displays the measured input frequency to UART console.
Timer_Wakeup	Use timer to wake up system from Power-down mode periodically.

UART_AutoBaudRate	Demonstrate how to use auto baud rate detection function.
UART_FlowCtrl	Transmit and receive data using auto flow control.
UART_IrDA	Show how to transmit and receive UART data in UART IrDA mode.
UART_LIN	Demonstrate how to transmit LIN header and response.
UART_PDMA	Demonstrate UART transmit and receive function with PDMA.
UART_RS485_Receive	Demonstrate how to receive data in UART RS485 mode.
UART_RS485_Transmit	Demonstrate how to transmit data in UART RS485 mode.
UART_Rx_Wakeup	Demonstrate how to wake up system from Power-down mode by UART interrupt.
UART_TxRx_Function	Transmit and receive data from PC terminal through RS232 interface.
USBD_HID_Keyboard	Demonstrate how to implement a USB keyboard device. This sample code supports to use GPIO to simulate key input.
USBD_HID_Mouse	Simulate an USB mouse and draws circle on the screen.
USBD_HID_MouseKeyboard	Simulate an USB HID mouse and HID keyboard. Mouse draws circle on the screen and Keyboard use GPIO to simulate key input.
USBD_HID_Touch	Demonstrate how to implement a USB touch digitizer device. Two lines demo in Paint.
USBD_HID_Transfer	Demonstrate how to transfer data between USB device and PC through USB HID interface. A windows tool is also included in this sample code to connect with a USB device.
USBD_HID_Transfer_And_Keyboard	Demonstrate how to implement a composite device (HID Transfer and keyboard). Transfer

	data between USB device and PC through USB HID interface. A windows tool is also included in this sample code to connect with a USB device.
USBD_HID_Transfer_And_MSC	Demonstrate how to implement a composite device (HID Transfer and Mass storage). Transfer data between USB device and PC through USB HID interface. A windows tool is also included in this sample code to connect with a USB device.
USBD_HID_Transfer_CTRL	Use USB Host core driver and HID driver. It shows how to submit HID class request and how to read data from control pipe. A windows tool is also included in this sample code to connect with a USB device.
USBD_Mass_Storage_CDROM	Demonstrate the emulation of USB Mass Storage Device CD-ROM.
USBD_Mass_Storage_Flash	Use internal Flash as back end storage media to simulate a USB pen drive.
USBD_Micro_Printer	Demonstrate how to implement a USB micro printer device.
USBD_Printer_And_HID_Transfer	Demonstrate how to implement a composite device. (USB micro printer device and HID Transfer). Transfer data between USB device and PC through USB HID interface. A windows tool is also included in this sample code to connect with a USB device.
USBD_VCOM_And_HID_Keyboard	Demonstrate how to implement a composite device.(VCOM and HID keyboard)
USBD_VCOM_And_HID_Transfer	Demonstrate how to implement a composite device.(VCOM and HID Transfer) Transfer data between USB device and PC through USB HID interface. A windows tool is also included in this sample code to connect with a USB device.
USBD_VCOM_And_Mass_Storage	Demonstrate how to implement a composite device.(Virtual COM port and Mass storage device)
USBD_VCOM_DualPort	Demonstrate how to implement a USB dual virtual COM port device.

USBD_VCOM_SerialEmulator	Demonstrate how to implement a USB virtual COM port device.
USBD_Vendor_LBK	A USB device vendor class sample program. This sample program needs to test with USBH_VENDOR_LBK that is executed on NUC442/472.
WDT_Polling	Use Polling mode to check WDT time-out state and reset WDT after time-out occurs.
WDT_Wakeup	Use WDT to wake up system from Power-down mode periodically.
WWDT_Reload	Demonstrate the WWDT counter reload function.

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