User Manual

for S32K3 WDG Driver

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Chapter 1

Revision History

Revision	Date	Author	Description
1.0	31.03.2023	NXP RTD Team	S32K3 Real-Time Drivers AUTOSAR 4.4 & R21-11 Version 3.0.0

Chapter 2

Introduction

This User Manual describes NXP Semiconductor AUTOSAR *Watchdog (Wdg)* for *S32K3XX*. AUTOSAR *Wdg* driver configuration parameters and deviations from the specification are described in Driver chapter of this document. AUTOSAR *Wdg* driver requirements and APIs are described in the AUTOSAR *Wdg* driver software specification document.

2.1 Supported Derivatives

The software described in this document is intended to be used with the following microcontroller devices of NXP Semiconductors:

- s32k310_mqfp100
- s32k310_lqfp48
- s32k311_mqfp100 / MWCT2015S_mqfp100
- s32k311_lqfp48
- s32k312_mqfp100 / MWCT2016S_mqfp100
- s32k312_mqfp172 / MWCT2016S_mqfp172
- s32k314_mqfp172
- s32k314_mapbga257
- s32k322_mqfp100 / MWCT2D16S_mqfp100
- s32k322_mqfp172 / MWCT2D16S_mqfp172

- s32k324_mqfp172 / MWCT2D17S_mqfp172
- s32k324_mapbga257
- s32k341_mqfp100
- s32k341_mqfp172
- s32k342_mqfp100
- s32k342_mqfp172
- s32k344_mqfp172
- s32k344_mapbga257
- s32k394_mapbga289
- s32k396_mapbga289
- s32k358_mqfp172
- s32k358_mapbga289
- s32k328_mqfp172
- s32k328_mapbga289
- s32k338_mqfp172
- s32k338_mapbga289
- s32k348_mqfp172
- s32k348_mapbga289
- s32m274_lqfp64
- s32m276_lqfp64

All of the above microcontroller devices are collectively named as S32K3.

Note: MWCT part numbers contain NXP confidential IP for Qi Wireless Power.

2.2 Overview

AUTOSAR (AUTomotive Open System ARchitecture) is an industry partnership working to establish standards for software interfaces and software modules for automobile electronic control systems.

AUTOSAR:

- paves the way for innovative electronic systems that further improve performance, safety and environmental friendliness.
- is a strong global partnership that creates one common standard: "Cooperate on standards, compete on implementation".
- is a key enabling technology to manage the growing electrics/electronics complexity. It aims to be prepared for the upcoming technologies and to improve cost-efficiency without making any compromise with respect to quality.
- facilitates the exchange and update of software and hardware over the service life of the vehicle.

2.3 About This Manual

This Technical Reference employs the following typographical conventions:

- **Boldface** style: Used for important terms, notes and warnings.
- *Italic* style: Used for code snippets in the text. Note that C language modifiers such "const" or "volatile" are sometimes omitted to improve readability of the presented code.

Notes and warnings are shown as below:

Note

This is a note.

Warning

This is a warning

2.4 Acronyms and Definitions

Term	Definition
API	Application Programming Interface
ASM	Assembler
BSMI	Basic Software Make file Interface
C/CPP	C and C++ Source Code
DEM	Diagnostic Event Manager
DET	Development Error Tracer
DMA	Direct Memory Access
ECU	Electronic Control Unit
LSB	Least Signifigant Bit
MCU	Micro Controller Unit
MIDE	Multi Integrated Development Environment
MSB	Most Significant Bit
N/A	Not Applicable
RAM	Random Access Memory
SIU	Systems Integration Unit
SWS	Software Specification
VLE	Variable Length Encoding
XML	Extensible Markup Language
SWT	Software Watchdog Timer

2.5 Reference List

#	Title	Version
1	Specification of Wdg Driver	AUTOSAR Release R21-11
2	S32K3xx Reference Manual	Rev.6, Draft B, 01/2023
3	S32K39 and S32K37 Reference Manual	Rev. 2 Draft A, 11/2022
4	S32M27x Reference Manual	Rev.2, Draft A, — 02/2023
5	S32K3xx Data Sheet	Rev. 6, 11/2022
6	S32K396 Data Sheet	Rev. 1.1 — 08/2022
7	S32M27x Data Sheet	Rev. 2 RC — 12/2022
8	S32K358_0P14E Mask Set Errata	Rev. 28, 9/2022
9	S32K396_0P40E Mask Set Errata	Rev. DEC2022, 12/2022
10	S32K311_0P98C Mask Set Errata	Rev. 6/March/2023, 3/2023
11	S32K312: Mask Set Errata for Mask 0P09C	Rev. 25/April/2022
12	S32K342: Mask Set Errata for Mask 0P97C	Rev. 10, 11/2022
13	S32K3x4: Mask Set Errata for Mask 0P55A/1P55A	Rev. 14/Oct/2022

Chapter 3

Driver

3.1 Requirements

Requirements for this driver are detailed in the Autosar Driver Software Specification document (See Table Reference List).

3.2 Driver Design Summary

Up to three software Watchdog Timers (SWT) with programmable interrupt response are available in S32K3XX. The Software Watchdog Timer (SWT) is a peripheral module that can prevent system lockup in situations such as software getting trapped in a loop or if a bus transaction fails to terminate. When enabled, the SWT requires periodic execution of a watchdog servicing operation. The servicing operation resets the timer to a specified time-out period. If this servicing action does not occur before the timer expires the SWT generates an interrupt or hardware reset. The SWT can be configured to generate a reset or interrupt on an initial time-out, a reset is always generated on a second consecutive time-out. In addition to these modes of operation, the watchdog timer also supports a windowed mode of operation. In this mode, the servicing of the watchdog timer must be performed in the last part of the timeout period defined by the window register. The window is open when the down counter is less than the value in the SWT_WN register. Outside of this window, service sequence writes are invalid accesses and generate a bus error or reset depending on the value of the SWT_CR.RIA. These timeout responses are configurable using the configuration parameter "WdgOperationMode".
The SWT has the following features:

- 32-bit time-out register to set the time-out period
- Programmable selection of window mode or regular servicing
- Programmable selection of reset or interrupt on an initial time-out
- Programmable selection of fixed or keyed servicing
- Master access protection

For more details please refer to device refence manual.

3.3 Hardware Resources

The WDG driver for S32K344, S32K358 and S32K396 uses the SWT hardware IP. The WDG driver for S32M276 uses the SWT and AEWDOG hardware IPs.

3.4 Deviations from Requirements

The driver deviates from the AUTOSAR WDG Driver software specification in some places. The table below identifies the AUTOSAR requirements that are not implemented or out of scope for the WDG Driver.

Term	Definition
N/S	Out of scope
N/I	Not implemented
N/F	Not fully implemented

Below table identifies the AUTOSAR requirements that are not fully implemented, implemented differently or out of scope for the WDG driver.

Requirement	Status	Description	Notes
SWS_Wdg_00055	N/S	The Wdg module for an external watchdog driver shall have source code that is independent of the microcontroller platform.	External module is customer dependant and not in scope.
SWS_Wdg_00034	N/S	The start address of the watchdog trigger routine shall be statically configurable to a fixed memory location by the user. The user needs to take care thatConfigured memory location is valid for the platform on which driver is being implemented on.This configuration parameter shall only be given if supported/needed by the hardware.	Rejection Reason: N/A for any of the available platforms

Requirement	Status	Description	Notes
SWS_Wdg_00076	N/S	To access the external watchdog hardware, the corresponding Wdg module instance shall use the functionality and API of the corresponding handler or driver, e.g. the SPI handler or DIO driver.	External module is customer dependant and not in scope.
SWS_Wdg_00162	N/S	The routine servicing an external watchdog shall be implemented by usage of an own internal hardware timer to be independent from other peripherals or by using a GPT driver callback	External module is customer dependant and not in scope.
SWS_Wdg_00077	N/S	A Wdg module for an external watchdog shall satisfy the same functional requirements and offer the same functional scope as a Wdg module for an internal watchdog. Hence their respective APIs are semantically identical.	External module is customer dependant and not in scope.
SWS_Wdg_00078	N/S	The Wdg module shall add all parameters required for accessing the external watchdog hardware, e.g. the used SPI channel or DIO port, to the module's published parameters and to the module's configuration parameters.	External module is customer dependant and not in scope.
SWS_Wdg_00172	N/S	If more than one watchdog driver instance exits on an ECU (namely an external and an internal one) the API names and instance specific type names specified in this chapter shall be made unique by expansion according to SRS_BSW_00347.	External module is customer dependant and not in scope.
SWS_Wdg_00175	N/S	These requirements are not applicable to this specification.	This requirement is mentioned in the WDG SWS chapter 'Not applicable requirements' so does not apply.
ECUC_Wdg_00118	N/S	Name - WdgTriggerLocation - Parent Container - WdgGeneral - Description - Location (memory address) of the watchdog trigger routine. - Multiplicity - 1 - Type - EcucFunction↩ NameDef - Default value - – - max↩ Length - – - minLength - – - regular↩ Expression - – - Post-Build Variant Value - false - Value Configuration Class - Pre-compile time - X - All Variants - Link time - – - - Post-build time - – - - - Scope / Dependency - scope: localdependency: Only relevant if provided by hardware and needed by the system. -	This paramater functionality is replaced by CPR_RTD_00161.

Requirement	Status	Description	Notes
ECUC_Wdg_00112	N/S	Container Name - WdgExternal↩ Configuration - Description - Configuration items for an external watchdog hardware - Configuration Parameters -	External module is customer dependant and not in scope.
ECUC_Wdg_00113	N/S	Name - WdgExternalContainerRef - Parent Container - WdgExternal↩ Configuration - Description - Reference to eithera DioChannelGroup container in case the hardware watchdog is connected via DIO pinsan Spi↩ SequenceConfiguration container in case the watchdog hardware is accessed via SPI - Multiplicity - 0..1 - Type - Choice reference to [Dio↩ ChannelGroup , SpiSequence] - PostBuild Variant Multiplicity - true - Post-Build Variant Value - true - Multiplicity Configuration Class - Precompile time - X - VARIANT-↩ PRE-COMPILE - Link time - X - VARIANT-LINK-TIME - Post-build time - X - VARIANT-POST-BUILD - Value Configuration Class - Precompile time - X - VARIANT-↩ PRE-COMPILE - Link time - X - VARIANT-LINK-TIME - Post-build time - X - VARIANT-POST-BUILD - Scope / Dependency - scope↩ : localdependency: See DIO resp. SPI SWS -	External module is customer dependant and not in scope.

3.5 Driver Limitations

- AeWdog is not support SetMode function and notification is not implemented by Wdg driver.

3.6 Driver usage and configuration tips

The Wdg driver can function in either Direct Service Mode or Gpt Triggered mode. In Direct Service Mode, the Swt hardware can be serviced directly, while in Gpt Triggered mode, a callback notification is set up so that the Gpt will periodically trigger the Swt hardware.

1. Configure the WDG reference clock from MCU (see parameter WdgClkSrcRef) according to reference point used by the WDG hardware on the platform. The WDG on S32K3XX is clocked by SIRC, so the MCU reference clock must be SIRC.

2. In Gpt Triggered Mode,configure WDG routine used for triggering as a GPT callback (Wdg_Cbk_Gpt↩ NotificationX must be configured as a notification callback for the GPT channel intended for triggering).

3. If there are multiple WDG hardware instances on the platform, the API names will expand according to AUTOSAR requirement SRS_BSW_00347. For example, if there are instances 0 and 1 available on the hardware,then the name of the init functions will be Wdg_43_Instance0_Init and Wdg_43_Instance1_Init instead of Wdg_Init().

4. The Wdg driver can be configured to run from RAM or ROM targets from the WdgRunArea option. The RAM target should be used in case the module dependencies are also run from RAM, such in the case of bootloaders. If the module dependencies code is being run from a flash target, the ROM option needs to be used.

5. In Gpt Triggered Mode, the user must ensure the following conditions are met when servicing the Wdg:

   - Watchdog timeout period and Trigger Condition must not have similar values because of interrupt clashing.
   - Watchdog timeout period must be less than Trigger Condition, in order for the Wdg to be serviced in time.
   - Trigger Condition must be greater than the Servicing period with which Wdg_SetTriggerCondition is called, in order for the Wdg not to expire.
   - To avoid potential clashing of triggering interrupts with the main loop, the user should avoid choosing a Hardware trigger that is equal to or equal to multiples of the Servicing Period.

6. In Direct Service Mode, the Gpt module does not need to be configured and the user must call Wdg_43_↩ InstanceX_Service periodically to service the Wdg in order to avoid the system is reset. The Wdg_Instance↩ X_SetTriggerCondition function is unavailable in this mode. Direct Service Mode can not be used in parallel with Gpt Triggered mode.

3.7 Runtime errors

The driver generates the following DEM errors at runtime.

