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# **MCUXpresso SDK Release Notes Supporting Ipcxpresso804**

**Change Logs**

**NXP Semiconductors**



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# 1 Driver Change Log

## CLOCK

The current CLOCK driver version is 2.3.3.

- 2.3.3
  - Improvements
    - \* Added lost comments for some enumerations.
- 2.3.2
  - Improvements
    - \* Used "offsetof" macro to get the offset of the structure element from the beginning of the structure.
- 2.3.1
  - Bug Fixes
    - \* Fixed MISRA C-2012 rule 10.1, rule 10.4, rule 10.8, rule 16.4 and so on.
- 2.3.0
  - New feature:
    - \* Moved SDK\_DelayAtLeastUs function from clock driver to common driver.
- 2.2.0
  - Replace the delay function
- 2.1.0
  - New feature
    - \* Adding new API CLOCK\_DelayAtLeastUs() to implemente a delay fucntion which allow users set delay in unit of microsecond.
- 2.0.3
  - add api to get uart clock frequency.
  - add api to set fractional multiplier value.
- 2.0.2
  - some minor fixes.
- 2.0.0
  - initial version.

## POWER

The current POWER driver version is 2.1.0.

- 2.1.0
  - New features
    - \* Added BOD control APIs.
- 2.0.4
  - Bug Fixes
    - \* Fixed the typo "Enbale", correcting it as "Enable".
- 2.0.3

- Bug Fixes
  - \* Fixed doxygen warnings(remove wrong character in annotation).
- 2.0.2
  - New Features
    - \* Added the Enable/DisableDeepSleepIRQ() to enable/disable pin wake up.
- 2.0.1
  - Improvements
    - \* Updated power drive to support PMU.
- 2.0.0
  - initial version.

## RESET

The current RESET driver version is 2.4.0.

- 2.4.0
  - Improvements
    - \* Add RESET\_ReleasePeripheralReset API.
- 2.0.1
  - Update component full\_name to "Reset Driver".
- 2.0.0
  - initial version.

## CAPT

The current CAPT driver version is 2.1.0.

- 2.1.0
  - New Features
    - \* Added new API CAPT\_PollNow, to immediately launch a one-time-only, simultaneous poll of all specified X pins.
- 2.0.3
  - Bug Fixes
    - \* Fixed bug that CAPT\_GetTouchData does not get right count.
- 2.0.2
  - Bug Fixes
    - \* Fixed the violation of MISRA-2012 rules:
      - Rule 10.3 15.5 17.7
- 2.0.1
  - Bug Fixes
    - \* Fixed the out-of-bounds error of Coverity caused by missing an assert sentence to avoid return value of CAPT\_GetInstance() exceeding array bounds.
- 2.0.0
  - Initial version.

## COMMON

The current COMMON driver version is 2.4.0.

- 2.4.0
  - New Features
    - \* Added EnableIRQWithPriority, IRQ\_SetPriority, and IRQ\_ClearPendingIRQ for ARM.
    - \* Added MSDK\_EnableCpuCycleCounter, MSDK\_GetCpuCycleCount for ARM.
- 2.3.3
  - New Features
    - \* Added NETC into status group.
- 2.3.2
  - Improvements
    - \* Make driver aarch64 compatible
- 2.3.1
  - Bug Fixes
    - \* Fixed MAKE\_VERSION overflow on 16-bit platforms.
- 2.3.0
  - Improvements
    - \* Split the driver to common part and CPU architecture related part.
- 2.2.10
  - Bug Fixes
    - \* Fixed the ATOMIC macros build error in cpp files.
- 2.2.9
  - Bug Fixes
    - \* Fixed MISRA C-2012 issue, 5.6, 5.8, 8.4, 8.5, 8.6, 10.1, 10.4, 17.7, 21.3.
    - \* Fixed SDK\_Malloc issue that not allocate memory with required size.
- 2.2.8
  - Improvements
    - \* Included stddef.h header file for MDK tool chain.
  - New Features:
    - \* Added atomic modification macros.
- 2.2.7
  - Other Change
    - \* Added MECC status group definition.
- 2.2.6
  - Other Change
    - \* Added more status group definition.
  - Bug Fixes
    - \* Undef \_\_VECTOR\_TABLE to avoid duplicate definition in cmsis\_clang.h
- 2.2.5
  - Bug Fixes
    - \* Fixed MISRA C-2012 rule-15.5.
- 2.2.4
  - Bug Fixes
    - \* Fixed MISRA C-2012 rule-10.4.

