MCAL User Manual for Mcu

32-bit TriCore™ AURIX™ TC3xx microcontroller

About this document

Scope and purpose

This User Manual is intended to enable users to integrate the Microcontroller Abstraction Layer (MCAL) software for the TriCore™ AURIX™ family of 32-bit microcontrollers.

This document describes responsibilities of integrator in-charge of integrating MCAL software with the basic software (BSW) stack. This document also provides detailed information on safety, configuration and functions along with examples of usage of significant features.

***Note**: Detailed information about package installation, safety and other generic information that are common across all modules are provided in MCAL User Manual General.*

Intended audience

This document is intended for anyone using the Mcu module of the TC3xx MCAL software.

Document conventions

Table 1 Conventions

Convention	Explanation
Bold	Emphasizes heading levels, column headings, table and figure captions, screen names, windows, dialog boxes, menus, sub-menus
Italics	Denotes variable(s) and reference(s)
`Courier New`	Denotes APIs, functions, interrupt handlers, events, data types, error handlers, file/folder names, directories, command line inputs, code snippets
>	Indicates that a cascading sub-menu opens when you select a menu item
[cover parentID=<alpha numeric value>]	Used for traceability completeness. Reader should ignore these.

Reference documents

This User Manual should be read in conjunction with the following documents:

- AURIX™ TC3xx MCAL User Manual General
- Specification of MCU Driver, AUTOSAR_SWS_MCU_Driver, AUTOSAR Release 4.2.2
- Specification of MCU Driver, AUTOSAR_SWS_MCU_Driver, AUTOSAR Release 4.4.0

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1 Mcu driver

1.1 User information

1.1.1 Description

The MCU driver is responsible for configuring the SCU, GTM, CCU6, GPT12 and STM peripherals. The driver provides runtime services specified by AUTOSAR. The MCU driver is responsible for the following:

- Configuration of Clock, Reset and static low power mode functionalities as specified by AUTOSAR
- Configuration of Trap functionality
- Configuration of global features of GTM, CCU6 and GPT12 required by the BASIC drivers
- Provide library support for other drivers for timer IPs - GTM, CCU6, GPT12 and STM
- Configuration of phase synchronizer necessary for analog converters
- Runtime APIs requested by AUTOSAR for clock, reset, low power management and RAM initialization
- Runtime APIs for Trap management

Additionally, the MCU driver provides a centralized hardware resource reservation mechanism to the configurator for conflict-free allocation to the MCAL drivers. The resources capable of being reserved are CCU6 modules, GTM timer slices, ASCLIN slices, ERU slices and STM comparators. The MCU driver is delivered as a Post-Build variant. Post-Build architecture guarantees the ability to generate an independent HEX file for configuration alone.

1.1.2 Hardware-software mapping

This section describes the system view of the MCU driver and peripherals administered by it.

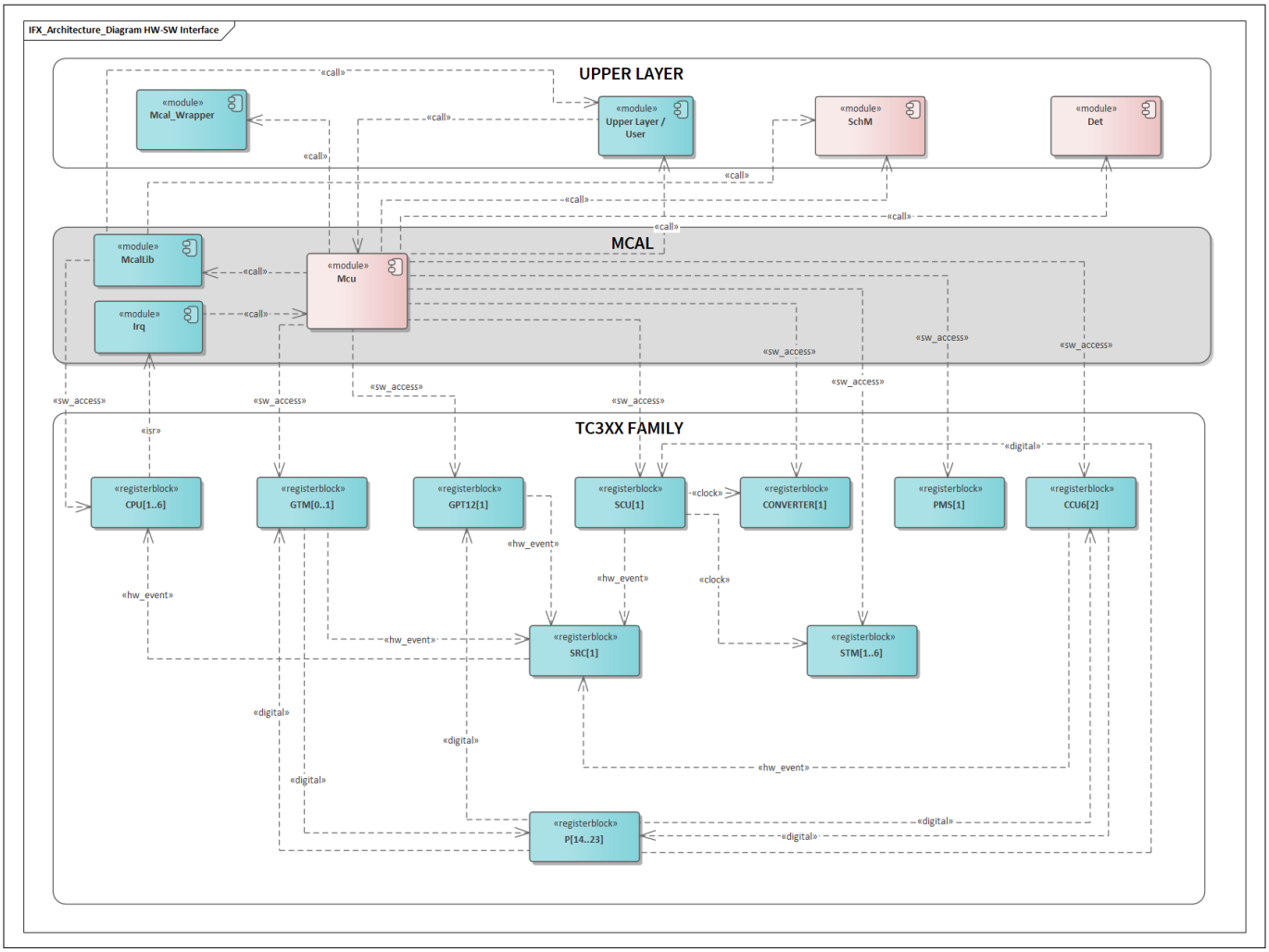


Figure 1 Mapping of hardware-software interfaces

1.1.2.1 CONVERTER: primary hardware peripheral

Hardware functional features

The MCU driver configures the convertor control block for providing a clock enable signal to synchronize the clock signals of all analog blocks (EVADC and EDSADC).

Users of the hardware

The phase synchronizer signal is used by the ADC and DSADC drivers, however the configuration for generating the signals is done by the MCU driver.

Hardware diagnostic features

The SMU alarms configured for the convertor control block are not monitored by the MCU driver.

Hardware events

Hardware events from the convertor control block are not used by the MCU driver.

1.1.2.2 SCU: primary hardware peripheral

Hardware functional features

The MCU driver uses the SCU IP for the following:

- Configuring the clock tree
- Reset control
- Trap setting
- Power-mode control and transitions
- Configuration of ERU for pattern detection and output gating control

The unsupported features of SCU are:

- Emergency stop
- Watchdog timers
- System register unit

Users of the hardware

The SCU IP supplies clock for all the peripherals and the MCU driver is responsible for configuring the clock tree. To avoid conflicts due to simultaneous writes, update to all the ENDINIT protected registers is performed using the MCALLIB APIs.

Hardware diagnostic features

The SMU alarms configured for the SCU IP are not monitored by the MCU driver.

Hardware events

The hardware event for ERU channels is enabled based on the user configuration. The MCU driver invokes the call back function provided as interrupt handler by the ICU and DSADC driver on a hardware event.

1.1.2.3 STM: primary hardware peripheral

Hardware functional features

The MCU driver only provides configuration interfaces for the STM IP. The STM IP is used by other MCAL drivers for various applications. The compare match SFRs are configured at run time (by other drivers).

Users of the hardware

The MCU driver provides APIs to program the STM SFRs. The WDG and STM driver use these APIs to utilize the compare match feature of the STM IP.

Additionally, updates to the compare register are performed by the WDG and STM drivers. Since the compare registers are exclusively reserved for each driver, access to the compare registers by the reserving driver is allowed.

Hardware diagnostic features

Not applicable.

Hardware events

The hardware event for each channel is enabled based on the user configuration. The MCU driver invokes the call back function provided as interrupt handler by each driver on a hardware event.

1.1.2.4 CCU6: primary hardware peripheral

Hardware functional features

The MCU driver only provides configuration interfaces for the CCU6 IP. The CCU6 IP is used by other MCAL drivers for various applications.

During the initialization the driver is responsible for enabling the clock for the CCU6 IP. The channel specific SFRs are configured at run time (by other drivers).

Users of the hardware

The MCU driver provides APIs to program the CCU6 SFRs. The PWM and ICU driver use these APIs to initialize, de-initialize, enable and disable channels.

Additionally, updates to the channel specific SFRs are performed by the PWM and ICU drivers. Since the channels are exclusively reserved for each driver, access to the channel specific SFRs by the reserving driver is allowed.

Hardware diagnostic features

Not applicable.

Hardware events

The hardware event for each channel is enabled based on the user configuration. The MCU driver invokes the call back function provided as interrupt handler by each driver on a hardware event.

1.1.2.5 GPT12: primary hardware peripheral

Hardware functional features

The MCU driver only provides configuration interfaces for the GPT12 IP. The GPT12 IP is used by other MCAL drivers for various applications.

During the initialization the driver is responsible for enabling the clock and configuring the block pre-scalers for the GPT12 IP. The channel specific SFRs are configured at run time (by other drivers).

Users of the hardware

The MCU driver provides APIs to program the GPT12 SFRs. The GPT and ICU driver use these APIs to initialize, de-initialize, enable and disable channels.

Additionally, updates to the channel specific SFRs are performed by the GPT and ICU drivers. Since the channels are exclusively reserved for each driver, access to the channel specific SFRs by the reserving driver is allowed.

Hardware diagnostic features

Not applicable.

Hardware events

The hardware event for each channel is enabled based on the user configuration. The MCU driver invokes the call back function provided as interrupt handler by each driver on a hardware event.

1.1.2.6 GTM: primary hardware peripheral

Hardware functional features

The MCU driver only provides configuration interfaces for the GTM IP.

During the initialization the driver is responsible for configuring the global blocks of GTM [CMU, CCM, TBU,TOUTSEL,TIMINSEL]. The channel specific SFRs are configured at run time (by other drivers).

Users of the hardware

The global functional blocks of GTM are centrally administered by the MCU driver.

The MCU driver provides APIs to program the GTM [TOM, ATOM, TIM] channel SFRs. The PWM, GPT, ADC, DSADC, WDG, OCU and ICU drivers use these APIs to initialize, de-initialize, enable and disable channels.

Additionally, updates to the channel specific SFRs are performed by the MCAL drivers also. Since the channels are exclusively reserved for each driver, access to the channel specific SFRs by the reserving driver is allowed.

