Release Note

SPD1179 SDK Release Note

版本历史

本节记录发布说明文档自身的修改情况,以保证版本元数据的可审计性与受控性。

版本	日期	作者	状态	变更
v1.0.0	2024-01-15	xuqing	已过期	1. 初始版本。
V2.0.0	2026-10-21	Hangsu	已发布	1. 增加 V15.0.12 版本。

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1 全局系统环境与前提条件

以下要求定义了正确重新构建并运行标准外设库所需的、经过验证的开发工具、编译器及硬件目标。

- 支持的芯片：SPC1169 MCU 系列
- Keil MDK IDE：v5.23
- IAR Embedded Workbench：EWARM v8.32.4
- GCC 工具链：GCC ARM Embedded v12.2

2 版本 15.0.12 / 2026-10-21

2.1 BUG 修复

模块	条目	描述
HV	spd1179_hv_bitfield.h	从 PDRVCTL1_LSVGS_8P15V PDRVCTL1_LSVGS_8P5V PDRVCTL1_LSVGS_8P9V PDRVCTL1_LSVGS_9P3V PDRVCTL1_LSVGS_9P6V PDRVCTL1_LSVGS_10P0V PDRVCTL1_LSVGS_10P4V PDRVCTL1_LSVGS_11P4V 变更为 PDRVCTL1_LSVGS_8P5V PDRVCTL1_LSVGS_8P9V PDRVCTL1_LSVGS_9P3V PDRVCTL1_LSVGS_9P6V PDRVCTL1_LSVGS_10P0V PDRVCTL1_LSVGS_10P4V PDRVCTL1_LSVGS_10P7V 修正 LSVGS 挡位
HV	spd1179_hv_bitfield.h	删除以下宏 PDRVCTL1_VCPLVL_9P7V PDRVCTL1_VCPLVL_10P1V PDRVCTL1_VCPLVL_10P7V PDRVCTL1_VCPLVL_11P4V PDRVCTL1_VCPLVL_12P0V PDRVCTL1_VCPLVL_12P8V PDRVCTL1_VCPLVL_13P5V PDRVCTL1_VCPLVL_14P4V 不再支持 VCPLVL 挡位调整
CAN	CAN_SetMessage() CAN_GetMessage()	修改函数，不再支持远程帧自动响应
	CAN_MessageTypeDef	修改结构体，不再支持远程帧自动响

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		应
	CAN_EnableMailboxResponseRemoteFrame CAN_DisableMailboxResponseRemoteFrame CAN_IsEnableMailboxResponseRemoteFrame	删除宏，不再支持远程帧自动响应
	spc1169_bitfield.h	删除以下宏 CANMBOXMCTL_RMTEN_Pos CANMBOXMCTL_RMTEN_Msk CANMBOXMCTL_RMTEN_DISABLE CANMBOXMCTL_RMTEN_ENABLE CANMBOXMCTL_RMTEN_(x) 不再支持远程帧自动响应
CAN	CAN_EnableProtocolException CAN_DisableProtocolException CAN_IsEnableProtocolException	删除宏，不再支持当 res 位为填充位并且该位发生填充错误时的错误帧响应
	CAN_MiscIntEnum	修改枚举，不再支持当 res 位为填充位并且该位发生填充错误时的错误帧响应
	spc1169_bitfield.h	删除以下宏 CANCTL_PXEN_Pos CANCTL_PXEN_Msk CANCTL_PXEN_DISABLE CANCTL_PXEN_ENABLE CANCTL_PXEN_(x) CANMIE_PXEVT_Pos CANMIE_PXEVT_Msk CANMIE_PXEVT_DISABLE CANMIE_PXEVT_ENABLE CANMIE_PXEVT_(x) CANMRAWIF_PXEVT_Pos CANMRAWIF_PXEVT_Msk CANMRAWIF_PXEVT_NOT_OCCURED CANMRAWIF_PXEVT_OCCURRED CANMRAWIF_PXEVT_(x) CANMIF_PXEVT_Pos CANMIF_PXEVT_Msk CANMIF_PXEVT_NOT_OCCURED CANMIF_PXEVT_OCCURRED CANMIF_PXEVT_(x) CANMIC_PXEVT_Pos CANMIC_PXEVT_Msk CANMIC_PXEVT_NO_EFFECT CANMIC_PXEVT_CLEAR CANMIC_PXEVT_(x) 不再支持当 res 位为填充位并且该位发生填充错误时的错误帧响应

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2.2 API 变更

模块	类型	旧 API	新 API	描述
CAN	修改	CAN_SetMessageData	CAN_SetMessageData	修正 CAN_SetMessageData 填充字节不一定为 0xCC 的问题
UART	修改	UART_Init	UART_Init	增加清 TX RX FIFO 操作

2.3 杂项

条目	类型	描述
lin_lld_uart.c	[SDK LIB]	将中断和 main 共同访问的变量设为 volatile 类型
adc.c can.c clock.c comp.c crc.c ecap.c gpio.c i2c.c pga.c phcomp.c pin.c power.c pwm.c spi.c system.c timer.c uart.c wdt.c	[SDK LIB]	增加 IAR 优先级控制
power.h spc1169_bitfield.h	[SDK LIB]	修改 BOD 挡位
9_6_ECAP_Capture_LIN	[DEMO]	增加通过 LIN 捕获引脚信号
24_1_LIN_Slave_RX	[DEMO]	在通信结束增加清 TX FIFO 或清 RX FIFO 操作 在每次通讯后，重开自动波特率
24_2_LIN_Slave_TX		
8_1_PWM_Single_Output_With_Up_Counting_Mode	[DEMO]	修正 PWM 频率与示例中 PWM_FREQ 不一致问题
8_2_PWM_Single_Output_With_Down_Counting_Mode		
10_1_ADC_Calibration	[DEMO]	显性配置通道的偏移，增益，不再依赖默认值
26_1_CAN_Extended_Frame_RX	[DEMO]	修改注释中采样点位置 不再支持当 res 位为填充位并且该位发生填充错误时的错误帧响应
26_1_CAN_Standard_And_Extended_Frame_TX		
26_1_CAN_Standard_Frame_RX		
26_2_CANFD_Extended_Frame_RX		

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26_2_CANFD_Standard_And_Extended_Frame_TX 26_2_CANFD_Standard_Frame_RX		
26_3_CAN_Int_RX 26_3_CAN_Int_TX	[DEMO]	传输帧数变更为 3，变更前为 4 不再支持当 res 位为填充位并且该位发生填充错误时的错误帧响应
2_2_BOD_UVOV_Reset	[DEMO]	调整 BOD 使用挡位
IAP_Loader IAPLoader.exe	[APP]	增加 CAN 支持 降低 LIN 速率到 20k 增加进度条支持 拒绝擦写 Flash 配置字扇区
Project.ewd	[DEMO] [APP]	确保 IAR debug 状态下从 boot 程序开始运行，而不是 main

3 版本 14.0.11 / 2026-03-27

Main Changes

1. Bug Fix

- power.h
  - Modify POWER_VDD33OVEnum, POWER_VDD33UVEnum, POWER_VDD12OVEnum, POWER_VDD12UVEnum
- spd1179_hv_bitfield.h
  - Delete VCPOV
  - Modify VBATUV, VDD5UV, VDD5OV, VDD5EXTUV, VDD5EXTOV, VDD3UV, VDD3OV
  - Modify BLANKWIN, FILTERWIN
- spc1169_bitfield.h
  - Modify UVASVTH, UVDEVTH, OVASVTH, OVDEVTH
- SPC1169.svd\.SFR
  - Modify UVASVTH, UVDEVTH, OVASVTH, OVDEVTH

2. Other Change

- Project / 0_Examples
  - Modify 2_1_BOD_UVOV_Int
  - Modify 23_6_Predriver_VBAT_UVOV_Trigger_TZ
  - Modify 23_8_Predriver_VDD5_OV_Trigger_TZ
  - Modify EEPROM_Data_Storage_Upon_VBAT_UV_Event
  - Modify MEEPROM_Data_Storage_Upon_VBAT_UV_Event

4 版本 13.0.11 / 2026-01-19

Main Changes

1. Bug Fix

2. Other Change

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- gpio.h
  - Modify GPIO_SetLevel()
  - Modify GPIO_WritePin()
- hwlib.h
  - Reserve SYSTEM_Stop()
  - Reserve MCU_Sleep()
  - Reserve MCU_Stop()
- spc1169.h
  - Add WRITE_U8()
  - Add WRITE_U16()
  - Add WRITE_U32()
  - Add WRITE_U64()
- adc.c/.h
  - Delete ADC_PowerUp()
  - Modify ADC_Enable()
  - Modify ADC_Init()
  - Modify ADC_EasyInit1()
  - Modify ADC_EasyInit2()
  - Add Optimization level restrictions
- system.c/.h
  - Delete SYSTEM_Sleep()
  - Add Optimization level restrictions
- uart.c/.h
  - Modify UART_ Init()
  - Modify LIN_Init()
  - Modify UART_WriteText()
  - Modify UART_Write()
  - Modify UART_Read()
  - Add Optimization level restrictions
- can.c
  - Modify CAN_Reset()
  - Add Optimization level restrictions
- clock.c
  - Modify CLOCK_Init()
  - Modify CLOCK_InitWithXO()
  - Modify CLOCK_InitWithRCO()
  - Modify CLOCK_ConfigurePLL()
  - Modify CLOCK_ConfigurePLLWithRCO()
  - Modify CLOCK_DetectionInitWithRCO()
  - Add Optimization level restrictions
- comp.c
  - Modify COMP_Init()
  - Add Optimization level restrictions
- crc.c
  - Modify CRC_Init()
  - Modify CRC_CalculateWithInitValueIsNotZero()
  - Modify CRC_CalculateWithInitValueIsZero()
  - Add Optimization level restrictions
- ecap.c
  - Modify ECAP_CaptureModeInit()
  - Modify ECAP_APWMModeInit()
  - Add Optimization level restrictions
- i2c.c
  - Modify I2C_MasterInit()
  - Modify I2C_SlaveInit()

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- Modify I2C_Enable()
- Modify I2C_Disable()
- Modify I2C_MasterRead()
- Add Optimization level restrictions

- pga.c
  - Modify PGA_InitDPGA()
  - Modify PGA_InitSPGA()
  - Add Optimization level restrictions
- pwm.c
  - Modify PWM_InitComplementaryPairChannel()
  - Modify PWM_InitSingleChannel()
  - Add Optimization level restrictions
- spi.c
  - Modify SPI_Init()
  - Modify SPI_ExitNetMode()
  - Modify SPI_FullDuplexTransceive()
  - Modify SPI_HalfDuplexTx()
  - Modify SPI_HalfDuplexRx()
  - Add Optimization level restrictions
- timer.c
  - Modify TIMER_Init()
  - Add Optimization level restrictions
- wdt.c
  - Modify WDT_Init()
  - Add Optimization level restrictions
- gpio.c/ phcomp.c/ pin.c/ power.c
  - Add Optimization level restrictions
- lin_stack/src/lin_lld_uart.c
  - Modify lin_lld_uart_init()
  - Modify timer_init()
- delay.c
  - Add Optimization level restrictions
- retarget.c
  - Modify fputc()
- epwr.c
  - Modify EPWR_GetID()
  - Modify EPWR_WriteRegister()
  - Modify EPWR_ReadRegister()
  - Modify EPWR_ResetRegister()
  - Modify EPWR_FeedWatchdog()
  - Add Optimization level restrictions
- Project / 0_Examples
  - Enable NVIC before enable IP interrupt
  - Add IP enable operation
  - Modify 19_4_System_Stop_Wakeup
  - Modify 19_5_System_Sleep_Wakeup
- Project / 1_Application
  - Enable NVIC before enable IP interrupt
  - Add IP enable operation