Function	Error Code	Condition triggering the error
Wdg_43_Instance<Number>_Init	WDG_E_DISABLE_REJECTED	Initialization or mode switch failed because it would disable the watchdog has occurred
Wdg_43_Instance<Number>_↩ SetMode	WDG_E_DISABLE_REJECTED	Initialization or mode switch failed because it would disable the watchdog has occurred
Wdg_43_Instance<Number>_Init	WDG_E_MODE_FAILED	Setting a watchdog mode failed (during initialization or mode switch) has occurred

Function	Error Code	Condition triggering the error
Wdg_43_Instance<Number>_↩ SetMode	WDG_E_MODE_FAILED	Setting a watchdog mode failed (during initialization or mode switch) has occurred

The driver generates the following DET runtime errors at runtime.

Function	Error Code	Condition triggering the error
Wdg_43_Instance<↩ Number>ClearResetRequest	WDG_E_STATUS_TIMEOUT	Osif timeout expired in while the reset request has not been cleared.

3.8 Symbolic Names Disclaimer

All containers having symbolicNameValue set to TRUE in the AUTOSAR schema will generate defines like:

#define <Mip>Conf_<Container_ShortName>_<Container_ID>

For this reason it is forbidden to duplicate the names of such containers across the RTD configurations or to use names that may trigger other compile issues (e.g. match existing `#ifdefs` arguments).

Chapter 4

Tresos Configuration Plug-in

This chapter describes the Tresos configuration plug-in for the driver. All the parameters are described below.

- Module Wdg
  - Container WdgDemEventParameterRefs
    - Reference WDG_E_DISABLE_REJECTED
    - Reference WDG_E_MODE_FAILED
  - Container WdgGeneral
    - Parameter WdgDevErrorDetect
    - Parameter WdgDisableAllowed
    - Parameter WdgEnableUserModeSupport
    - Parameter WdgEnableDirectService
    - Parameter WdgEnableClearResetRequest
    - Parameter WdgEnableMultiCoreSupport
    - Parameter WdgTimeoutMethod
    - Parameter WdgOsifTimeoutVal
    - Parameter WdgIndex
    - Parameter WdgInitialTimeout
    - Parameter WdgMaxTimeout
    - Parameter WdgRunArea
    - Parameter WdgTriggerLocation
    - Parameter WdgCallbackNotification
    - Parameter WdgVersionInfoApi
    - Reference WdgEcucPartitionRef
    - Container AutosarExt
      - Parameter WdgDisableDemReportErrorStatus
  - Container WdgClockReferencePoint
    - Reference WdgClockReference
  - Container WdgSettingsConfig
    - Parameter WdgInstance
    - Parameter WdgDefaultMode
    - Parameter WdgInterruptContentEnable

- Reference WdgExternalTriggerCounterRef
- Container WdgExternalConfiguration
  - Reference WdgExternalContainerRef
- Container WdgSettingsFast
  - Parameter WdgClockValue
  - Parameter WdgMasterAccessProtectionforMaster0
  - Parameter WdgMasterAccessProtectionforMaster1
  - Parameter WdgMasterAccessProtectionforMaster2
  - Parameter WdgMasterAccessProtectionforMaster3
  - Parameter WdgMasterAccessProtectionforMaster4
  - Parameter WdgMasterAccessProtectionforMaster5
  - Parameter WdgMasterAccessProtectionforMaster6
  - Parameter WdgMasterAccessProtectionforMaster7
  - Parameter WdgKeyedService
  - Parameter WdgServiceKeyValue
  - Parameter WdgSoftLockConfiguration
  - Parameter WdgHardLockConfiguration
  - Parameter WdgRunsInStopMode
  - Parameter WdgRunsInDebugMode
  - Parameter WdgOperationMode
  - Parameter WdgResetOnInvalidAccess
  - Parameter WdgClockSelection
  - Parameter WdgTimeoutPeriod
  - Parameter WdgWindowMode
  - Parameter WdgWindowPeriod
  - Reference WdgClkSrcRef
- Container WdgSettingsOff
  - Parameter WdgSoftLockConfiguration
  - Parameter WdgHardLockConfiguration
- Container WdgSettingsSlow
  - Parameter WdgClockValue
  - Parameter WdgMasterAccessProtectionforMaster0
  - Parameter WdgMasterAccessProtectionforMaster1
  - Parameter WdgMasterAccessProtectionforMaster2
  - Parameter WdgMasterAccessProtectionforMaster3
  - Parameter WdgMasterAccessProtectionforMaster4
  - Parameter WdgMasterAccessProtectionforMaster5
  - Parameter WdgMasterAccessProtectionforMaster6
  - Parameter WdgMasterAccessProtectionforMaster7
  - Parameter WdgKeyedService
  - Parameter WdgServiceKeyValue
  - Parameter WdgSoftLockConfiguration
  - Parameter WdgHardLockConfiguration
  - Parameter WdgRunsInStopMode
  - Parameter WdgRunsInDebugMode
  - Parameter WdgOperationMode
  - Parameter WdgResetOnInvalidAccess

        - Parameter WdgClockSelection
        - Parameter WdgTimeoutPeriod
        - Parameter WdgWindowMode
        - Parameter WdgWindowPeriod
        - Reference WdgClkSrcRef
    - Container WdgPublishedInformation
        - Parameter WdgTriggerMode
    - Container CommonPublishedInformation
        - Parameter ArReleaseMajorVersion
        - Parameter ArReleaseMinorVersion
        - Parameter ArReleaseRevisionVersion
        - Parameter ModuleId
        - Parameter SwMajorVersion
        - Parameter SwMinorVersion
        - Parameter SwPatchVersion
        - Parameter VendorApiInfix
        - Parameter VendorId

4.1 Module Wdg

Wdg

Configuration of the Wdg (Watchdog driver) module

Included containers:

- WdgDemEventParameterRefs
- WdgGeneral
- WdgClockReferencePoint
- WdgSettingsConfig
- WdgPublishedInformation
- CommonPublishedInformation

Property	Value
type	ECUC-MODULE-DEF
lowerMultiplicity	1
upperMultiplicity	Infinite
postBuildVariantSupport	true
supportedConfigVariants	VARIANT-LINK-TIME, VARIANT-POST-BUILD, VARIANT-PRE-COMPILE

4.2 Container WdgDemEventParameterRefs

Container for the references to DemEventParameter elements which shall be invoked using the API Dem_SetEventStatus in case the corresponding error occurs. The EventId is taken from the referenced DemEventParameter's DemEventId value.

Included subcontainers:

- None

Property	Value
type	ECUC-PARAM-CONF-CONTAINER-DEF
lowerMultiplicity	0
upperMultiplicity	1
postBuildVariantMultiplicity	false
multiplicityConfigClasses	VARIANT-LINK-TIME: PRE-COMPILE
	VARIANT-POST-BUILD: PRE-COMPILE
	VARIANT-PRE-COMPILE: PRE-COMPILE

4.3 Reference WDG_E_DISABLE_REJECTED

Reference to the DemEventParameter which shall be issued when the error "Initialization or mode switch failed because it would disable the watchdog" has occurred.

Property	Value
type	ECUC-REFERENCE-DEF
origin	AUTOSAR_ECUC
lowerMultiplicity	0
upperMultiplicity	1
postBuildVariantMultiplicity	false
multiplicityConfigClasses	VARIANT-LINK-TIME: PRE-COMPILE
	VARIANT-POST-BUILD: PRE-COMPILE
	VARIANT-PRE-COMPILE: PRE-COMPILE
postBuildVariantValue	false
valueConfigClasses	VARIANT-LINK-TIME: PRE-COMPILE
	VARIANT-POST-BUILD: PRE-COMPILE
	VARIANT-PRE-COMPILE: PRE-COMPILE
requiresSymbolicNameValue	true
destination	/AUTOSAR/EcucDefs/Dem/DemConfigSet/DemEventParameter

4.4 Reference WDG_E_MODE_FAILED

Reference to the DemEventParameter which shall be issued when the error "Setting a watchdog mode failed (during initialization or mode switch)" has occurred.

Property	Value
type	ECUC-REFERENCE-DEF
origin	AUTOSAR_ECUC
lowerMultiplicity	0
upperMultiplicity	1
postBuildVariantMultiplicity	false
multiplicityConfigClasses	VARIANT-LINK-TIME: PRE-COMPILE
	VARIANT-POST-BUILD: PRE-COMPILE
	VARIANT-PRE-COMPILE: PRE-COMPILE
postBuildVariantValue	false
valueConfigClasses	VARIANT-LINK-TIME: PRE-COMPILE
	VARIANT-POST-BUILD: PRE-COMPILE
	VARIANT-PRE-COMPILE: PRE-COMPILE
requiresSymbolicNameValue	true
destination	/AUTOSAR/EcucDefs/Dem/DemConfigSet/DemEventParameter

4.5 Container WdgGeneral

WdgGeneral

All general parameters of the watchdog driver are collected here.

Included subcontainers:

- AutosarExt

Property	Value
type	ECUC-PARAM-CONF-CONTAINER-DEF
lowerMultiplicity	1
upperMultiplicity	1
postBuildVariantMultiplicity	N/A
multiplicityConfigClasses	N/A

4.6 Parameter WdgDevErrorDetect

Wdg Development Error Detect

Compile switch to enable / disable development error detection for this module.

True: Development error detection enabled

False: Development error detection disabled

Property	Value
type	ECUC-BOOLEAN-PARAM-DEF
origin	AUTOSAR_ECUC
symbolicNameValue	false
lowerMultiplicity	1
upperMultiplicity	1
postBuildVariantMultiplicity	N/A
multiplicityConfigClasses	N/A
postBuildVariantValue	false
valueConfigClasses	VARIANT-LINK-TIME: PRE-COMPILE
	VARIANT-POST-BUILD: PRE-COMPILE
	VARIANT-PRE-COMPILE: PRE-COMPILE
defaultValue	false

4.7 Parameter WdgDisableAllowed

Wdg Disable Allowed

Compile switch to allow / forbid disabling the watchdog driver during runtime.

True: Disabling the watchdog driver at runtime is allowed

False:Disabling the watchdog driver at runtime is not allowed

Property	Value
type	ECUC-BOOLEAN-PARAM-DEF
origin	AUTOSAR_ECUC
symbolicNameValue	false
lowerMultiplicity	1
upperMultiplicity	1
postBuildVariantMultiplicity	N/A
multiplicityConfigClasses	N/A
postBuildVariantValue	false
valueConfigClasses	VARIANT-LINK-TIME: PRE-COMPILE
	VARIANT-POST-BUILD: PRE-COMPILE
	VARIANT-PRE-COMPILE: PRE-COMPILE
defaultValue	false

4.8 Parameter WdgEnableUserModeSupport

Wdg Enable User Mode Support

When this parameter is enabled, the Wdg module will adapt to run from User Mode, with the following measure : configuring REG_PROT for Wdg IPs so that the registers under protection can be accessed from user mode by setting UAA bit in REG_PROT_GCR to 1 for more information and availability on this platform, please see chapter "User Mode Support" in IM.

True: Wdg module will adapt to run from User Mode.

False:Wdg module will not apdapt to run from User Mode.

If this parameter is not ediatable, that means Wdg driver can run in User Mode.

Property	Value
type	ECUC-BOOLEAN-PARAM-DEF
origin	NXP
symbolicNameValue	false
lowerMultiplicity	1
upperMultiplicity	1
postBuildVariantMultiplicity	N/A
multiplicityConfigClasses	N/A
postBuildVariantValue	false
valueConfigClasses	VARIANT-LINK-TIME: PRE-COMPILE
	VARIANT-POST-BUILD: PRE-COMPILE
	VARIANT-PRE-COMPILE: PRE-COMPILE
defaultValue	false

4.9 Parameter WdgEnableDirectService

Wdg Enable Direct Service

When this parameter is enabled, the Wdg module can be serviced directly, without using an external hardware trigger.

True: Wdg module can be serviced directly.

False:Wdg module can not be serviced directly.

Property	Value
type	ECUC-BOOLEAN-PARAM-DEF
origin	NXP
symbolicNameValue	false
lowerMultiplicity	1
upperMultiplicity	1
postBuildVariantMultiplicity	N/A
multiplicityConfigClasses	N/A
postBuildVariantValue	false
valueConfigClasses	VARIANT-LINK-TIME: PRE-COMPILE
	VARIANT-POST-BUILD: PRE-COMPILE
	VARIANT-PRE-COMPILE: PRE-COMPILE
defaultValue	false

4.10 Parameter WdgEnableClearResetRequest

Wdg Enable Clear Reset Request

When this parameter is enabled, the Wdg module can clear a pending reset request

which has occurred on a Wdg timeout.

True: Wdg module can clear a reset request.

False:Wdg module can not clear a reset request.

Property	Value
type	ECUC-BOOLEAN-PARAM-DEF
origin	NXP
symbolicNameValue	false
lowerMultiplicity	1
upperMultiplicity	1
postBuildVariantMultiplicity	N/A
multiplicityConfigClasses	N/A
postBuildVariantValue	false
valueConfigClasses	VARIANT-LINK-TIME: PRE-COMPILE
	VARIANT-POST-BUILD: PRE-COMPILE
	VARIANT-PRE-COMPILE: PRE-COMPILE
defaultValue	false

4.11 Parameter WdgEnableMultiCoreSupport

Wdg Enable Multi-Core Support

When this parameter is enabled, the Wdg module will adapt to run in Multi-core

True: Wdg module will adapt to run in Multi-core.