Hardware diagnostic features

The SMU alarms configured for the GTM IP are not monitored by the MCU driver.

Hardware events

The hardware event for each channel is enabled based on the user configuration. The MCU driver invokes the callback function provided as interrupt handler by each driver on a hardware event.

1.1.2.7 PMS: primary hardware peripheral

Hardware functional features

The MCU driver uses the PMS IP for changing the active power-mode of the controller. The supported power modes are:

- Normal
- Idle
- Sleep
- Standby

The unsupported features of PMS are:

- Load jump sequencing and voltage droop
- Core Die Temperature Sensor
- Power supply generation and monitoring
- Standby controller

Users of the hardware

The MCU driver exclusively utilizes the PMS IP for power mode management.

Hardware diagnostic features

Not applicable.

Hardware events

The MCU driver configures the wake-up events from the PMS IP.

1.1.3 File structure

1.1.3.1 C file structure

This section provides details of the C files of the MCU driver.

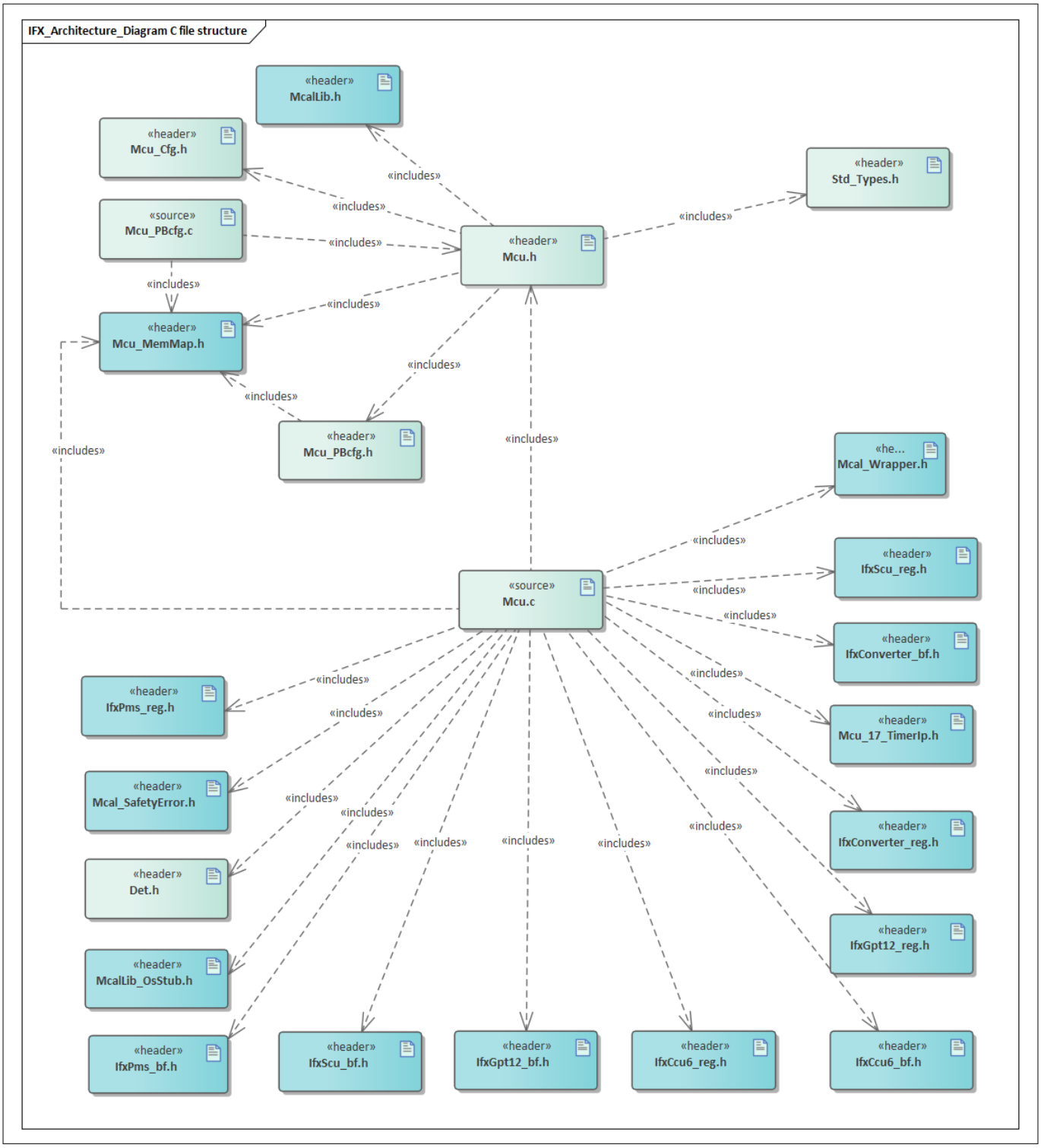


Figure 2 Mcu_C_file_structure-1.png

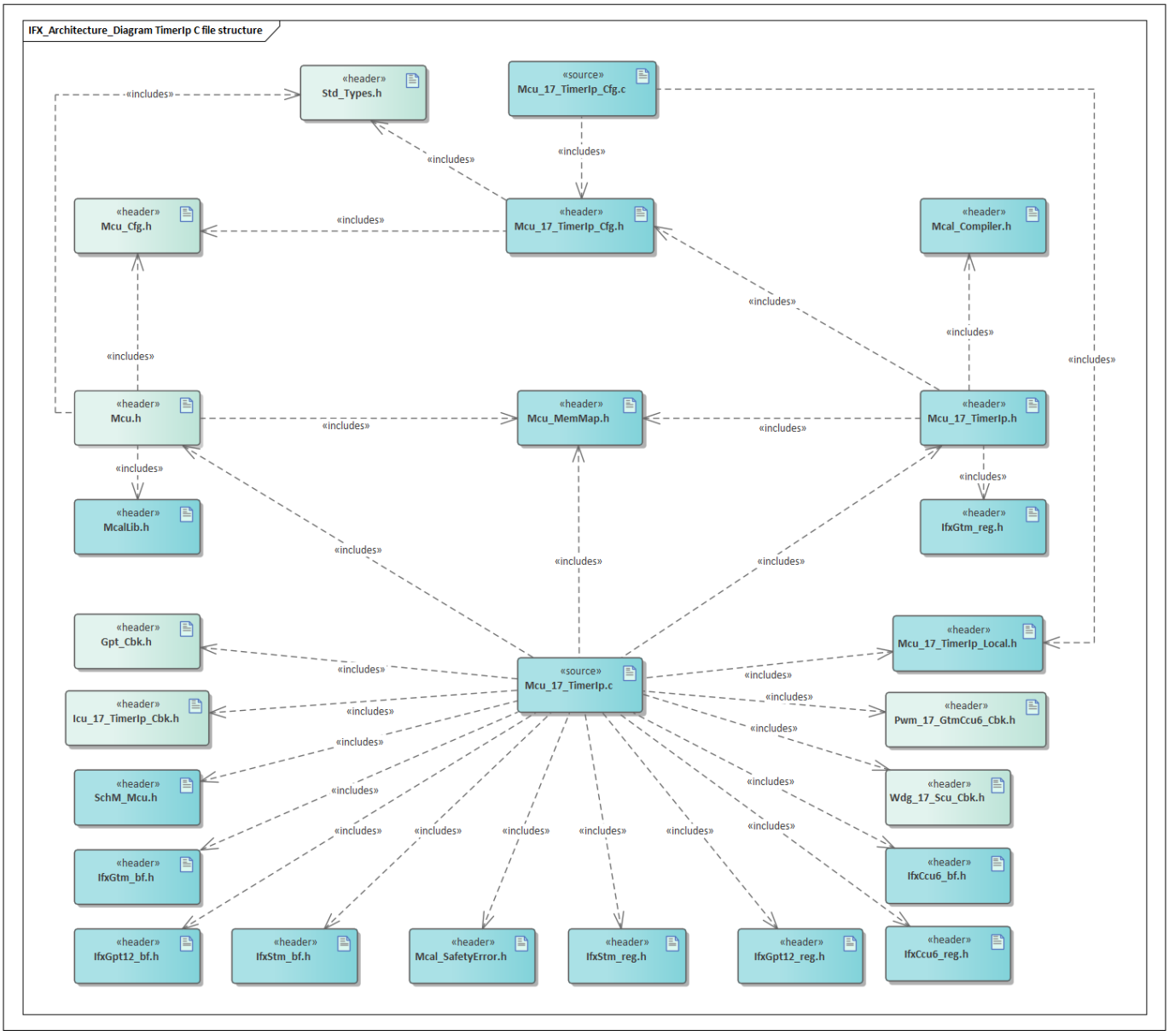


Figure 3 **Mcu_TimerIp_C_file_structure-2.png**

Table 2 **C file structure**

File name	Description
`Det.h`	Provides the exported interfaces of Development Error Tracer
`IfxCcu6_bf.h`	SFR header file for CCU6
`IfxCcu6_reg.h`	SFR header file for CCU6
`IfxConverter_bf.h`	SFR header file for Converter
`IfxConverter_reg.h`	SFR header file for Converter
`IfxGpt12_bf.h`	SFR header file for GPT12
`IfxGpt12_reg.h`	SFR header file for GPT12
`IfxPms_bf.h`	SFR header file for Pms

(table continues...)

Table 2 (continued) C file structure

File name	Description
IfxPms_reg.h	SFR header file for Pms
IfxScu_bf.h	SFR header file for SCU
IfxScu_reg.h	SFR header file for SCU
McalLib.h	Static header file defining prototypes of data structure and APIs exported by the MCALLIB.
McalLib_OsStub.h	McalLib_OsStub.h provides macros to support user mode of Tricore. This shall be included by other drivers to call OS APIs.
Mcal_SafetyError.h	Header file containing the prototype of the API for reporting safety-related errors
Mcal_Wrapper.h	Provides the exported interfaces for Production Error and Runtime Development Errors. Implemented by default to include functions of Dem.h and Det.h files. This file can be modified by the user but function prototype is not user modifiable.
Mcu.c	MCU source file providing implementation of APIs (including AUTOSAR) relating to initialization, clock, power modes, reset, trap, etc.
Mcu.h	Header file providing prototypes of APIs and data types. This file exports only necessary interfaces for upper layer
Mcu_17_TimerIp.h	Header file defining prototypes of data structures and APIs of Timer IPs (GTM, CCU6 and GPT12), containing functions such as initialization, enable, interrupt handlers and other services and is included by Mcu_17_TimerIp.c source file
Mcu_Cfg.h	Generated header file containing macros
Mcu_MemMap.h	File (Static) containing the memory section definitions used by the MCU driver
Mcu_PBcfg.c	Generated header file containing configuration data of the user
Mcu_PBcfg.h	File (Generated) containing declaration of the post-build configuration data structures
Std_Types.h	Standard type declaration file as defined by AUTOSAR. It is independent of compiler or platform.
Gpt_Cbk.h	Header file providing prototypes of callback APIs
Icu_17_TimerIp_Cbk.h	Header file to declare the callback APIs
IfxCcu6_bf.h	SFR header file for CCU6
IfxCcu6_reg.h	SFR header file for CCU6
IfxGpt12_bf.h	SFR header file for GPT12
IfxGpt12_reg.h	SFR header file for GPT12
IfxGtm_bf.h	SFR header file for GTM
IfxGtm_reg.h	SFR header file for GTM
IfxStm_bf.h	SFR header file for STM
IfxStm_reg.h	SFR header file for STM
McalLib.h	Static header file defining prototypes of data structure and APIs exported by the MCALLIB.