- 2.2.3
  - New Features
    - \* Provided better accuracy of SDK\_DelayAtLeastUs with DWT, use macro SDK\_DELAY\_USE\_DWT to enable this feature.
    - \* Modified the Cortex-M7 delay count divisor based on latest tests on RT series boards, this setting lets result be closer to actual delay time.
- 2.2.2
  - New Features
    - \* Added include RTE\_Components.h for CMSIS pack RTE.
- 2.2.1
  - Bug Fixes
    - \* Fixed violation of MISRA C-2012 Rule 3.1, 10.1, 10.3, 10.4, 11.6, 11.9.
- 2.2.0
  - New Features
    - \* Moved SDK\_DelayAtLeastUs function from clock driver to common driver.
- 2.1.4
  - New Features
    - \* Added OTFAD into status group.
- 2.1.3
  - Bug Fixes
    - \* MISRA C-2012 issue fixed.
      - Fixed the rule: rule-10.3.
- 2.1.2
  - Improvements
    - \* Add SUPPRESS\_FALL\_THROUGH\_WARNING() macro for the usage of suppressing fallthrough warning.
- 2.1.1
  - Bug Fixes
    - \* Deleted and optimized repeated macro.
- 2.1.0
  - New Features
    - \* Added IRQ operation for XCC toolchain.
    - \* Added group IDs for newly supported drivers.
- 2.0.2
  - Bug Fixes
    - \* MISRA C-2012 issue fixed.
      - Fixed the rule: rule-10.4.
- 2.0.1
  - Improvements
    - \* Removed the implementation of LPC8XX Enable/DisableDeepSleepIRQ() function.
    - \* Added new feature macro switch "FSL\_FEATURE\_HAS\_NO\_NONCACHEABLE\_SECTION" for specific SoCs which have no noncacheable sections, that helps avoid an unnecessary complex in link file and the startup file.
    - \* Updated the align(x) to **attribute**(aligned(x)) to support MDK v6 armclang compiler.
- 2.0.0

- Initial version.

## CTIMER

The current CTimer driver version is 2.3.1.

- 2.3.1
  - Bug Fixes
    - \* MISRA C-2012 issue fixed: rule 10.7 and 12.2.
- 2.3.0
  - Improvements
    - \* Added the CTIMER\_SetPrescale(), CTIMER\_GetCaptureValue(), CTIMER\_EnableResetMatchChannel(), CTIMER\_EnableStopMatchChannel(), CTIMER\_EnableRisingEdgeCapture(), CTIMER\_EnableFallingEdgeCapture(), CTIMER\_SetShadowValue(), APIs Interface to reduce code complexity.
- 2.2.2
  - Bug Fixes
    - \* Fixed SetupPwm() API only can use match 3 as period channel issue.
- 2.2.1
  - Bug Fixes
    - \* Fixed use specified channel to setting the PWM period in SetupPwmPeriod() API.
    - \* Fixed Coverity Out-of-bounds issue.
- 2.2.0
  - Improvements
    - \* Updated three API Interface to support Users to flexibly configure the PWM period and PWM output.
  - Bug Fixes
    - \* MISRA C-2012 issue fixed: rule 8.4.
- 2.1.0
  - Improvements
    - \* Added the CTIMER\_GetOutputMatchStatus() API Interface.
    - \* Added feature macro for FSL\_FEATURE\_CTIMER\_HAS\_NO\_CCR\_CAP2 and FSL\_FEATURE\_CTIMER\_HAS\_NO\_IR\_CR2INT.
- 2.0.3
  - Bug Fixes
    - \* MISRA C-2012 issue fixed: rule 10.3, 10.4, 10.6, 10.7 and 11.9.
- 2.0.2
  - New Features
    - \* Added new API "CTIMER\_GetTimerCountValue" to get the current timer count value.
    - \* Added a control macro to enable/disable the RESET and CLOCK code in current driver.
    - \* Added a new feature macro to update the API of CTimer driver for lpc8n04.
- 2.0.1
  - Improvements
    - \* API Interface Change