False:Wdg module will not apdapt to in Multi-core.

Property	Value
type	ECUC-BOOLEAN-PARAM-DEF
origin	NXP
symbolicNameValue	false
lowerMultiplicity	1
upperMultiplicity	1
postBuildVariantMultiplicity	N/A
multiplicityConfigClasses	N/A
postBuildVariantValue	false
valueConfigClasses	VARIANT-LINK-TIME: PRE-COMPILE
	VARIANT-POST-BUILD: PRE-COMPILE
	VARIANT-PRE-COMPILE: PRE-COMPILE
defaultValue	false

4.12 Parameter WdgTimeoutMethod

WdgTimeoutMethod

Configures the timeout method.

Based on this selection a certain timeout method from OsIf will be used in the driver.

Note: Editable when 'Wdg Enable Clear Reset Request' node that require timeout are enabled.

Note: If OSIF_COUNTER_SYSTEM or OSIF_COUNTER_CUSTOM are selected make sure the corresponding timer is enabled in OsIf General configuration.

Note: Implementation Specific Parameter.

Property	Value
type	ECUC-ENUMERATION-PARAM-DEF
origin	NXP
symbolicNameValue	false
lowerMultiplicity	1
upperMultiplicity	1

Property	Value
postBuildVariantMultiplicity	N/A
multiplicityConfigClasses	N/A
postBuildVariantValue	false
valueConfigClasses	VARIANT-LINK-TIME: PRE-COMPILE
	VARIANT-PRE-COMPILE: PRE-COMPILE
	VARIANT-POST-BUILD: PRE-COMPILE
defaultValue	OSIF_COUNTER_DUMMY
literals	['OSIF_COUNTER_DUMMY', 'OSIF_COUNTER_SYSTEM', 'OSIF_↩ COUNTER_CUSTOM']

4.13 Parameter WdgOsifTimeoutVal

Wdg Osif timeout value.

Note: Editable when 'Wdg Enable Clear Reset Request' node that require timeout are enabled.

Property	Value
type	ECUC-INTEGER-PARAM-DEF
origin	NXP
symbolicNameValue	false
lowerMultiplicity	1
upperMultiplicity	1
postBuildVariantMultiplicity	N/A
multiplicityConfigClasses	N/A
postBuildVariantValue	false
valueConfigClasses	VARIANT-LINK-TIME: PRE-COMPILE
	VARIANT-POST-BUILD: PRE-COMPILE
	VARIANT-PRE-COMPILE: PRE-COMPILE
defaultValue	3000
max	4294967295
min	0

4.14 Parameter WdgIndex

Wdg Instance 0 Index

Represents the watchdog driver's ID for Instance 0 so that it can be referenced by the watchdog interface.

Property	Value
type	ECUC-INTEGER-PARAM-DEF

Property	Value
origin	AUTOSAR_ECUC
symbolicNameValue	true
lowerMultiplicity	1
upperMultiplicity	1
postBuildVariantMultiplicity	N/A
multiplicityConfigClasses	N/A
postBuildVariantValue	false
valueConfigClasses	VARIANT-LINK-TIME: PRE-COMPILE
	VARIANT-POST-BUILD: PRE-COMPILE
	VARIANT-PRE-COMPILE: PRE-COMPILE
defaultValue	0
max	255
min	0

4.15 Parameter WdgInitialTimeout

Wdg Initial Timeout

The initial timeout (sec) for the trigger condition to be initialized during Init function. It shall be not larger than WdgMaxTimeout.

Property	Value
type	ECUC-FLOAT-PARAM-DEF
origin	AUTOSAR_ECUC
symbolicNameValue	false
lowerMultiplicity	1
upperMultiplicity	1
postBuildVariantMultiplicity	N/A
multiplicityConfigClasses	N/A
postBuildVariantValue	false
valueConfigClasses	VARIANT-LINK-TIME: PRE-COMPILE
	VARIANT-POST-BUILD: PRE-COMPILE
	VARIANT-PRE-COMPILE: PRE-COMPILE
defaultValue	0.0
max	65.535
min	0.0

4.16 Parameter WdgMaxTimeout

Wdg Max Timeout

The maximum timeout (sec) to which the watchdog trigger condition can be initialized.

Property	Value
type	ECUC-FLOAT-PARAM-DEF
origin	AUTOSAR_ECUC
symbolicNameValue	false
lowerMultiplicity	1
upperMultiplicity	1
postBuildVariantMultiplicity	N/A
multiplicityConfigClasses	N/A
postBuildVariantValue	false
valueConfigClasses	VARIANT-LINK-TIME: PRE-COMPILE
	VARIANT-POST-BUILD: PRE-COMPILE
	VARIANT-PRE-COMPILE: PRE-COMPILE
defaultValue	0.0
max	65.535
min	0.0

4.17 Parameter WdgRunArea

Wdg Run Area

Represents the watchdog driver execution area is either from ROM(Flash) or RAM as required with the particular microcontroller.

This should be set to RAM when other Wdg dependecies, such as Dem and Gpt, are also running from RAM. Otherwise, ROM should be selected.

Property	Value
type	ECUC-ENUMERATION-PARAM-DEF
origin	AUTOSAR_ECUC
symbolicNameValue	false
lowerMultiplicity	1
upperMultiplicity	1
postBuildVariantMultiplicity	N/A
multiplicityConfigClasses	N/A
postBuildVariantValue	false
valueConfigClasses	VARIANT-LINK-TIME: PRE-COMPILE
	VARIANT-POST-BUILD: PRE-COMPILE
	VARIANT-PRE-COMPILE: PRE-COMPILE
defaultValue	ROM
literals	['RAM', 'ROM']

4.18 Parameter WdgTriggerLocation

Wdg Trigger Location

Location (memory address) of the watchdog trigger routine.

Note:Not supported by the current hardware.

Property	Value
type	ECUC-FUNCTION-NAME-DEF
origin	NXP
symbolicNameValue	false
lowerMultiplicity	1
upperMultiplicity	1
postBuildVariantMultiplicity	N/A
multiplicityConfigClasses	N/A
postBuildVariantValue	false
valueConfigClasses	VARIANT-LINK-TIME: PRE-COMPILE
	VARIANT-POST-BUILD: PRE-COMPILE
	VARIANT-PRE-COMPILE: PRE-COMPILE
defaultValue	NULL_PTR

4.19 Parameter WdgCallbackNotification

Vendor specific:

WdgCallbackNotification

Callback notification for the ISR Wdg_Swt0_Isr function

Property	Value
type	ECUC-FUNCTION-NAME-DEF
origin	NXP
symbolicNameValue	false
lowerMultiplicity	1
upperMultiplicity	1
postBuildVariantMultiplicity	N/A
multiplicityConfigClasses	N/A
postBuildVariantValue	true
valueConfigClasses	VARIANT-LINK-TIME: LINK
	VARIANT-PRE-COMPILE: PRE-COMPILE
	VARIANT-POST-BUILD: POST-BUILD
defaultValue	NULL_PTR

4.20 Parameter WdgVersionInfoApi

Wdg VersionInfo Api

Compile switch to enable or disable the version information API.

True: API enabled

False:API disabled

Property	Value
type	ECUC-BOOLEAN-PARAM-DEF
origin	AUTOSAR_ECUC
symbolicNameValue	false
lowerMultiplicity	1
upperMultiplicity	1
postBuildVariantMultiplicity	N/A
multiplicityConfigClasses	N/A
postBuildVariantValue	false
valueConfigClasses	VARIANT-LINK-TIME: PRE-COMPILE
	VARIANT-POST-BUILD: PRE-COMPILE
	VARIANT-PRE-COMPILE: PRE-COMPILE
defaultValue	true

4.21 Reference WdgEcucPartitionRef

Maps the Wdg driver to zero or one ECUC partition to make the driver API available in this partition.

Property	Value
type	ECUC-REFERENCE-DEF
origin	AUTOSAR_ECUC
lowerMultiplicity	0
upperMultiplicity	1
postBuildVariantMultiplicity	true
multiplicityConfigClasses	VARIANT-LINK-TIME: PRE-COMPILE
	VARIANT-POST-BUILD: PRE-COMPILE
	VARIANT-PRE-COMPILE: PRE-COMPILE
postBuildVariantValue	true
valueConfigClasses	VARIANT-POST-BUILD: PRE-COMPILE
	VARIANT-PRE-COMPILE: PRE-COMPILE
	VARIANT-LINK-TIME: PRE-COMPILE
requiresSymbolicNameValue	False
destination	/AUTOSAR/EcucDefs/EcuC/EcucPartitionCollection/EcucPartition

4.22 Container AutosarExt

Autosar Extension settings.

Included subcontainers:

- None

Property	Value
type	ECUC-PARAM-CONF-CONTAINER-DEF
lowerMultiplicity	1
upperMultiplicity	1
postBuildVariantMultiplicity	N/A
multiplicityConfigClasses	N/A

4.23 Parameter WdgDisableDemReportErrorStatus

Enable/Disable Dem error reporting.

Property	Value
type	ECUC-BOOLEAN-PARAM-DEF
origin	NXP
symbolicNameValue	false
lowerMultiplicity	1
upperMultiplicity	1
postBuildVariantMultiplicity	N/A
multiplicityConfigClasses	N/A
postBuildVariantValue	false
valueConfigClasses	VARIANT-LINK-TIME: PRE-COMPILE
	VARIANT-POST-BUILD: PRE-COMPILE
	VARIANT-PRE-COMPILE: PRE-COMPILE
defaultValue	true

4.24 Container WdgClockReferencePoint

This container contains a parameter, which represents a reference to a container of the type McuClockReferencePoint (defined in module MCU).

If the cip is trimmed (internal RC oscillator clock FIRC running at 48MHz frequency), then configure in MCU a reference point of FIRC type

with 48MHz frequency. If the cip is not trimmed (FIRC running at frequency different than 48MHz), then configure in MCU a reference point

of CUSTOM type with the real FIRC frequency measured on the cip.

Included subcontainers:

- None

Property	Value
type	ECUC-PARAM-CONF-CONTAINER-DEF
lowerMultiplicity	1
upperMultiplicity	Infinite
postBuildVariantMultiplicity	false
multiplicityConfigClasses	VARIANT-LINK-TIME: PRE-COMPILE
	VARIANT-PRE-COMPILE: PRE-COMPILE
	VARIANT-POST-BUILD: PRE-COMPILE

4.25 Reference WdgClockReference

Reference to a container of the type McuClockReferencePoint, to select an input clock.

Property	Value
type	ECUC-REFERENCE-DEF
origin	NXP
lowerMultiplicity	1
upperMultiplicity	1
postBuildVariantMultiplicity	N/A
multiplicityConfigClasses	N/A
postBuildVariantValue	false
valueConfigClasses	VARIANT-LINK-TIME: PRE-COMPILE
	VARIANT-PRE-COMPILE: PRE-COMPILE
	VARIANT-POST-BUILD: PRE-COMPILE
requiresSymbolicNameValue	False
destination	/AUTOSAR/EcucDefs/Mcu/McuModuleConfiguration/McuClockSetting↩ Config/McuClockReferencePoint

4.26 Container WdgSettingsConfig

WdgSettingsConfig

Configuration items for the different watchdog settings, including those for external watchdog hardware.

Included subcontainers:

- WdgExternalConfiguration
- WdgSettingsFast
- WdgSettingsOff
- WdgSettingsSlow

Property	Value
type	ECUC-PARAM-CONF-CONTAINER-DEF
lowerMultiplicity	1
upperMultiplicity	1
postBuildVariantMultiplicity	N/A
multiplicityConfigClasses	N/A

4.27 Parameter WdgInstance

Vendor specific:

Wdg Hardware Instance

Select specific hardware instance for watchdog driver initialization.

Property	Value
type	ECUC-ENUMERATION-PARAM-DEF
origin	NXP
symbolicNameValue	false
lowerMultiplicity	1
upperMultiplicity	1
postBuildVariantMultiplicity	N/A
multiplicityConfigClasses	N/A
postBuildVariantValue	false
valueConfigClasses	VARIANT-LINK-TIME: PRE-COMPILE
	VARIANT-PRE-COMPILE: PRE-COMPILE
	VARIANT-POST-BUILD: PRE-COMPILE
defaultValue	SWT0
literals	['SWT0']

4.28 Parameter WdgDefaultMode

Wdg Default Mode

Default mode for watchdog driver initialization.

