NM1530 CMSIS BSP Directory

Directory Introduction for 32-bit NuMicro™ Family

Directory Information

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

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1. Document Information

NuMicro NM1530 Series CMSIS BSP Revision History.pdf	Show all the revision history about specific BSP.
NuMicro NM1530 Driver Reference Guide.chm	Describe the definition, input and output of each API.

2. Library Information

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.
ThirdParty	Library from third party

3. Sample Code Information

\SampleCode\FreeRTOS	Simple FreeRTOS™ demo code.
\SampleCode\Hard_Fault_ Sample	Show hard fault information when hard fault happened.
\SampleCode\Template	Software Development Template.
\SampleCode\Semihost	Show how to debug with semi-host message print..
\SampleCode\RegBased	The sample codes which access control registers directly.
\SampleCode\StdDriver	NM1530 Series Driver Samples

4. \SampleCode\RegBased

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.
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.
CAN_Set_MaskFilter	Demonstrate how to use MaskFilter to receive message in Normal mode. This sample code needs to work with CAN_Test_MaskFilter.
CAN_Test_MaskFilter	Demonstrate how to use message object No.1 to send message objects (ID=0x700~0x70F). This sample code needs to work with CAN_Set_MaskFilter.
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.
ECAP	Show how to use ECAP to measure clock frequency
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.

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.
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.
HDIV	Show how to calculate with hardware divider.
I2C_EEPROM	Show how to use I^2C interface to access EEPROM.
I2C_GCMode_Master	Show how a Master uses I^2C address 0x0 to write data to Slave. This sample code needs to work with I2C_GCMode_Slave.
I2C_GCMode_Slave	Show a Slave how to receive data from Master in GC (General Call) mode. This sample code needs to work with I2C_GCMode_Master.
I2C_Master	Show a Master how to access Slave. This sample code needs to work with I2C_Slave.
I2C_Slave	Show how to set I^2C in Slave mode and receive the data from Master. This sample code needs to work with I2C_Master.
I2C_Wakeup_Master	Show how to wake up MCU from Power-down. This sample code needs to work with I2C_Wakeup_Slave.
I2C_Wakeup_Slave	Show how to wake up MCU from Power-down mode through I^2C interface. This sample code needs to work with I2C_Wakeup_Master.

MDU_FOC	To show how to use MDU + EPWM to implement FOC and output SVPWM waveform.
OPA	Demonstrate how OPA works with schmitt trigger buffer.
QEI	Show the usage of QEI compare function.
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.
SYS	Change system clock to different PLL frequency and output system clock from CLKO pin.
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.
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 form Power-down mode by UART interrupt.
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.
WWDT_CompareINT	Show how to reload the WWDT counter value.

1. Analog Comparator (ACMP).

5. \SampleCode\StdDriver

ACMP	Demonstrate how ACMP works with internal band-gap voltage.
ACMP_Wakeup	Show how to wake up MCU from Power-down mode by ACMP wake-up function.
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.
CAN_BasicMode_Receive	Demonstrate how to receive message in Basic mode. This sample code needs to work with CAN_BasicMode_Transmit.
CAN_BasicMode_Transmit	Demonstrate how to transmit message in Basic mode. This sample code needs to work with CAN_BasicMode_Receive.
CAN_NormalMode_Receive	Demonstrate how to receive message in Normal mode. This sample code needs to work with CAN_NormalMode_Transmit.
CAN_NormalMode_Transmit	Demonstrate how to transmit message in Normal mode. This sample code needs to work with CAN_NormalMode_Receive.
CAN_Wakeup	Demonstrate how to wake up system form Power-down mode by detecting a transition.
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 ADC by writing ADSSTR register.
EADC_Timer_Trigger	Show how to trigger EADC by timer.
ECAP	Show how to use ECAP to measure clock frequency
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.
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.
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.
HDIV	Show how to calculate with hardware divider.
I2C_EEPROM	Show how to use I^2C interface to access EEPROM.
I2C_GCMode_Master	Show how a Master uses I^2C address 0x0 to write data to Slave. This sample code needs to work with I2C_GCMode_Slave.
I2C_GCMode_Slave	Show a Slave how to receive data from Master in GC (General Call) mode. This sample code needs to work with I2C_GCMode_Master.
I2C_Master	Show a Master how to access Slave. This sample code needs to work with I2C_Slave.
I2C_Slave	Show how to set I^2C in Slave mode and receive the data from Master. This sample code needs to work with I2C_Master.

I2C_Wakeup_Master	Show how to wake up MCU from Power-down. This sample code needs to work with I2C_Wakeup_Slave.
I2C_Wakeup_Slave	Show how to wake up MCU from Power-down mode through I^2C interface. This sample code needs to work with I2C_Wakeup_Master.
QEI	Show the usage of QEI compare function.
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.
SPI_SD_Card	Demonstrate how to access a SD card formatted in FAT file system.
SYS	Change system clock to different PLL frequency and output system clock from CLKO pin.
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	Implement timer counting in periodic mode.
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.
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WDT_TimeoutReset	Show how to generate time-out reset system event while WDT time-out reset delay period expired.
WWDT_CompareINT	Show how to reload the WWDT counter value.

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