(table continues...)

Table 2 (continued) C file structure

File name	Description
Mcal_Compiler.h	Header file providing abstraction for TriCore™-intrinsic instruction.
Mcal_SafetyError.h	Header file containing the prototype of the API for reporting safety-related errors
Mcu.h	Header file providing prototypes of APIs and data types. This file exports only necessary interfaces for upper layer
Mcu_17_TimerIp.c	File (Static) containing implementation of APIs of Timer IPs - GTM, CCU6 and GPT12, initialization, enable, interrupt and other services
Mcu_17_TimerIp.h	Header file defining prototypes of data structures and APIs of Timer IPs (GTM, CCU6 and GPT12), containing functions such as initialization, enable, interrupt handlers and other services and is included by Mcu_17_TimerIp.c source file
Mcu_17_TimerIp_Cfg.c	Generated source file, which contains the user information for each the Timers - CCU6 , GPT12 and GTM channels
Mcu_17_TimerIp_Cfg.h	Generated header file for Timer IPs APIs
Mcu_17_TimerIp_Local.h	Header file contains declaration of callback data for ERU, CCU6, GPT12, GTM (TIM, TOM, ATOM) and STM
Mcu_Cfg.h	Generated header file containing macros
Mcu_MemMap.h	File (Static) containing the memory section definitions used by the MCU driver
Pwm_17_GtmCcu6_Cbk.h	Includes callback header definition
SchM_Mcu.h	Non-productized file. Contains prototype of SchM_Enter/Exit interfaces needed by Timer APIs
Std_Types.h	Standard type declaration file as defined by AUTOSAR. It is independent of compiler or platform.
Wdg_17_Scu_Cbk.h	Header file contains call back function of the WDG driver.

1.1.3.2 Code generator plugin files

This section provides details of the code generator plugin files of the MCU driver.

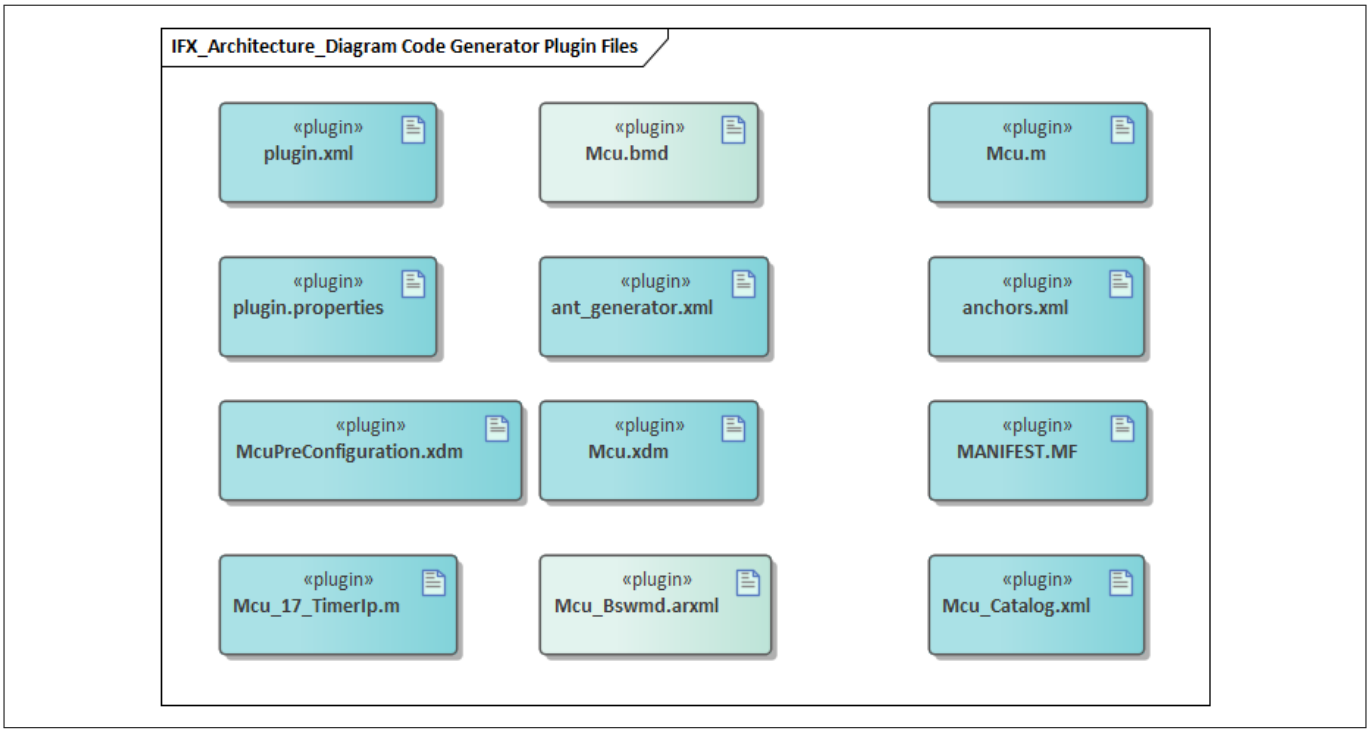


Figure 4 **Mcu_Code_Generator_Plugin_Files-1.png**

Table 3 **Code generator plugin files**

File name	Description
`MANIFEST.MF`	Tresos plugin support file containing metadata for the MCU driver
`Mcu.bmd`	AUTOSAR format XML data model schema file (for each device)
`Mcu.m`	Code template macro file for the MCU driver
`Mcu.xdm`	Tresos format XML data model schema file
`McuPreConfiguration.xdm`	Tresos format XML data model schema file
`Mcu_17_TimerIp.m`	Code template macro file for Timer APIs in the MCU driver
`Mcu_Bswmd.arxml`	AUTOSAR format module description file
`Mcu_Catalog.xml`	AUTOSAR format catalog file
`anchors.xml`	Tresos anchors support file for the MCU driver
`ant_generator.xml`	Tresos support file to generate and rename multiple post-build configuration when using variation point
`plugin.properties`	Tresos plugin support file for the MCU driver
`plugin.xml`	Tresos plugin support file for the MCU driver

1.1.4 Integration hints

This section lists the key points that an integrator or user of the MCU driver must consider.

1.1.4.1 Integration with AUTOSAR stack

This section lists the modules, which are not part of MCAL, but are required to integrate the MCU driver.

- **EcuM**

  The ECU Manager module is a part of the AUTOSAR stack that manages common aspects of ECU. Specifically, in the context of MCAL, EcuM is used for initialization and de-initialization of the software drivers. The EcuM module provided in the MCAL package is a stub code and needs to be replaced with a complete EcuM module during the integration phase.

- **Memory mapping**

  Memory mapping is a concept from AUTOSAR that allows relocation of text, variables, constants and configuration data to user-specific memory regions. To achieve this, all the relocatable elements of the driver are encapsulated in different memory-section macros. These macros are defined in the `Mcu_MemMap.h` file.

  The `Mcu_MemMap.h` file is provided in the MCAL package as a stub code. The integrator must place appropriate compiler pragmas within the memory-section macros. The pragmas ensure that the elements are re-located to the correct memory region. A sample implementation listing the memory-section macros is shown as follows.

```
/* Sample implementation of Mcu_MemMap.h */
/**** CONFIGURATION DATA ****/
#if defined MCU_START_SEC_CONFIG_DATA_ASIL_B_GLOBAL_UNSPECIFIED
 /*user pragma here */
 #undef MCU_START_SEC_CONFIG_DATA_ASIL_B_GLOBAL_UNSPECIFIED
 #undef MEMMAP_ERROR

#elif defined MCU_STOP_SEC_CONFIG_DATA_ASIL_B_GLOBAL_UNSPECIFIED
 /*user pragma here */
 #undef MCU_STOP_SEC_CONFIG_DATA_ASIL_B_GLOBAL_UNSPECIFIED
 #undef MEMMAP_ERROR


#elif defined MCU_17_TIMERIP_START_SEC_CONFIG_DATA_ASIL_B_GLOBAL_16
 /*user pragma here */
 #undef MCU_17_TIMERIP_START_SEC_CONFIG_DATA_ASIL_B_GLOBAL_16
 #undef MEMMAP_ERROR
#elif defined MCU_17_TIMERIP_STOP_SEC_CONFIG_DATA_ASIL_B_GLOBAL_16
 /*user pragma here */
 #undef MCU_17_TIMERIP_STOP_SEC_CONFIG_DATA_ASIL_B_GLOBAL_16
 #undef MEMMAP_ERROR

/**** GLOBAL DATA ****/
#elif defined MCU_START_SEC_VAR_CLEARED_ASIL_B_GLOBAL_32
 /*user pragma here */
 #undef MCU_START_SEC_VAR_CLEARED_ASIL_B_GLOBAL_32
 #undef MEMMAP_ERROR

#elif defined MCU_STOP_SEC_VAR_CLEARED_ASIL_B_GLOBAL_32
 /*user pragma here */
 #undef MCU_STOP_SEC_VAR_CLEARED_ASIL_B_GLOBAL_32
 #undef MEMMAP_ERROR

#elif defined MCU_17_TIMERIP_START_SEC_VAR_INIT_ASIL_B_GLOBAL_32
 /*user pragma here */
 #undef MCU_17_TIMERIP_START_SEC_VAR_INIT_ASIL_B_GLOBAL_32
 #undef MEMMAP_ERROR

#elif defined MCU_17_TIMERIP_STOP_SEC_VAR_INIT_ASIL_B_GLOBAL_32
 /*user pragma here */
 #undef MCU_17_TIMERIP_STOP_SEC_VAR_INIT_ASIL_B_GLOBAL_32
 #undef MEMMAP_ERROR

/**** CONST DATA ****/
#elif defined MCU_17_TIMERIP_START_SEC_CONST_ASIL_B_GLOBAL_UNSPECIFIED
 /*user pragma here */
 #undef MCU_17_TIMERIP_START_SEC_CONST_ASIL_B_GLOBAL_UNSPECIFIED
 #undef MEMMAP_ERROR

#elif defined MCU_17_TIMERIP_STOP_SEC_CONST_ASIL_B_GLOBAL_UNSPECIFIED
 /*user pragma here */
 #undef MCU_17_TIMERIP_STOP_SEC_CONST_ASIL_B_GLOBAL_UNSPECIFIED
```

```
 #undef MEMMAP_ERROR

/**** CODE ****/
#elif defined MCU_START_SEC_CODE_ASIL_B_GLOBAL
 /*user pragma here */
 #undef MCU_START_SEC_CODE_ASIL_B_GLOBAL
 #undef MEMMAP_ERROR

#elif defined MCU_STOP_SEC_CODE_ASIL_B_GLOBAL
 /*user pragma here */
 #undef MCU_STOP_SEC_CODE_ASIL_B_GLOBAL
 #undef MEMMAP_ERROR

#elif defined MCU_17_TIMERIP_START_SEC_CODE_ASIL_B_GLOBAL
 /*user pragma here */
 #undef MCU_17_TIMERIP_START_SEC_CODE_ASIL_B_GLOBAL
 #undef MEMMAP_ERROR

#elif defined MCU_17_TIMERIP_STOP_SEC_CODE_ASIL_B_GLOBAL
 /*user pragma here */
 #undef MCU_17_TIMERIP_STOP_SEC_CODE_ASIL_B_GLOBAL
 #undef MEMMAP_ERROR

#endif

#if defined MEMMAP_ERROR
 #error Mcu MemMap file definition is not correct.
#endif
```

- **DET**

  The DET module is a part of the AUTOSAR stack that handles all the development and runtime errors reported by the BSW modules. The MCU driver reports all the development errors to the DET module through the `Det_ReportError()` API. The user of the MCU driver must process all the errors reported to the DET module through the `Det_ReportError()` API.