5 版本 12.1.9 / 2025-09-16

Main Changes

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1. **Bug Fix**

2. **Other Change**

- hwlib.h
  - Reserve ErrorStatus(*SYSTEM_Sleep)()
- system.c/.h
  - Add SYSTEM_Sleep()
- lin_stack/src/lin_lld_uart.c
  - Modify lin_lld_uart_set_low_power_mode()
- Project / 0_Examples
  - Modify 2_2_BOD_UVOV_Reset
  - Modify 19_5_System_Sleep_Wakeup
- Project / 1_Application
  - Delete IAP_UART
  - Delete IAP_LIN
  - Delete IAP_CAN
  - Add IAP
  - Modify Tool/IAPLoader.exe

6 版本 12.0.9 / 2025-06-05

Main Changes

1. **Bug Fix**

- Project / 0_Examples
  - Modify 19_4_System_Stop_Wakeup

2. **Other Change**

- Project / 1_Application
  - Modify IAP_LIN

7 版本 12.0.8 / 2025-02-17

Main Changes

3. **Bug Fix**

4. **Other Change**

- spd1179_hv.c
  - Modify HV_Reset()
- lin_stack/src/lin_lld_uart.c
  - Add HV_Reset() in lin_lld_uart_init()
- Project / 0_Examples
  - Add HV_Reset() in all HV examples

8 版本 12.0.7 / 2025-02-14

Main Changes

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1. Bug Fix

- epwr.h
  - Add definition EPWR_COMMUNICATION_MAX_RETRY_CNT
- epwr.c
  - Modify EPWR_ComSpeedInit()
  - Modify EPWR_GetID()
  - Modify EPWR_WriteRegister()
  - Modify EPWR_WriteRegisterField()
  - Modify EPWR_ReadRegister()
  - Modify EPWR_ResetRegister()
  - Modify EPWR_FeedWatchdog()
- spd1179_hv.h
  - Modify definition EPWR_COM_SPEED
  - Add HV_Reset()
- spd1179_hv.c
  - Add HV_GetTrimInfo()
  - Modify HV_Init()
  - Modify HV_InitRegister()
  - Add HV_Reset()

2. Other Change

9 版本 11.0.6 / 2025-01-24

Main Changes

1. Bug Fix

2. Other Change

- i2c.c
  - Modify all interface
- i2c.h
  - Modify note of I2C_SetSDAHoldCount() and I2C_GetSDAHoldCount()
- spd1179_hv.c
  - Modify HV_Init ()
  - Modify HV_InitRegister()
- IDE_Support
  - Add SPC1169_RDN.FLM
- Project / 0_Examples
  - Delete 27_1_I2C_Slave_Bulk_Polling_TxRx
  - Delete 27_1_I2C_Master_Bulk_Polling_TxRx
  - Modify 27_3_I2C_Slave_INT_TxRx
  - Modify 27_3_I2C_Master_INT_TxRx
  - Modify 27_2_I2C_Slave_Polling_TxRx
  - Modify 27_2_I2C_Master_Polling_TxRx
  - Modify 8_5_PWM_TriPhase_Waveform
  - Modify 8_6_PWM_Software_Global_SYNC
  - Modify 8_7_PWM_Software_Group_SYNC
  - Modify 8_8_PWM_GPIO_SYNC
  - Modify 8_9_PWM_Timer_SYNC
  - Modify 8_10_PWM_TBCNT_0_SYNC_and_Signal_Observe

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- Modify 24_1_LIN_Slave_RX
- Modify 24_2_LIN_Slave_TX
- Add 26_3_CAN_Int_TX
- Add 26_3_CAN_Int_RX

■ Project / 1_Application
- Modify IAP_UART
- Modify IAP_LIN
- Modify AT24C02_EEPROM

10 版本 10.0.5 / 2024-12-03

Main Changes

1. Bug Fix

2. Other Change

■ system.c/.h
- Modify SYSTEM_SetStopWakeUpByGPIO(), SYSTEM_SetSleepWakeUpByGPIO()

■ pin.c/.h
- Modify PIN_ResetAllPin()
- Modify note of PIN_OutStrengthEnum, PIN_SetOutStrength()

■ clock.c
- Modify CLOCK_Init(), CLOCK_InitWithXO(), CLOCK_InitWithRCO()

■ spi.c/.h
- Delete SPI_Send(), SPI_Receive(), SPI_MasterTransceive(), SPI_MasterB2BTransceive(), SPI_SlaveTransceive()
- Add SPI_FullDuplexTransceive(), SPI_HalfDuplexTx(), SPI_HalfDuplexRx()

■ gpio.c/.h
- Add GPIO_SetOpenDrainOutputHigh(), GPIO_SetOpenDrainOutputLow()

■ pwm.c/.h
- Modify PWM_InitComplementaryPairChannel(), PWM_InitSingleChannel()
- Modify PWM_GetClockDiv()

■ hwlib.h
- Modify note of SYSTEM_Sleep(), SYSTEM_Stop()

■ lin_stack/src/lin_lld_uart.c
- Modify definition

■ Project / 0_Examples
- Modify definition
- Modify 13_1_BEMF_Comparator
- Modify 8_1_PWM_Single_Output_With_Up_Counting_Mode
- Modify 8_2_PWM_Single_Output_With_Down_Counting_Mode
- Modify 8_3_PWM_Single_Output_With_Up_Down_Counting_Mode
- Modify 8_4_PWM_Complementary_Pair_Channel
- Modify 8_5_PWM_TriPhase_Waveform
- Modify 8_6_PWM_Software_Global_SYNC
- Modify 8_7_PWM_Software_Group_SYNC
- Modify 8_8_PWM_GPIO_SYNC
- Modify 8_9_PWM_Timer_SYNC
- Modify 8_10_PWM_TBCNT_0_SYNC_and_Signal_Observe
- Modify 8_11_PWM_Trigger_ADC_Sample_and_Signal_Observe
- Modify 8_12_PWM_GPIO_Trigger_TZ
- Modify 8_13_PWM_Current_Protect_Trigger_TZ
- Modify 8_14_PWM_ADC_PPU_Trigger_TZ
- Modify 9_1_ECAP_Continue_Absolute

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- Modify 9_2_ECAP_Continue_Delta
- Modify 9_3_ECAP_Oneshot_Absolute
- Modify 9_5_ECAP_Continue_Absolute_Dual_Pin
- Delete 17_1_SPI_Master_B2B_TxRx_Polling
- Delete 17_1_SPI_Slave_B2B_TxRx_Polling
- Modify 17_2_SPI_Master_TxRx_Polling
- Modify 17_2_SPI_Slave_TxRx_Polling
- Modify 17_3_SPI_Master_TxRx_Int
- Modify 17_3_SPI_Slave_TxRx_Int
- Modify 18_5_Flash_With_ISR_In_RAM
- Modify 19_4_System_Stop_Wakeup
- Modify 23_1_Predriver_Operation
- Modify 23_3_Predriver_VDS_Monitor_Trigger_TZ
- Modify 23_4_Predriver_Strength_Optimize
- Modify 23_5_Predriver_Propagation_Delay
- Modify 23_6_Predriver_VBAT_UVOV_Trigger_TZ
- Modify 23_7_Predriver_LIN_TX_Timeout_Trigger_TZ
- Modify 23_8_Predriver_VDD5_OV_Trigger_TZ
- Modify 23_10_Predriver_PMUCLKERR_Trigger_TZ
- Modify 23_11_Predriver_PMUOT_Trigger_TZ

■ Project / 1_Application
- Modify definition
- Modify EEPROM_Data_Storage_Upon_VBAT_UV_Event
- Modify MEEPROM_Data_Storage_Upon_VBAT_UV_Event

11 版本 9.0.4 / 2024-11-14

Main Changes

1. Bug Fix

■ Project / 0_Examples
- Modify 24_2_LIN_Slave_TX
- Modify 24_1_LIN_Slave_RX

■ Project / 1_Application
- Modify IAP_LIN
- Modify AT24C02_EEPROM

2. Other Change

■ lin_stack/src/lin_lld_uart.c
- Add definition

■ spd1179_hv.c
- Modify note

■ adc.h
- Modify definition

■ hwlib.h
- Modify note

■ Project / 0_Examples
- Modify definition
- Modify 10_2_ADC_Open_Detect
- Modify 10_3_ADC_Short_Detect
- Modify 8_13_PWM_Current_Protect_Trigger_TZ
- Modify 11_1_SPGA_Calibration
- Modify 16_1_UART_RX_Int
- Delete 9_6_ECAP_Continue_Delta_LIN

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- Modify 8_10_PWM_TBCNT_0_SYNC_and_Signal_Observe
- Modify 8_8_PWM_GPIO_SYNC
- Modify 8_9_PWM_Timer_SYNC
- Modify 8_11_PWM_Trigger_ADC_Sample_and_Signal_Observe
- Modify 8_7_PWM_Software_Group_SYNC
- Modify 8_6_PWM_Software_Global_SYNC
- Modify 8_5_PWM_TriPhase_Waveform
- Modify 13_1_BEMF_Comparator
- Modify 23_10_Predriver_PMUCLKERR_Trigger_TZ
- Modify 23_11_Predriver_PMUOT_Trigger_TZ
- Modify 23_1_Predriver_Operation
- Modify 23_3_Predriver_VDS_Monitor_Trigger_TZ
- Modify 23_4_Predriver_Strength_Optimize
- Modify 23_5_Predriver_Propagation_Delay
- Modify 23_6_Predriver_VBAT_UVOV_Trigger_TZ
- Modify 23_7_Predriver_LIN_TX_Timeout_Trigger_TZ
- Modify 23_8_Predriver_VDD5_OV_Trigger_TZ

■ Project / 1_Application
- Modify definition
- Modify EEPROM_Data_Storage_Upon_VBAT_UV_Event
- Modify MEEPROM_Data_Storage_Upon_VBAT_UV_Event

12 版本 8.1.3 / 2024-09-05

Main Changes

1. Bug Fix

■ Project / 0_Examples
- Modify IAP_CAN

2. Other Change

■ Project / 1_Application
- Modify IAP_CAN
- Modify IAP_UART
- Modify IAPLoader.exe

13 版本 8.0.3 / 2024-07-16

Main Changes

1. Bug Fix

■ lin_stack/src/lin_lld_uart.c
- Modify UART1_IRQHandler()
- Modify lin_lld_uart_init()
- Modify lin_lld_uart_tx_response()
- Modify TIMER1_IRQHandler()

■ Project /0_Examples
- Modify 24_1_LIN_Slave_RX
- Modify 24_2_LIN_Slave_TX

2. Other Change

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- system_spc1169.c
  - Modify SystemInit()
- Project / 1_Application
  - Modify Math_Lib
  - Modify LIN_Slave_Auto_Baud

14 版本 7.0.3 / 2024-06-01

Main Changes

1. Bug Fix

- pin.c
  - Modify PIN_SetPinAsECAPO()
- system.c
  - Modify SYSTEM_SetMonitorThreshold ()
- adc.h
  - Modify ADC_InputSelectEnum

2. Other Change

- crc.h
  - Modify CRC_ModeEnum
  - Delete CRC_EndianEnum
  - Delete CRC_DataOperationEnum
  - Delete CRC_SetInputFormat()
  - Delete CRC_SetOutputFormat()
  - Delete CRC_Calculate()
  - Delete CRC_FeedStream()
  - Add CRC_DataReverseEnum
  - Add CRC_OutputDataXorEnum
  - Add CRC_ReverseData()
  - Add CRC_XorOutputData()
  - Add CRC_CalculateWithInitValueIsNotZero()
  - Add CRC_CalculateWithInitValueIsZero()
- crc.c
  - Modify CRC_Init()
  - Delete CRC_Calculate()
  - Delete CRC_FeedStream()
  - Add CRC_CalculateWithInitValueIsNotZero()
  - Add CRC_CalculateWithInitValueIsZero()
- hwlib.h
  - Modify note of FLASHC_VerifyRead()
  - Modify note of FLASHC_VerifyErase()
- clock.c
  - Modify CLOCK_ConfigurePLL()
- ecap.c
  - Modify ECAP_APWMModeInit ()
- adc.c
  - Modify ADC_Init()
- Project /0_Examples
  - Delete 28_1_CRC_16_CCITT
  - Add 28_1_CRC
  - Add 19_6_System_ECC_Validation
  - Modify 18_6_Flash_EEPROM_Emulation_Controller
  - Add 18_7_Flash_MEEPROM_Emulation_Controller

