

NUC505 Series 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.
ThirdParty	Third party source code, including FatFs, LibMAD, and FreeRTOS™.

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1 Document Information

<p>NuMicro NUC505 Series CMSIS BSP Revision History.pdf</p>	<p>This document shows all the revision history about NUC505 Series BSP.</p>
<p>CMSIS.chm</p>	<p>Document of CMSIS 3.01.</p>
<p>NuMicro NUC505 Series Driver Reference Guide.chm</p>	<p>This document describes the usage of drivers in NUC505 series Board Support Package (BSP).</p>

2 Library Information

CMSIS	Cortex [®] Microcontroller Software Interface Standard (CMSIS) V3.01 definitions by ARM [®] Corp.
Device	CMSIS compliant device header file.
StdDriver	All peripheral driver header and source files.
UsbHostLib	USB host library source code.

3 Sample Code Information

BootTemplate	Different boot sample code.
CortexM4	Cortex®-M4 sample code.
Hard_Fault_Sample	Accessing the memory space to generate bus fault exception is not supported in NUC505. If bus fault handler cannot execute the exception, Hard fault exception will take care of it.
Semihost	Show how to print and get characters with IDE console window.
StdDriver	A sample code to demonstrate the usage of NUC505 series MCU peripheral driver APIs.
Template	A project template for NUC505 series MCU.

4 ThirdParty Information

FATFS	A generic FAT file system module for small embedded systems. Its official website is: http://elm-chan.org/fsw/ff/00index_e.html
FreeRTOS	A real time operating system available for free download. Its official website is: http://www.freertos.org/ .
LibMAD	A MPEG audio decoder library which currently supports MPEG-1 and the MPEG-2 extension to lower sampling frequencies, as well as the de facto MPEG 2.5 format. All three audio layers — Layer I, Layer II, and Layer III (i.e. MP3) are fully implemented. This library is distributed under GPL license. Please contact Underbit Technologies (http://www.underbit.com/) for the commercial license.

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CriticalOnSRAM	Demonstrate how to locate a program mainly on SPI Flash for typical use, except critical parts on SRAM for fast execution.
FullOnSRAM	Demonstrate how to locate a program fully on SRAM.
Loader	Demonstrate how to launch a program via loader which is located fully on SRAM.
MainOnSRAM	Demonstrate how to locate a program mainly on SRAM for fast execution, except startup parts on SPI Flash for initialization.

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BitBand	Demonstrate the usage of Cortex [®] -M4 BitBand.
DSP_FFT	Demonstrate how to call ARM CMSIS DSP library to calculate FFT (Fast Fourier Transform).
MPU	Demonstrate the usage of Cortex [®] -M4 MPU.

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ADC	1. Demonstrate ADC conversion from channel 0. 2. Demonstrate analog keypad detection from channel 2.
GPIO	Use GPIO driver to control the GPIO pin direction, control their high/low state, and how to use GPIO interrupts.
GPIO_PowerDown	Show how to wake up system form Power-down mode by GPIO interrupt.
I2C_EEPROM	Show how to use I ² C interface to access EEPROM.
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 ² C 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 mode. This sample code needs to work with I2C_Wakeup_Slave.
I2C_Wakeup_Slave	Show how to wake up MCU from Power-down mode through I2C interface. This sample code needs to work with I2C_Wakeup_Master.
I2S_InternalCODEC	An I ² S demo using internal Audio CODEC used to playback the input from line-in or MIC interface.
I2S_Master	Demonstrate how I ² S works in Master mode. This sample code needs to work with I2S_Slave.
I2S_MP3PLAYER_SD	A MP3 file player demo using internal Audio CODEC to play back a MP3 file stored in SD card.
I2S_MP3PLAYER_USB	A MP3 file player demo using internal Audio CODEC to play back a MP3 file stored in USB pen drive.
I2S_NAU8822	An I ² S demo using NAU8822 Audio CODEC to playback the input from line-in or MIC interface.

I2S_NAU8822_MP3PLAYER_SD	A MP3 file player demo using NAU8822 Audio CODEC to play back a MP3 file stored in SD card.
I2S_NAU8822_MP3PLAYER_USB	A MP3 file player demo using NAU8822 Audio CODEC to play back a MP3 file stored in USB pen drive.
I2S_NAU8822_WAVPLAYER_SD	A WAV file player demo using NAU8822 Audio CODEC o play back a WAV file stored in SD card.
I2S_NAU8822_WAVPLAYER_USB	A WAV file player demo using NAU8822 Audio CODEC to play back a WAV file stored in USB pen drive.
I2S_NAU8822_WAVRECORDER_SD	A WAV file recorder demo using NAU8822 Audio CODEC to record a WAV file and save the file to SD card.
I2S_Slave	Demonstrate how I ² S works in Slave mode. This sample code needs to work with I2S_Master.
I2S_WAVPLAYER_SD	A WAV file player demo using internal Audio CODEC to play back a WAV file stored in SD card.
I2S_WAVPLAYER_USB	A WAV file player demo using internal Audio CODEC to play back a WAV file stored in USB pen drive.
I2S_WAVRECORDER_SD	A WAV file recorder demo using internal Audio CODEC to record a WAV file and save the file to SD card.
PWM_Capture	Demonstrate PWM Capture function by using PWM channel 2 to capture the output of PWM channel 0. Please connect PB.10 and PB.12 to execute this code.
PWM_DeadZone	Demonstrate the dead-zone feature with PWM.
RTC_Alarm_Mask_Test	Demonstrate the RTC alarm function. This sample code sets a minute alarm mask after execution.
RTC_Alarm_Test	Demonstrate the RTC alarm function. This sample code sets an alarm 10 seconds after execution.
RTC_Time_Display	Demonstrate the RTC function and display the current time to the UART console.