- Changed API interface by adding CTIMER\_SetupPwmPeriod API and CTIMER-  
\_UpdatePwmPulsePeriod API, which both can set up the right PWM with high  
resolution.
- 2.0.0
  - Initial version.

## IAP

The current IAP driver version is 2.0.7.

- 2.0.7
  - Bug Fixes
    - \* Fixed IAP\_ReinvokeISP bug that can't support UART ISP auto baud detection.
- 2.0.6
  - Bug Fixes
    - \* Fixed IAP\_ReinvokeISP wrong parameter setting.
- 2.0.5
  - New Feature
    - \* Added support config flash memory access time.
- 2.0.4
  - Bug Fixes
    - \* Fixed the violations of MISRA 2012 rules 9.1
- 2.0.3
  - New Features
    - \* Added support for LPC 845's FAIM operation.
    - \* Added support for LPC 80x's fixed reference clock for flash controller.
    - \* Added support for LPC 5411x's Read UID command useless situation.
  - Improvements
    - \* Improved the document and code structure.
  - Bug Fixes
    - \* Fixed the violations of MISRA 2012 rules:
      - Rule 10.1 10.3 10.4 17.7
- 2.0.2
  - New Features
    - \* Added an API to read generated signature.
  - Bug Fixes
    - \* Fixed the incorrect board support of IAP\_ExtendedFlashSignatureRead().
- 2.0.1
  - New Features
    - \* Added an API to read factory settings for some calibration registers.
  - Improvements
    - \* Updated the size of result array in part APIs.
- 2.0.0
  - Initial version.

## LPC\_ACOMP

The current LPC\_ACOMP driver version is 2.1.0.

- 2.1.0
  - Bug Fixes
    - \* Fixed one wrong enum value for the hysteresis.
    - \* Fixed the violations of MISRA C-2012 rules:
      - Rule 10.1, 17.7.
- 2.0.2
  - Bug Fixes
    - \* Fixed the out-of-bounds error of Coverity caused by missing an assert sentence to avoid the return value of ACOMP\_GetInstance() exceeding the array bounds.
- 2.0.1
  - New Features
    - \* Added a control macro to enable/disable the CLOCK code in current driver.
- 2.0.0
  - Initial version.

## ADC

The current ADC driver version is 2.5.3.

- 2.5.3
  - Improvements
    - \* Release peripheral from reset if necessary in init function.
- 2.5.2
  - Improvements
    - \* Integrated different sequence's sample time numbers into one variable.
  - Bug Fixes
    - \* Fixed violation of MISRA C-2012 rule 20.9 .
- 2.5.1
  - Bug Fixes
    - \* Fixed ADC conversion sequence priority misconfiguration issue in the ADC\_SetConvSeqAHighPriority() and ADC\_SetConvSeqBHighPriority() APIs.
  - Improvements
    - \* Supported configuration ADC conversion sequence sampling time.
- 2.5.0
  - Improvements
    - \* Add missing parameter tag of ADC\_DoOffsetCalibration().
  - Bug Fixes
    - \* Removed a duplicated API with typo in name: ADC\_EnableShresholdCompareInterrupt().
- 2.4.1
  - Bug Fixes