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- Modify note of 26_1_CAN_Standard_And_Extended_Frame_TX
- Modify note of 26_1_CAN_Standard_Frame_RX
- Modify note of 26_1_CAN_Extended_Frame_RX
- Modify note of 26_2_CANFD_Standard_And_Extended_Frame_TX
- Modify note of 26_2_CANFD_Standard_Frame_RX
- Modify note of 26_2_CANFD_Extended_Frame_RX
- Modify 19_1_System_Voltage_Monitor
- Modify Math_Lib
- Modify 23_10_Predriver_PMUCLKERR_Trigger_TZ
- Modify 26_1_CAN_Standard_And_Extended_Frame_TX
- Modify 26_2_CANFD_Standard_And_Extended_Frame_TX

■ Project / 1_Application
- Modify EEPROM_Data_Storage_Upon_VBAT_UV_Event
- Add MEEPROM_Data_Storage_Upon_VBAT_UV_Event
- Delete IAP_LIN_Phy2

15 版本 6.0.2 / 2024-01-20

Main Changes

1. Bug Fix

■ hwlib.h
- Reserve MEEPROM_WriteWord ()
- Reserve MEEPROM_ReadWord ()

■ Project /0_Examples
- Modify 18_6_Flash_EEPROM_Emulation_Controller

■ Project / 1_Application
- Modify EEPROM_Data_Storage_Upon_VBAT_UV_Event

2. Other Change

16 版本 5.0.2 / 2024-01-17

Main Changes

1. Bug Fix

■ hwlib.h
- Reserve MEEPROM_Init()
- Reserve MEEPROM_Format()

■ Project /0_Examples
- Modify 20_6_DMA_ADC_to_Memory
- Modify 20_7_DMA_SPI_to_UART
- Modify 20_1_DMA_Memory_to_Memory
- Modify 20_2_DMA_Memory_to_SPI
- Modify 20_4_DMA_SPI_to_Memory
- Modify 20_3_DMA_Memory_to_UART
- Modify 20_5_DMA_UART_to_Memory
- Modify 20_8_DMA_UART_to_SPI
- Modify 20_10_DMA_ADC_to_UART
- Modify 20_9_DMA_ADC_to_SPI
- Modify 18_6_Flash_EEPROM_Emulation_Controller

■ Project / 1_Application

SPINTROL

- Modify EEPROM_Data_Storage_Upon_VBAT_UV_Event

2. Other Change

- epwr.h/.c
  - Delete EPWR_Stop()
  - Delete EPWR_Sleep()
- lin_stack/inc/lin.h
  - Add #define LIN_N_AS_AND_N_CR_TIMEOUT 1000
- lin_stack/src/lin_lld_uart.c
  - Add #ifdef LOAD_ID_NAD_FROM_FLASH #else #endif for lin_init_id_or_nad_from_flash() and lin_save_configuration()
- Project / 1_Application
  - Modify LIN_Slave_node

17 版本 4.0.1 / 2023-12-24

Main Changes

1. Bug Fix

- adc.c
  - Modify ADC_Init()
  - Modify ADC_EasyInit1()
  - Modify ADC_EasyInit2()
  - Modify ADC_GetInputPinCode()
- pin.c
  - Modify PIN_SetPinAsAnalog()
- i2c.c
  - Modify I2C_MasterBulkRead()
- pwm.h
  - Modify interface of PWM_EnableSYNCOToGPIO()
  - Modify interface of PWM_DisableSYNCOToGPIO()
  - Modify interface of PWM_EnableSOCAToGPIO()
  - Modify interface of PWM_DisableSOCAToGPIO()
  - Modify interface of PWM_EnableSOCBToGPIO()
  - Modify interface of PWM_DisableSOCBToGPIO()
  - Modify interface of PWM_EnableSOCCToGPIO()
  - Modify interface of PWM_DisableSOCCToGPIO()
- SPC1169.svd/.SFR
  - Modify GPIO register
- Project /0_Examples
  - Delete 23_8_Predriver_VDD5_UVOV_Trigger_TZ
  - Add 23_8_Predriver_VDD5_OV_Trigger_TZ

2. Other Change

- i2c.c
  - Modify I2C_InitSpeed()
  - Modify I2C_MasterWrite()
  - Modify I2C_MasterRead()
  - Modify I2C_MasterBulkWrite()
- phcomp.c
  - Modify PHCOMP_SetFilterWindow()
- pin.h
  - Modify PIN_EnableInputChannel()
  - Modify PIN_DisableInputChannel()

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- .vscode/arm-none-eabi-gcc.cmake
  - Delete Absolute Path
- SPC1169.svd/.SFR
  - Modify note from SSP to SPI
- SPC1169_bitfield.h
  - Modify note from SSP to SPI
- system.c
  - Modify the note of SYSTEM_SetSleepWakeUpByGPIO()
- clock.c
  - Modify CLOCK_InitWithXO()
  - Modify CLOCK_Init()
  - Modify CLOCK_InitWithRCO()
  - Modify CLOCK_ConfigurePLL()
- dma.c
  - Rename SSP to SPI
- epwr.c
  - Modify EPWR_ReadRegister()
- pwm.h
  - Modify PWM_LoadTimingEnum
- Libraries
  - Modify lin_stack
- Project /0_Examples
  - Delete 17_3_SSP_Master_TxRx_Int
  - Delete 20_8_DMA_UART_to_SSP
  - Delete 17_2_SSP_Master_TxRx_Polling
  - Delete 20_9_DMA_ADC_to_SSP
  - Delete 17_2_SSP_Slave_TxRx_Polling
  - Delete 17_1_SSP_Master_B2B_TxRx_Polling
  - Delete 20_7_DMA_SSP_to_UART
  - Delete 10_5_ADC_Differential_Abs_Result
  - Delete 20_2_DMA_Memory_to_SSP
  - Delete 20_4_DMA_SSP_to_Memory
  - Delete 10_4_ADC_Single_End_Abs_Result
  - Delete 17_1_SSP_Slave_B2B_TxRx_Polling
  - Delete 17_3_SSP_Slave_TxRx_Int
  - Modify 18_5_Flash_With_ISR_In_RAM
  - Add 17_3_SPI_Master_TxRx_Int
  - Add 20_8_DMA_UART_to_SPI
  - Add 17_2_SPI_Master_TxRx_Polling
  - Add 20_9_DMA_ADC_to_SPI
  - Add 17_2_SPI_Slave_TxRx_Polling
  - Add 17_1_SPI_Master_B2B_TxRx_Polling
  - Add 20_7_DMA_SPI_to_UART
  - Add 10_5_ADC_Differential_Result
  - Add 20_2_DMA_Memory_to_SPI
  - Add 20_4_DMA_SPI_to_Memory
  - Add 10_4_ADC_Single_Ended_Result
  - Add 17_1_SPI_Slave_B2B_TxRx_Polling
  - Add 17_3_SPI_Slave_TxRx_Int
  - Modify 18_1_Flash_Operation
  - Modify 18_2_Flash_Sector_Protect
  - Modify 18_3_Flash_Call_User_Func
  - Modify 18_5_Flash_With_ISR_In_RAM
  - Modify 19_5_System_Sleep_Wakeup
  - Modify isr.h/.c

CONTROL

- Modify CMakeLists.txt

■ Project / 1_Application
- Add IAP_CAN
- Modify IAPLoader.exe
- Modify Math_Lib
- Modify LIN_Slave_node
- Modify CMakeLists.txt

18 版本 3.0.0 / 2023-12-07

Main Changes

1. Bug Fix

■ hwlib.h
- Hide EEPROM_Init, EEPROM_WriteWord, EEPROM_ReadWord, EEPROM_Format

■ Project /0_Examples
- Modify 18_6_Flash_EEPROM_Emulation_Controller

2. Other Change

■ Project / 1_Application
- Add EEPROM_Data_Storage_Upon_VBAT_UV_Event

19 版本 2.11.0 / 2023-10-22

Main Changes

1. Bug Fix

■ Project.uvprojx
- Modify <uGnu>1</uGnu> to <uGnu>0</uGnu>

■ Project /0_Examples
- Delete 23_9_Predriver_VDD5_OC_Trigger_TZ

2. Other Change

■ Libraries/drivers/inc/
- Modify note in adc.h, can.h, clock.h, comp.h, dma.h, ecap.h, engr.h, i2c.h, pwm.h, spi.h, system.h, uart.h

■ spi.h/.c
- Modify SPI_InitSpeed()

■ clock.h/.c
- Modify CLOCK_InitWithXO()

■ .vscode
- Delete spintrol.bat
- Modify launch.json

■ Project /0_Examples
- Add download.bat in GCC
- Modify 19_2_System_GPIO_Trigger_NMI
- Modify 4_1_GPIO_Edge_Detect
- Modify 4_2_GPIO_Level_Test

■ Project /1_Application
- Add Math_Lib
- Add RTT_Printf

■ Utilities/delay.c
- Modify note of Delay_Us

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- IDE_Support/EWARM/SPC1169.svd
- IDE_Support/MDK-ARM/SPC1169.SFR
- Libraries/drivers/inc/reg/spc1169_bitfield.h
- spd1179_hv.c
  - Modify HV_InitRegister()

20 版本 2.10.0 / 2023-09-20

Main Changes

1. **Bug Fix**
2. **Other Change**

- Libraries/lin_stack/inc/lin_commontl_proto.h
  - Modify lin_tl_make_multi_slaveres_pdu()
- Libraries/lin_stack/inc/lin_commontl_proto.c
  - Modify lin_tl_make_multi_slaveres_pdu()
  - Modify lin_tl_attach_service()
- Libraries/lin_stack/src/lin_lld_uart.c
  - Add lin_init_id_or_nad_from_flash()
  - Modify lin_lld_uart_init()
  - Modify lin_lld_uart()
- 1_Application/LIN_Slave_node/lin_cfg.h
  - Add #define LOAD_ID_NAD_FROM_FLASH

21 版本 2.9.0 / 2023-09-15

Main Changes

1. **Bug Fix**
2. **Other Change**

- .vscode
  - Add spintrol.bat
  - Modify launch.json
  - Modify arm-none-eabi-gcc.cmake
- IDE_Support/MDK-ARM/SPC1169_128M.FLM
  - Rename to SPC1169_128K.FLM
- IDE_Support/MDK-ARM/SPC1169_64M.FLM
  - Rename to SPC1169_64K.FLM
- Libraries/CMSIS/device/startup/gcc
  - Modify startup_spc1169.S
- Libraries/CMSIS/device/startup/iar
  - Modify startup_spc1169.s
- Libraries/CMSIS/device/system_spc1169.c
  - Modify SysInfo
- Libraries/lin_stack/src/ lin_lld_uart.c
  - Modify UART1_IRQHandler()
- ecap.h, i2c.h, spi.h
  - Note code in /* */ instead of //
- Project /0_Examples
  - Modify CMakeLists.txt
  - Modify project.ld

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- Modify Project.uvprojx
- Delete file build
- Modify download.jlink

■ Utilities / retarget.c
- Modify _write()
- Delete __io_putchar()
- Add void _close()
- Add void _fstat()
- Add void _getpid()
- Add void _isatty()
- Add void _kill()
- Add void _lseek()
- Add void _read()

22 版本 2.8.0 / 2023-09-03

Main Changes

1. Bug Fix

2. Other Change

■ .vscode
- Add arm-none-eabi-gcc.cmake

■ Libraries/lin_stack/inc/ lin_lld_uart.h
- Delete gpio_init()