Property	Value
type	ECUC-ENUMERATION-PARAM-DEF
origin	AUTOSAR_ECUC
symbolicNameValue	false
lowerMultiplicity	1
upperMultiplicity	1
postBuildVariantMultiplicity	N/A
multiplicityConfigClasses	N/A
postBuildVariantValue	true
valueConfigClasses	VARIANT-LINK-TIME: LINK
	VARIANT-PRE-COMPILE: PRE-COMPILE
	VARIANT-POST-BUILD: POST-BUILD
defaultValue	WDGIF_SLOW_MODE
literals	['WDGIF_FAST_MODE', 'WDGIF_OFF_MODE', 'WDGIF_SLOW_MODE']

4.29 Parameter WdgInterruptContentEnable

Vendor specific:

Wdg Interrupt Enable

This parametter is used to generate interrupt content for each SWT.

True = Interrupt content is generated.

False = Interrupt content is not generated.

Property	Value
type	ECUC-BOOLEAN-PARAM-DEF
origin	NXP
symbolicNameValue	false
lowerMultiplicity	1
upperMultiplicity	1
postBuildVariantMultiplicity	N/A
multiplicityConfigClasses	N/A
postBuildVariantValue	false
valueConfigClasses	VARIANT-LINK-TIME: PRE-COMPILE
	VARIANT-PRE-COMPILE: PRE-COMPILE
	VARIANT-POST-BUILD: PRE-COMPILE
defaultValue	true

4.30 Reference WdgExternalTriggerCounterRef

Vendor specific:

Wdg External Trigger Counter

Reference to the GptChannel configuration which set for the watchdog servicing routine implementation.

Property	Value
type	ECUC-CHOICE-REFERENCE-DEF
origin	NXP
lowerMultiplicity	1
upperMultiplicity	1
postBuildVariantMultiplicity	N/A
multiplicityConfigClasses	N/A
postBuildVariantValue	true
valueConfigClasses	VARIANT-LINK-TIME: LINK
	VARIANT-PRE-COMPILE: PRE-COMPILE
	VARIANT-POST-BUILD: POST-BUILD
requiresSymbolicNameValue	False
destinations	['/AUTOSAR/EcucDefs/Gpt/GptChannelConfigSet/GptChannelConfiguration']

4.31 Container WdgExternalConfiguration

WdgExternalConfiguration

Configuration items for an external watchdog hardware

Included subcontainers:

- None

Property	Value
type	ECUC-PARAM-CONF-CONTAINER-DEF
lowerMultiplicity	0
upperMultiplicity	1
postBuildVariantMultiplicity	false
multiplicityConfigClasses	VARIANT-LINK-TIME: PRE-COMPILE
	VARIANT-PRE-COMPILE: PRE-COMPILE
	VARIANT-POST-BUILD: PRE-COMPILE

4.32 Reference WdgExternalContainerRef

WdgExternalContainerRef

Reference to either

- a DioChannelGroup container in case the hardware watchdog is connected via DIO pins

- a SpiSequenceConfiguration container in case the watchdog hardware is accessed via SPI

Note:This parameter is not used by current implementation

Property	Value
type	ECUC-CHOICE-REFERENCE-DEF
origin	AUTOSAR_ECUC
lowerMultiplicity	0
upperMultiplicity	1
postBuildVariantMultiplicity	true
multiplicityConfigClasses	VARIANT-LINK-TIME: LINK
	VARIANT-PRE-COMPILE: PRE-COMPILE
	VARIANT-POST-BUILD: POST-BUILD
postBuildVariantValue	true
valueConfigClasses	VARIANT-LINK-TIME: LINK
	VARIANT-PRE-COMPILE: PRE-COMPILE
	VARIANT-POST-BUILD: POST-BUILD
requiresSymbolicNameValue	False
destinations	['/AUTOSAR/EcucDefs/Dio/DioConfig/DioPort/DioChannelGroup', '/↩ AUTOSAR/EcucDefs/Spi/SpiDriver/SpiSequence']

4.33 Container WdgSettingsFast

WdgSettingsFast

Hardware dependent settings for the watchdog driver's fast mode.

Included subcontainers:

- None

Property	Value
type	ECUC-PARAM-CONF-CONTAINER-DEF
lowerMultiplicity	1
upperMultiplicity	1
postBuildVariantMultiplicity	N/A
multiplicityConfigClasses	N/A

4.34 Parameter WdgClockValue

Vendor specific:

Wdg Clock Value

This is the Implementation Specific parameter.

Indicates Wdg Clock Value in KHz (internal oscilator clock value is by default 128KHz).

Property	Value
type	ECUC-INTEGER-PARAM-DEF
origin	NXP
symbolicNameValue	false
lowerMultiplicity	1
upperMultiplicity	1
postBuildVariantMultiplicity	N/A
multiplicityConfigClasses	N/A
postBuildVariantValue	true
valueConfigClasses	VARIANT-LINK-TIME: LINK
	VARIANT-PRE-COMPILE: PRE-COMPILE
	VARIANT-POST-BUILD: POST-BUILD
defaultValue	0
max	133000
min	0

4.35 Parameter WdgMasterAccessProtectionforMaster0

Vendor specific:

Master Access Protection for Master 0. .

False = Access for the master is not enabled.

True = Access for the master is enabled

NoteThis is an Implementation Specific Parameter.

Property	Value
type	ECUC-BOOLEAN-PARAM-DEF
origin	NXP
symbolicNameValue	false
lowerMultiplicity	1
upperMultiplicity	1
postBuildVariantMultiplicity	N/A

Property	Value
multiplicityConfigClasses	N/A
postBuildVariantValue	false
valueConfigClasses	VARIANT-LINK-TIME: PRE-COMPILE
	VARIANT-POST-BUILD: PRE-COMPILE
	VARIANT-PRE-COMPILE: PRE-COMPILE
defaultValue	true

4.36 Parameter WdgMasterAccessProtectionforMaster1

Vendor specific:

Master Access Protection for Master 1.

False = Access for the master is not enabled.

True = Access for the master is enabled

NoteThis is an Implementation Specific Parameter.

Property	Value
type	ECUC-BOOLEAN-PARAM-DEF
origin	NXP
symbolicNameValue	false
lowerMultiplicity	1
upperMultiplicity	1
postBuildVariantMultiplicity	N/A
multiplicityConfigClasses	N/A
postBuildVariantValue	false
valueConfigClasses	VARIANT-LINK-TIME: PRE-COMPILE
	VARIANT-POST-BUILD: PRE-COMPILE
	VARIANT-PRE-COMPILE: PRE-COMPILE
defaultValue	true

4.37 Parameter WdgMasterAccessProtectionforMaster2

Vendor specific:

Master Access Protection for Master 2.

False = Access for the master is not enabled.

True = Access for the master is enabled

NoteThis is an Implementation Specific Parameter.

Property	Value
type	ECUC-BOOLEAN-PARAM-DEF
origin	NXP
symbolicNameValue	false
lowerMultiplicity	1
upperMultiplicity	1
postBuildVariantMultiplicity	N/A
multiplicityConfigClasses	N/A
postBuildVariantValue	false
valueConfigClasses	VARIANT-LINK-TIME: PRE-COMPILE
	VARIANT-POST-BUILD: PRE-COMPILE
	VARIANT-PRE-COMPILE: PRE-COMPILE
defaultValue	true

4.38 Parameter WdgMasterAccessProtectionforMaster3

Vendor specific:

Master Access Protection for Master 3.

False = Access for the master is not enabled.

True = Access for the master is enabled

NoteThis is an Implementation Specific Parameter.

Property	Value
type	ECUC-BOOLEAN-PARAM-DEF
origin	NXP
symbolicNameValue	false
lowerMultiplicity	1
upperMultiplicity	1
postBuildVariantMultiplicity	N/A
multiplicityConfigClasses	N/A
postBuildVariantValue	false
valueConfigClasses	VARIANT-LINK-TIME: PRE-COMPILE
	VARIANT-POST-BUILD: PRE-COMPILE
	VARIANT-PRE-COMPILE: PRE-COMPILE
defaultValue	true

4.39 Parameter WdgMasterAccessProtectionforMaster4

Vendor specific:

Master Access Protection for Master 4.

False = Access for the master is not enabled.

True = Access for the master is enabled

NoteThis is an Implementation Specific Parameter.

Property	Value
type	ECUC-BOOLEAN-PARAM-DEF
origin	NXP
symbolicNameValue	false
lowerMultiplicity	1
upperMultiplicity	1
postBuildVariantMultiplicity	N/A
multiplicityConfigClasses	N/A
postBuildVariantValue	false
valueConfigClasses	VARIANT-LINK-TIME: PRE-COMPILE
	VARIANT-POST-BUILD: PRE-COMPILE
	VARIANT-PRE-COMPILE: PRE-COMPILE
defaultValue	true

4.40 Parameter WdgMasterAccessProtectionforMaster5

Vendor specific:

Master Access Protection for Master 5.

False = Access for the master is not enabled.

True = Access for the master is enabled

NoteThis is an Implementation Specific Parameter.

Property	Value
type	ECUC-BOOLEAN-PARAM-DEF
origin	NXP
symbolicNameValue	false
lowerMultiplicity	1
upperMultiplicity	1
postBuildVariantMultiplicity	N/A

Property	Value
multiplicityConfigClasses	N/A
postBuildVariantValue	false
valueConfigClasses	VARIANT-LINK-TIME: PRE-COMPILE
	VARIANT-POST-BUILD: PRE-COMPILE
	VARIANT-PRE-COMPILE: PRE-COMPILE
defaultValue	true

4.41 Parameter WdgMasterAccessProtectionforMaster6

Vendor specific:

Master Access Protection for Master 6.

False = Access for the master is not enabled.

True = Access for the master is enabled

NoteThis is an Implementation Specific Parameter.

Property	Value
type	ECUC-BOOLEAN-PARAM-DEF
origin	NXP
symbolicNameValue	false
lowerMultiplicity	1
upperMultiplicity	1
postBuildVariantMultiplicity	N/A
multiplicityConfigClasses	N/A
postBuildVariantValue	false
valueConfigClasses	VARIANT-LINK-TIME: PRE-COMPILE
	VARIANT-POST-BUILD: PRE-COMPILE
	VARIANT-PRE-COMPILE: PRE-COMPILE
defaultValue	true

4.42 Parameter WdgMasterAccessProtectionforMaster7

Vendor specific:

Master Access Protection for Master 7.

False = Access for the master is not enabled.

True = Access for the master is enabled

NoteThis is an Implementation Specific Parameter.

Property	Value
type	ECUC-BOOLEAN-PARAM-DEF
origin	NXP
symbolicNameValue	false
lowerMultiplicity	1
upperMultiplicity	1
postBuildVariantMultiplicity	N/A
multiplicityConfigClasses	N/A
postBuildVariantValue	false
valueConfigClasses	VARIANT-LINK-TIME: PRE-COMPILE
	VARIANT-POST-BUILD: PRE-COMPILE
	VARIANT-PRE-COMPILE: PRE-COMPILE
defaultValue	true

4.43 Parameter WdgKeyedService

Vendor specific:

Fixed Service Sequence or Keyed Service Mode .

False = Fixed Service Sequence, the fixed sequence 0xA602, 0xB480 is used to service the watchdog.

True = Keyed Service Mode, two pseudorandom key values are used to service the watchdog.

NoteThis is an Implementation Specific Parameter.

Property	Value
type	ECUC-BOOLEAN-PARAM-DEF
origin	NXP
symbolicNameValue	false
lowerMultiplicity	1
upperMultiplicity	1
postBuildVariantMultiplicity	N/A
multiplicityConfigClasses	N/A
postBuildVariantValue	false
valueConfigClasses	VARIANT-LINK-TIME: PRE-COMPILE
	VARIANT-POST-BUILD: PRE-COMPILE
	VARIANT-PRE-COMPILE: PRE-COMPILE
defaultValue	false

4.44 Parameter WdgServiceKeyValue

Vendor specific:

Service Key

This value is the initial service key value used in keyed service mode.

If SWT_CR[KEY] is set, the next key value to be written to the SWT_SR is (17*SK+3) mod 2^16.

Property	Value
type	ECUC-INTEGER-PARAM-DEF
origin	NXP
symbolicNameValue	false
lowerMultiplicity	1
upperMultiplicity	1
postBuildVariantMultiplicity	N/A
multiplicityConfigClasses	N/A
postBuildVariantValue	false
valueConfigClasses	VARIANT-LINK-TIME: PRE-COMPILE
	VARIANT-POST-BUILD: PRE-COMPILE
	VARIANT-PRE-COMPILE: PRE-COMPILE
defaultValue	0
max	65535
min	0

4.45 Parameter WdgSoftLockConfiguration

Vendor specific:

SoftLockConfiguration

This is the Implementation Specific parameter.Soft Lock for the Software Watchdog Timer Control (SWTCR) Register

Enabled : SWTCR can be read or written.

Disabled: SWTCR can be read only.

An unlock sequence should be written into service register before this register can again be written.

The setting of this switch is intended to prevent accidental writes of the SWTCR from changing the defined system watchdog configuration.