  The `Det.h` and `Det.c` files are provided in the MCAL package as a stub code and needs to be replaced with a complete DET module during the integration phase.

- **Mcal_Wrapper**

  This Driver performs reporting of the Production and Runtime errors. The Handling of the reported errors shall be done by the user. The `Mcal_Wrapper_Det_ReportRuntimeError()` API, `Mcal_Wrapper_Dem_SetEventStatus()` API and `Mcal_Wrapper_Dem_ReportErrorStatus()` API are provided in the `Mcal_Wrapper.c` and `Mcal_Wrapper.h` files as a stub code, and can be updated by the integrator to handle the reported errors. The files `Mcal_Wrapper.c` and `Mcal_Wrapper.h` are user modifiable but the function prototype is not user modifiable and by default the Mcal Wrapper function shall call AUTOSAR DEM and DET Modules.

  The user of the Mcu driver shall process all the production errors (fail/pass) reported to the Mcal_Wrapper module. The interface used for reporting production error in AUTOSAR version 4.2.2 is `Mcal_Wrapper_Dem_ReportErrorStatus()` and for AUTOSAR version 4.4.0 is `Mcal_Wrapper_Dem_SetEventStatus()`. The `Mcal_Wrapper.c` and `Mcal_Wrapper.h` files are provided in the MCAL package as a stub code and can be replaced with a user specific production error handling module during the integration phase.

- **SchM**

The SchM module is a part of the RTE that manages the Basic Software Scheduler. The MCU driver uses the exclusive areas defined in `SchM_Mcu.h` file to protect the SFRs and variables from concurrent accesses from different threads. The SchMs identified for the MCU driver are:

- ATOM AGC registers
- TOM TGC registers

The `SchM_Mcu.h` and `SchM_Mcu.c` files are provided in the MCAL package as an example code and needs to updated by the integrator. The user must implement the SchM functions defined by the MCU driver as **suspend / resume** of interrupts for the CPU on which the API is invoked. A sample implementation of the SchM functions is shown as follows.

```
void SchM_Enter_Mcu_TomTgcReg(void)
{
 SuspendAllInterrupts();
}

void SchM_Exit_Mcu_TomTgcReg(void)
{
 ResumeAllInterrupts();
}

void SchM_Enter_Mcu_AtomAgcReg(void)
{
 SuspendAllInterrupts();
}

void SchM_Exit_Mcu_AtomAgcReg(void)
{
 ResumeAllInterrupts();
}
```

- **Safety error**

  The MCU driver will report all the detected safety errors through the `Mcal_ReportSafetyError()` API.

  The driver performs only detection and reporting of the safety errors. The handling of the reported errors shall be done by the user. The Mcal_ReportSafetyError() API is provided in the `Mcal_SafetyError.c` and `Mcal_SafetyError.h` files as a stub code, and must be updated by the integrator to handle the reported errors.

  Note: All DET errors are also reported as safety errors (error code used is same as DET).

- **Notifications and callbacks**

  The MCU driver does not provide any callbacks or notifications.

- **Operating system**

  The OS or application must ensure correct type of service and interrupt priority is configured in the SR register. Enabling and disabling of interrupts must also be managed by the OS or application.

  The OS files provided by the MCAL package is only an example code and must be updated by the integrator with the actual OS files for the desired function.

1.1.4.2 Multicore and Resource Manager

The MCU driver supports execution of its runtime APIs simultaneously from all CPU cores (initialization APIs are `Mcu_Init()`, `Mcu_InitClock()`, `Mcu_DistributePllClock()` and `Mcu_DeInit()`). In general, apart from the

initialization APIs of MCU driver, other APIs may be invoked from several CPU cores in parallel with some restrictions, which are also described in this section. The following are the key points to be considered with respect to multicore in the driver:

- Initialization APIs `Mcu_Init()`, `Mcu_InitClock()`, `Mcu_DistributePllClock()` and `Mcu_DeInit()` can only be invoked by the master core.
- DETs will be raised in case APIs are invoked with mismatch of core.
- Locating constants, variables and configuration data to correct memory space should be done by the user. Memory sections are marked GLOBAL (common to all cores). The following should be considered by the user to ensure better performance of the driver:

  Code section:

  The executable code of the MCU driver is placed under single MemMap section. The executable code can be relocated to any PFlash region.

  Data section:

  The sections marked as global should be relocated to the non-cached LMU region.

  Configuration data and constants:

  The sections marked as global should be relocated to the PFlash of the master core.

  Note: Relocating of code, data or constants to a distant memory region would impact execution timings.

1.1.4.3 MCU support

Not applicable for the MCU driver.

1.1.4.4 Port support

The MCU driver does not use any services provided by the PORT driver.

1.1.4.5 DMA support

The MCU driver does not use any services provided by the DMA driver.

1.1.4.6 Interrupt connections

The MCU driver clears the interrupt flags for intended channel for GTM(TIM, TOM, ATOM), CCU6, STM and ERU before invoking the ISR of respective user driver. Refer to Interrupt service routines section for ISRs provided by the MCU driver. Refer to respective driver user manual for details on the user driver's ISR (e.g. ICU, PWM, GPT etc.).

1.1.4.7 Example usage

This section explains an example usage scenario of the MCU Driver for a nominal case.

Configuration of the driver

MCU Driver is configured before usage and configuration files are generated and made available during software build process.

Initialization of driver

Step 1: Include the `Mcu.h` header file, to include definition of the MCU driver configuration data structure..

Step 2: Invoke the `Mcu_Init ( )` API by passing configuration structure pointer as an input parameter.

Example:

```
#include "Mcu.h"
Mcu_Init (&Mcu_Config); /*Mcu_Config is the configuration structure variable for MCU */
```

Initialization of PLLs and Clocks

Pre-requisite: The `Mcu_Init ( )` API must be invoked before this phase.

Step1: Invoke the `Mcu_InitClock ( )` API by passing the clock configuration index

Example:

```
TempVal = Mcu_InitClock (0); /* 0 is clock setting id */
```

Step2: Wait until the system PLL is locked.

Example: Add a wait loop around the following condition:

```
while(Mcu_GetPllStatus ( ) != MCU_PLL_LOCKED); /* Wait for PLLs to Lock */
```

Step3: Invoke the `Mcu_DistributePllClock()` API to change the clock source as PLL and ramp up/down to the configured clock frequencies.

Example:

```
TempVal = Mcu_DistributePllClock ();
```

De-Initialization of driver

Step1: Invoke the `Mcu_DeInit ( )` API. The API de-initializes all MCU relevant global configuration registers except for the PLL and clock-related registers.

Using low power modes

The MCU Driver shall be initialized before using low power mode API. Low power mode APIs shall be enabled as per configuration

Step1: Configure the wakeup source before entering into low power modes. Special configurations for STANDBY modes are available in McuModeSettingConf container. Ensure the executing core is authorized to perform low power mode transitions, as per the McuIdleModeCpuCore and McuSystemModeCpuCore configuration parameters.

Step2 (For IDLE/SLEEP): Invoke as shown below. For example for SLEEP mode.

```
Mcu_SetMode (MCU_SLEEP);
```

Step2 (For STANDBY): It is important that wakeup source status flags are cleared on exit of standby mode to ensure further wake-ups from standby state are enabled.

Note: The initial 64 bytes (16 32-bit words) from the start address of DLMU0 and DLMU1 shall not be used by application, as this memory region is used by start-up software during standby mode.

Example sequence during STANDBY entry:

```
Temp_Val = Mcu_GetWakeupCause ();
Mcu_ClearWakeupCause (Temp_Val);
Mcu_SetMode (MCU_STANDBY);
```

1.1.5 Key architectural considerations

1.1.5.1 GTM: usage with complex drivers

The user must consider the following points while using the GTM IP outside of the MCU driver.

The MCU driver enables the clock for a cluster only if GTM (TIM, TOM or ATOM) channels are reserved inside the McuHardwareResourceAllocationConf for that particular cluster.

When none of the GTM (TIM, TOM and ATOM) channels are reserved inside the McuHardwareResourceAllocationConf container for a particular cluster, the clock to the TIM, TOM and ATOM modules of that cluster is set to its default value.

The configurable clocks and the fixed clocks for the clusters are configured as per user configuration.

1.1.5.2 Multicore support for MCU

MCU initialization, de-initialization and clock tree configuration should be carried out by the master core with the following APIs: Mcu_Init, Mcu_DeInit, Mcu_InitClock and Mcu_DistributePllClock. These APIs shall not be invoked from the slave core(s). [cover parentID MCU={B4FAB0B9-7333-4da0-8A40-59575AEBFF6E}]

1.1.5.3 Usage of Mcu_DeInit API

The Mcu_DeInit API should be called only after all functions have completed their execution in slave cores.

[cover parentID MCU={E02F04BC-B8D2-47c0-83D2-E9BA65207E8E}]

1.1.5.4 Error handling for Timer IP APIs

DETs and Production errors are not reported by the Timer IP APIs. Hence the integrity of the input arguments for these APIs must be done by the user of these APIs.

[cover parentID MCU={46F34BBF-11B7-4ac0-9DA7-73566A300E9D}]

1.1.5.5 User mode support

The MCU Driver supports Supervisor and User-1 modes to write into registers which can be written in the Supervisor mode and User-1 mode.

[cover parentID MCU={E0E98A25-3A4F-478b-B80B-9237918239B5}]

1.1.5.6 Reset reason due to HSM

The Mcu_GetResetReason API does not support application and system resets occurring due to HSM. If an application/system reset due to HSM occurs, then Mcu_GetResetReason returns MCU_RESET_UNDEFINED. In such case, user must use Mcu_GetResetRawValue API to identify the reset reason.

[cover parentID MCU={15307DAC-2ED5-42fe-BDF9-00BC40FCB1FA}]

1.1.5.7 Reset reason due to multiple resets

The Mcu_GetResetReason API does not support multiple reset reasons, unless they are associated with power on reset as there are many other combinations which cannot be covered.

[cover parentID MCU={30EB1B27-5B0A-4581-9C00-05345C1945AB}]

1.1.5.8 Power modes entry

Before entering any power down mode like Idle, sleep or standby, the steps for ramping down the frequencies mentioned in the Power management system (PMS) chapter of the HW Target Specification should be followed.

[cover parentID MCU={3C41313F-F55F-46b3-A2B4-B384C5205D21}]

1.1.5.9 Generic AoUs to users of MCU

Users of the MCU shall ensure to provide valid input parameters for TOM/ATOM, CCU6, GPT12 APIs, MCU De-init and Timer Ip De-init APIs should be called before re-initializing. Modules shall use the APIs provided by the MCU driver to access common resources and to perform a force update of the GTM registers.