■ Libraries/lin_stack/src/ lin_lld_uart.c
- Add lin_save_configuration()
- Add lin_Cr_or_As_timeout()
- Modify lin_lld_uart()
- Modify TIMER2_IRQHandler()
- Modify TIMER1_IRQHandler()
- Modify UART1_IRQHandler()
- Modify lin_lld_uart_init()
- Modify timer_init()
- Modify lin_lld_uart_set_low_power_mode()
- Modify lin_lld_uart_tx_response()

■ 1_Application/LIN_Slave_node/main.c
- Delete gpio_init()

■ Project /0_Examples
- Modify gcc configuration files of all demos
- Delete arm-none-eabi-gcc.cmake
- Add J-Link download

■ Utilities / retarget.c
- Add _write()
- Add __io_putchar()

23 版本 2.7.0 / 2023-08-28

Main Changes

1. Bug Fix

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2. Other Change

- Clock.h
  - Add CLOCK_InitWithXO()
- Clock.c
  - Add CLOCK_InitWithXO()
  - Modify CLOCK_ConfigurePLL()
- pwm.h
  - Modify PWM_LoadTimingEnum
- Libraries/CMSIS/device/startup/gcc
  - Add startup_spc1169.S
- Project /0_Examples
  - Add gcc configuration files to all demos

24 版本 2.6.0 / 2023-08-11

Main Changes

1. Bug Fix

- clock.c
  - Modify CLOCK_ConfigurePLL ()

2. Other Change

- can.h
  - Add CAN_EnableAutoBusOffRecovery()
  - Add CAN_DisabeAutoBusOffRecovery()
- pwm.h
  - Modify PWM_LoadTimingEnum
- spd1179_hv_bitfield.h
  - Rename ATESTCTL to HV ATESTCTL
- spd1179_hv.h
  - Rename ATESTCTL to HVATESTCTL
- uart.h
  - Rename UART_BaudCounterUpdateEnum to UART_BaudCountUpdateEnum
  - Add LIN_RxFIFOModeEnum
  - Modify UART_IntEnum
  - Rename UART_UpdateBaudCounterByHW() to UART_UpdateBaudCountByHW()
  - Rename UART_UpdateBaudCounterBySW() to UART_UpdateBaudCountBySW()
  - Rename UART_SetBaudCounterUpdateMethod() to UART_SetBaudCountUpdateMethod()
  - Rename UART_GetBaudCounterUpdateMethod() to UART_GetBaudCountUpdateMethod()
  - Add UART_EnableErrorReportWhenRxFull()
  - Add UART_DisableErrorReportWhenRxFull()
  - Add UART_IsEnableErrorReportWhenRxFull()
  - Add UART_EnablePinSwap()
  - Add UART_DisablePinSwap()
  - Add UART_IsEnablePinSwap()
  - Add LIN_SetRxFIFOMode()
- uart.c
  - Modify UART_WaitAutoBaudReady()
- IDE_Support/EWARM/SPC1169.svd
- IDE_Support/MDK-ARM/SPC1169.SFR
- Project /0_Examples

SPINTROL

- Modify 10_1_ADC_Calibration
- Modify 19_1_System_Voltage_Monitor

■ Project/1_Application
- Add LIN_Master_Auto_Baud
- Add LIN_Slave_Auto_Baud

25 版本 2.5.0 / 2023-07-28

Main Changes

1. Bug Fix

■ clock.c
- Modify CLOCK_Init()
- Modify CLOCK_InitWithRCO()
- Modify CLOCK_ConfigurePLL()

2. Other Change

■ uart.c
- Modify LIN_Init()

■ lin_lld_uart.c
- Modify lin_lld_uart()
- Modify UART1_IRQHandler()
- Modify lin_lld_uart_set_low_power_mode()

■ system.h
- Delete SYSTEM_GetFlashOption()

■ flashc.h
- Rename FLASH_SIZE to FLASH_CHIP_SIZE

■ pin.h
- Rename PIN_GPIO2_CLKMON to PIN_GPIO2_DCLK

■ spd1179_hv.c
- Modify HV_InitRegister()

■ Project/0_Examples
- Modify 23_6_Predriver_VBAT_UVOV_Trigger_TZ
- Modify 24_1_LIN_Master_TX
- Modify 24_1_LIN_Slave_RX
- Modify 24_2_LIN_Master_RX
- Modify 24_2_LIN_Slave_TX
- Modify 24_3_LIN_TX_Timeout_Shutdown
- Modify 19_1_System_Voltage_Monitor

■ Project/1_Application
- Modify AT24C02_EEPROM
- Modify IAP_LIN_Phy2
- Modify IAP_UART

26 版本 2.4.1 / 2023-06-15

Main Changes

1. Bug Fix

2. Other Change

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- Project /1_Application
  - Modify LIN_Slave_node

27 版本 2.4.0 / 2023-05-12

Main Changes

1. Bug Fix

- clock.c
  - Modify CLOCK_Init ()
  - Modify CLOCK_InitWithRCO()
- spc1169_bitfield.h
  - Delete NINJLEN
- Project/0_Examples
  - Modify 10_1_ADC_Calibration
  - Delete 19_7_System_Sleep_Wakeup_by_Event
  - Add 19_5_System_Sleep_Wakeup

2. Other Change

- Project/0_Examples
  - Modify 11_1_SPGA_Calibration
  - Modify 11_2_DPGA_Calibration
  - Delete 19_4_System_Stop_Wakeup_Cyclicly
  - Delete 19_5_System_Stop_Wakeup_by_Event
  - Delete 19_6_System_Sleep_Wakeup_Cyclicly
  - Add 19_4_System_Stop_Wakeup

28 版本 2.3.0 / 2023-04-23

Main Changes

1. Bug Fix

2. Other Change

- Project
  - Modify the default Flash size to 64k
  - Modify the default RAM size to 16k

29 版本 2.2.0 / 2023-03-16

Main Changes

1. Bug Fix

2. Other Change

- Project/0_Examples
  - Modify 2_4_MCU_Sleep_Wakeup_by_Event
  - Modify 7_3_WDT_Rset_System
  - Modify 8_4_PWM_Complementary_Pair_Channel
  - Modify 8_5_PWM_TriPhase_Waveform

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- Modify 8_6_PWM_Software_Global_SYNC
- Modify 8_7_PWM_Software_Group_SYNC
- Modify 8_8_PWM_GPIO_SYNC
- Modify 8_9_PWM_Timer_SYNC
- Modify 8_10_PWM_TBCNT_0_SYNC_and_Signal_Observe
- Modify 8_12_PWM_GPIO_Trigger_TZ
- Modify 9_1_ECAP_Continue_Absolute
- Modify 9_4_ECAP_APWM_Function
- Modify 9_5_ECAP_Continue_Absolute_Dual_Pin
- Modify 10_1_ADC_Calibration
- Modify 10_3_ADC_Short_Detect
- Modify 10_4_ADC_Single_End_Abs_Result
- Modify 10_5_ADC_Differential_Abs_Result
- Modify 10_6_ADC_Triggered_by_Timer
- Modify 10_7_ADC_Continous_Mode_and_Conversion_Priority
- Modify 10_8_ADC_PPU
- Modify 10_9_ADC_With_SPGA
- Modify 10_10_ADC_With_DPGA
- Modify 14_1_DAC_to_ADC
- Modify 14_2_ADC_to_DAC
- Modify 17_1_SSP_Master_B2B_TxRx_Polling
- Modify 17_1_SSP_Slave_B2B_TxRx_Polling
- Modify 17_2_SSP_Master_TxRx_Polling
- Modify 17_2_SSP_Slave_TxRx_Polling
- Modify 17_3_SSP_Master_TxRx_Int
- Modify 17_3_SSP_Slave_TxRx_Int
- Modify 18_5_Flash_With_ISR_In_RAM
- Add 18_6_Flash_EEPROM_Emulation_Controller
- Modify 26_1_CAN_Extended_Frame_RX
- Modify 26_1_CAN_Standard_And_Extended_Frame_TX
- Modify 26_1_CAN_Standard_Frame_RX
- Modify 26_2_CANFD_Extended_Frame_RX
- Modify 26_2_CANFD_Standard_And_Extended_Frame_TX
- Modify 26_2_CANFD_Standard_Frame_RX
- Modify 27_1_I2C_Master_Bulk_Polling_TxRx
- Modify 27_1_I2C_Slave_Bulk_Polling_TxRx
- Modify 27_2_I2C_Master_Polling_TxRx
- Modify 27_2_I2C_Slave_Polling_TxRx
- Modify 27_3_I2C_Master_INT_TxRx
- Modify 27_3_I2C_Slave_INT_TxRx

30 版本 2.1.0 / 2023-03-02

Main Changes

1. Bug Fix

- can.h
  - Modify CAN_GetTxPinTestMode ()
  - Modify CAN_SetTxPinTestMode ()
- clock.c
  - Modify CLOCK_ConfigurePLL ()
- Phcomp.h
  - Modify PHCOMP_GetOriginalOutputStatus ()

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2. Other Change

- Project/0_Examples
  - Modify 8_1_PWM_Single_Output_With_Up_Counting_Mode
  - Modify 8_2_PWM_Single_Output_With_Down_Counting_Mode
  - Modify 8_3_PWM_Single_Output_With_Up_Down_Counting_Mode
  - Modify 8_5_PWM_TriPhase_Waveform
  - Modify 8_6_PWM_Software_Global_SYNC
  - Modify 8_7_PWM_Software_Group_SYNC
  - Modify 8_8_PWM_GPIO_SYNC
  - Modify 8_9_PWM_Timer_SYNC
  - Modify 8_10_PWM_TBCNT_0_SYNC_and_Signal_Observe
  - Modify 8_11_PWM_Trigger_ADC_Sample_and_Signal_Observe
  - Modify 8_12_PWM_GPIO_Trigger_TZ
  - Modify 8_13_PWM_Current_Protect_Trigger_TZ
  - Modify 8_14_PWM_ADC_PPU_Trigger_TZ
  - Modify 10_7_ADC_Continous_Mode_and_Conversion_Priority
  - Modify 10_8_ADC_PPU
  - Modify 12_1_Comparator
  - Delete 15_1_LV_TSensor
  - Modify 19_1_System_Voltage_Monitor
  - Modify 19_7_System_Sleep_Wakeup_by_Event
  - Delete 26_1_CAN_TX_Data
  - Delete 26_1_CAN_RX_Data1
  - Delete 26_1_CAN_RX_Data2
  - Add 26_1_CAN_Standard_And_Extended_Frame_TX
  - Add 26_1_CAN_Standard_Frame_RX
  - Add 26_1_CAN_Extended_Frame_RX
  - Add 26_2_CANFD_Standard_And_Extended_Frame_TX
  - Add 26_2_CANFD_Standard_Frame_RX
  - Add 26_2_CANFD_Extended_Frame_RX
- clock.c
  - Add CLOCK_UpdateInfo ()
  - Delete __XO_CLOCK variable
- can.c
  - Delete CAN_SetMessageErrorStateIndicator ()
  - Add CAN_ForceSendDominantErrorStateIndicator ()
  - Add CAN_ForceSendRecessiveErrorStateIndicator ()
  - Add CAN_DisableForceSendErrorStateIndicator ()
  - Add CAN_IsForceSendErrorStateIndicator ()
  - Add CAN_GetMessageErrorStateIndicator()
  - Modify CAN_SetMessage ()
- system_spc1169.c
  - Modify SystemInit()
  - Modify SysInfoStruct SysInfo
- pwm.h
  - Modify PWM_SetPRDLoadTiming ()
  - Modify PWM_SetAQCSFRCLoadTiming ()
  - Modify PWM_SetDBCTLLoadTiming ()
  - Modify PWM_SetDBREDLoadTiming ()
  - Modify PWM_SetDBFEDLoadTiming ()
  - Modify PWM_LoadTimingEnum
- Clock.h
  - Modify CLOCK_GetModuleDiv ()
- pga.h
  - Modify PGA_InputSelEnum

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- adc.h
  - Delete ADC_PPU_TriggerSourceEnum
- can.h
  - Modify CAN_GetMessageFrameFormat ()
- spc1169.h
  - Add CEIL_DIV ()
  - Add FLOOR_DIV ()
- License.txt
  - Modify license.txt

