NUC123 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.

www.nuvoton.com

TABLE OF CONTENTS

1 Document Information

Revision History	Show all the revision history about specific BSP.
NuMicro NUC123 Driver Reference Guide.chm	The usage of drivers in NUC123 Series BSP.

2 Library Information

CMSIS	CMSIS definitions by ARM® Corp.
Device	CMSIS compliant device header file.
StdDriver	All peripheral driver header and source files.

3 Sample Code Information

Hard_Fault_Sample	Show hard fault information when hard fault happened.
ISP	Sample codes for In-System-Programming.
Template	Software Development Template.
Semihost	A sample code to show how to debug with semihost message print.
RegBased	The sample codes which access control registers directly.
StdDriver	NUC123 Series Driver Samples

4 SampleCode\ISP

ISP_DFU	In-System-Programming Sample code through USB interface and following Device Firmware Upgrade Class Specification.
ISP_HID	In-System-Programming Sample code through USB HID interface.
ISP_I2C	In-System-Programming Sample code through I2C interface.
ISP_RS485	In-System-Programming Sample code through RS485 interface.
ISP_SPI	In-System-Programming Sample code through SPI interface.
ISP_UART	In-System-Programming Sample code through UART interface.

5 SampleCode\RegBased

System Manager (SYS)

SYS	Demonstrate how to change system clock to different PLL frequency and output system clock from CLKO pin.
SYS_PowerDown_MinCurrent	Demonstrate how to minimize power consumption when entering power down mode

Flash Memory Controller (FMC)

FMC_RW	Demonstrate how to read/program embedded flash by ISP function.

General Purpose I/O (GPIO)

GPIO_EINT	Demonstrate how to use GPIO external interrupt function.
GPIO_INT	Demonstrate how to use GPIO interrupt function.
GPIO_OutputInput	Demonstrate how to set GPIO pin mode and use pin data input/output control.
GPIO_PowerDown	Demonstrate how to wake-up form Power-down mode by GPIO interrupt.
GPIO_SwDebounce	Demonstrate how to imeplement software debounce with GPIO interrupt and timer.

PDMA Controller (PDMA)

PDMA	Demonstrate how to use PDMA channel 0 to transfer data from memory to memory.

Timer Controller (TIMER)

TIMER_Capture	Demonstrate how to use timer2 capture event to capture

	timer2 counter value.
TIMER_Counter	Demonstrate how to use timer1 counter input function to count the input event.
TIMER_PeriodicINT	Demonstrate how to perform timer counting in periodic mode.
TIMER_PowerDown	Demonstrate how to use timer0 toggle-output interrupt event to wake-up system.

Watchdog Timer (WDT)

WDT_PowerDown	Demonstrate how to use WDT time-out interrupt event to wake-up system.
WDT_TimeoutINT	Select one WDT time-out interval period time to generate time-out interrupt event.
WDT_TimeoutReset	Demonstrate how to cause WDT time-out reset system event while WDT time-out reset delay period expired.

Window Watchdog Timer (WWDT)

WWDT_CompareINT	Select one WWDT window compare value to generate window compare match interrupt event.

PWM Generator and Capture Timer (PWM)

PWM_Capture	Demonstrate how to use PWMB Channel 2 captures PWMB Channel 1 Waveform.
PWM_DeadZone	Demonstrate how to use PWM Dead Zone function.
PWM_DoubleBuffer	Use PWM Double Buffer function to change duty cycle and period of output waveform.

UART Interface Controller (UART)

UART_Autoflow_Master	Demonstrate how to transmit and receive data with auto flow control. The sample code needs to work with UART_Autoflow_Slave.
UART_Autoflow_Slave	Demonstrate how to transmit and receive data with auto flow control. The sample code needs to work with UART_Autoflow_Master.
UART_IrDA_Master	Demonstrate how to transmit and receive data in UART IrDA mode. The sample code needs to work with UART_IrDA_Slave.
UART_IrDA_Slave	Demonstrate how to transmit and receive data in UART IrDA mode. The sample code needs to work with UART_IrDA_Master.
UART_PDMA	Transmit and receive UART data with PDMA.
UART_RS485_Master	Demonstrate how to transmit and receive data in UART RS485 mode. The sample code needs to work with UART_RS485_Slave.
UART_RS485_Slave	Demonstrate how to transmit and receive data in UART RS485 mode. The sample code needs to work with UART_RS485_Master.
UART_TxRx_Function	Demonstrate how UART transmit and receive data from PC terminal through RS232 interface.
UART_Wakeup	Show how to wake up system form Power-down mode by UART interrupt.