[cover parentID MCU={AB317AE6-76D0-433d-ADE5-992094CB5901}]

1.1.5.10 Timer channel reservation in MCU hardware resource allocation

For GTM, CCU6, GPT12 and ERU hardware channels, channel reserved and not utilized by any of the drivers, has to be unreserved. Similarly for STM comparators, comparator reserved and not utilized by any of the driver should be unreserved.

1.1.5.11 Usage of Mcu_SetMode API

If the MCU driver is programmed to enter into the sleep or standby mode, where all the CPUs unanimously decide to enter the sleep/standby mode, then the slave cores should enter the respective power down modes first, with the master core being the last CPU to enter the power down mode.

[cover parentID MCU={E8E1B722-AE0A-4bb6-BD92-F79F3A200DA4}]

1.1.5.12 Cluster 0 clock should not be disabled if GTM is to be used

Cluster 0 clock should always be kept enabled in the configuration if the GTM is used as CMU derives its clock from Cluster 0 clock.

[cover parentID MCU={2EDBA464-E77A-423c-A5DB-978106D4819F}]

1.1.5.13 CCU6 and GPT12 initialization is performed only for the kernel/ timers reserved by the user

CCU6 and GPT12 initialization is performed only for the kernel/timers reserved by the user.

1.1.5.14 Approximation of frequency to divider calculation

In MCU clock configuration container McuClockSettingConfig the user enters a desired frequency for all the clocks.

The MCU driver automatically calculates the divider for all the clocks based on configured clock frequency and its source frequency (Source Frequency / Configured Clock Frequency).

If the calculated divider is an integer then the exact calculated value for the divider is programmed in the SFR. In case the calculated divider is not an integer but within +/- 0.1 of an integer. Then the closest integer value is considered and programmed.

For example if the McuClockReferencePointFrequency2 is 200 MHz and McuI2CFrequency is configured as 66.6 MHz, the calculated divider value is 3.003.

In this scenario, a value of 3 will be considered to be programmed for the divider value as it is within the threshold of +/- 0.1

1.1.5.15 Timer APIs in the driver

The MCU driver contains a submodule apart from providing its main functionality as described in AUTOSAR. The submodule, Mcu_17_TimerIp, contains support functions for GTM, CCU6 and GPT12 timer channels, which may be used by other drivers for initializing, starting and so on of timer channels. The MCU driver through the Mcu_Init() API initializes the GTM global configurations such as cluster, clock management unit, time base unit, etc. initializes the clock control for CCU6 and GPT12.

1.2 Assumptions of Use (AoU)

The AoU for the MCU driver are as follows.

- **Atomic access using TriCore atomic instruction for ERU registers**

User of the ERU shall ensure that all the ERU-specific SFRs are accessed atomically.
[cover parentID MCU={7E9E92CE-7018-4b24-B184-DB24346D9E8A}]

- **ConfigPtr passed to InitCheck**

User of the MCU shall ensure that InitCheck is invoked with the same ConfigPtr that was used during initialization.
[cover parentID MCU={ADE0F1CA-CEC3-423c-AA12-F673593DB8F2}]

- **Correctness of the configuration is generated - ERU**

User of the MCU (ERU) shall ensure that the resource allocation information generated for the ERU channels is as per the configuration in the GUI.
[cover parentID MCU={C4CA831B-4FF9-4d97-A06B-B571161992DE}]

- **Critical section protection with Interrupt enable/disable**

User of the MCU (TOM/ATOM) shall ensure that the critical section protection provided by the MCU for TOM and ATOM shall be implemented to disable interrupts.
[cover parentID MCU={276431BA-062F-47b5-B2E8-270B6095F087}]

- **Freedom from Interference**

It is the onus on the user to provide protection to the MCAL data and SFRs from the QM software to avoid any SFR or memory corruption.
[cover parentID MCU={78293C3C-A3AB-4c45-BE00-30A0D271FF97}]

- **Generic AoUs for the users of the MCU**

- Drivers using the MCU shall ensure that GTM, CCU6 and GPT12 APIs are invoked after completion of the MCU initialization (clock tree initialization).

- Drivers using the MCU shall ensure to provide valid input parameters for TIM/TOM/ATOM, CCU6 and GPT12 APIs.

- MCU de-init and TimerIp de-init APIs shall be called before re-initializing the MCU TimerIp-related initialization services, respectively.

- Common resources shall be accessed using the MCU APIs.
[cover parentID MCU={E91C15B4-38E0-485f-ADAA-EBCFFD98D831}]

- **InitCheck sequence**

User shall invoke the Mcu_InitCheck() API to ensure the initialization is done correctly.

The McuInitCheckApi parameter shall be enabled and the user of the MCU shall call the InitCheck function before the execution of any runtime API (except GetVersionInfo) but after the completion of the MCU initialization sequence.
[cover parentID MCU={AF9A5DC2-05BA-4b55-8377-D1A640B25832}]

- **Interrupt source needs to be checked by user for GPT12 ISR**

User shall ensure that the intended GPT12 channel is the source of the interrupt to avoid unexpected/spurious interrupts.
[cover parentID MCU={EA111806-7E04-4e56-AD1A-AF63E5648682}]

- **Maximum STM compare duration**

User of the MCU (STM) shall ensure that the maximum compare duration does not exceed the 32-bit compare value.

[cover parentID MCU={22FB290D-B9BC-41ca-81C8-A85E6AF795D5}]

- **Mcu_17_Gtm_ConnectTimerOutToPortPin shall not conflict with the configured TOUTs in GtmTimerPortPinSelect**

User shall ensure that Mcu_17_Gtm_ConnectTimerOutToPortPin shall not conflict with the configured TOUTs in GtmTimerPortPinSelect for respective TOM/ATOM channels.
[cover parentID MCU={F7EF2127-FF0D-4a52-949B-B52ECF8AE8AB}]

- **Provide correct configuration**

User shall provide the correct configuration values for the configuration parameters.
[cover parentID MCU={1E99EFD8-6D52-4be8-AF7E-8D6C82CC41D5}]

- **RAM section base address**

User shall provide the start address for the RAM section as per the natural memory alignment of the memory type.
[cover parentID MCU={4B92F5E7-BD7A-48eb-805C-8B7C525A3ED7}]

- **Sequence to enter the Sleep or Standby mode using the Mcu_SetMode API**

User shall ensure that when the MCU driver is programmed to enter into the sleep or standby mode where all the CPUs unanimously decide to enter the sleep or standby mode, the slave cores should enter the respective power down modes

first, with the master core being the last CPU to enter the power down mode.
[cover parentID MCU={2261FEE8-1D74-46f2-929C-BFA1A65A7541}]

- **Setting same trap again**

When the McuIfxTrapApi configuration parameter is set to TRUE and the Mcu_SetTrapRequest() API is used for setting a trap, user shall ensure that the same trap cause is cleared before calling the Mcu_SetTrapRequest() API.
[cover parentID MCU={E2582802-9F0C-4794-9EC6-A30E801DFD95}]

- **SMU alarms with clock initialization**

User shall disable the SMU alarms relating to the clock tree before calling the Mcu_InitClock() and Mcu_DistributePllClock() APIs and re-configure to user setting after the successful execution of both the APIs. Alarms related to clock tree are as follows:

- ALM21[15] - PLLx/fSPB alive (where x: 0,1,2)
- ALM8[0] - OSC clock frequency out of range
- ALM8[1] - Back-up clock out-of-range alarm
- ALM8[2] - Back-up clock alive alarm
- ALM8[3] - System PLL DCO loss of lock event
- ALM8[4] - Peripheral PLL DCO loss of lock event

[cover parentID MCU={D10AE831-59F1-4bf4-A3D1-F41F9CED6C9B}]

- **Software reset configuration**

User shall ensure that when the Mcu_PerformReset API is called to perform software reset, the McuSWResetConf parameter shall not be configured as no reset.
[cover parentID MCU={34569091-6D4D-4789-BA0E-193A77598D5F}]

- **STM is enabled**

User of the MCAL shall ensure that the STM is enabled and not in the sleep mode before invoking any MCAL APIs.

[cover parentID MCU={944C58EE-586A-49f6-8036-C206C63762E1}]

- **STM same configuration used for check and setup comparator**

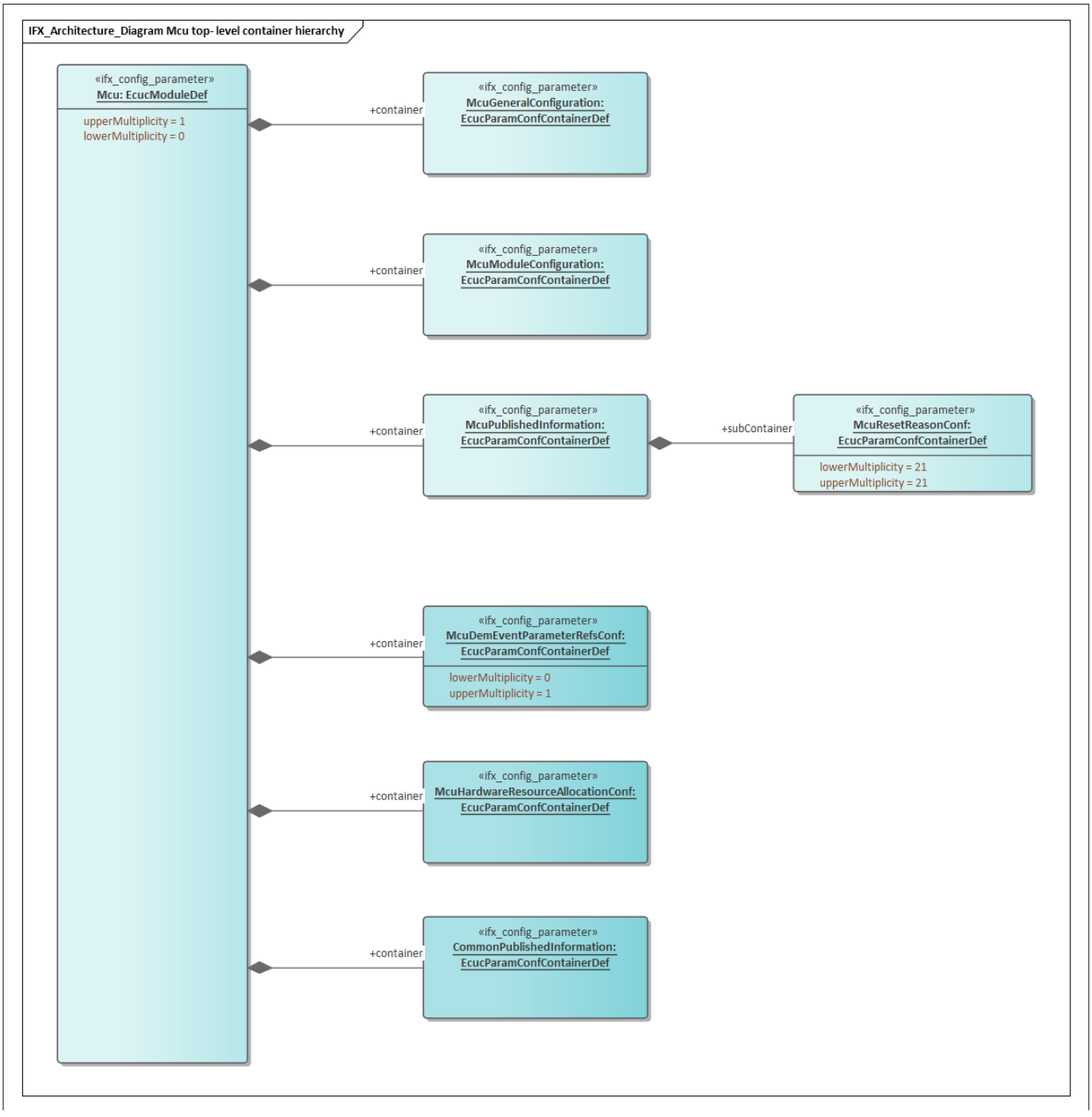
User of the MCU (STM) shall provide same configuration for the SetupComparator() and CheckComparator() APIs.