31 版本 2.0.0 / 2023-02-11

Main Changes

1. Bug Fix

- can.c
  - CAN_SetMessage ()
- IDE_Support
  - Modify SPC1169.svd
  - Modify SPC1169.SFR

2. Other Change

- Project/0_Examples
  - Modify 19_1_System_Voltage_Monitor
  - Add 9_5_ECAP_Continue_Absolute_Dual_Pin
  - Add 9_6_ECAP_Continue_Delta_LIN
- Libraries/lin_stack/src/lin_lld_uart.c
  - Modify lin_lld_uart()
  - Modify lin_lld_uart_set_low_power_mode()

32 版本 1.9.0 / 2023-01-10

Main Changes

1. Bug Fix

- spd1179_hv.c
  - Modify HV_InitRegister()
- IDE_Support
  - Modify DebugCtrl.mac
  - Modify SPC1169.svd
  - Modify FlashSPC1169.board
  - Modify FlashSPC1169.flash
  - Modify FlashSPC1169.out
  - Modify SPC1169.FLM
  - Modify SPC1169.SFR
- adc.c
  - Modify ADC_SetSampleAndConvertTime()
  - Modify ADC_InputSelectEnum
  - Modify ADC_EasyInit1()
  - Modify ADC_EasyInit2()
  - Modify ADC_Init()
  - Modify ADC_GetInputPinCode()

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- system.h
  - Modify SYSTEM_MonitorItemEnum
  - Modify SYSTEM_GetADCREFLowThreshold()
  - Modify SYSTEM_GetADCREFHighThreshold()
  - Modify SYSTEM_GetADCREFMonitorValue()
- i2c.h
  - Modify I2C_GetTxAbortSource()
- phcomp.h
  - Modify PHCOMP_ReferenceEnum
- can.h
  - Modify CAN_StatusEnum
  - Modify CAN_GetStatus()
- pga.h
  - Modify D2S_Enable()
  - Modify D2S_Disable()
- clock.c
  - Modify CLOCK_SetModuleDiv()

2. Other Change

- adc.h
  - Modify ADC_Enable()
- comp.h
  - Modify COMP_SetDACBufferInput()
- pga.c
  - Modify PGA_InitDPGA()
  - Modify PGA_InitSPGA()
- spi.c
  - Modify SPI_InitSpeed()
- ecap.c
  - Modify ECAP_CaptureModeInit()
  - Modify ECAP_APWMModeInit()
- wdt.c
  - Modify WDT_Init()
- uart.h
  - Add UART_SetRxTimeoutThreshold()
  - Add UART_GetRxTimeoutThreshold()
- spi.c
  - Delete SSP_MasterB2BTransceive ()
- Project/1_Application
  - Add IAP_LIN_Phy
  - Modify IAP_UART
- Project/0_Examples
  - Modify 10_10_ADC_With_DPGA
  - Modify 10_1_ADC_Calibration
  - Modify 10_2_ADC_Open_Detect
  - Modify 10_3_ADC_Short_Detect
  - Modify 10_4_ADC_Single_End_Abs_Result
  - Modify 10_5_ADC_Differential_Abs_Result
  - Modify 10_6_ADC_Triggered_by_Timer
  - Modify 10_7_ADC_Continous_Mode_and_Conversion_Priority
  - Modify 10_8_ADC_PPU
  - Modify 10_9_ADC_With_SPGA
  - Modify 11_1_SPGA_Calibration
  - Modify 11_2_DPGA_Calibration
  - Modify 12_1_Comparator

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- Modify 13_1_BEMF_Comparator
- Modify 14_1_DAC_to_ADC
- Modify 14_2_ADC_to_DAC
- Modify 15_1_LV_TSensor
- Modify 16_1_UART_RX_Int
- Modify 16_2_UART_RX_and_SentBack
- Modify 16_2_UART_TX_and_CheckRX
- Modify 17_1_SSP_Master_B2B_TxRx_Polling
- Modify 17_1_SSP_Slave_B2B_TxRx_Polling
- Modify 17_2_SSP_Master_TxRx_Polling
- Modify 17_2_SSP_Slave_TxRx_Polling
- Modify 17_3_SSP_Master_TxRx_Int
- Modify 17_3_SSP_Slave_TxRx_Int
- Modify 18_1_Flash_Operation
- Modify 18_2_Flash_Sector_Protect
- Modify 18_3_Flash_Call_User_Func
- Modify 18_3_Flash_User_Func
- Modify 18_4_Flash_EEPROM_Emulation
- Modify 18_5_Flash_With_ISR_In_RAM
- Modify 19_1_System_Voltage_Monitor
- Modify 19_2_System_GPIO_Trigger_NMI
- Modify 19_3_System_Boot_Log_and_ECC_Error
- Modify 19_4_System_Stop_Wakeup_Cyclicly
- Modify 19_5_System_Stop_Wakeup_by_Event
- Modify 19_6_System_Sleep_Wakeup_Cyclicly
- Modify 19_7_System_Sleep_Wakeup_by_Event
- Modify 20_10_DMA_ADC_to_UART
- Modify 20_1_DMA_Memory_to_Memory
- Modify 20_2_DMA_Memory_to_SSP
- Modify 20_3_DMA_Memory_to_UART
- Modify 20_4_DMA_SSP_to_Memory
- Modify 20_5_DMA_UART_to_Memory
- Modify 20_6_DMA_ADC_to_Memory
- Modify 20_7_DMA_SSP_to_UART
- Modify 20_8_DMA_UART_to_SSP
- Modify 20_9_DMA_ADC_to_SSP
- Modify 23_10_Predriver_PMUCLKERR_Trigger_TZ
- Modify 23_11_Predriver_PMUOT_Trigger_TZ
- Modify 23_1_Predriver_Operation
- Modify 23_3_Predriver_VDS_Monitor_Trigger_TZ
- Modify 23_4_Predriver_Strength_Optimize
- Modify 23_5_Predriver_Propagation_Delay
- Modify 23_6_Predriver_VBAT_UVOV_Trigger_TZ
- Modify 23_7_Predriver_LIN_TX_Timeout_Trigger_TZ
- Modify 23_8_Predriver_VDD5_UVOV_Trigger_TZ
- Modify 23_9_Predriver_VDD5_OC_Trigger_TZ
- Modify 24_1_LIN_Master_TX
- Modify 24_1_LIN_Slave_RX
- Modify 24_2_LIN_Master_RX
- Modify 24_2_LIN_Slave_TX
- Modify 24_3_LIN_TX_Timeout_Shutdown
- Modify 25_1_MON_Int
- Add 26_1_CAN_RX_Data1
- Add 26_1_CAN_RX_Data2
- Add 26_1_CAN_TX_Data

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- Add 27_1_I2C_Master_Bulk_Polling_TxRx
- Add 27_1_I2C_Slave_Bulk_Polling_TxRx
- Add 27_2_I2C_Master_Polling_TxRx
- Add 27_2_I2C_Slave_Polling_TxRx
- Add 27_3_I2C_Master_INT_TxRx
- Add 27_3_I2C_Slave_INT_TxRx
- Add 28_1_CRC_16_CCITT
- Modify 2_1_BOD_UVOV_Int
- Modify 2_2_BOD_UVOV_Reset
- Modify 2_3_MCU_Stop_Wakeup_by_Event
- Modify 2_4_MCU_Sleep_Wakeup_by_Event
- Modify 3_1_PLL_unlock_Int
- Modify 3_2_PLL_unlock_Reset
- Modify 3_3_Clock_Detect_Error_Int
- Modify 3_4_Clock_Detect_Error_Reset
- Modify 4_1_GPIO_Edge_Detect
- Modify 4_2_GPIO_Level_Test
- Modify 6_1_GTimer_Int
- Modify 7_1_WDT_Int
- Modify 7_2_WDT_Feed_DOG
- Modify 7_3_WDT_Rset_System
- Modify 8_10_PWM_TBCNT_0_SYNC_and_Signal_Observe
- Modify 8_11_PWM_Trigger_ADC_Sample_and_Signal_Observe
- Modify 8_12_PWM_GPIO_Trigger_TZ
- Modify 8_13_PWM_Current_Protect_Trigger_TZ
- Modify 8_14_PWM_ADC_PPU_Trigger_TZ
- Modify 8_1_PWM_Single_Output_With_Up_Counting_Mode
- Modify 8_2_PWM_Single_Output_With_Down_Counting_Mode
- Modify 8_3_PWM_Single_Output_With_Up_Down_Counting_Mode
- Modify 8_4_PWM_Complementary_Pair_Channel
- Modify 8_5_PWM_TriPhase_Waveform
- Modify 8_6_PWM_Software_Global_SYNC
- Modify 8_7_PWM_Software_Group_SYNC
- Modify 8_8_PWM_GPIO_SYNC
- Modify 8_9_PWM_Timer_SYNC
- Modify 9_1_ECAP_Continue_Absolute
- Modify 9_2_ECAP_Continue_Delta
- Modify 9_3_ECAP_Oneshot_Absolute
- Modify 9_4_ECAP_APWM_Function
- Delete IAP_LIN_Phy

33 版本 1.8.0 / 2022-12-29

Main Changes

1. Bug Fix

- spi.h
  - Modify SPI_SetTestSFRMLock()
- iar
  - Modify startup_spc1169.s

2. Other Change

- adc.h
  - Modify ADC_SetChannelIntTriggerSOC ()

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- Modify ADC_SetChannelSOCTriggerSource()

■ uart.c
- Modify LIN_Init()

■ hwlib.h
- Modify Note

■ Project/1_Application
- Add LIN_Slave_node

34 版本 1.7.0 / 2022-10-25

Main Changes

1. Bug Fix

■ Example Code
- Modify 18_4_Flash_EEPROM_Emulation

2. Other Change

■ clock.h
- Modify CLOCK_SetPLLInputDiv()
- Modify CLOCK_SetPLLFeedbackDiv()
- Modify CLOCK_SetWDT0ClockSource()
- Modify CLOCK_SetWDT1ClockSource()

■ power.c
- Modify POWER_SetVDD12UVThreshold()
- Modify POWER_SetVDD12OVThreshold()
- Modify POWER_SetVDD33UVThreshold()
- Modify POWER_SetVDD33OVThreshold()

■ adc.h
- Modify ADC_SH0_P_VBAT_DIV to ADC_SH0_P_VBATM_DIV

■ delay.h/.c
- Modify Delay_Init()
- Modify Delay_Us()

■ comp.c
- Modify COMP_Init()
- Modify COMP_SetFilterWindowTimeNs()

■ phcomp.c
- Modify PHCOMP_SetFilterWindowTimeNs()

■ spc1169_bitfield.h
- Modify ADCCHCTL0_SHINSELP_VBAT_DIV to ADCCHCTL0_SHINSELP_VBATM_DIV

■ spd1179_hv_bitfield.h
- Modify EVTTHCTL0_PMUOTFATAL_XXC
- Modify EVTTHCTL0_PMUOTWARN_XXC
- Modify EVTTHCTL1_VCPUV_VBAT_ADD_XXdotXX_V
- Modify EVTTHCTL1_VCPOV_VBAT_ADD_XXdotXX_V
- Delete PDRVPDEVTEN

■ spd1179_hv.h
- Delete HV_REG_PDRVPDEVTEN

■ Example Code
- Modify 23_11_Predriver_PMUOT_Trigger_TZ
- Delete 23_2_Predriver_VBAT_UV_Shutdown
- Modify 18_1_Flash_Operation
- Modify 18_2_Flash_Sector_Protect
- Modify 18_3_Flash_Call_User_Func

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- Modify 18_3_Flash_User_Func
- Modify 18_4_Flash_EEPROM_Emulation
- Modify 18_5_Flash_With_ISR_In_RAM