- \* Enabled self-calibration after clock divider be changed to make sure the frequency update be taken.
- 2.4.0
  - New Features
    - \* Added new API `ADC_DoOffsetCalibration()` which supports a specific operation frequency.
  - Other Changes
    - \* Marked the `ADC_DoSelfCalibration(ADC_Type *base)` as deprecated.
  - Bug Fixes
    - \* Fixed the violations of MISRA C-2012 rules:
      - Rule 10.1 10.3 10.4 10.7 10.8 17.7.
- 2.3.2
  - Improvements
    - \* Added delay after enabling using the `ADC_GPADC_CTRL0_LDO_POWER_EN` bit for JN5189/QN9090.
  - New Features
    - \* Added support for platforms which have only one ADC sequence control/result register.
- 2.3.1
  - Bug Fixes
    - \* Avoided writing ADC STARTUP register in `ADC_Init()`.
    - \* Fixed Coverity zero divider error in `ADC_DoSelfCalibration()`.
- 2.3.0
  - Improvements
    - \* Updated `"ADC_Init()" "ADC_GetChannelConversionResult()"` API and `"adc_resolution_t"` structure to match QN9090.
    - \* Added `"ADC_EnableTemperatureSensor"` API.
- 2.2.1
  - Improvements
    - \* Added a brief delay in uSec after ADC calibration start.
- 2.2.0
  - Improvements
    - \* Updated `"ADC_DoSelfCalibration"` API and `"adc_config_t"` structure to match LPC845.
- 2.1.0
  - Improvements
    - \* Renamed `"ADC_EnableShresholdCompareInterrupt"` to `"ADC_EnableThresholdCompareInterrupt"`.
- 2.0.0
  - Initial version.

## CRC

The current CRC driver version is 2.1.1.

- 2.1.1



- \* Updated "GPIO\_PinInit" API. If it has DIRCLR and DIRSET registers, use them at set 1 or clean 0.
- 2.1.2
  - Improvements
    - \* Removed deprecated APIs.
- 2.1.1
  - Improvements
    - \* API interface changes:
      - Refined naming of APIs while keeping all original APIs, marking them as deprecated. Original APIs will be removed in next release. The mainin change is updating APIs with prefix of \_PinXXX() and \_PorortXXX
- 2.1.0
  - New Features
    - \* Added GPIO initialize API.
- 2.0.0
  - Initial version.

## I2C

The current I2C driver version is 2.1.0.

- 2.1.0
  - Bug Fixes
    - \* Fixed MISRA 8.6 violations.
- 2.0.4
  - Bug Fixes
    - \* Fixed wrong assignment for datasize in I2C\_InitTransferStateMachineDMA.
    - \* Fixed wrong working flow in I2C\_RunTransferStateMachineDMA to ensure master can work in no start flag and no stop flag mode.
    - \* Fixed wrong working flow in I2C\_RunTransferStateMachine and added kReceiveData-BEGINState in \_i2c\_transfer\_states to ensure master can work in no start flag and no stop flag mode.
    - \* Fixed wrong handle state in I2C\_MasterTransferDMAHandleIRQ. After all the data has been transfered or nak is returned, handle state should be changed to idle.
    - \* Eliminated IAR Pa082 warning in I2C\_SlaveTransferHandleIRQ by assigning volatile variable to local variable and using local variable instead.
    - \* Fixed MISRA issues.
      - Fixed rules 4.7, 10.1, 10.3, 10.4, 11.1, 11.8, 14.4, 17.7.
  - Improvements
    - \* Rounded up the calculated divider value in I2C\_MasterSetBaudRate.
    - \* Updated the I2C\_WAIT\_TIMEOUT macro to unified name I2C\_RETRY\_TIMES.
- 2.0.3
  - Bug Fixes
    - \* Fixed Coverity issue of unchecked return value in I2C\_RTOS\_Transfer.

