M0519 CMSIS BSP Directory

Directory Introduction for 32-bit NuMicro™ Family

Directory Information

Document	Device driver reference manual and reversion history.
Library	Device driver header and source files.
SampleCode	Device driver sample code.
ThirdParty	Library from the third party.

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

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TABLE OF CONTENTS

1. Document

Revision History.pdf	Show all the revision history about specific BSP.
NuMicro M0519 BSP Driver Reference Guide.chm	Describe the definition, input and output of each API.

2. Library

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

3. Sample Code

FreeRTOS	Simple FreeRTOS™ demo code.
Hard_Fault_Sample	Show hard fault information when hard fault happened.
ISP	Sample codes for In-System-Programming.
Template	Software Development Template.
Semihost	Show how to debug with semi-host message print..
RegBased	The sample codes which access control registers directly.
StdDriver	M0519 Series Driver Samples

4. SampleCode\ISP

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	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.

Fash Memory Controller (FMC)

FMC_IAP	Show how to call LDROM functions from APROM. The code in APROM will look up the table at 0x100E00 to get the address of function of LDROM and call the function.
FMC_MultiBoot	Implement a multi-boot system to boot from different applications in APROM. A LDROM code and 4 APROM code are implemented in this sample code.
FMC_RW	Show how to read/program embedded flash by ISP function.

General Purpose I/O (GPIO)

GPIO_EINTAndDebounce	Show the usage of GPIO external interrupt function and de-bounce function.
GPIO_INT	Show the usage of GPIO interrupt function.
GPIO_OutputInput	Show how to set GPIO pin mode and use pin data input/output control.
GPIO_PowerDown	Show how to wake up system from Power-down mode by GPIO interrupt.

Timer Controller (TIMER)

TIMER_Capture	Show how to use the timer2 capture function to capture timer2 counter value.
TIMER_Counter	Implement timer1 event counter function to count the external input event.

TIMER_PeriodicINT	Implement timer counting in periodic mode.

Watchdog Timer (WDT)

WDT_PowerDown	Use WDT time-out interrupt event to wake-up system.
WDT_TimeoutINT	Implement periodic WDT time-out interrupt event.
WDT_TimeoutReset	Show how to generate time-out reset system event while WDT time-out reset delay period expired.

Window Watchdog Timer (WWDT)

WWDT_CompareINT	Show how to reload the WWDT counter value.

Basic PWM Generator and Capture Timer (BPWM)

BPWM_Capture	Capture the BPWM0 Channel 0 waveform by BPWM0 Channel 1.
BPWM_DeadZone	Demonstrate how to use BPWM Dead Zone function.
BPWM_DoubleBuffer	Change duty cycle and period of output waveform by BPWM Double Buffer function.

Enhance PWM Generator and Capture Timer (EPWM)

EPWM_DeadZone	Demonstrate how to use EPWM Dead Zone function.
EPWM_DoubleBuffer	Change duty cycle and period of output waveform by EPWM Double Buffer function.

UART Interface Controller (UART)

UART_Autoflow_Master	Transmit and receive data with auto flow control. This sample code needs to work with UART_Autoflow_Slave.
UART_Autoflow_Slave	Transmit and receive data with auto flow control. This sample code needs to work with UART_Autoflow_Master.

UART_IrDA_Master	Transmit and receive data in UART IrDA mode. This sample code needs to work with UART_IrDA_Slave.
UART_IrDA_Slave	Transmit and receive data in UART IrDA mode. This sample code needs to work with UART_IrDA_Master.
UART_LIN	Transmit LIN frame including header and response in UART LIN mode.
UART_RS485_Master	Transmit and receive data in UART RS485 mode. This sample code needs to work with UART_RS485_Slave.
UART_RS485_Slave	Transmit and receive data in UART RS485 mode. This sample code needs to work with UART_RS485_Master.
UART_TxRx_Function	Transmit and receive data from PC terminal through RS232 interface.
UART_Wakeup	Show how to wake up system from Power-down mode by UART interrupt.

Serial Peripheral Interface (SPI)

SPI_Flash_With_FIFO	Demonstrate how to access a Winbond 25Q16 SPI flash with FIFO buffers.
SPI_Flash_Without_FIFO	Demonstrate how to access a Winbond 25Q16 SPI flash without FIFO buffers.
SPI_Loopback	Implement SPI Master loop back transfer. This sample code needs to connect SPI0_MISO pin and SPI0_MOSI pin together. It will compare the received data with transmitted data.
SPI_MasterFifoMode	Configure SPI0 as Master mode and 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	Configure SPI0 as Slave mode and 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.

I^{2}C Serial Interface Controller (I^{2}C)

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_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 I^{2}C to wake-up MCU from power-down mode. Needs to work with I2C_Wakeup_Master sample code.

Enhance 12-bit Analog-to-Digital Converter (EADC)

EADC_ADINT_Trigger	Use ADINT interrupt to do the EADC continuous scan conversion.
EADC_PWM_Trigger	Demonstrate how to trigger EADC by BPWM.
EADC_ResultMonitor	Monitor the conversion result of channel 2 by the digital compare function.
EADC_SimultaneousMode	Show how to converts two different input signal at the same time by simultaneous mode of EADC.(Two ADC converters sample simultaneously.)
EADC_SWTRG_Trigger	Trigger EADC by writing ADSSTR register.
EADC_Timer_Trigger	Show how to trigger EADC by timer.

Analog Comparator Controller (ACMP)

ACMP	Demonstrate how ACMP[1] works with internal band-gap voltage.
ACMP_Wakeup	Show how to wake up MCU from Power-down mode by ACMP wake-up function.

[1] Analog Comparator (ACMP).

OPA (Operational Amplifier)

OPA	Demonstrate how OPA works with schmitt trigger buffer.

Hardware Divider (HDIV)

HDIV	Show how to calculate with hardware divider.

Enhanced Input Capture Timer (ECAP)

ECAP	Show how to use ECAP to measure clock frequency

6. SampleCode\StdDriver

System Manager (SYS)

SYS	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_IAP	Show how to reboot to LDROM functions from APROM. This sample code set VECMAP to LDROM and reset to re-boot to LDROM.
FMC_RW	Show how to read/program embedded flash by ISP function.

General Purpose I/O (GPIO)

GPIO_EINTAndDebounce	Show the usage of GPIO external interrupt function and de-bounce function.
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GPIO_PowerDown	Show how to wake up system from Power-down mode by GPIO interrupt.

Timer Controller (TIMER)

TIMER_Capture	Show how to use the timer2 capture function to capture timer2 counter value.
TIMER_Counter	Implement timer1 event counter function to count the external input event.
TIMER_Delay	Show how to use timer0 to create various delay time.

TIMER_PeriodicINT	Show how to use timer0 to create various delay time.

Watchdog Timer (WDT)

WDT_PowerDown	Use WDT time-out interrupt event to wake-up system.
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SPI_SlaveFIFOMode	Configure SPI0 as Slave mode and 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_SD_Card	Demonstrate how to access a SD card formatted in FAT

	file system.

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Important Notice

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