■ Application code
- Add IAP_UART

■ SPC1169.svd/.SFR
- Rename PHC to VBATM_DIV

35 版本 1.6.0 / 2022-08-26

Main Changes

1. Bug Fix

■ Example Code
- Modify 20_10_DMA_ADC_to_UART/main.c
- Modify 20_9_DMA_ADC_to_SSP/main.c
- Modify 20_6_DMA_ADC_to_Memory/main.c
- Modify 23_5_Predriver_Propagation_Delay/main.c

2. Other Change

■ hv.h
- Rename to spd1179_hv.h

■ hv.c
- Rename to spd1179_hv.c

■ hv_bitfield.h
- Rename to spd1179_hv_bitfield.h

■ spd1179.h
- Add #define SPD1179

■ Example Code
- Modify 18_4_Flash_EEPROM_Emulation/data_manage.c
- Modify 18_4_Flash_EEPROM_Emulation/data_manage.h
- Modify 18_4_Flash_EEPROM_Emulation/main.c
- Modify 19_1_System_Voltage_Monitor/main.c
- Modify Template/main.c
- Modify 20_6_DMA_ADC_to_Memory/main.c
- Modify 20_10_DMA_ADC_to_UART/main.c
- Modify 20_1_DMA_Memory_to_Memory/main.c
- Modify 20_2_DMA_Memory_to_SSP/main.c
- Modify 20_3_DMA_Memory_to_UART/main.c
- Modify 20_4_DMA_SSP_to_Memory/main.c
- Modify 20_5_DMA_UART_to_Memory/main.c
- Modify 20_7_DMA_SSP_to_UART/main.c
- Modify 20_8_DMA_UART_to_SSP/main.c
- Modify 20_9_DMA_ADC_to_SSP/main.c
- Modify 24_1_LIN_Master_TX/isr.c
- Modify 24_1_LIN_Master_TX/main.c
- Modify 24_1_LIN_Slave_RX/main.c
- Modify 24_2_LIN_Master_RX/main.c
- Modify 24_2_LIN_Slave_TX/isr.c
- Modify 24_2_LIN_Slave_TX/main.c
- Modify 9_1_ECAP_Continue_Absolute/main.c
- Modify 9_2_ECAP_Continue_Delta/main.c

CONTROL

- Modify 9_3_ECAP_Oneshot_Absolute/main.c

36 版本 1.5.0 / 2022-05-20

Main Changes

- epwr.c
  - Modify EPWR_ReadRegister() function

37 版本 1.4.0 / 2022-05-20

Main Changes

1. Bug Fix

- adc.h
  - Rename ADC_SH0_P_PHC to VBAT_DIV to ADC_SH0_P_VBAT_DIV

2. Other Change

- epwr.h
  - Add EPWR_SelectTZEventOutputToGPIO()
- pwm.h
  - Rename PWM_RISING_EDGE_DELAT_PATH to PWM_RISING_EDGE_DELAY_PATH

38 版本 1.3.0 / 2021-12-17

Main Changes

1. Bug Fix

- adc.c
  - Modify the ADC_SetSampleAndConvertTime()

2. Other Change

- pga.c
  - Add D2S_Enable() and D2S_Disable()
- hv.c
  - In HV_ConnectTPMUToAnalogTest(), use (__IO uint32_t *) instead of (uint32_t *)
- Example Code
  - Modify 13_1_BEMF_Comparator/main.c
  - Modify 23_1_Predriver_Operation/main.c
  - Modify 23_2_Predriver_VBAT_UV_Shutdown/main.c
  - Modify 23_3_Predriver_VDS_Monitor_Trigger_TZ/main.c
  - Modify 23_4_Predriver_Strength_Optimize/main.c
  - Modify 23_5_Predriver_Propagation_Delay/main.c
  - Modify 23_6_Predriver_VBAT_UVOV_Trigger_TZ/main.c
  - Modify 23_7_Predriver_LIN_TX_Timeout_Trigger_TZ/main.c
  - Modify 23_8_Predriver_VDD5_UVOV_Trigger_TZ/main.c
  - Modify 23_9_Predriver_VDD5_OC_Trigger_TZ/main.c
  - Modify 23_10_Predriver_PMUCLKERR_Trigger_TZ/main.c
  - Modify 23_11_Predriver_PMUOT_Trigger_TZ/main.c

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39 版本 1.2.0 / 2021-09-26

Main Changes

1. Bug Fix

- adc.h
  - Add parameter ADCx in ADC_ForceMultiChannelSOC()
  - Add parameter ADCx in ADC_DisablePPUInt()
- dma.h
  - Modify DMA_GetTransferType()
  - Modify DMA_IsFIFOEmpty()
- epwr.h
  - Modify EPWR_SetSyncEvent()
- pin.h
  - Modify defination PIN_EXTPU5V_Msk and PIN_EXTPU5V_Pos
- epwr.c
  - Modify EPWR_ReadRegister()
- uart.h
  - Modify LIN_SetSyncBreak()
  - Modify parameter UARTx in UART_WDIS()
- phcomp.h
  - Modify input parameter of PHCOMP_SelectReference()
- pwm.h
  - Modify PWM_EnableTripWhenDebug()

2. Other Change

- adc.h
  - Add definition ADC_MAX_SAMPLE_TIME and ADC_MAX_CONVERSION_TIME
  - Delete definition __ADC_RESOLUTION_BITS
- clock.h
  - Rename CLOCK_IsXOEnabled() to CLOCK_IsEnableXO()
- phcomp.h
  - Add enum PHCOMP_IntEnum
  - Add enum PHCOMP_ModeEnum
  - Delete PHCOMP_SetNormalComparatorMode()
  - Delete PHCOMP_SetPhaseComparatorMode()
  - Add PHCOMP_SetMode()
  - Delete PHCOMP_EnableIntU(), PHCOMP_EnableIntV(), PHCOMP_EnableIntW()
  - Delete PHCOMP_DisableIntU(), PHCOMP_DisableIntV(), PHCOMP_DisableIntW()
  - Delete PHCOMP_ClearIntU(), PHCOMP_ClearIntV(), PHCOMP_ClearIntW()
  - Delete PHCOMP_GetIntRawFlagU(), PHCOMP_GetIntRawFlagV(), PHCOMP_GetIntRawFlagW()
  - Delete PHCOMP_GetIntFlagU(), PHCOMP_GetIntFlagV(), PHCOMP_GetIntFlagW()
  - Delete PHCOMP_GetGlobalIntFlag(), PHCOMP_GetAllIntFlag()
  - Modify input parameter of PHCOMP_EnableInt()
  - Modify input parameter of PHCOMP_DisableInt()
  - Modify input parameter of PHCOMP_GetIntRawFlag()
  - Modify input parameter of PHCOMP_GetIntFlag()
  - Modify input parameter of PHCOMP_ClearInt()
  - Delete PHCOMP_ClearGlobalInt() and PHCOMP_GetAllIntRawFlag()
- pwm.h
  - Rename enum PWM_EdgeEnum to PWM_DeadBandOutputSourceEnum
  - Rename enum PWM_TripIntEventEnum to PWM_TripIntEnum
  - Add TRIP_INT_GLOBAL and TRIP_INT_ALL in PWM_TripIntEnum
  - Rename PWM_SetCHAContinuesForceOutputAction()
    to PWM_SetCHAContinuousForceOutputAction()

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- Rename PWM_SetCHBContinuesForceOutputAction() to PWM_SetCHBContinuousForceOutputAction()
- Rename PWM_GetCHAContinuesForceOutputAction() to PWM_GetCHAContinuousForceOutputAction()
- Rename PWM_GetShadowCHAContinuesForceOutputAction() to PWM_GetShadowCHAContinuousForceOutputAction()
- Rename PWM_GetCHBContinuesForceOutputAction() to PWM_GetCHBContinuousForceOutputAction()
- Rename PWM_GetShadowCHBContinuesForceOutputAction() to PWM_GetShadowCHBContinuousForceOutputAction()
- Rename PWM_EnableDBDelayDualEdge() to PWM_EnableDBDualEdgeDelayMode()
- Rename PWM_DisableDBDelayDualEdge() to PWM_DisableDBDualEdgeDelayMode()
- Rename PWM_SetDBOutputChannelASource() to PWM_SetDBOutputASource()
- Rename PWM_SetDBOutputChannelBSource() to PWM_SetDBOutputBSource()
- Modify input parameter of PWM_SetCHAOneShotForceOutputAction()
- Modify input parameter of PWM_SetCHBOneShotForceOutputAction()
- Modify input parameter of PWM_GetCHAOneShotForceOutputAction()
- Modify input parameter of PWM_GetCHBOneShotForceOutputAction()
- Delete PWM_EnableOneShotTripInt()
- Delete PWM_DisableOneShotTripInt()
- Delete PWM_EnableCBCTripInt()
- Delete PWM_DisableCBCTripInt()
- Delete PWM_EnableDCAEVT0TripInt()
- Delete PWM_DisableDCAEVT0TripInt()
- Delete PWM_EnableDCAEVT1TripInt()
- Delete PWM_DisableDCAEVT1TripInt()
- Delete PWM_EnableDCBEVT0TripInt()
- Delete PWM_DisableDCBEVT0TripInt()
- Delete PWM_EnableDCBEVT1TripInt()
- Delete PWM_DisableDCBEVT1TripInt()
- Delete PWM_GetOneShotTripIntRawFlag()
- Delete PWM_GetCBCTripIntRawFlag()
- Delete PWM_GetDCAEVT0TripIntRawFlag()
- Delete PWM_GetDCAEVT1TripIntRawFlag()
- Delete PWM_GetDCBEVT0TripIntRawFlag()
- Delete PWM_GetDCBEVT1TripIntRawFlag()
- Delete PWM_GetOneShotTripIntFlag()
- Delete PWM_GetCBCTripIntFlag()
- Delete PWM_GetDCAEVT0TripIntFlag()
- Delete PWM_GetDCAEVT1TripIntFlag()
- Delete PWM_GetDCBEVT0TripIntFlag()
- Delete PWM_GetDCBEVT1TripIntFlag()
- Delete PWM_GetGlobalTripIntFlag()
- Delete PWM_ClearOneShotTripInt()
- Delete PWM_ClearCBCTripInt()
- Delete PWM_ClearDCAEVT0TripInt()
- Delete PWM_ClearDCAEVT1TripInt()
- Delete PWM_ClearDCBEVT0TripInt()
- Delete PWM_ClearDCBEVT1TripInt()
- Delete PWM_ClearGlobalTripInt()

■ comp.h

- Delete COMP_ClearAllFilterOutputFlag()
- Delete COMP_SetDAC0RampReloadValue()
- Delete COMP_SetDAC1RampReloadValue()
- Delete COMP_GetDAC0RampReloadValue()

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- Delete COMP_GetDAC1RampReloadValue()
- Delete COMP_SetDAC0RampDelay()
- Delete COMP_SetDAC1RampDelay()
- Delete COMP_GetDAC0RampDelay()
- Delete COMP_GetDAC1RampDelay()
- Delete COMP_GetDAC0RampDecrement()
- Delete COMP_GetDAC1RampDecrement()

■ dma.h
- Rename DMA_GetChannelInt() to DMA_IsEnableChannelInt() and the return value form (0 or 1) to (0 or not 0)
- Rename DMA_GetSuspend() to DMA_IsEnableSuspend() and the return value form (0 or 1) to (0 or not 0)
- Rename DMA_GetTransferCompleteInt() to DMA_IsEnableTransferCompleteInt()
- Rename DMA_GetTransferErrorInt() to DMA_IsEnableTransferErrorInt()
- Rename DMA_IsEnabled() to DMA_IsEnable()
- Rename DMA_GetChannelTransfer() to DMA_IsEnableChannelTransfer()
- Use the defination DMATCIE_CH0WE_Pos, DMAERRIE_CH0WE_Pos, DMACHEN_CH0WE_Pos to replace NUM_OF_DMA_CHANNEL

■ ecap.h
- Rename ECAP_APWMSetActiveHigh() to ECAP_SetAPWMOutputActiveHigh()
- Rename ECAP_APWMSetActiveLow() to ECAP_SetAPWMOutputActiveLow()