Property	Value
type	ECUC-BOOLEAN-PARAM-DEF

Property	Value
origin	NXP
symbolicNameValue	false
lowerMultiplicity	1
upperMultiplicity	1
postBuildVariantMultiplicity	N/A
multiplicityConfigClasses	N/A
postBuildVariantValue	true
valueConfigClasses	VARIANT-LINK-TIME: LINK
	VARIANT-PRE-COMPILE: PRE-COMPILE
	VARIANT-POST-BUILD: POST-BUILD
defaultValue	false

4.46 Parameter WdgHardLockConfiguration

Vendor specific:

Wdg Read Only

This is the Implementation Specific parameter.HardLock for the Software Watchdog Timer Control (SWTCR) Register

Enabled : SWTCR can be read or written.

Disabled: SWTCR can be read only.

A system reset is required before this register can again be written.

The setting of this switch is intended to prevent accidental writes of the SWTCR from changing the defined system watchdog configuration.

Property	Value
type	ECUC-BOOLEAN-PARAM-DEF
origin	NXP
symbolicNameValue	false
lowerMultiplicity	1
upperMultiplicity	1
postBuildVariantMultiplicity	N/A
multiplicityConfigClasses	N/A
postBuildVariantValue	true
valueConfigClasses	VARIANT-LINK-TIME: LINK
	VARIANT-PRE-COMPILE: PRE-COMPILE
	VARIANT-POST-BUILD: POST-BUILD
defaultValue	false

4.47 Parameter WdgRunsInStopMode

Vendor specific:

Wdg Runs in Stop Mode

This is the Implementation Specific parameter.

Enabled: SWT continues to count even while the processor core is in stop mode.

Disabled: SWT stops counting if the processor core is in stop mode.

Note: The 'WdgRunsInStopMode' parameter specifies if the watchdog timer should run or not while the clock to the core is halted.

This is true only for the STOP0 mode of the controller. It will always run while the controller is in the HALT0 mode.

Property	Value
type	ECUC-BOOLEAN-PARAM-DEF
origin	NXP
symbolicNameValue	false
lowerMultiplicity	1
upperMultiplicity	1
postBuildVariantMultiplicity	N/A
multiplicityConfigClasses	N/A
postBuildVariantValue	true
valueConfigClasses	VARIANT-LINK-TIME: LINK
	VARIANT-PRE-COMPILE: PRE-COMPILE
	VARIANT-POST-BUILD: POST-BUILD
defaultValue	false

4.48 Parameter WdgRunsInDebugMode

Vendor specific:

Wdg Runs In Debug Mode

This is the Implementation Specific parameter.

Enabled: SWT continues to count even while the device enters the debug mode.

Disabled: SWT stops counting if the processor core when the device enters the debug mode

Property	Value
type	ECUC-BOOLEAN-PARAM-DEF
origin	NXP

Property	Value
symbolicNameValue	false
lowerMultiplicity	1
upperMultiplicity	1
postBuildVariantMultiplicity	N/A
multiplicityConfigClasses	N/A
postBuildVariantValue	true
valueConfigClasses	VARIANT-LINK-TIME: LINK
	VARIANT-PRE-COMPILE: PRE-COMPILE
	VARIANT-POST-BUILD: POST-BUILD
defaultValue	false

4.49 Parameter WdgOperationMode

Vendor specific:

Wdg Operation Mode

This is the Implementation Specific parameter.

ResetOnTimeOut: Generate a reset on a time-out.

Interrupt: Generate an interrupt on an initial time-out, reset on a second consecutive time-out.

Property	Value
type	ECUC-ENUMERATION-PARAM-DEF
origin	NXP
symbolicNameValue	false
lowerMultiplicity	1
upperMultiplicity	1
postBuildVariantMultiplicity	N/A
multiplicityConfigClasses	N/A
postBuildVariantValue	true
valueConfigClasses	VARIANT-LINK-TIME: LINK
	VARIANT-PRE-COMPILE: PRE-COMPILE
	VARIANT-POST-BUILD: POST-BUILD
defaultValue	ResetOnTimeOut
literals	['ResetOnTimeOut', 'Interrupt']

4.50 Parameter WdgResetOnInvalidAccess

Vendor specific:

Wdg Reset on Invalid Access

If window mode is enabled, the service sequence must be

performed in the last part of the window time out period. The window is open when

the down counter is less than the value in the SWT_WN register. Outside of this window,

service sequence writes are invalid access and generate:

BusError: Invalid access to the SWT generates a bus error.

SystemReset: Invalid access to the SWT causes a system reset if WEN=1.

Property	Value
type	ECUC-ENUMERATION-PARAM-DEF
origin	NXP
symbolicNameValue	false
lowerMultiplicity	1
upperMultiplicity	1
postBuildVariantMultiplicity	N/A
multiplicityConfigClasses	N/A
postBuildVariantValue	true
valueConfigClasses	VARIANT-LINK-TIME: LINK
	VARIANT-PRE-COMPILE: PRE-COMPILE
	VARIANT-POST-BUILD: POST-BUILD
defaultValue	SystemReset
literals	['BusError', 'SystemReset']

4.51 Parameter WdgClockSelection

Vendor specific:

Wdg Clock Selection

The value of the clock need to

be set up in the Wdg/WdgGeneral/WdgClockValue.

The value set up in the WdgClockValue will be used

by all the configurations and it is a precompile

parameter.

Property	Value
type	ECUC-ENUMERATION-PARAM-DEF
origin	NXP
symbolicNameValue	false
lowerMultiplicity	1
upperMultiplicity	1
postBuildVariantMultiplicity	N/A
multiplicityConfigClasses	N/A
postBuildVariantValue	true
valueConfigClasses	VARIANT-LINK-TIME: LINK
	VARIANT-PRE-COMPILE: PRE-COMPILE
	VARIANT-POST-BUILD: POST-BUILD
defaultValue	OscillatorClock
literals	['OscillatorClock', 'SystemClock']

4.52 Parameter WdgTimeoutPeriod

Vendor specific:

Wdg Timeout Period

Wdg Timeout Period

Property	Value
type	ECUC-FLOAT-PARAM-DEF
origin	NXP
symbolicNameValue	false
lowerMultiplicity	1
upperMultiplicity	1
postBuildVariantMultiplicity	N/A
multiplicityConfigClasses	N/A
postBuildVariantValue	true
valueConfigClasses	VARIANT-LINK-TIME: LINK
	VARIANT-PRE-COMPILE: PRE-COMPILE
	VARIANT-POST-BUILD: POST-BUILD
defaultValue	0.002
max	134217.72796875
min	9.375E-5

4.53 Parameter WdgWindowMode

Vendor specific:

Wdg WindowMode.

Disabled: Regular mode, service sequence can be done at any time.

Enabled : Windowed mode, the service sequence is only valid when the down counter is less than value in the SWTWN register.

Property	Value
type	ECUC-BOOLEAN-PARAM-DEF
origin	NXP
symbolicNameValue	false
lowerMultiplicity	1
upperMultiplicity	1
postBuildVariantMultiplicity	N/A
multiplicityConfigClasses	N/A
postBuildVariantValue	true
valueConfigClasses	VARIANT-LINK-TIME: LINK
	VARIANT-PRE-COMPILE: PRE-COMPILE
	VARIANT-POST-BUILD: POST-BUILD
defaultValue	false

4.54 Parameter WdgWindowPeriod

Vendor specific:

Wdg Window Period

This is the Implementation Specific parameter.

Window start value. When window mode is enabled, the service sequence can only be written when

the internal down counter is less than this value.

Property	Value
type	ECUC-FLOAT-PARAM-DEF
origin	NXP
symbolicNameValue	false
lowerMultiplicity	1
upperMultiplicity	1
postBuildVariantMultiplicity	N/A
multiplicityConfigClasses	N/A
postBuildVariantValue	true
valueConfigClasses	VARIANT-LINK-TIME: LINK
	VARIANT-PRE-COMPILE: PRE-COMPILE
	VARIANT-POST-BUILD: POST-BUILD
defaultValue	0.0
max	134217.72796875
min	0.0

4.55 Reference WdgClkSrcRef

Reference to the WdgClockReferencePoint from which the clock is derived.

Property	Value
type	ECUC-REFERENCE-DEF
origin	NXP
lowerMultiplicity	1
upperMultiplicity	1
postBuildVariantMultiplicity	N/A
multiplicityConfigClasses	N/A
postBuildVariantValue	true
valueConfigClasses	VARIANT-LINK-TIME: LINK
	VARIANT-PRE-COMPILE: PRE-COMPILE
	VARIANT-POST-BUILD: POST-BUILD
requiresSymbolicNameValue	False
destination	/TS_T40D34M30I0R0/Wdg/WdgClockReferencePoint

4.56 Container WdgSettingsOff

WdgSettingsOff

Hardware dependent settings for the watchdog driver's off mode.

Included subcontainers:

- None

Property	Value
type	ECUC-PARAM-CONF-CONTAINER-DEF
lowerMultiplicity	1
upperMultiplicity	1
postBuildVariantMultiplicity	N/A
multiplicityConfigClasses	N/A

4.57 Parameter WdgSoftLockConfiguration

Vendor specific:

SoftLockConfiguration

This is the Implementation Specific parameter.Soft Lock for the Software Watchdog Timer Control (SWTCR) Register

Enabled : SWTCR can be read or written.

Disabled: SWTCR can be read only.

An unlock sequence should be written into service register before this register can again be written.

The setting of this switch is intended to prevent accidental writes of the SWTCR from changing the defined system watchdog configuration.

Property	Value
type	ECUC-BOOLEAN-PARAM-DEF
origin	NXP
symbolicNameValue	false
lowerMultiplicity	1
upperMultiplicity	1
postBuildVariantMultiplicity	N/A
multiplicityConfigClasses	N/A
postBuildVariantValue	true
valueConfigClasses	VARIANT-LINK-TIME: LINK
	VARIANT-PRE-COMPILE: PRE-COMPILE
	VARIANT-POST-BUILD: POST-BUILD
defaultValue	false

4.58 Parameter WdgHardLockConfiguration

Vendor specific:

Wdg Read Only

This is the Implementation Specific parameter.HardLock for the Software Watchdog Timer Control (SWTCR) Register

Enabled : SWTCR can be read or written.

Disabled: SWTCR can be read only.

A system reset is required before this register can again be written.

The setting of this switch is intended to prevent accidental writes of the SWTCR from changing the defined system watchdog configuration.

Property	Value
type	ECUC-BOOLEAN-PARAM-DEF
origin	NXP

Property	Value
symbolicNameValue	false
lowerMultiplicity	1
upperMultiplicity	1
postBuildVariantMultiplicity	N/A
multiplicityConfigClasses	N/A
postBuildVariantValue	true
valueConfigClasses	VARIANT-LINK-TIME: LINK
	VARIANT-PRE-COMPILE: PRE-COMPILE
	VARIANT-POST-BUILD: POST-BUILD
defaultValue	false

4.59 Container WdgSettingsSlow

WdgSettingsSlow

Hardware dependent settings for the watchdog driver's slow mode.

Included subcontainers:

- None

Property	Value
type	ECUC-PARAM-CONF-CONTAINER-DEF
lowerMultiplicity	1
upperMultiplicity	1
postBuildVariantMultiplicity	N/A
multiplicityConfigClasses	N/A

4.60 Parameter WdgClockValue

Vendor specific:

Wdg Clock Value

This is the Implementation Specific parameter.

Indicates Wdg Clock Value in KHz (internal oscilator clock value is by default 128KHz).

Property	Value
type	ECUC-INTEGER-PARAM-DEF

Property	Value
origin	NXP
symbolicNameValue	false
lowerMultiplicity	1
upperMultiplicity	1
postBuildVariantMultiplicity	N/A
multiplicityConfigClasses	N/A
postBuildVariantValue	true
valueConfigClasses	VARIANT-LINK-TIME: LINK
	VARIANT-PRE-COMPILE: PRE-COMPILE
	VARIANT-POST-BUILD: POST-BUILD
defaultValue	0
max	133000
min	0

4.61 Parameter WdgMasterAccessProtectionforMaster0

Vendor specific:

Master Access Protection for Master 0. .

False = Access for the master is not enabled.

True = Access for the master is enabled

NoteThis is an Implementation Specific Parameter.

Property	Value
type	ECUC-BOOLEAN-PARAM-DEF
origin	NXP
symbolicNameValue	false
lowerMultiplicity	1
upperMultiplicity	1
postBuildVariantMultiplicity	N/A
multiplicityConfigClasses	N/A
postBuildVariantValue	false
valueConfigClasses	VARIANT-LINK-TIME: PRE-COMPILE
	VARIANT-POST-BUILD: PRE-COMPILE
	VARIANT-PRE-COMPILE: PRE-COMPILE
defaultValue	true

4.62 Parameter WdgMasterAccessProtectionforMaster1

Vendor specific:

Master Access Protection for Master 1.

False = Access for the master is not enabled.

True = Access for the master is enabled

NoteThis is an Implementation Specific Parameter.