- 2.0.2
  - New Features
    - \* Added macro gate "FSL\_SDK\_ENABLE\_I2C\_DRIVER\_TRANSACTIONAL\_APIS" to enable/disable the transactional APIs which will help reduce the code size when no nonblocking transfer is used. Default configuration is enabled.
    - \* Added a control macro to enable/disable the RESET and CLOCK code in current driver.
- 2.0.1
  - Improvements
    - \* Added I2C\_WATI\_TIMEOUT macro to allow the user to specify the timeout times for waiting flags in functional API and blocking transfer API.
- 2.0.0
  - Initial version.

## IOCON

The current IOCON driver version is 2.0.2.

- 2.0.2
  - Bug Fixes
    - \* Fixed MISRA-C 2012 violations.
- 2.0.1
  - Bug Fixes
    - \* Fixed out-of-range issue of the IOCON mode function when enabling DAC.
- 2.0.0
  - Initial version.

## SPI

The current SPI driver version is 2.0.6.

- 2.0.6
  - Improvements
    - \* Changed SPI\_DUMMYDATA to 0x00.
- 2.0.5
  - Bug Fixes
    - \* Fixed bug that the transfer configuration does not take effect after the first transfer.
- 2.0.4
  - Bug Fixes
    - \* Fixed the issue that when transfer finish callback is invoked TX data is not sent to bus yet.
- 2.0.3
  - Improvements
    - \* Added timeout mechanism when waiting certain states in transfer driver.
    - \* Fixed MISRA 10.4 issue.
- 2.0.2

- Bug Fixes
  - \* Fixed Coverity issue of incrementing null pointer in SPI\_MasterTransferNonBlocking.
  - \* Fixed MISRA issues.
    - Fixed rules 10.1, 10.3, 10.4, 10.6, 14.4.
- New Features
  - \* Added enumeration for dataWidth.
- 2.0.1
  - Bug Fixes
    - \* Added wait mechanism in SPI\_MasterTransferBlocking() API, which checks if master S-PI becomes IDLE when the EOT bit is set before returning. This confirms that all data will be sent out by SPI master.
    - \* Fixed the bug that the EOT bit couldn't be set when only one frame was sent in polling mode and interrupt transfer mode.
  - New Features
    - \* Added macro gate "FSL\_SDK\_ENABLE\_SPI\_DRIVER\_TRANSACTIONAL\_APIS" to enable/disable the transactional APIs, which helps reduce the code size when no nonblocking transfer is used. Enabled default configuration.
    - \* Added a control macro to enable/disable the RESET and CLOCK code in current driver.
- 2.0.0
  - Initial version.

## USART

The current USART driver version is 2.5.1.

- 2.5.1
  - Improvements
    - \* Fixed doxygen warning in USART\_SetRxIdleTimeout.
- 2.5.0
  - New Features
    - \* Supported new feature of rx idle timeout.
- 2.4.0
  - Improvements
    - \* Used separate data for TX and RX in usart\_transfer\_t.
  - Bug Fixes
    - \* Fixed bug that when ring buffer is used, if some data is received in ring buffer first before calling USART\_TransferReceiveNonBlocking, the received data count returned by USART\_TransferGetReceiveCount is wrong.
- 2.3.0
  - New Features
    - \* Modified usart\_config\_t, USART\_Init and USART\_GetDefaultConfig APIs so that the hardware flow control can be enabled during module initialization.
- 2.2.0
  - Improvements