■ ssp.h
- Modify PSP_SlotEnum
- Rename SSP_IsSetPSPNetFrameTxActiveSlot() to SSP_IsEnablePSPNetFrameTxActiveSlot()
- Rename SSP_IsSetPSPNetFrameRxActiveSlot() to SSP_IsEnablePSPNetFrameRxActiveSlot()
- Rename SSP_EnableLockSFRMOutput() to SSP_EnableSFRMLock()
- Rename SSP_DisableLockSFRMOutput() to SSP_DisableSFRMLock()
- Rename SSP_IsEnableLockSFRMOutput() to SSP_IsEnableSFRMLock()
- Delete enum SSP_TrailingBytesHandlerEnum
- Delete SSP_SetTrailingBytesHandler()
- Delete SSP_GetTrailingBytesHandler()

■ timer.h
- Add TIMER_WALLOW() and TIMER_WDIS()

■ uart.h
- Rename enum UART_BusWidthEnum to UART_FIFOAccessWidthEnum
- Modify UART_WriteByte(), LIN_WriteByte(), UART_ReadByte(), LIN_ReadByte()
- Rename UART_GetRx() to UART_IsEnableRx()
- Rename UART_GetTx() to UART_IsEnableTx()
- Rename UART_GetRxDMA() to UART_IsEnableRxDMA()
- Rename UART_GetTxDMA() to UART_IsEnableTxDMA()
- Delete UART_GetBreak()
- Delete UART_GetAutoBaud()
- Rename UART_IsAutoBaudEnabled() to UART_IsEnableAutoBaud()
- Rename UART_SetBusWidth() to UART_SetFIFOAccessWidth()
- Rename UART_GetBusWidth() to UART_GetFIFOAccessWidth()
- Rename LIN_Get() to LIN_IsEnable()
- Rename UART_GetRxSIR() to UART_IsEnableRxSIR()
- Rename UART_GetTxSIR() to UART_IsEnableTxSIR()
- Rename UART_GetInt() to UART_IsEnableInt()

■ system.h
- Add enum MemoryEnum
- Rename SSYTEM_GetGPIONMIInputSourcePolarity() to SYSTEM_GetGPIONMIInputSourcePolarity()
- Rename SYSTEM_GetNonMaskableInt() to SYSTEM_IsEnableNonMaskableInt()
- Rename SYSTEM_GetResetEvent() to SYSTEM_IsEnableResetEvent()

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- Delete SYSTEM_GetROMErrorAddress()
- Delete SYSTEM_GetFlashErrorAddress()
- Delete SYSTEM_GetIRAMErrorAddress()
- Delete SYSTEM_GetDRAMErrorAddress()
- Add SYSTEM_GetMemoryErrorAddress()

■ epwr.h
- Modify EPWR_GetFilteredTripEventStatus() the return value form (0 or 1) to (0 or not 0)
- Modify EPWR_GetTripEventFlag() the return value form (0 or 1) to (0 or not 0)

■ Example Code
- Modify 12_1_Comparator/main.c
- Modify 13_1_BEMF_Comparator/main.c
- Modify 20_10_DMA_ADC_to_UART/main.c
- Modify 20_2_DMA_Memory_to_SSP/main.c
- Modify 20_3_DMA_Memory_to_UART/main.c
- Modify 20_4_DMA_SSP_to_Memory/main.c
- Modify 20_5_DMA_UART_to_Memory/main.c
- Modify 20_6_DMA_ADC_to_Memory/main.c
- Modify 20_7_DMA_SSP_to_UART/main.c
- Modify 20_8_DMA_UART_to_SSP/main.c
- Modify 20_9_DMA_ADC_to_SSP/main.c
- Modify 23_10_Predriver_PMUCLKERR_Trigger_TZ/main.c
- Modify 23_11_Predriver_PMUOT_Trigger_TZ/main.c
- Modify 23_3_Predriver_VDS_Monitor_Trigger_TZ/main.c
- Modify 23_6_Predriver_VBAT_UVOV_Trigger_TZ/main.c
- Modify 23_8_Predriver_VDD5_UVOV_Trigger_TZ/main.c
- Modify 23_9_Predriver_VDD5_OC_Trigger_TZ/main.c
- Modify 8_12_PWM_GPIO_Trigger_TZ/main.c
- Modify 8_13_PWM_Current_Protect_Trigger_TZ/main.c
- Modify 8_14_PWM_ADC_PPU_Trigger_TZ/main.c

40 版本 1.1.0 / 2021-06-23

Main Changes

■ spc1169_bitfield.h
- Raname TXDREQ/RXDAV to TXREQ/RXRED in UARTRAWIF/IF/IE registers
- Update TXREQ/RXRED description in SSPRAWIF/IF/IE registers
- Raname TXDREQ/RXDAV to TXREQ/RXRED in I2CRAWIF/IF/IE/IC registers

■ ecap.c
- Update ECAP_CaptureModeInit()

■ ecap.h
- Delete ECAP_SetRunMode().
- Rename ECAP_SetCounterModeOnCPUHaltCMP() to ECAP_SetCounterModeOnCPUHalt()
- Delete ECAP_GetCEVT0IntRawFlag(ECAPx)
- Delete ECAP_GetCEVT1IntRawFlag(ECAPx)
- Delete ECAP_GetCEVT2IntRawFlag(ECAPx)
- Delete ECAP_GetCEVT3IntRawFlag(ECAPx)
- Delete ECAP_GetCounterOverflowIntRawFlag(ECAPx)
- Delete ECAP_GetCounterEqualPRDIntRawFlag(ECAPx)
- Delete ECAP_GetCounterEqualCMPIntRawFlag(ECAPx)
- Delete ECAP_GetAllIntRawFlag(ECAPx)
- Delete ECAP_GetCEVT0IntFlag(ECAPx)
- Delete ECAP_GetCEVT1IntFlag(ECAPx)
- Delete ECAP_GetCEVT2IntFlag(ECAPx)

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- Delete ECAP_GetCEVT3IntFlag(ECAPx)
- Delete ECAP_GetCounterOverflowIntFlag(ECAPx)
- Delete ECAP_GetCounterEqualPRDIntFlag(ECAPx)
- Delete ECAP_GetCounterEqualCMPIntFlag(ECAPx)
- Delete ECAP_GetGlobalIntFlag(ECAPx)
- Delete ECAP_IsGlobalIntPending(ECAPx)
- Delete ECAP_GetAllIntFlag(ECAPx)
- Delete ECAP_EnableCEVT0Int(ECAPx)
- Delete ECAP_DisableCEVT0Int(ECAPx)
- Delete ECAP_EnableCEVT1Int(ECAPx)
- Delete ECAP_DisableCEVT1Int(ECAPx)
- Delete ECAP_EnableCEVT2Int(ECAPx)
- Delete ECAP_DisableCEVT2Int(ECAPx)
- Delete ECAP_EnableCEVT3Int(ECAPx)
- Delete ECAP_DisableCEVT3Int(ECAPx)
- Delete ECAP_EnableCounterOverflowInt(ECAPx)
- Delete ECAP_DisableCounterOverflowInt(ECAPx)
- Delete ECAP_EnableCounterEqualPRDInt(ECAPx)
- Delete ECAP_DisableCounterEqualPRDInt(ECAPx)
- Delete ECAP_EnableCounterEqualCMPInt(ECAPx)
- Delete ECAP_DisableCounterEqualCMPInt(ECAPx)
- Delete ECAP_EnableAllInt(ECAPx)
- Delete ECAP_DisableAllInt(ECAPx)
- Delete ECAP_ForceCEVT0Int(ECAPx)
- Delete ECAP_ForceCEVT1Int(ECAPx)
- Delete ECAP_ForceCEVT2Int(ECAPx)
- Delete ECAP_ForceCEVT3Int(ECAPx)
- Delete ECAP_ForceCounterOverflowInt(ECAPx)
- Delete ECAP_ForceCounterEqualPRDInt(ECAPx)
- Delete ECAP_ForceCounterEqualCMPInt(ECAPx)
- Delete ECAP_ClearCEVT0Int(ECAPx)
- Delete ECAP_ClearCEVT1Int(ECAPx)
- Delete ECAP_ClearCEVT2Int(ECAPx)
- Delete ECAP_ClearCEVT3Int(ECAPx)
- Delete ECAP_ClearCounterOverflowInt(ECAPx)
- Delete ECAP_ClearCounterEqualPRDInt(ECAPx)
- Delete ECAP_ClearCounterEqualCMPInt(ECAPx)
- Delete ECAP_ClearGlobalInt(ECAPx)
- Delete ECAP_ClearAllInt(ECAPx)

■ comp.c
- Update COMP_Init().
- Update COMP_SetFilterWindowTimeNs()

■ comp.h
- Delete COMP_SetOutputActiveHigh().
- Delete COMP_SetOutputActiveLow().
- Delete COMP_SetOutputActiveHighForPWM().
- Delete COMP_SetOutputActiveLowForPWM().
- Delete COMP_SetOutputActiveHighForGPIO().
- Delete COMP_SetOutputActiveLowForGPIO().
- Add COMP_SetOutputPolarity().
- Add COMP_SetOutputPolarityForPWM().
- Add COMP_SetOutputPolarityForGPIO()

■ power.h
- Delete POWER_DeepSleepMode()
- Delete POWER_StopMode()

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- ssp.h
  - Delete SSP_IsTxNotFull(SSPx)
  - Delete SSP_IsTxEmpty(SSPx)
  - Delete SSP_IsRxFull(SSPx)
  - Delete SSP_IsRxNotEmpty(SSPx)
  - Delete SSP_IsBusy(SSPx)
  - Delete SSP_IsBusySyncSlaveClock(SSPx)
  - Delete SSP_IsSlaveNotReady(SSPx)
  - Delete SSP_IsTxHasEvenSample(SSPx)
  - Delete SSP_IsRxHasEvenSample(SSPx)
  - Delete SSP_IsNetworkBusy(SSPx)
  - Delete SSP_IsSFRMLocked(SSPx)
  - Delete SSP_GetRxUnderflowIntRawFlag(SSPx)
  - Delete SSP_GetRxOverflowIntRawFlag(SSPx)
  - Delete SSP_GetRxServiceRequestIntRawFlag(SSPx)
  - Delete SSP_GetRxTimeoutIntRawFlag(SSPx)
  - Delete SSP_GetTxUnderflowIntRawFlag(SSPx)
  - Delete SSP_GetTxOverflowIntRawFlag(SSPx)
  - Delete SSP_GetTxServiceRequestIntRawFlag(SSPx)
  - Delete SSP_GetBitCountErrorIntRawFlag(SSPx)
  - Delete SSP_GetTrailByteIntRawFlag(SSPx)
  - Delete SSP_GetDMAEndOfChainIntRawFlag(SSPx)
  - Delete SSP_GetRxUnderflowIntFlag(SSPx)
  - Delete SSP_GetRxOverflowIntFlag(SSPx)
  - Delete SSP_GetRxServiceRequestIntFlag(SSPx)
  - Delete SSP_GetRxTimeoutIntFlag(SSPx)
  - Delete SSP_GetTxUnderflowIntFlag(SSPx)
  - Delete SSP_GetTxOverflowIntFlag(SSPx)
  - Delete SSP_GetTxServiceRequestIntFlag(SSPx)
  - Delete SSP_GetBitCountErrorIntFlag(SSPx)
  - Delete SSP_GetTrailByteIntFlag(SSPx)
  - Delete SSP_GetDMAEndOfChainIntFlag(SSPx)
  - Delete SSP_GetGlobalIntFlag(SSPx)
  - Delete SSP_EnableRxUnderflowInt(SSPx)
  - Delete SSP_DisableRxUnderflowInt(SSPx)
  - Delete SSP_EnableRxOverflowInt(SSPx)
  - Delete SSP_DisableRxOverflowInt(SSPx)
  - Delete SSP_EnableRxServiceRequestInt(SSPx)
  - Delete SSP_DisableRxServiceRequestInt(SSPx)
  - Delete SSP_EnableRxTimeoutInt(SSPx)
  - Delete SSP_DisableRxTimeoutInt(SSPx)
  - Delete SSP_EnableTxUnderflowInt(SSPx)
  - Delete SSP_DisableTxUnderflowInt(SSPx)
  - Delete SSP_EnableTxOverflowInt(SSPx)
  - Delete SSP_DisableTxOverflowInt(SSPx)
  - Delete SSP_EnableTxServiceRequestInt(SSPx)
  - Delete SSP_DisableTxServiceRequestInt(SSPx)
  - Delete SSP_EnableBitCountErrorInt(SSPx)
  - Delete SSP_DisableBitCountErrorInt(SSPx)
  - Delete SSP_EnableTrailByteInt(SSPx)
  - Delete SSP_DisableTrailByteInt(SSPx)
  - Delete SSP_EnableDMAEndOfChainInt(SSPx)
  - Delete SSP_DisableDMAEndOfChainInt(SSPx)
  - Delete SSP_ClearRxUnderflowInt(SSPx)
  - Delete SSP_ClearRxOverflowInt(SSPx)