Property	Value
type	ECUC-BOOLEAN-PARAM-DEF
origin	NXP
symbolicNameValue	false
lowerMultiplicity	1
upperMultiplicity	1
postBuildVariantMultiplicity	N/A
multiplicityConfigClasses	N/A
postBuildVariantValue	false
valueConfigClasses	VARIANT-LINK-TIME: PRE-COMPILE
	VARIANT-POST-BUILD: PRE-COMPILE
	VARIANT-PRE-COMPILE: PRE-COMPILE
defaultValue	true

4.63 Parameter WdgMasterAccessProtectionforMaster2

Vendor specific:

Master Access Protection for Master 2.

False = Access for the master is not enabled.

True = Access for the master is enabled

NoteThis is an Implementation Specific Parameter.

Property	Value
type	ECUC-BOOLEAN-PARAM-DEF
origin	NXP
symbolicNameValue	false
lowerMultiplicity	1
upperMultiplicity	1
postBuildVariantMultiplicity	N/A

Property	Value
multiplicityConfigClasses	N/A
postBuildVariantValue	false
valueConfigClasses	VARIANT-LINK-TIME: PRE-COMPILE
	VARIANT-POST-BUILD: PRE-COMPILE
	VARIANT-PRE-COMPILE: PRE-COMPILE
defaultValue	true

4.64 Parameter WdgMasterAccessProtectionforMaster3

Vendor specific:

Master Access Protection for Master 3.

False = Access for the master is not enabled.

True = Access for the master is enabled

NoteThis is an Implementation Specific Parameter.

Property	Value
type	ECUC-BOOLEAN-PARAM-DEF
origin	NXP
symbolicNameValue	false
lowerMultiplicity	1
upperMultiplicity	1
postBuildVariantMultiplicity	N/A
multiplicityConfigClasses	N/A
postBuildVariantValue	false
valueConfigClasses	VARIANT-LINK-TIME: PRE-COMPILE
	VARIANT-POST-BUILD: PRE-COMPILE
	VARIANT-PRE-COMPILE: PRE-COMPILE
defaultValue	true

4.65 Parameter WdgMasterAccessProtectionforMaster4

Vendor specific:

Master Access Protection for Master 4.

False = Access for the master is not enabled.

True = Access for the master is enabled

NoteThis is an Implementation Specific Parameter.

Property	Value
type	ECUC-BOOLEAN-PARAM-DEF
origin	NXP
symbolicNameValue	false
lowerMultiplicity	1
upperMultiplicity	1
postBuildVariantMultiplicity	N/A
multiplicityConfigClasses	N/A
postBuildVariantValue	false
valueConfigClasses	VARIANT-LINK-TIME: PRE-COMPILE
	VARIANT-POST-BUILD: PRE-COMPILE
	VARIANT-PRE-COMPILE: PRE-COMPILE
defaultValue	true

4.66 Parameter WdgMasterAccessProtectionforMaster5

Vendor specific:

Master Access Protection for Master 5.

False = Access for the master is not enabled.

True = Access for the master is enabled

NoteThis is an Implementation Specific Parameter.

Property	Value
type	ECUC-BOOLEAN-PARAM-DEF
origin	NXP
symbolicNameValue	false
lowerMultiplicity	1
upperMultiplicity	1
postBuildVariantMultiplicity	N/A
multiplicityConfigClasses	N/A
postBuildVariantValue	false
valueConfigClasses	VARIANT-LINK-TIME: PRE-COMPILE
	VARIANT-POST-BUILD: PRE-COMPILE
	VARIANT-PRE-COMPILE: PRE-COMPILE
defaultValue	true

4.67 Parameter WdgMasterAccessProtectionforMaster6

Vendor specific:

Master Access Protection for Master 6.

False = Access for the master is not enabled.

True = Access for the master is enabled

NoteThis is an Implementation Specific Parameter.

Property	Value
type	ECUC-BOOLEAN-PARAM-DEF
origin	NXP
symbolicNameValue	false
lowerMultiplicity	1
upperMultiplicity	1
postBuildVariantMultiplicity	N/A
multiplicityConfigClasses	N/A
postBuildVariantValue	false
valueConfigClasses	VARIANT-LINK-TIME: PRE-COMPILE
	VARIANT-POST-BUILD: PRE-COMPILE
	VARIANT-PRE-COMPILE: PRE-COMPILE
defaultValue	true

4.68 Parameter WdgMasterAccessProtectionforMaster7

Vendor specific:

Master Access Protection for Master 7.

False = Access for the master is not enabled.

True = Access for the master is enabled

NoteThis is an Implementation Specific Parameter.

Property	Value
type	ECUC-BOOLEAN-PARAM-DEF
origin	NXP
symbolicNameValue	false
lowerMultiplicity	1
upperMultiplicity	1
postBuildVariantMultiplicity	N/A

Property	Value
multiplicityConfigClasses	N/A
postBuildVariantValue	false
valueConfigClasses	VARIANT-LINK-TIME: PRE-COMPILE
	VARIANT-POST-BUILD: PRE-COMPILE
	VARIANT-PRE-COMPILE: PRE-COMPILE
defaultValue	true

4.69 Parameter WdgKeyedService

Vendor specific:

Fixed Service Sequence or Keyed Service Mode .

False = Fixed Service Sequence, the fixed sequence 0xA602, 0xB480 is used to service the watchdog.

True = Keyed Service Mode, two pseudorandom key values are used to service the watchdog.

NoteThis is an Implementation Specific Parameter.

Property	Value
type	ECUC-BOOLEAN-PARAM-DEF
origin	NXP
symbolicNameValue	false
lowerMultiplicity	1
upperMultiplicity	1
postBuildVariantMultiplicity	N/A
multiplicityConfigClasses	N/A
postBuildVariantValue	false
valueConfigClasses	VARIANT-LINK-TIME: PRE-COMPILE
	VARIANT-POST-BUILD: PRE-COMPILE
	VARIANT-PRE-COMPILE: PRE-COMPILE
defaultValue	false

4.70 Parameter WdgServiceKeyValue

Vendor specific:

Service Key

This value is the initial service key value used in keyed service mode.

If SWT_CR[KEY] is set, the next key value to be written to the SWT_SR is (17*SK+3) mod 2^16.

Property	Value
type	ECUC-INTEGER-PARAM-DEF
origin	NXP
symbolicNameValue	false
lowerMultiplicity	1
upperMultiplicity	1
postBuildVariantMultiplicity	N/A
multiplicityConfigClasses	N/A
postBuildVariantValue	false
valueConfigClasses	VARIANT-LINK-TIME: PRE-COMPILE
	VARIANT-POST-BUILD: PRE-COMPILE
	VARIANT-PRE-COMPILE: PRE-COMPILE
defaultValue	0
max	65535
min	0

4.71 Parameter WdgSoftLockConfiguration

Vendor specific:

SoftLockConfiguration

This is the Implementation Specific parameter.Soft Lock for the Software Watchdog Timer Control (SWTCR) Register

Enabled : SWTCR can be read or written.

Disabled: SWTCR can be read only.

An unlock sequence should be written into service register before this register can again be written.

The setting of this switch is intended to prevent accidental writes of the SWTCR from changing the defined system watchdog configuration.

Property	Value
type	ECUC-BOOLEAN-PARAM-DEF
origin	NXP
symbolicNameValue	false
lowerMultiplicity	1
upperMultiplicity	1
postBuildVariantMultiplicity	N/A
multiplicityConfigClasses	N/A
postBuildVariantValue	true
valueConfigClasses	VARIANT-LINK-TIME: LINK
	VARIANT-PRE-COMPILE: PRE-COMPILE
	VARIANT-POST-BUILD: POST-BUILD
defaultValue	false

4.72 Parameter WdgHardLockConfiguration

Vendor specific:

Wdg Read Only

This is the Implementation Specific parameter.HardLock for the Software Watchdog Timer Control (SWTCR) Register

Enabled : SWTCR can be read or written.

Disabled: SWTCR can be read only.

A system reset is required before this register can again be written.

The setting of this switch is intended to prevent accidental writes of the SWTCR from changing the defined system watchdog configuration.

Property	Value
type	ECUC-BOOLEAN-PARAM-DEF
origin	NXP
symbolicNameValue	false
lowerMultiplicity	1
upperMultiplicity	1
postBuildVariantMultiplicity	N/A
multiplicityConfigClasses	N/A
postBuildVariantValue	true
valueConfigClasses	VARIANT-LINK-TIME: LINK
	VARIANT-PRE-COMPILE: PRE-COMPILE
	VARIANT-POST-BUILD: POST-BUILD
defaultValue	false

4.73 Parameter WdgRunsInStopMode

Vendor specific:

Wdg Runs in Stop Mode

This is the Implementation Specific parameter.

Enabled: SWT continues to count even while the processor core is in stop mode.

Disabled: SWT stops counting if the processor core is in stop mode.

Note: The 'WdgRunsInStopMode' parameter specifies if the watchdog timer should run or not while the clock to the core is halted.

This is true only for the STOP0 mode of the controller. It will always run while the controller is in the HALT0 mode.

Property	Value
type	ECUC-BOOLEAN-PARAM-DEF
origin	NXP
symbolicNameValue	false
lowerMultiplicity	1
upperMultiplicity	1
postBuildVariantMultiplicity	N/A
multiplicityConfigClasses	N/A
postBuildVariantValue	true
valueConfigClasses	VARIANT-LINK-TIME: LINK
	VARIANT-PRE-COMPILE: PRE-COMPILE
	VARIANT-POST-BUILD: POST-BUILD
defaultValue	false

4.74 Parameter WdgRunsInDebugMode

Vendor specific:

Wdg Runs In Debug Mode

This is the Implementation Specific parameter.

Enabled: SWT continues to count even while the device enters the debug mode.

Disabled: SWT stops counting if the processor core when the device enters the debug mode.

Property	Value
type	ECUC-BOOLEAN-PARAM-DEF
origin	NXP
symbolicNameValue	false
lowerMultiplicity	1
upperMultiplicity	1
postBuildVariantMultiplicity	N/A
multiplicityConfigClasses	N/A
postBuildVariantValue	true
valueConfigClasses	VARIANT-LINK-TIME: LINK
	VARIANT-PRE-COMPILE: PRE-COMPILE
	VARIANT-POST-BUILD: POST-BUILD
defaultValue	false

4.75 Parameter WdgOperationMode

Vendor specific:

Wdg Operation Mode

This is the Implementation Specific parameter.

ResetOnTimeOut: Generate a reset on a time-out.

Interrupt: Generate an interrupt on an initial time-out, reset on a second consecutive time-out.

Property	Value
type	ECUC-ENUMERATION-PARAM-DEF
origin	NXP
symbolicNameValue	false
lowerMultiplicity	1
upperMultiplicity	1
postBuildVariantMultiplicity	N/A
multiplicityConfigClasses	N/A
postBuildVariantValue	true
valueConfigClasses	VARIANT-LINK-TIME: LINK
	VARIANT-PRE-COMPILE: PRE-COMPILE
	VARIANT-POST-BUILD: POST-BUILD
defaultValue	ResetOnTimeOut
literals	['ResetOnTimeOut', 'Interrupt']

4.76 Parameter WdgResetOnInvalidAccess

Vendor specific:

Wdg Reset on Invalid Access

If window mode is enabled, the service sequence must be

performed in the last part of the window time out period. The window is open when

the down counter is less than the value in the SWT_WN register. Outside of this window,

service sequence writes are invalid access and generate:

BusError: Invalid access to the SWT generates a bus error.

SystemReset: Invalid access to the SWT causes a system reset if WEN=1.

Property	Value
type	ECUC-ENUMERATION-PARAM-DEF
origin	NXP
symbolicNameValue	false
lowerMultiplicity	1
upperMultiplicity	1
postBuildVariantMultiplicity	N/A
multiplicityConfigClasses	N/A
postBuildVariantValue	true
valueConfigClasses	VARIANT-LINK-TIME: LINK
	VARIANT-PRE-COMPILE: PRE-COMPILE
	VARIANT-POST-BUILD: POST-BUILD
defaultValue	SystemReset
literals	['BusError', 'SystemReset']

4.77 Parameter WdgClockSelection

Vendor specific:

Wdg Clock Selection

The value of the clock need to

be set up in the Wdg/WdgGeneral/WdgClockValue.

The value set up in the WdgClockValue will be used

by all the configurations and it is a precompile

parameter.

Property	Value
type	ECUC-ENUMERATION-PARAM-DEF
origin	NXP
symbolicNameValue	false
lowerMultiplicity	1
upperMultiplicity	1
postBuildVariantMultiplicity	N/A
multiplicityConfigClasses	N/A
postBuildVariantValue	true
valueConfigClasses	VARIANT-LINK-TIME: LINK
	VARIANT-PRE-COMPILE: PRE-COMPILE
	VARIANT-POST-BUILD: POST-BUILD
defaultValue	OscillatorClock
literals	['OscillatorClock', 'SystemClock']

4.78 Parameter WdgTimeoutPeriod

Vendor specific:

Wdg Timeout Period

This is the Implementation Specific parameter.