- \* Added timeout mechanism when waiting for certain states in transfer driver.
- \* Fixed MISRA 10.4 issues.
- 2.1.1
  - Bug Fixes
    - \* Fixed the bug that in USART\_SetBaudRate best\_diff rather than diff should be used to compare with calculated baudrate.
    - \* Eliminated IAR pa082 warnings from USART\_TransferGetRxRingBufferLength and USART\_TransferHandleIRQ.
    - \* Fixed MISRA issues.
  - Improvements
    - \* Rounded up the calculated sbr value in USART\_SetBaudRate to achieve more accurate baudrate setting.
    - \* Modified USART\_ReadBlocking so that if more than one receiver errors occur, all status flags will be cleared and the most severe error status will be returned.
- 2.1.0
  - New Features
    - \* Added new APIs to allow users to configure the USART continuous SCLK feature in synchronous mode transfer.
- 2.0.1
  - Bug Fixes
    - \* Fixed the repeated reading issue of the STAT register while dealing with the IRQ routine.
  - New Features
    - \* Added macro gate "FSL\_SDK\_ENABLE\_USART\_DRIVER\_TRANSACTIONAL\_APIS" to enable/disable the transactional APIs, which helps reduce the code size when no nonblocking transfer is used. Enabled default configuration.
    - \* Added a control macro to enable/disable the RESET and CLOCK code in current driver.
    - \* Added macro switch gate "FSL\_SDK\_USART\_DRIVER\_ENABLE\_BAUDRATE\_AUTO\_GENERATE" to enable/disable the baud rate to generate automatically. Disabling this feature will help reduce the code size to a certain degree. Default configuration enables auto generating of baud rate.
    - \* Added the check of baud rate while initializing the USART. If the baud rate calculated is not precise, the software assertion will be triggered.
    - \* Added a new API to allow users to enable the CTS, which determines whether CTS is used for flow control.
- 2.0.0
  - Initial version.

## MRT

The current MRT driver version is 2.0.4.

- 2.0.4
  - Improvements
    - \* Don't reset MRT when there is not system level MRT reset functions.

- 2.0.3
  - Bug Fixes
    - \* Fixed violations of MISRA C-2012 rule 10.1 and 10.4.
    - \* Fixed the wrong count value assertion in MRT\_StartTimer API.
- 2.0.2
  - Bug Fixes
    - \* Fixed violations of MISRA C-2012 rule 10.4.
- 2.0.1
  - Added control macro to enable/disable the RESET and CLOCK code in current driver.
- 2.0.0
  - Initial version.

## PINT

The current PINT driver version is 2.1.12.

- 2.1.12
  - Bug Fixes
    - \* Fixed coverity issue.
- 2.1.11
  - Bug Fixes
    - \* Fixed MISRA C-2012 rule 10.7 violation.
- 2.1.10
  - New Features
    - \* Added the driver support for MCXN10 platform with combined interrupt handler.
- 2.1.9
  - Bug Fixes
    - \* Fixed MISRA-2012 rule 8.4.
- 2.1.8
  - Bug Fixes
    - \* Fixed MISRA-2012 rule 10.1 rule 10.4 rule 10.8 rule 18.1 rule 20.9.
- 2.1.7
  - Improvements
    - \* Added fully support for the SECPINT, making it can be used just like PINT.
- 2.1.6
  - Bug Fixes
    - \* Fixed the bug of not enabling common pint clock when enabling security pint clock.
- 2.1.5
  - Bug Fixes
    - \* Fixed issue for MISRA-2012 check.
      - Fixed rule 10.1 rule 10.3 rule 10.4 rule 10.8 rule 14.4.
    - \* Changed interrupt init order to make pin interrupt configuration more reasonable.
- 2.1.4
  - Improvements

