M071M Series CMSIS BSP Guide

Directory Introduction for 32-bit NuMicro® Family

Directory Information

Document	Driver reference guide 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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TABLE OF CONTENTS

1 Document

NuMicro M071M Series Driver Reference Guide.chm	Describe the definition, input and output of each API.
Revision History.pdf	Show all the revision history about specific BSP.

2 Library

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

3 SampleCode

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

4 SampleCode\ISP

ISP_I2C	In-System-Programming Sample code through I^2C 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_PLLClockOutput	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 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 or LDROM by VECMAP.
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 and output control.
GPIO_PowerDown	Show how to wake up system from Power-down mode by GPIO interrupt.

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	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.

PWM Generator and Capture Timer (PWM)

PWM_Capture	Capture the PWM1 Channel 0 waveform by PWM0 Channel 0.
PWM_DeadZone	Demonstrate how to use PWM Dead Zone function.
PWM_DoubleBuffer	Change duty cycle and period of output waveform by PWM Double Buffer function.

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_LIN	Demonstrate how to transmit LIN header and response.
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.

I²C Serial Interface Controller (I²C)

I2C_EEPROM	Demonstrate how to access EEPROM by I²C interface.

I2C_GCMode_Master	Demonstrate how a Master uses I²C address 0x0 to write data to I²C Slave. Needs to work with I2C_GCMode_SLAVE sample code.
I2C_GCMode_Slave	Demonstrate how to receive Master data in GC (General Call) mode. Needs to work with I2C_GCMode_MASTER sample code.
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_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.

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_MeasureAVDD	Measure AVDD voltage by ADC.
ADC_PwmTrigger	Demonstrate how to trigger ADC by PWM.
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.

6 SampleCode\StdDriver

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GPIO_PowerDown	Demonstrate how to wake-up form Power-down mode by GPIO interrupt.

Timer Controller (TIMER)

TIMER_Capture	Show how to use the timer0 capture function to capture timer0 counter value
TIMER_Counter	Implement timer0 event counter function to count the external input event.

TIMER_Delay	Show how to use timer0 to create various delay time.
TIMER_PeriodicINT	Implement Timer counting in periodic mode.
TIMER_PowerDown	Use timer0 periodic time-out 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)

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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.

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