SD_FATFS	Access a SD card formatted in the FAT file system.
SPI_Flash	Access the SPI Flash through a SPI interface.
SPI_Loopback	Demonstrate SPI master loop back transfer. This sample code needs to connect the SPI0_MISO0 pin and the SPI0_MOSI0 pin together. It will compare the received data with transmitted data.
SPI_MasterMode	Demonstrate how to communicate with an off-chip SPI slave device. This sample code needs to work with SPI_SlaveMode.
SPI_SlaveMode	Demonstrate how to communicate with an off-chip SPI master device. This sample code needs to work with SPI_MasterMode.
SPIM_CheckIF	Check which interface SPI Flash is attached to.
SPIM_DMA	Demonstrate how to read/write SPI Flash in SPIM DMA mode.
SPIM_DMM	Demonstrate how to read SPI Flash in SPIM DMM (Direct Memory Map) mode.
SPIM_IO	Demonstrate how to read/write SPI Flash in SPIM (SPI Master) I/O mode.
SPIM_SPIROM	Special notes for code running on SPI Flash: <ol style="list-style-type: none"> 1. Switch to different clock safely, especially higher system clock. 2. Embed MTP signature in the predefined location for security function.
SYS	<ol style="list-style-type: none"> 1. Demonstrate delay function by systick. 2. Demonstrate core clock switching. 3. Demonstrate how to enable module clock and set module clock divider.
SYS_PowerDownConsumption	Demonstrate how to save power consumption in Power-down mode.
Timer_Delay	Demonstrate the usage of TIMER_Delay() API to generate a 1 second delay.
Timer_EventCounter	Use the pin PA.12 to demonstrate the timer event counter function.

Timer_FreeCountingMode	Use the timer pin PA.13 to demonstrate timer free counting mode function. And displays the measured input frequency to UART console.
Timer_Periodic	Use the timer periodic mode to generate timer interrupt per one second.
Timer_ToggleOut	Demonstrate the timer 0 toggle out function on pin PA.12.
UART_AutoBaudRate_Master	Demonstrate how to use auto baud rate detection function. This sample code needs to work with UART_AutoBaudRate_Slave.
UART_AutoBaudRate_Slave	Demonstrate how to use auto baud rate detection function. This sample code needs to work with UART_AutoBaudRate_Master.
UART_Autoflow_Master	Demonstrate how to transmit and receive data with auto flow control. This sample code needs to work with UART_Autoflow_Slave.
UART_Autoflow_Slave	Demonstrate how to transmit and receive data with auto flow control. This sample code needs to work with UART_Autoflow_Master
UART_IrDA_Master	Demonstrate how to transmit and receive data in UART IrDA mode. This sample code needs to work with UART_IrDA_Slave.
UART_IrDA_Slave	Demonstrate how to transmit and receive data in UART IrDA mode. This 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. This sample code needs to work with UART_RS485_Slave.
UART_RS485_Slave	Demonstrate how to transmit and receive data in UART RS485 mode. This sample code needs to work with UART_RS485_Master.
UART_TxRxFunction	Demonstrate how UART transmit and receive data

	from PC terminal through RS232 interface.
UART_Wakeup	Demonstrate how to wake up system form Power-down mode by UART interrupt.
USBDAudioSpeaker	An UAC1.0 sample used to play the sound sent from PC through a USB interface.
USBDAID_MOUSE	Simulate a USB mouse and draws a circle on the screen.
USBDMassStorage_SD	Implement a mass storage class sample for SD card reader.
USBDMassStorage_ShortPacket	Implement a mass storage class sample to demonstrate how to receive a USB short packet.
USBDMassStorage_SRAM	Use internal SRAM as back-end storage media to simulate a 30KB USB pen drive.
USBDMassStorage_ScatterGather	Demonstrate the usage of USB DMA scatter gather function.
USBH_HID	Use USB Host core driver and HID driver. This sample code reads raw data from a USB mouse.
USBH_UMAS	Use USB Host core driver, USB mass storage driver, and FATFS file system to show a disk access shell interface.
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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