- \* Added feature to control distinguish PINT/SECPINT relevant interrupt/clock configurations for PINT\_Init and PINT\_Deinit API.
- \* Swapped the order of clearing PIN interrupt status flag and clearing pending NVIC interrupt in PINT\_EnableCallback and PINT\_EnableCallbackByIndex function.
- \* Bug Fixes
  - Fixed build issue caused by incorrect macro definitions.
- 2.1.3
  - Bug fix:
    - \* Updated PINT\_PinInterruptClrStatus to clear PINT interrupt status when the bit is asserted and check whether was triggered by edge-sensitive mode.
    - \* Write 1 to IST corresponding bit will clear interrupt status only in edge-sensitive mode and will switch the active level for this pin in level-sensitive mode.
    - \* Fixed MISRA c-2012 rule 10.1, rule 10.6, rule 10.7.
    - \* Added FSL\_FEATURE\_SECPINT\_NUMBER\_OF\_CONNECTED\_OUTPUTS to distinguish IRQ relevant array definitions for SECPINT/PINT on lpc55s69 board.
    - \* Fixed PINT driver c++ build error and remove index offset operation.
- 2.1.2
  - Improvement:
    - \* Improved way of initialization for SECPINT/PINT in PINT\_Init API.
- 2.1.1
  - Improvement:
    - \* Enabled secure pint interrupt and add secure interrupt handle.
- 2.1.0
  - Added PINT\_EnableCallbackByIndex/PINT\_DisableCallbackByIndex APIs to enable/disable callback by index.
- 2.0.2
  - Added control macro to enable/disable the RESET and CLOCK code in current driver.
- 2.0.1
  - Bug fix:
    - \* Updated PINT driver to clear interrupt only in Edge sensitive.
- 2.0.0
  - Initial version.

## PLU

The current PLU driver version is 2.2.1.

- 2.2.1
  - Bug Fixes
    - \* Fixed MISRA C-2012 rule 10.3 and rule 17.7.
- 2.2.0
  - Bug Fixes
    - \* Fixed wrong parameter of the PLU\_EnableWakeIntRequest function.
- 2.1.0

- New Features
  - \* Added 4 new APIs to support Niobe4's wake-up/interrupt control feature, including PLU\_GetDefaultWakeIntConfig(), PLU\_EnableWakeIntRequest(), PLU\_LatchInterrupt() and PLU\_ClearLatchedInterrupt().
- Other Changes
  - \* Changed the register name LUT\_INP to LUT\_INP\_MUX due to register map update.
- 2.0.1
  - New Features
    - \* Added control macro to enable/disable the RESET and CLOCK code in current driver.
- 2.0.0
  - Initial version.

## SWM

The current SWM driver version is 2.1.2.

- 2.1.1
  - Improvements
    - \* Reduce RAM footprint.
- 2.1.1
  - Bug Fixes
    - \* MISRA C-2012 issue fixed: rule 10.1 and 10.3.
- 2.1.0
  - New Features
    - \* Supported Flextimer function pin assign.
- 2.0.2
  - Bug Fixes
    - \* MISRA C-2012 issue fixed: rule 14.3.
- 2.0.1
  - Bug Fixes
    - \* MISRA C-2012 issue fixed: rule 10.1, 10.3, and 10.4.
- 2.0.0
  - Initial version.
  - The API SWM\_SetFixedMovablePinSelect() is targeted at the device that has PINASSIGNFIXED0 register, such as LPC804.

## SYSCON

The current SYSCON driver version is 2.0.1.

- 2.0.1
  - Bug Fixes
    - \* Fixed issue for MISRA-2012 check.
      - Fixed rule 10.4.

- 2.0.0
  - Initial version.

## WKT

The current WKT driver version is 2.0.2.

- 2.0.2
  - Bug Fixes
    - \* Fixed violation of MISRA C-2012 rule 10.3.
- 2.0.1
  - New Features
    - \* Added control macro to enable/disable the RESET and CLOCK code in current driver.
- 2.0.0
  - Initial version.

## WWDT

The current WWDT driver version is 2.1.9.