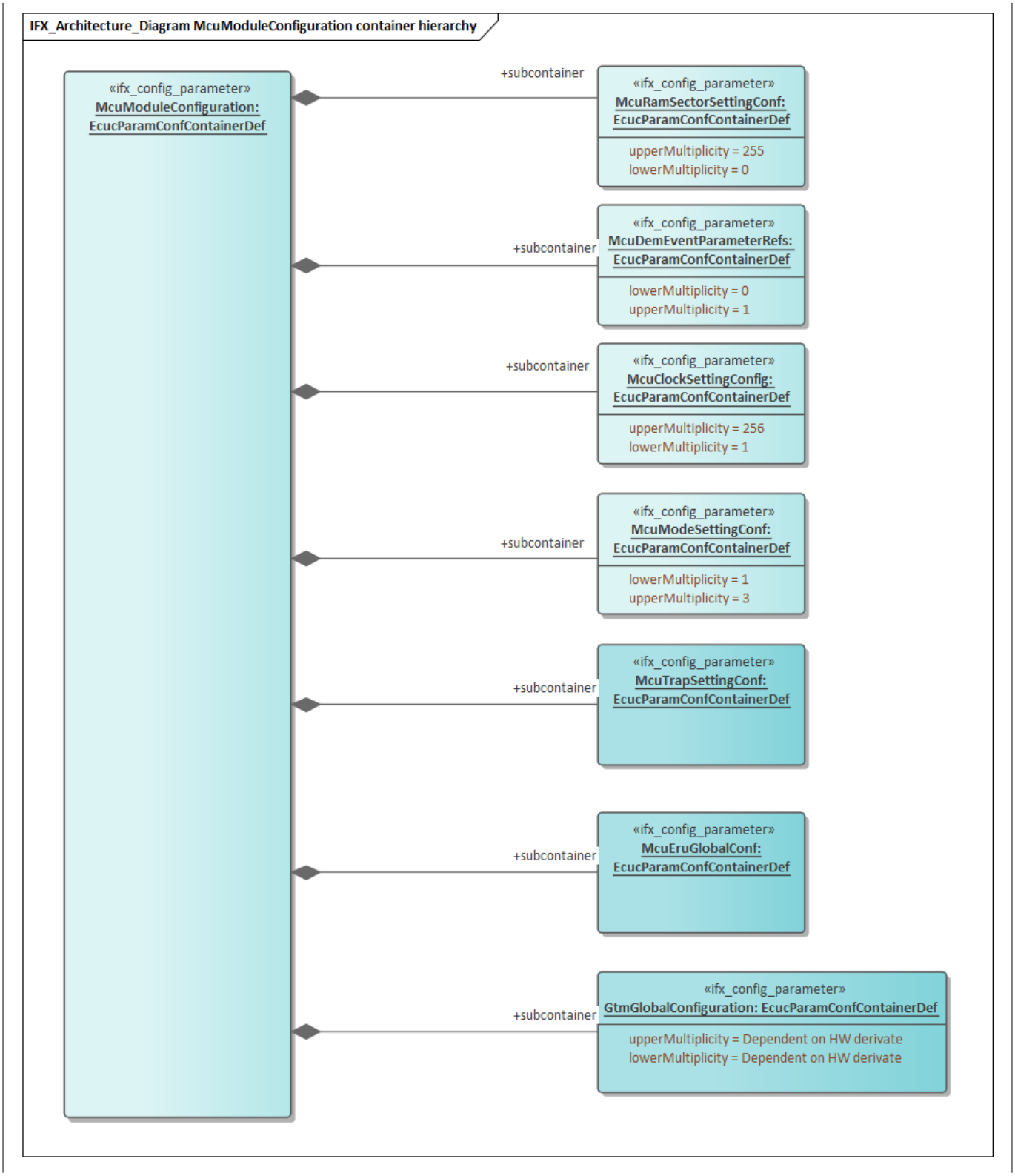
[cover parentID MCU={3BC33D10-04B2-4b7f-82E7-5F93FDB874E8}]