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- Delete SSP_ClearRxTimeoutInt(SSPx)
- Delete SSP_ClearTxUnderflowInt(SSPx)
- Delete SSP_ClearTxOverflowInt(SSPx)
- Delete SSP_ClearBitCountErrorInt(SSPx)
- Delete SSP_ClearTrailByteInt(SSPx)
- Delete SSP_ClearDMAEndOfChainInt(SSPx)
- Delete SSP_ClearGlobalInt(SSPx)

■ system.h
- Delete SYSTEM_EnableSingleMonitorItem(eItem)
- Delete SYSTEM_EnableSingleNonMaskableInt(eNMIEvt)
- Delete SYSTEM_EnableAllNonMaskableInt()
- Delete SYSTEM_DisableAllNonMaskableInt()
- Delete SYSTEM_ClearNonMaskableGlobalInt()
- Delete SYSTEM_GetAllNonMaskableIntRawFlag()
- Delete SYSTEM_GetNonMaskableGlobalIntFlag()
- Delete SYSTEM_GetAllNonMaskableIntFlag()
- Delete SYSTEM_EnableSingleResetEvent(eRSTEvt)
- Delete SYSTEM_EnableAllResetEvent()
- Delete SYSTEM_DisableAllResetEvent()
- Delete SYSTEM_GetAllResetEventFlag()

■ uart.h
- Delete UART_IsRxNotEmpty(UARTx)
- Delete UART_IsRxFull(UARTx)
- Delete UART_IsTxEmpty(UARTx)
- Delete UART_IsTxNotFull(UARTx)
- Delete UART_IsRxParityError(UARTx)
- Delete UART_IsRxFrameError(UARTx)
- Delete UART_IsRxBreak(UARTx)
- Delete UART_IsRxError(UARTx)
- Delete UART_IsRxBusy(UARTx)
- Delete UART_IsTxBusy(UARTx)
- Delete UART_GetRxOverflowIntRawFlag(UARTx)
- Delete UART_GetRxUnderflowIntRawFlag(UARTx)
- Delete UART_GetRxDataAvailableIntRawFlag(UARTx)
- Delete UART_GetRxParityErrorIntRawFlag(UARTx)
- Delete UART_GetRxFrameErrorIntRawFlag(UARTx)
- Delete UART_GetRxBreakIntRawFlag(UARTx)
- Delete UART_GetRxTimeoutIntRawFlag(UARTx)
- Delete UART_GetTxOverflowIntRawFlag(UARTx)
- Delete UART_GetTxDataRequestIntRawFlag(UARTx)
- Delete UART_GetAutoBaudLockedIntRawFlag(UARTx)
- Delete UART_GetLINRxIDMatchIntRawFlag(UARTx)
- Delete UART_GetLINBitErrorIntRawFlag(UARTx)
- Delete UART_GetLINChecksumErrorIntRawFlag(UARTx)
- Delete UART_GetDMAEndOfChainIntRawFlag(UARTx)
- Delete UART_GetRxOverflowIntFlag(UARTx)
- Delete UART_GetRxUnderflowIntFlag(UARTx)
- Delete UART_GetRxDataAvailableIntFlag(UARTx)
- Delete UART_GetRxParityErrorIntFlag(UARTx)
- Delete UART_GetRxFrameErrorIntFlag(UARTx)
- Delete UART_GetRxBreakIntFlag(UARTx)
- Delete UART_GetRxTimeoutIntFlag(UARTx)
- Delete UART_GetTxOverflowIntFlag(UARTx)
- Delete UART_GetTxDataRequestIntFlag(UARTx)
- Delete UART_GetAutoBaudLockedIntFlag(UARTx)

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- Delete UART_GetLINRxIDMatchIntFlag(UARTx)
- Delete UART_GetLINBitErrorIntFlag(UARTx)
- Delete UART_GetLINChecksumErrorIntFlag(UARTx)
- Delete UART_GetDMAEndOfChainIntFlag(UARTx)
- Delete UART_GetGlobalIntFlag(UARTx)
- Delete UART_ClearRxOverflowInt(UARTx)
- Delete UART_ClearRxUnderflowInt(UARTx)
- Delete UART_ClearRxParityErrorInt(UARTx)
- Delete UART_ClearRxFrameErrorInt(UARTx)
- Delete UART_ClearRxBreakInt(UARTx)
- Delete UART_ClearRxTimeoutInt(UARTx)
- Delete UART_ClearTxOverflowInt(UARTx)
- Delete UART_ClearAutoBaudLockedInt(UARTx)
- Delete UART_ClearLINRxIDMatchInt(UARTx)
- Delete UART_ClearLINBitErrorInt(UARTx)
- Delete UART_ClearLINChecksumErrorInt(UARTx)
- Delete UART_ClearDMAEndOfChainInt(UARTx)
- Delete UART_ClearGlobalInt(UARTx)
- Delete UART_EnableRxOverflowInt(UARTx)
- Delete UART_DisableRxOverflowInt(UARTx)
- Delete UART_EnableRxUnderflowInt(UARTx)
- Delete UART_DisableRxUnderflowInt(UARTx)
- Delete UART_EnableRxAvaliableInt(UARTx)
- Delete UART_DisableRxAvaliableInt(UARTx)
- Delete UART_EnableRxParityErrorInt(UARTx)
- Delete UART_DisableRxParityErrorInt(UARTx)
- Delete UART_EnableRxFrameErrorInt(UARTx)
- Delete UART_DisableRxFrameErrorInt(UARTx)
- Delete UART_EnableRxBreakInt(UARTx)
- Delete UART_DisableRxBreakInt(UARTx)
- Delete UART_EnableRxTimeoutInt(UARTx)
- Delete UART_DisableRxTimeoutInt(UARTx)
- Delete UART_EnableTxOverflowInt(UARTx)
- Delete UART_DisableTxOverflowInt(UARTx)
- Delete UART_EnableTxDataRequestInt(UARTx)
- Delete UART_DisableTxDataRequestInt(UARTx)
- Delete UART_EnableAutoBaudLockedInt(UARTx)
- Delete UART_DisableAutoBaudLockedInt(UARTx)
- Delete UART_EnableLINRxIDMatchInt(UARTx)
- Delete UART_DisableLINRxIDMatchInt(UARTx))
- Delete UART_EnableLINBitErrorInt(UARTx)
- Delete UART_DisableLINBitErrorInt(UARTx)
- Delete UART_EnableLINChecksumErrorInt(UARTx)
- Delete UART_DisableLINChecksumErrorInt(UARTx)
- Delete UART_EnableDMAEndOfChainInt(UARTx)
- Delete UART_DisableDMAEndOfChainInt(UARTx)

■ Example Code

- Modify 10_10_ADC_With_DPGA/main.c
- Modify 10_4_ADC_Single_End_Abs_Result/main.c
- Modify 10_5_ADC_Differential_Abs_Result/main.c
- Modify 10_6_ADC_Triggered_by_Timer/main.c
- Modify 10_7_ADC_Continous_Mode and Conversion_Priority/main.c
- Modify 10_9_ADC_With_SPGA/main.c
- Modify 14_1_DAC_to_ADC/main.c
- Modify 14_2_ADC_to_DAC/main.c

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- Modify 15_1_LV_TSensor/main.c
- Modify 16_1_UART_RX_Int/main.c
- Modify 16_1_UART_RX_Int/main.c
- Modify 16_2_UART_RX_and_SentBack/main.c
- Modify 17_1_SSP_Master_B2B_TxRx_Polling/main.c
- Modify 17_1_SSP_Slave_B2B_TxRx_Polling/main.c
- Modify 17_2_SSP_Master_TxRx_Polling/main.c
- Modify 17_2_SSP_Slave_TxRx_Polling/main.c
- Modify 17_3_SSP_Master_TxRx_Int/main.c
- Modify 17_3_SSP_Slave_TxRx_Int/main.c
- Modify 18_1_Flash_Operation/main.c
- Modify 18_2_Flash_Sector_Protect/main.c
- Modify 18_3_Flash_ User_Func/main.c
- Modify 18_3_Flash_Call_User_Func/main.c
- Modify 19_2_System_GPIO_Trigger_NMI/main.c
- Modify 20_10_DMA_ADC_to_UART/main.c
- Modify 20_1_DMA_Memory_to_Memory/main.c
- Modify 20_2_DMA_Memory_to_SSP/main.c
- Modify 20_3_DMA_Memory_to_UART/main.c
- Modify 20_4_DMA_SSP_to_Memory/main.c
- Modify 20_5_DMA_UART_to_Memory/main.c
- Modify 20_6_DMA_ADC_to_Memory/main.c
- Modify 20_7_DMA_SSP_to_UART/main.c
- Modify 20_8_DMA_UART_to_SSP/main.c
- Modify 20_9_DMA_ADC_to_SSP/main.c
- Modify 23_10_Predriver_PMUCLKERR_Trigger_TZ/main.c
- Modify 23_11_Predriver_PMUOT_Trigger_TZ/main.c
- Modify 23_3_Predriver_VDS_Monitor_Trigger_TZ/main.c
- Modify 23_7_Predriver_LIN_TX_Timeout_Trigger_TZ/main.c
- Modify 23_8_Predriver_VDD5_UVOV_Trigger_TZ/main.c
- Modify 23_9_Predriver_VDD5_OC_Trigger_TZ/main.c
- Modify 24_1_LIN_Master_TX/main.c
- Modify 24_1_LIN_Slave_RX/main.c
- Modify 24_2_LIN_Master_RX/main.c
- Modify 24_2_LIN_Slave_TX/main.c
- Modify 24_3_LIN_TX_Timeout_Shutdown/main.c
- Modify 25_1_MON_Int/main.c
- Modify 3_1_PLL_unlock_Int/main.c
- Modify 3_2_PLL_unlock_Reset/main.c
- Modify 3_3_Clock_Detect_Error_Int/main.c
- Modify 3_4_Clock_Detect_Error_Reset/main.c
- Modify 4_1_GPIO_Edge_Detect/main.c
- Modify 4_2_GPIO_Level_Test/main.c
- Modify 6_1_GTimer_Int/main.c
- Modify 7_1_WDT_Int/main.c
- Modify 7_2_WDT_Feed_DOG/main.c
- Modify 8_10_PWM_TBCNT_0_SYNC_and_Signal_Observe/main.c
- Modify 8_12_PWM_GPIO_Trigger_TZ/main.c
- Modify 8_13_PWM_Current_Protect_Trigger_TZ/main.c
- Modify 8_14_PWM_ADC_PPU_Trigger_TZ/main.c
- Modify 9_1_ECAP_Continue_Absolute/main.c
- Modify 9_2_ECAP_Continue_Delta/main.c
- Modify 9_3_ECAP_Oneshot_Absolute/main.c

CONTROL

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Main Changes

- Created

42 限制

模块	描述

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