- 2.1.9
  - Bug Fixes
    - \* Fixed violation of the MISRA C-2012 rule 10.4.
- 2.1.8
  - Improvements
    - \* Updated the "WWDT\_Init" API to add wait operation. Which can avoid the TV value read by CPU still be 0xFF (reset value) after WWDT\_Init function returns.
- 2.1.7
  - Bug Fixes
    - \* Fixed the issue that the watchdog reset event affected the system from PMC.
    - \* Fixed the issue of setting watchdog WDPROTECT field without considering the backwards compatibility.
    - \* Fixed the issue of clearing bit fields by mistake in the function of WWDT\_ClearStatus-Flags.
- 2.1.5
  - Bug Fixes
    - \* deprecated a unusable API in WWDT driver.
      - WWDT\_Disable
- 2.1.4
  - Bug Fixes
    - \* Fixed violation of the MISRA C-2012 rules Rule 10.1, 10.3, 10.4 and 11.9.
    - \* Fixed the issue of the inseparable process interrupted by other interrupt source.
      - WWDT\_Init
- 2.1.3

- Bug Fixes
  - \* Fixed legacy issue when initializing the MOD register.
- 2.1.2
  - Improvements
    - \* Updated the "WWDT\_ClearStatusFlags" API and "WWDT\_GetStatusFlags" API to match QN9090. WDTOF is not set in case of WD reset. Get info from PMC instead.
- 2.1.1
  - New Features
    - \* Added new feature definition macro for devices which have no LCOK control bit in MOD register.
    - \* Implemented delay/retry in WWDT driver.
- 2.1.0
  - Improvements
    - \* Added new parameter in configuration when initializing WWDT module. This parameter, which must be set, allows the user to deliver the WWDT clock frequency.
- 2.0.0
  - Initial version.

## 2 Middleware Change Log

### FreeMASTER Communication Driver

Current version is 3.0.6. Visit <https://www.nxp.com/freemaster> for more information. Reach out for a support at <https://community.nxp.com/community/freemaster>.

- 3.0.0
  - Initial version of FreeMASTER driver reworked from a standalone package to MCUXpresso SDK middleware.
  - This driver version supports new version V4 of FreeMASTER serial communication protocol.
  - Supports UART, LPUART, USART, MINIUSART, FlexCAN, USB-CDC and JTAG/BDM communication.
  - Initial version was tested with the following boards: evkmimxrt1060, frdmk64f, frdmke15z, frdmkl28z, lpcxpresso54628 lpcxpresso55s69, lpcxpresso845max and twrk64f120m.
  - Use with FreeMASTER PC Host tool version 2.5 or later.
- 3.0.1
  - FreeMASTER driver extended to support wide range of Kinetis, LPC and i.MX-RT platforms.
  - Low-level communication drivers also available for few non-SDK NXP platforms like S12Z, S32x and more.
  - Use with FreeMASTER PC Host tool version 3.0 or later.
- 3.0.2
  - FreeMASTER driver support of DSC56F800EX and S12 platforms extended.
  - Removed dependency on C99 compiler features.
  - Use with FreeMASTER PC Host tool version 3.0.2 or later.
- 3.0.3
  - General update for SDK 2.9.0
  - fmstr\_any demo added to selected platforms - use with MCUXpresso SDK and FreeMASTER peripheral configuration tool.
  - New example.pmp project file embedded into application flash storage.
  - USB-CDC implementation fixed, new JTAG EOnCE communication interface added to DSC 56F800E family.
  - Use with FreeMASTER PC Host tool version 3.0.3 or later. Version 3.1.x is recommended.
- 3.0.4
  - Fixed component dependency logic of FreeMASTER driver.
  - Use with FreeMASTER PC Host tool version 3.1.x
- 3.0.5
  - General update for SDK 2.11 and 2.12
  - New TCP and UDP support with lwIP stack
  - New communication over Segger RTT interface
  - Add fmstr\_net and fmstr\_wifi examples for selected i.MX-RT platforms
  - Add fmstr\_rtt example for selected platforms
  - Fixed negative recorder threshold trigger processing
- 3.0.6

- General update for SDK 2.13
- Use of new Ethernet MDIO driver concept.
- Support of ENET and NETC Ethernet modules in the fmstr\_net example application.
- 3.0.7
  - General update for SDK 2.14

## **SAFETY\_IEC60730B for KSDK**

Current version is 1.1.0

- 1.1.0
  - Initial version.

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