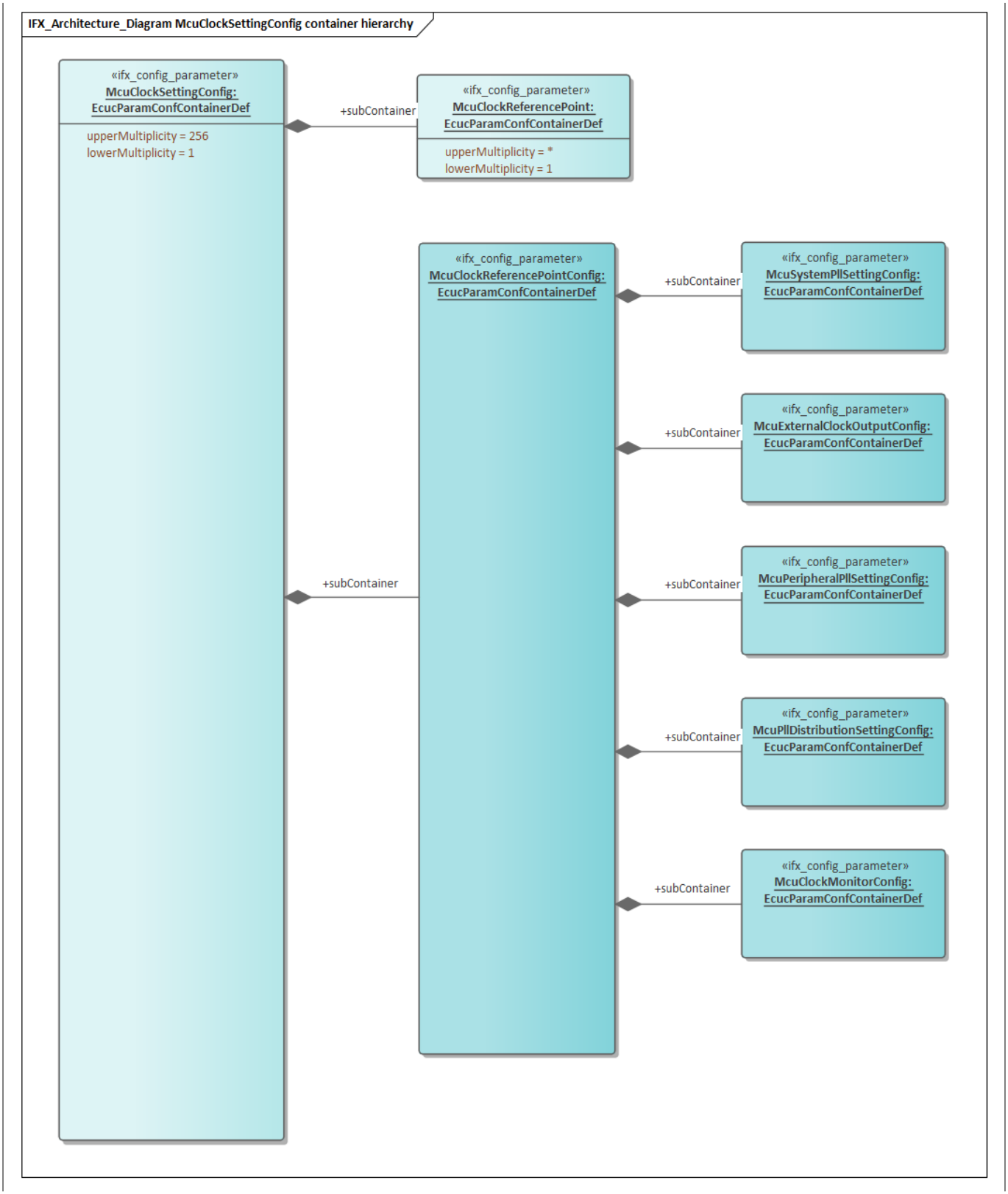
1.3 Reference information

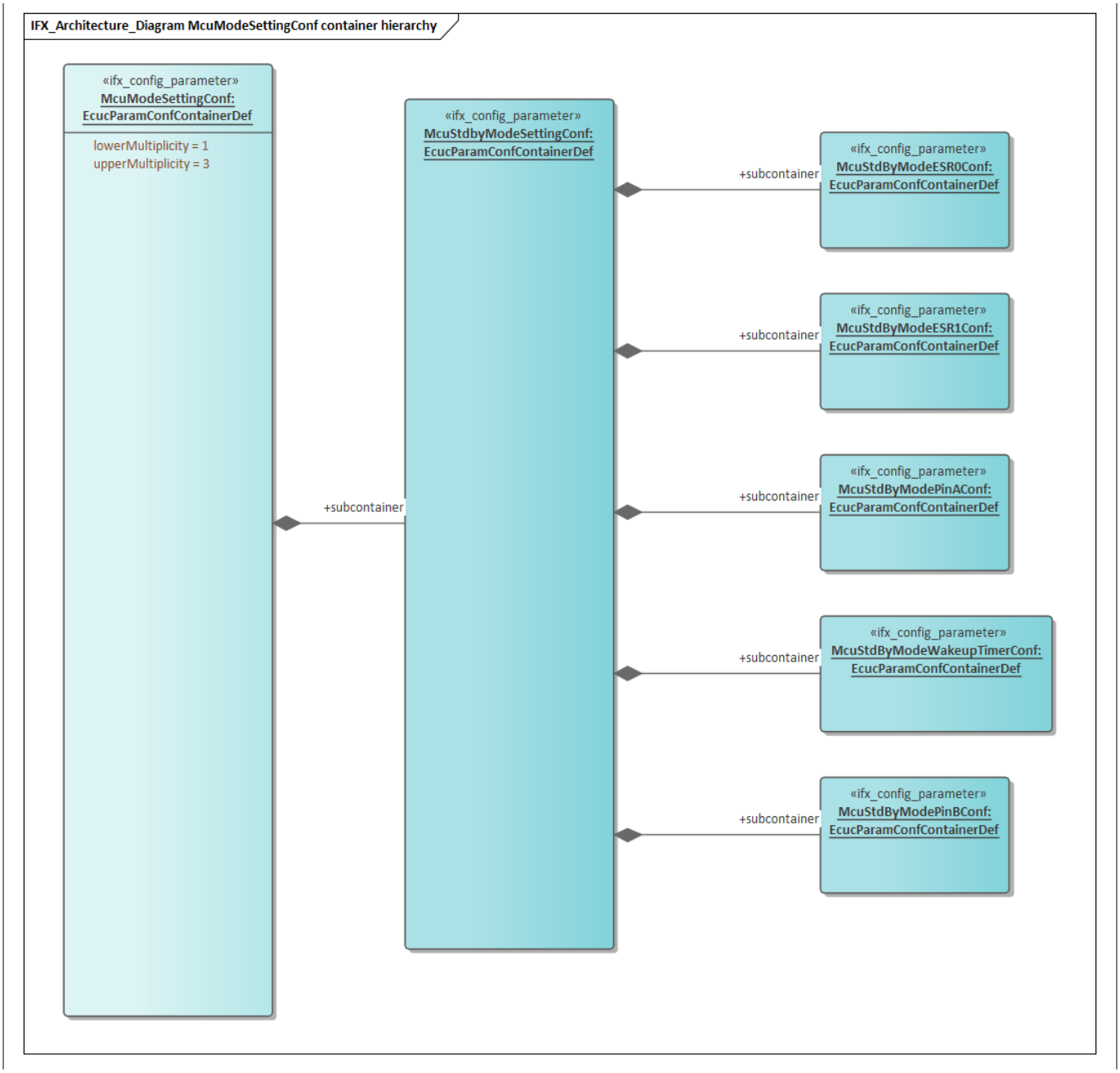
1.3.1 Configuration interfaces

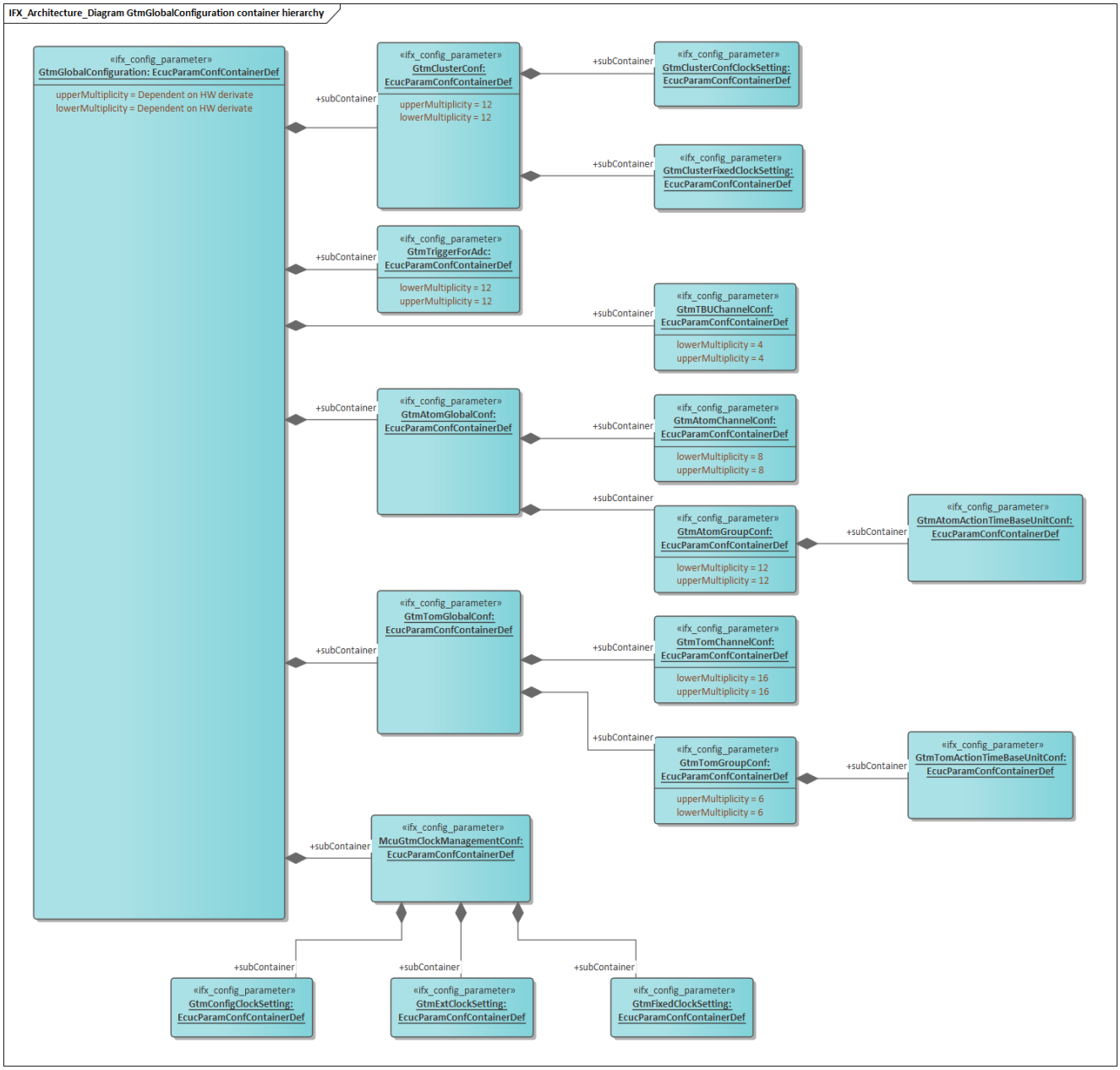
Supported configuration variant: Post-Build


IFX_Architecture_Diagram Mcu top- level container hierarchy
«ifx_config_parameter»
Mcu: EcucModuleDef
upperMultiplicity = 1
lowerMultiplicity = 0
+container
«ifx_config_parameter»
McuGeneralConfiguration:
EcucParamConfContainerDef
+container
«ifx_config_parameter»
McuModuleConfiguration:
EcucParamConfContainerDef
+container
«ifx_config_parameter»
McuPublishedInformation:
EcucParamConfContainerDef
+subContainer
«ifx_config_parameter»
McuResetReasonConf:
EcucParamConfContainerDef
lowerMultiplicity = 21
upperMultiplicity = 21
+container
«ifx_config_parameter»
McuDemEventParameterRefsConf:
EcucParamConfContainerDef
lowerMultiplicity = 0
upperMultiplicity = 1
+container
«ifx_config_parameter»
McuHardwareResourceAllocationConf:
EcucParamConfContainerDef
+container
«ifx_config_parameter»
CommonPublishedInformation:
EcucParamConfContainerDef


IFX_Architecture_Diagram McuModuleConfiguration container hierarchy
«ifx_config_parameter»
McuModuleConfiguration:
EcucParamConfContainerDef
+subcontainer
«ifx_config_parameter»
McuRamSectorSettingConf:
EcucParamConfContainerDef
upperMultiplicity = 255
lowerMultiplicity = 0
+subcontainer
«ifx_config_parameter»
McuDemEventParameterRefs:
EcucParamConfContainerDef
lowerMultiplicity = 0
upperMultiplicity = 1
+subcontainer
«ifx_config_parameter»
McuClockSettingConfig:
EcucParamConfContainerDef
upperMultiplicity = 256
lowerMultiplicity = 1
+subcontainer
«ifx_config_parameter»
McuModeSettingConf:
EcucParamConfContainerDef
lowerMultiplicity = 1
upperMultiplicity = 3
+subcontainer
«ifx_config_parameter»
McuTrapSettingConf:
EcucParamConfContainerDef
+subcontainer
«ifx_config_parameter»
McuEruGlobalConf:
EcucParamConfContainerDef
+subcontainer
«ifx_config_parameter»
GtmGlobalConfiguration: EcucParamConfContainerDef
upperMultiplicity = Dependent on HW derivate
lowerMultiplicity = Dependent on HW derivate


IFX_Architecture_Diagram McuClockSettingConfig container hierarchy
«ifx_config_parameter»
McuClockSettingConfig:
EcucParamConfContainerDef
upperMultiplicity = 256
lowerMultiplicity = 1
+subContainer
«ifx_config_parameter»
McuClockReferencePoint:
EcucParamConfContainerDef
upperMultiplicity = *
lowerMultiplicity = 1
«ifx_config_parameter»
McuClockReferencePointConfig:
EcucParamConfContainerDef
+subContainer
«ifx_config_parameter»
McuSystemPllSettingConfig:
EcucParamConfContainerDef
+subContainer
«ifx_config_parameter»
McuExternalClockOutputConfig:
EcucParamConfContainerDef
+subContainer
«ifx_config_parameter»
McuPeripheralPllSettingConfig:
EcucParamConfContainerDef
+subContainer
«ifx_config_parameter»
McuPllDistributionSettingConfig:
EcucParamConfContainerDef
+subContainer
«ifx_config_parameter»
McuClockMonitorConfig:
EcucParamConfContainerDef
+subContainer


IFX_Architecture_Diagram McuModeSettingConf container hierarchy
«ifx_config_parameter»
McuModeSettingConf:
EcucParamConfContainerDef
lowerMultiplicity = 1
upperMultiplicity = 3
+subcontainer
«ifx_config_parameter»
McuStdbyModeSettingConf:
EcucParamConfContainerDef
+subcontainer
«ifx_config_parameter»
McuStdByModeESR0Conf:
EcucParamConfContainerDef
+subcontainer
«ifx_config_parameter»
McuStdByModeESR1Conf:
EcucParamConfContainerDef
+subcontainer
«ifx_config_parameter»
McuStdByModePinAConf:
EcucParamConfContainerDef
+subcontainer
«ifx_config_parameter»
McuStdByModeWakeupTimerConf:
EcucParamConfContainerDef
+subcontainer
«ifx_config_parameter»
McuStdByModePinBConf:
EcucParamConfContainerDef


IFX_Architecture_Diagram GtmGlobalConfiguration container hierarchy
«ifx_config_parameter»
GtmGlobalConfiguration: EcucParamConfContainerDef
upperMultiplicity = Dependent on HW derivate
lowerMultiplicity = Dependent on HW derivate
+subContainer
«ifx_config_parameter»
GtmClusterConf:
EcucParamConfContainerDef
upperMultiplicity = 12
lowerMultiplicity = 12
«ifx_config_parameter»
GtmClusterConfClockSetting:
EcucParamConfContainerDef
«ifx_config_parameter»
GtmClusterFixedClockSetting:
EcucParamConfContainerDef
«ifx_config_parameter»
GtmTriggerForAdc:
EcucParamConfContainerDef
lowerMultiplicity = 12
upperMultiplicity = 12
«ifx_config_parameter»
GtmTBUChannelConf:
EcucParamConfContainerDef
lowerMultiplicity = 4
upperMultiplicity = 4
«ifx_config_parameter»
GtmAtomGlobalConf:
EcucParamConfContainerDef
«ifx_config_parameter»
GtmAtomChannelConf:
EcucParamConfContainerDef
lowerMultiplicity = 8
upperMultiplicity = 8
«ifx_config_parameter»
GtmAtomGroupConf:
EcucParamConfContainerDef
lowerMultiplicity = 12
upperMultiplicity = 12
«ifx_config_parameter»
GtmAtomActionTimeBaseUnitConf:
EcucParamConfContainerDef
«ifx_config_parameter»
GtmTomGlobalConf:
EcucParamConfContainerDef
«ifx_config_parameter»
GtmTomChannelConf:
EcucParamConfContainerDef
lowerMultiplicity = 16
upperMultiplicity = 16
«ifx_config_parameter»
GtmTomGroupConf:
EcucParamConfContainerDef
upperMultiplicity = 6
lowerMultiplicity = 6
«ifx_config_parameter»
GtmTomActionTimeBaseUnitConf:
EcucParamConfContainerDef
«ifx_config_parameter»
McuGtmClockManagementConf:
EcucParamConfContainerDef
«ifx_config_parameter»
GtmConfigClockSetting:
EcucParamConfContainerDef
«ifx_config_parameter»
GtmExtClockSetting:
EcucParamConfContainerDef
«ifx_config_parameter»
GtmFixedClockSetting:
EcucParamConfContainerDef