Serial Peripheral Interface (SPI)

SPI_Loopback	Implement SPI Master loop back transfer. This sample code needs to connect SPI0_MISO0 pin and SPI0_MOSI0 pin together. It will compare the received data with transmitted data.
SPI_MasterFifoMode	Demonstrate how to communicate with an off-chip SPI slave device with FIFO mode. This sample code needs to

	work with SPI_SlaveFifoMode sample code.
SPI_SlaveFifoMode	Demonstrate how to communicate with an off-chip SPI master device with FIFO mode. This sample code needs to work with SPI_MasterFifoMode sample code.
SPI_MasterDualIOMode	Demonstrate how to communicate with an off-chip SPI slave device with Dual I/O mode and FIFO mode. This sample code needs to work with SPI_SlaveDualIOMode sample code.
SPI_SlaveDualIOMode	Demonstrate how to communicate with an off-chip SPI master device with Dual I/O mode and FIFO mode. This sample code needs to work with SPI_MasterDualIOMode sample code.

I²C Serial Interface Controller (I²C)

I2C_EEPROM	Demonstrate how to access EEPROM through a I2C interface
I2C_GCMode_Master	Demonstrate how a Master uses I2C address 0x0 to write data to I2C Slave. This sample code needs to work with I2C_GCMode_Slave.
I2C_GCMode_Slave	Demonstrate how to receive Master data in GC (General Call) mode. This sample code needs to work with I2C_GCMode_Master.
I2C_Loopback	Demonstrate how a Master accesses a Slave.
I2C_Master	Demonstrate how a Master accesses a Slave. This sample code needs to work with I2C_Slave.
I2C_Slave	Demonstrate how to set I2C in slave mode to receive data from a Master. This sample code needs to work with I2C_Master.
I2C_Wakeup_Master	Demonstrate how to wake-up MCU from power-down. Needs to work with I2C_Wakeup_Slave sample code.

I2C_Wakeup_Slave	Demonstrate how to set I²C to wake-up MCU from power-down mode. Needs to work with I2C_Wakeup_Master sample code.

I²S Controller (I²S)

I2S_Master	Demonstrate how I²S works in master mode. This sample code needs to work with I2S_Slave sample code.
I2S_Slave	Demonstrate how I²S works in slave mode. This sample code needs to work with I2S_Master sample code.

CRC Controller (CRC)

CRC_CCITT	Implement CRC in CRC-CCITT mode and get CRC checksum results.
CRC_8	Implement CRC in CRC-8 mode and get CRC checksum results.

Analog-to-Digital Converter (ADC)

ADC_ContinuousScanMode	Demonstrate how to use continuous scan mode and finishes two cycles of conversion for the specified channels.
ADC_PwmTrigger	Demonstrate how to trigger ADC by PWM.
ADC_MeasureAVDD	Demonstrate how to measure AVDD voltage by ADC.
ADC_ResultMonitor	Demonstrate how to use the digital compare function to monitor the conversion result of channel 2.
ADC_SingleCycleScanMode	Demonstrate how to use single cycle scan mode and finishes one cycle of conversion for

	the specified channels.
ADC_SingleMode	Demonstrate how to use single mode and finishes the conversion of the specified channel.

PS/2 Controller (PS/2)

PS2	Demonstrate how to control PS/2 mouse movement on the screen.

6 SampleCode\StdDriver

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I2C_GCMode_Slave	Demonstrate how to receive Master data in GC (General Call) mode. Needs to work with I2C_GCMode_MASTER sample code.
I2C_Loopback	Demonstrate how to set I2C Master and Slave mode, and show how a Master access Slave.
I2C_Master	Demonstrate how a Master access Slave. Needs to work with I2C_SLAVE sample code.
I2C_Slave	Demonstrate how to set I²C in slave mode to receive the data of a Master. Needs to work with I2C_MASTER sample code.
I2C_MultiBytes_Master	Demonstrate how a Master access Slave use multi bytes write and multi-bytes read. Needs to work with I2C_SLAVEsample code.
I2C_SingleByte_Master	Demonstrate how a Master access Slave use single byte write and single byte read. Needs to work with I2C_SLAVE sample code.
I2C_Wakeup_Master	Demonstrate how to wake-up MCU from power-down. Needs to work with I2C_Wakeup_Slave sample code.
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Important Notice

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