Software Watchdog Time-Out Period in seconds. Selects the time-out period for the SWT.

Property	Value
type	ECUC-FLOAT-PARAM-DEF
origin	NXP
symbolicNameValue	false
lowerMultiplicity	1
upperMultiplicity	1
postBuildVariantMultiplicity	N/A
multiplicityConfigClasses	N/A
postBuildVariantValue	true
valueConfigClasses	VARIANT-LINK-TIME: LINK
	VARIANT-PRE-COMPILE: PRE-COMPILE
	VARIANT-POST-BUILD: POST-BUILD
defaultValue	0.002
max	134217.72796875
min	9.375E-5

4.79 Parameter WdgWindowMode

Vendor specific:

Wdg WindowMode.

Disabled: Regular mode, service sequence can be done at any time.

Enabled : Windowed mode, the service sequence is only valid when the down counter is less than value in the SWTWN register.

Property	Value
type	ECUC-BOOLEAN-PARAM-DEF
origin	NXP
symbolicNameValue	false
lowerMultiplicity	1
upperMultiplicity	1
postBuildVariantMultiplicity	N/A

Property	Value
multiplicityConfigClasses	N/A
postBuildVariantValue	true
valueConfigClasses	VARIANT-LINK-TIME: LINK
	VARIANT-PRE-COMPILE: PRE-COMPILE
	VARIANT-POST-BUILD: POST-BUILD
defaultValue	false

4.80 Parameter WdgWindowPeriod

Vendor specific:

Wdg Window Period

This is the Implementation Specific parameter.

Window start value. When window mode is enabled, the service sequence can only be written when the internal down counter is less than this value.

Property	Value
type	ECUC-FLOAT-PARAM-DEF
origin	NXP
symbolicNameValue	false
lowerMultiplicity	1
upperMultiplicity	1
postBuildVariantMultiplicity	N/A
multiplicityConfigClasses	N/A
postBuildVariantValue	true
valueConfigClasses	VARIANT-LINK-TIME: LINK
	VARIANT-PRE-COMPILE: PRE-COMPILE
	VARIANT-POST-BUILD: POST-BUILD
defaultValue	0.0
max	134217.72796875
min	0.0

4.81 Reference WdgClkSrcRef

Reference to the WdgClockReferencePoint from which the clock is derived.

Property	Value
type	ECUC-REFERENCE-DEF

Property	Value
origin	NXP
lowerMultiplicity	1
upperMultiplicity	1
postBuildVariantMultiplicity	N/A
multiplicityConfigClasses	N/A
postBuildVariantValue	true
valueConfigClasses	VARIANT-LINK-TIME: LINK
	VARIANT-PRE-COMPILE: PRE-COMPILE
	VARIANT-POST-BUILD: POST-BUILD
requiresSymbolicNameValue	False
destination	/TS_T40D34M30I0R0/Wdg/WdgClockReferencePoint

4.82 Container WdgPublishedInformation

WdgPublishedInformation

Container holding all Wdg specific published information parameters

Included subcontainers:

- None

Property	Value
type	ECUC-PARAM-CONF-CONTAINER-DEF
lowerMultiplicity	1
upperMultiplicity	1
postBuildVariantMultiplicity	N/A
multiplicityConfigClasses	N/A

4.83 Parameter WdgTriggerMode

Wdg Trigger Mode

Watchdog trigger mode (toggle/window/both).

Property	Value
type	ECUC-ENUMERATION-PARAM-DEF
origin	AUTOSAR_ECUC
symbolicNameValue	false

Property	Value
lowerMultiplicity	1
upperMultiplicity	1
postBuildVariantMultiplicity	N/A
multiplicityConfigClasses	N/A
postBuildVariantValue	false
valueConfigClasses	VARIANT-LINK-TIME: PUBLISHED-INFORMATION
	VARIANT-PRE-COMPILE: PUBLISHED-INFORMATION
	VARIANT-POST-BUILD: PUBLISHED-INFORMATION
defaultValue	WDG_BOTH
literals	['WDG_BOTH', 'WDG_TOGGLE', 'WDG_WINDOW']

4.84 Container CommonPublishedInformation

Common container, aggregated by all modules. It contains published information about vendor and versions.

Included subcontainers:

- None

Property	Value
type	ECUC-PARAM-CONF-CONTAINER-DEF
lowerMultiplicity	1
upperMultiplicity	1
postBuildVariantMultiplicity	N/A
multiplicityConfigClasses	N/A

4.85 Parameter ArReleaseMajorVersion

Vendor specific:

Major version number of AUTOSAR specification on which the appropriate implementation is based on.

Property	Value
type	ECUC-INTEGER-PARAM-DEF
origin	NXP
symbolicNameValue	false
lowerMultiplicity	1
upperMultiplicity	1
postBuildVariantMultiplicity	N/A

Property	Value
multiplicityConfigClasses	N/A
postBuildVariantValue	false
valueConfigClasses	VARIANT-LINK-TIME: PUBLISHED-INFORMATION
	VARIANT-PRE-COMPILE: PUBLISHED-INFORMATION
	VARIANT-POST-BUILD: PUBLISHED-INFORMATION
defaultValue	4
max	4
min	4

4.86 Parameter ArReleaseMinorVersion

Vendor specific:

Minor version number of AUTOSAR specification on which the appropriate implementation is based on.

Property	Value
type	ECUC-INTEGER-PARAM-DEF
origin	NXP
symbolicNameValue	false
lowerMultiplicity	1
upperMultiplicity	1
postBuildVariantMultiplicity	N/A
multiplicityConfigClasses	N/A
postBuildVariantValue	false
valueConfigClasses	VARIANT-LINK-TIME: PUBLISHED-INFORMATION
	VARIANT-PRE-COMPILE: PUBLISHED-INFORMATION
	VARIANT-POST-BUILD: PUBLISHED-INFORMATION
defaultValue	7
max	7
min	7

4.87 Parameter ArReleaseRevisionVersion

Vendor specific:

Revision version number of AUTOSAR specification on which the appropriate implementation is based on.

Property	Value
type	ECUC-INTEGER-PARAM-DEF
origin	NXP

Property	Value
symbolicNameValue	false
lowerMultiplicity	1
upperMultiplicity	1
postBuildVariantMultiplicity	N/A
multiplicityConfigClasses	N/A
postBuildVariantValue	false
valueConfigClasses	VARIANT-LINK-TIME: PUBLISHED-INFORMATION
	VARIANT-PRE-COMPILE: PUBLISHED-INFORMATION
	VARIANT-POST-BUILD: PUBLISHED-INFORMATION
defaultValue	0
max	0
min	0

4.88 Parameter ModuleId

Vendor specific:

Module ID of this module from Module List.

Property	Value
type	ECUC-INTEGER-PARAM-DEF
origin	NXP
symbolicNameValue	false
lowerMultiplicity	1
upperMultiplicity	1
postBuildVariantMultiplicity	N/A
multiplicityConfigClasses	N/A
postBuildVariantValue	false
valueConfigClasses	VARIANT-LINK-TIME: PUBLISHED-INFORMATION
	VARIANT-PRE-COMPILE: PUBLISHED-INFORMATION
	VARIANT-POST-BUILD: PUBLISHED-INFORMATION
defaultValue	102
max	102
min	102

4.89 Parameter SwMajorVersion

Vendor specific:

Major version number of the vendor specific implementation of the module. The numbering is vendor specific.

Property	Value
type	ECUC-INTEGER-PARAM-DEF
origin	NXP
symbolicNameValue	false
lowerMultiplicity	1
upperMultiplicity	1
postBuildVariantMultiplicity	N/A
multiplicityConfigClasses	N/A
postBuildVariantValue	false
valueConfigClasses	VARIANT-LINK-TIME: PUBLISHED-INFORMATION
	VARIANT-PRE-COMPILE: PUBLISHED-INFORMATION
	VARIANT-POST-BUILD: PUBLISHED-INFORMATION
defaultValue	3
max	3
min	3

4.90 Parameter SwMinorVersion

Vendor specific:

Minor version number of the vendor specific implementation of the module. The numbering is vendor specific.

Property	Value
type	ECUC-INTEGER-PARAM-DEF
origin	NXP
symbolicNameValue	false
lowerMultiplicity	1
upperMultiplicity	1
postBuildVariantMultiplicity	N/A
multiplicityConfigClasses	N/A
postBuildVariantValue	false
valueConfigClasses	VARIANT-LINK-TIME: PUBLISHED-INFORMATION
	VARIANT-PRE-COMPILE: PUBLISHED-INFORMATION
	VARIANT-POST-BUILD: PUBLISHED-INFORMATION
defaultValue	0
max	0
min	0

4.91 Parameter SwPatchVersion

Vendor specific:

Patch level version number of the vendor specific implementation of the module. The numbering is vendor specific.

Property	Value
type	ECUC-INTEGER-PARAM-DEF
origin	NXP
symbolicNameValue	false
lowerMultiplicity	1
upperMultiplicity	1
postBuildVariantMultiplicity	N/A
multiplicityConfigClasses	N/A
postBuildVariantValue	false
valueConfigClasses	VARIANT-LINK-TIME: PUBLISHED-INFORMATION
	VARIANT-PRE-COMPILE: PUBLISHED-INFORMATION
	VARIANT-POST-BUILD: PUBLISHED-INFORMATION
defaultValue	0
max	0
min	0

4.92 Parameter VendorApiInfix

In driver modules which can be instantiated several times on a single ECU, BSW00347 requires that the name of APIs is extended by the VendorId and a vendor specific name.

This parameter is used to specify the vendor specific name. In total, the implementation specific name is generated as follows:

<ModuleName>_>VendorId>_<VendorApiInfix>

E.g. assuming that the VendorId of the implementor is 123 and the implementer chose a VendorApiInfix of "v11r456" a api name Can_Write defined in the SWS will translate to Can_123_v11r456Write.

This parameter is mandatory for all modules with upper multiplicity > 1. It shall not be used for modules with upper multiplicity =1.

Property	Value
type	ECUC-STRING-PARAM-DEF
origin	NXP
symbolicNameValue	false
lowerMultiplicity	0
upperMultiplicity	1
postBuildVariantMultiplicity	false
multiplicityConfigClasses	VARIANT-LINK-TIME: PUBLISHED-INFORMATION
	VARIANT-PRE-COMPILE: PUBLISHED-INFORMATION
	VARIANT-POST-BUILD: PUBLISHED-INFORMATION
postBuildVariantValue	false
valueConfigClasses	VARIANT-LINK-TIME: PUBLISHED-INFORMATION
	VARIANT-PRE-COMPILE: PUBLISHED-INFORMATION
	VARIANT-POST-BUILD: PUBLISHED-INFORMATION
defaultValue	Instance0

4.93 Parameter VendorId

Vendor ID of the dedicated implementation of this module according to the AUTOSAR vendor list.

Property	Value
type	ECUC-INTEGER-PARAM-DEF
origin	NXP
symbolicNameValue	false
lowerMultiplicity	1
upperMultiplicity	1
postBuildVariantMultiplicity	N/A
multiplicityConfigClasses	N/A
postBuildVariantValue	false
valueConfigClasses	VARIANT-LINK-TIME: PUBLISHED-INFORMATION
	VARIANT-PRE-COMPILE: PUBLISHED-INFORMATION
	VARIANT-POST-BUILD: PUBLISHED-INFORMATION
defaultValue	43
max	43
min	43

This chapter describes the Tresos configuration plug-in for the *WDG* Driver. The most of the parameters are described below.

Chapter 5

Module Index

5.1 Software Specification

Here is a list of all modules:

Chapter 6

Module Documentation

6.1 AeWdog_Ip

6.1.1 Detailed Description

Data Structures

- struct AeWdog_Ip_ConfigType

  AEWDOG configuration structure This structure is used to configure the AEWDOG fault response, watchdog mode, Max number of bad responses, window duty cycle and watchdog window duration. More...

Enum Reference

- enum AeWdog_Ip_StatusType

  Enum defining the possible type values for AEWDOG API @Implements AeWdog_Ip_StatusType_enumeration.
- enum AeWdog_Ip_ModeType

  Enum defining the watchdog mode for AEWDOG API @Implements AeWdog_Ip_ModeType_enumeration.
- enum AeWdog_Ip_FaultRespType

  Enum defining the fault response configuration for AEWDOG API @Implements AeWdog_Ip_FaultRespType_enumeration.
- enum AeWdog_Ip_BadRespType

  Enum defining the max number of bad responses for AEWDOG API @Implements AeWdog_Ip_BadRespType_enumeration.
- enum AeWdog_Ip_WindowDutyCycleType

  Enum defining the window duty cycle for AEWDOG API @Implements AeWdog_Ip_WindowDutyCycleType_enumeration.
- enum AeWdog_Ip_WindowPeriodType

  Enum defining the watchdog window duration for AEWDOG API @Implements AeWdog_Ip_WindowPeriodType_enumeration.

6.1.2 Data Structure Documentation

6.1.2.1 struct AeWdog_Ip_ConfigType

AEWDOG configuration structure This structure is used to configure the AEWDOG fault response, watchdog mode, Max number of bad responses, window duty cycle and watchdog window duration.

Implements : aewdog_init_config_t_Class

Definition at line 187 of file AeWdog_Ip_Types.h.

Data Fields

Type	Name	Description
AeWdog_Ip_ModeType	eAeWdogMode	Watchdog mode for AEWDOG
AeWdog_Ip_FaultRespType	eFaultRespType	Fault response configuration
AeWdog_Ip_BadRespType	eMaxBadResp	Max number of bad responses
AeWdog_Ip_WindowDutyCycleType	eWindowDutyCycle	Window duty cycle
AeWdog_Ip_WindowPeriodType	eWindowPeriod	Watchdog Window Duration

6.1.3 Enum Reference

6.1.3.1 AeWdog_Ip_StatusType

enum AeWdog_Ip_StatusType

Enum defining the possible type values for AEWDOG API @Implements AeWdog_Ip_StatusType_enumeration.

Definition at line 105 of file AeWdog_Ip_Types.h.

6.1.3.2 AeWdog_Ip_ModeType

enum AeWdog_Ip_ModeType

Enum defining the watchdog mode for AEWDOG API @Implements AeWdog_Ip_ModeType_enumeration.

Definition at line 115 of file AeWdog_Ip_Types.h.

6.1.3.3 AeWdog_Ip_FaultRespType

enum AeWdog_Ip_FaultRespType

Enum defining the fault response configuration for AEWDOG API @Implements AeWdog_Ip_FaultRespType_↩ enumeration.

Definition at line 124 of file AeWdog_Ip_Types.h.

6.1.3.4 AeWdog_Ip_BadRespType

enum AeWdog_Ip_BadRespType

Enum defining the max number of bad responses for AEWDOG API @Implements AeWdog_Ip_BadRespType_↩ enumeration.

Definition at line 133 of file AeWdog_Ip_Types.h.

6.1.3.5 AeWdog_Ip_WindowDutyCycleType

enum AeWdog_Ip_WindowDutyCycleType

Enum defining the window duty cycle for AEWDOG API @Implements AeWdog_Ip_WindowDutyCycleType_↩ enumeration.

Definition at line 144 of file AeWdog_Ip_Types.h.

6.1.3.6 AeWdog_Ip_WindowPeriodType

enum AeWdog_Ip_WindowPeriodType

Enum defining the watchdog window duration for AEWDOG API @Implements AeWdog_Ip_WindowPeriodType↩ _enumeration.

Definition at line 155 of file AeWdog_Ip_Types.h.

6.2 Swt

6.2.1 Detailed Description

Data Structures

- struct Swt_Ip_ConfigType

  Structure defining the configuration parameters used for SWT. More...

Enum Reference

- enum Swt_Ip_StatusType
  Enum defining the possible type values for SWT API.
- enum Swt_Ip_LockType
  Enum defining the possible lock types for the SWT.
- enum Swt_Ip_ServiceModeType
  Enum defining the possible service modes for the SWT.

Function Reference

- Swt_Ip_StatusType Swt_Ip_Init (const uint32 Instance, const Swt_Ip_ConfigType *const ConfigPtr)
  Initialize SWT instance.
- void Swt_Ip_Service (const uint32 Instance)
  Services the SWT instance.
- Swt_Ip_StatusType Swt_Ip_Config (const uint32 Instance, const Swt_Ip_ConfigType *const ConfigPtr)
  Configure SWT instance.
- Swt_Ip_StatusType Swt_Ip_SetTimeout (const uint32 Instance, const uint32 TimeoutValue, const uint32 WindowValue)
  Sets the timeout value for SWT instance.
- Swt_Ip_StatusType Swt_Ip_StartTimer (const uint32 Instance)
  Starts the timer of SWT instance.
- Swt_Ip_StatusType Swt_Ip_StopTimer (const uint32 Instance)
  Stops the timer of SWT instance.

6.2.2 Data Structure Documentation

6.2.2.1 struct Swt_Ip_ConfigType

Structure defining the configuration parameters used for SWT.

Definition at line 138 of file Swt_Ip_Types.h.

6.2.3 Enum Reference

6.2.3.1 Swt_Ip_StatusType

```
enum Swt_Ip_StatusType
```

Enum defining the possible type values for SWT API.

Definition at line 105 of file Swt_Ip_Types.h.

6.2.3.2 Swt_Ip_LockType

```
enum Swt_Ip_LockType
```

Enum defining the possible lock types for the SWT.

Definition at line 114 of file Swt_Ip_Types.h.

6.2.3.3 Swt_Ip_ServiceModeType

```
enum Swt_Ip_ServiceModeType
```

Enum defining the possible service modes for the SWT.

Definition at line 123 of file Swt_Ip_Types.h.

6.2.4 Function Reference

6.2.4.1 Swt_Ip_Init()

```
Swt_Ip_StatusType Swt_Ip_Init (
            const uint32 Instance,
            const Swt_Ip_ConfigType *const ConfigPtr )
```

Initialize SWT instance.

This Initializes SWT instance with the configuration passed via ConfigPtr pointer.

Parameters

in	*Instance*	SWT Instance number.
in	*ConfigPtr*	Pointer to the configuration structure which will be used to configure the SWT driver

Returns

An error code or SWT_IP_STATUS_SUCCESS

6.2.4.2 Swt_Ip_Service()

```
void Swt_Ip_Service (
            const uint32 Instance )
```

Services the SWT instance.

This function services SWT instance.

Parameters

in	*Instance*	SWT Instance number

Returns

void

6.2.4.3 Swt_Ip_Config()

```
Swt_Ip_StatusType Swt_Ip_Config (
            const uint32 Instance,
            const Swt_Ip_ConfigType *const ConfigPtr )
```

Configure SWT instance.

This function configure SWT instance.

Parameters

in	*Instance*	SWT Instance number
in	*ConfigPtr*	Pointer to the configuration structure which will be used to configure the SWT driver

Returns

An error code or SWT_IP_STATUS_SUCCESS

6.2.4.4 Swt_Ip_SetTimeout()

```
Swt_Ip_StatusType Swt_Ip_SetTimeout (
            const uint32 Instance,
            const uint32 TimeoutValue,
            const uint32 WindowValue )
```

Sets the timeout value for SWT instance.

This function sets the timeout value for SWT instance.

Parameters

in	*Instance*	SWT Instance number
in	*TimeoutValue*	SWT timeout value
in	*WindowValue*	SWT window value

Returns

An error code or SWT_IP_STATUS_SUCCESS

6.2.4.5 Swt_Ip_StartTimer()

```
Swt_Ip_StatusType Swt_Ip_StartTimer (
            const uint32 Instance )
```

Starts the timer of SWT instance.

This function starts the timer of the SWT instance.

Parameters

in	*Instance*	SWT Instance number

Returns

An error code or SWT_IP_STATUS_SUCCESS

6.2.4.6 Swt_Ip_StopTimer()

```
Swt_Ip_StatusType Swt_Ip_StopTimer (
            const uint32 Instance )
```

Stops the timer of SWT instance.

This function stops the timer of the SWT instance.

Parameters

in	*Instance*	SWT Instance number

Returns

An error code or SWT_IP_STATUS_SUCCESS

6.3 Wdg

6.3.1 Detailed Description

Data Structures

- struct Wdg_ConfigType
  Defines the configuration structure. More...

Enum Reference

- enum Wdg_ServiceIdType
  This enumerated type will contain the service ids for the watchodg functions.
- enum Wdg_ErrorIdType
  Indicates the aditional det errors used by the watchdog driver.
- enum Wdg_Ipw_InstanceType
  Wdg_IPW_ConfigType.
- enum Wdg_Ipw_IpType
  Wdg_Ipw_IpType.

Function Reference

- void Wdg_ChannelInit (const Wdg_Ipw_InstanceType Instance, const Wdg_ConfigType *ConfigPtr)
  This function initializes the WDG module.
- Std_ReturnType Wdg_ChannelSetMode (const Wdg_Ipw_InstanceType Instance, WdgIf_ModeType Mode)
  Switches the watchdog into the mode Mode.
- void Wdg_ChannelSetTriggerCondition (const Wdg_Ipw_InstanceType Instance, uint16 Timeout)
  Reset the watchdog timeout counter according to the timeout value passed.

6.3.2 Data Structure Documentation

6.3.2.1 struct Wdg_ConfigType

Defines the configuration structure.

Definition at line 211 of file Wdg_ChannelTypes.h.

Data Fields

- const WdgIf_ModeType Wdg_DefaultMode
  The number of configured channels.
- const Wdg_Ipw_InstanceType Wdg_Instance
  The instance id.
- const Gpt_ChannelType Wdg_TimerChannel
  Gpt Channel configured.
- const uint32 Wdg_u32TriggerSourceClock
  The frequency of the configured timer channel.
- const Wdg_ModeType *const Wdg_ModeSettings [3]
  Pointer to Watchdog Specific implementation details.

6.3.2.1.1 Field Documentation

6.3.2.1.1.1 Wdg_DefaultMode `const WdgIf_ModeType Wdg_DefaultMode`

The number of configured channels.

Definition at line 216 of file Wdg_ChannelTypes.h.

6.3.2.1.1.2 Wdg_Instance `const Wdg_Ipw_InstanceType Wdg_Instance`

The instance id.

Definition at line 220 of file Wdg_ChannelTypes.h.

6.3.2.1.1.3 Wdg_TimerChannel `const Gpt_ChannelType Wdg_TimerChannel`

Gpt Channel configured.

Definition at line 226 of file Wdg_ChannelTypes.h.

6.3.2.1.1.4 Wdg_u32TriggerSourceClock `const uint32 Wdg_u32TriggerSourceClock`

The frequency of the configured timer channel.

Definition at line 231 of file Wdg_ChannelTypes.h.

6.3.2.1.1.5 Wdg_ModeSettings `const Wdg_ModeType* const Wdg_ModeSettings[3]`

Pointer to Watchdog Specific implementation details.

Definition at line 237 of file Wdg_ChannelTypes.h.

6.3.3 Enum Reference

6.3.3.1 Wdg_ServiceIdType

enum Wdg_ServiceIdType

This enumerated type will contain the service ids for the watchodg functions.

Precondition

To define WDG_GETVERSION_ID, WDG_VERSION_INFO_API has to be equal to STD_ON

Definition at line 146 of file Wdg_ChannelTypes.h.

6.3.3.2 Wdg_ErrorIdType

enum Wdg_ErrorIdType

Indicates the aditional det errors used by the watchdog driver.

Definition at line 176 of file Wdg_ChannelTypes.h.

6.3.3.3 Wdg_Ipw_InstanceType

enum Wdg_Ipw_InstanceType

Wdg_IPW_ConfigType.

Contains the information related to the hardware setup for SWT

Definition at line 145 of file Wdg_Ipw_Types.h.

6.3.3.4 Wdg_Ipw_IpType

enum Wdg_Ipw_IpType

Wdg_Ipw_IpType.

Contains the Ip types available for Wdg.

Definition at line 164 of file Wdg_Ipw_Types.h.

6.3.4 Function Reference

6.3.4.1 Wdg_ChannelInit()

```
void Wdg_ChannelInit (
            const Wdg_Ipw_InstanceType Instance,
            const Wdg_ConfigType * ConfigPtr )
```

This function initializes the WDG module.

The `Wdg_Init` function shall initialize the Wdg module and the watchdog hardware, i.e. it shall set the default watchdog mode and timeout period as provided in the configuration set.

Parameters

in	*ConfigPtr*	Pointer to configuration set.
in	*Instance*	Harwdware instance.

Returns

void

6.3.4.2 Wdg_ChannelSetMode()

```
Std_ReturnType Wdg_ChannelSetMode (
            const Wdg_Ipw_InstanceType Instance,
            WdgIf_ModeType Mode )
```

Switches the watchdog into the mode Mode.

By choosing one of a limited number of statically configured settings (e.g. toggle or window watchdog, different timeout periods) the Wdg module and the watchdog hardware can be switched between the following three different watchdog modes using the `Wdg_SetMode` function:

- WDGIF_OFF_MODE,
- WDGIF_SLOW_MODE,
- WDGIF_FAST_MODE.

Parameters

in	*Mode*	One of the following statically configured modes: 1. WDGIF_OFF_MODE, 2. WDGIF_SLOW_MODE, 3. WDGIF_FAST_MODE.
in	*Instance*	Harwdware instance.

Returns

Std_ReturnType.

Return values

E_OK	Mode switch executed completely and successfully.
E_NOT_OK	The mode switch encountered errors.

6.3.4.3 Wdg_ChannelSetTriggerCondition()

```
void Wdg_ChannelSetTriggerCondition (
            const Wdg_Ipw_InstanceType Instance,
            uint16 Timeout )
```

Reset the watchdog timeout counter according to the timeout value passed.

Parameters

in	*Timeout*	value (milliseconds) for setting the trigger counter.
in	*Instance*	Harwdware instance.

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