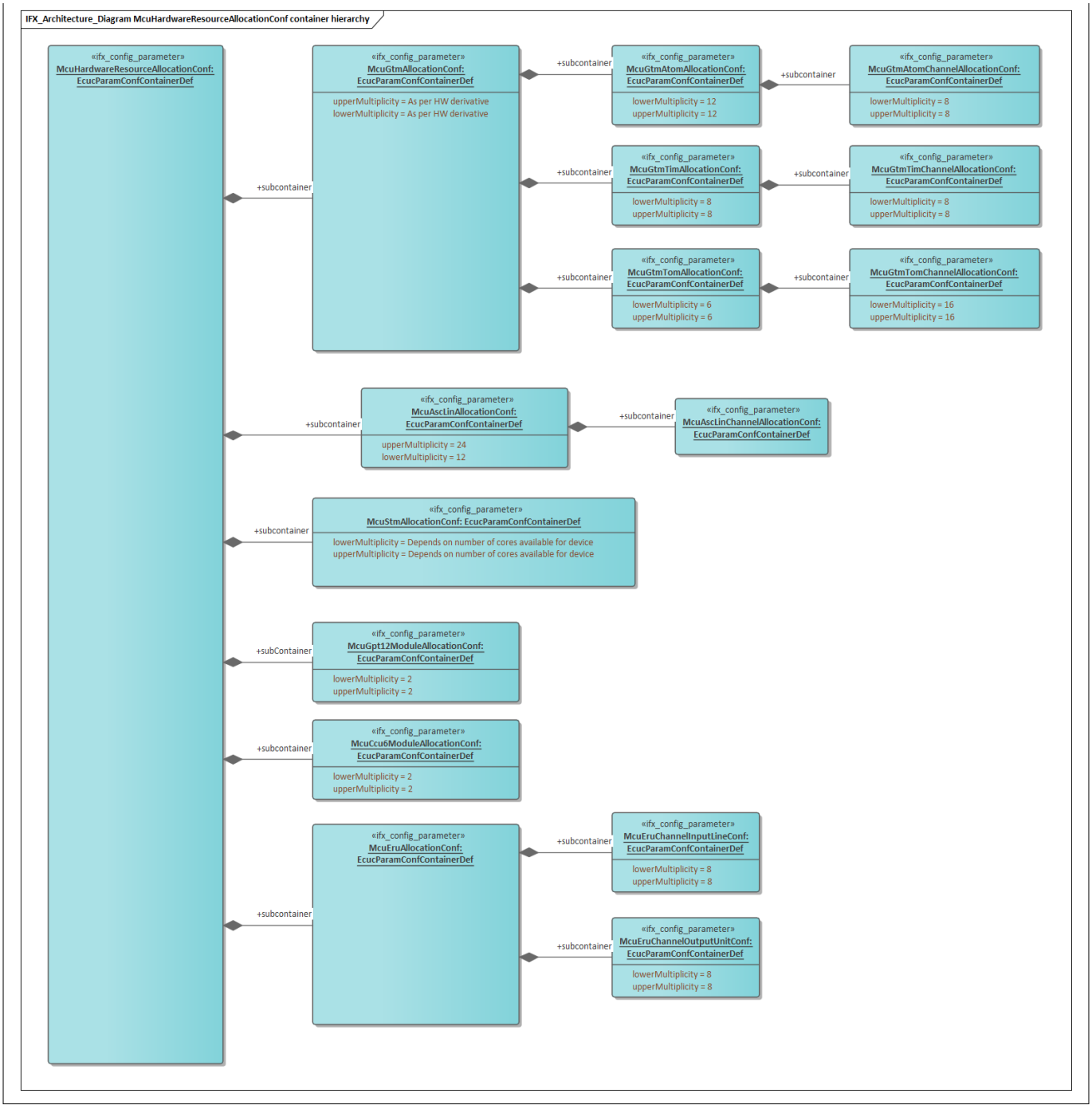


Figure 5 Container hierarchy along with their configuration parameters

1.3.1.1 Container: McuClockMonitorConfig

Post-Build Variant Multiplicity: -

Multiplicity Configuration Class: -

1.3.1.1.1 McuBackupClockMonEnable

Table 4 Specification for McuBackupClockMonEnable

Name	`McuBackupClockMonEnable`		
Description	Specifies if the Backup clock monitoring is enabled/disabled. TRUE: Backup clock monitoring is enabled FALSE: Backup clock monitoring is disabled		
Multiplicity	1..1	**Type**	EcucBooleanParamDef
Range	TRUE FALSE		
Default value	FALSE		
Post-build variant value	FALSE	**Post-build variant multiplicity**	-
Value configuration class	Pre-Compile	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	LOCAL
Dependency	-		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.1.2 McuBackupClockRangeMonEnable

Table 5 Specification for McuBackupClockRangeMonEnable

Name	`McuBackupClockRangeMonEnable`		
Description	Specifies if the Backup clock range monitoring is enabled/disabled. TRUE: Backup clock range monitoring is enabled FALSE: Backup clock range monitoring is disabled		
Multiplicity	1..1	**Type**	EcucBooleanParamDef
Range	TRUE FALSE		
Default value	FALSE		
Post-build variant value	FALSE	**Post-build variant multiplicity**	-
Value configuration class	Pre-Compile	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	LOCAL
Dependency	-		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.1.3 McuPll0ClockMonEnable

Table 6 Specification for McuPll0ClockMonEnable

Name	`McuPll0ClockMonEnable`		
Description	Specifies if the PLL0 monitoring is enabled/disabled. TRUE : PLL0 monitoring is enabled FALSE: PLL0 monitoring is disabled		
Multiplicity	1..1	**Type**	EcucBooleanParamDef
Range	TRUE FALSE		
Default value	FALSE		
Post-build variant value	FALSE	**Post-build variant multiplicity**	-
Value configuration class	Pre-Compile	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	LOCAL
Dependency	-		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.1.4 McuPll1ClockMonEnable

Table 7 Specification for McuPll1ClockMonEnable

Name	`McuPll1ClockMonEnable`		
Description	Specifies if the PLL1 monitoring is enabled/disabled. TRUE : PLL1 monitoring is enabled FALSE: PLL1 monitoring is disabled		
Multiplicity	1..1	**Type**	EcucBooleanParamDef
Range	TRUE FALSE		
Default value	FALSE		
Post-build variant value	TRUE	**Post-build variant multiplicity**	-
Value configuration class	Pre-Compile	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	LOCAL
Dependency	-		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.1.5 McuPll2ClockMonEnable

Table 8 Specification for McuPll2ClockMonEnable

Name	`McuPll2ClockMonEnable`		
Description	Specifies if the PLL2 monitoring is enabled/disabled. TRUE : PLL2 monitoring is enabled FALSE: PLL2 monitoring is disabled		
Multiplicity	1..1	**Type**	EcucBooleanParamDef
Range	TRUE FALSE		
Default value	FALSE		
Post-build variant value	FALSE	**Post-build variant multiplicity**	-
Value configuration class	Pre-Compile	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	LOCAL
Dependency	-		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.1.6 McuSpbClockMonEnable

Table 9 Specification for McuSpbClockMonEnable

Name	`McuSpbClockMonEnable`		
Description	Specifies if the SPB clock monitoring is enabled/disabled. TRUE : SPB clock monitoring is enabled FALSE: SPB clock monitoring is disabled		
Multiplicity	1..1	**Type**	EcucBooleanParamDef
Range	TRUE FALSE		
Default value	FALSE		
Post-build variant value	FALSE	**Post-build variant multiplicity**	-
Value configuration class	Pre-Compile	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	LOCAL
Dependency	-		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.2 Container: McuGpt12PrescalerConf

This container defines the configuration parameters for the GPT prescalar
Post-Build Variant Multiplicity: -
Multiplicity Configuration Class: -

1.3.1.2.1 Gpt1BlockPrescalerSel

Table 10 Specification for Gpt1BlockPrescalerSel

Name	`Gpt1BlockPrescalerSel`		
Description	Specifies the selection for GPT1 block prescalar		
Multiplicity	1..1	**Type**	EcucEnumerationParamDef
Range	GPT1_BLOCK_NOT_USED: GPT1 Timer Block is not used GPT1_PRESCALING_FACTOR_16: GPT1 Timer Block is clocked at GPT frequency by 16 GPT1_PRESCALING_FACTOR_32: GPT1 Timer Block is clocked at GPT frequency by 32 GPT1_PRESCALING_FACTOR_4: GPT1 Timer Block is clocked at GPT frequency by 4 GPT1_PRESCALING_FACTOR_8: GPT1 Timer Block is clocked at GPT frequency by 8		
Default value	GPT1_BLOCK_NOT_USED		
Post-build variant value	TRUE	**Post-build variant multiplicity**	-
Value configuration class	Post-Build	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	LOCAL
Dependency	McuGpt12ModuleAllocationConf		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.2.2 Gpt2BlockPrescalerSel

Table 11 Specification for Gpt2BlockPrescalerSel

Name	`Gpt2BlockPrescalerSel`		
Description	Specifies the selection for GPT2 block prescalar		
Multiplicity	1..1	**Type**	EcucEnumerationParamDef
Range	GPT2_BLOCK_NOT_USED: GPT2 Timer Block is not used GPT2_PRESCALING_FACTOR_16: GPT2 Timer Block is clocked at GPT frequency by 16 GPT2_PRESCALING_FACTOR_2: GPT2 Timer Block is clocked at GPT frequency by 2 GPT2_PRESCALING_FACTOR_4: GPT2 Timer Block is clocked at GPT frequency by 4 GPT2_PRESCALING_FACTOR_8: GPT2 Timer Block is clocked at GPT frequency by 8		
Default value	GPT2_BLOCK_NOT_USED		

(table continues...)

Table 11 (continued) Specification for Gpt2BlockPrescalerSel

Post-build variant value	TRUE	**Post-build variant multiplicity**	-
Value configuration class	Post-Build	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	LOCAL
Dependency	McuGpt12ModuleAllocationConf		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.3 Container: McuStmAllocationConf

This container holds information related to MCU STM resource allocation configuration.

User is not allowed to change the name of the parameters in this container.
Post-Build Variant Multiplicity: -
Multiplicity Configuration Class: -

1.3.1.3.1 McuStmCmp0RegAllocationConf

Table 12 Specification for McuStmCmp0RegAllocationConf

Name	`McuStmCmp0RegAllocationConf`		
Description	The STM timer compare register 0 usage. *Note: Availability of module is based on the Release Notes.*		
Multiplicity	1..1	**Type**	EcucEnumerationParamDef
Range	STM_CMP0_NOT_USED: STM timer compare register 0 is not used. STM_CMP0_USED_BY_STM: STM timer compare register 0 is used by the STM. STM_CMP0_USED_BY_WDG: STM timer compare register 0 is used by the WDG.		
Default value	STM_CMP0_NOT_USED		
Post-build variant value	FALSE	**Post-build variant multiplicity**	-
Value configuration class	Pre-Compile	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	LOCAL
Dependency	-		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.3.2 McuStmCmp1RegAllocationConf

Table 13 Specification for McuStmCmp1RegAllocationConf

Name	`McuStmCmp1RegAllocationConf`		
Description	The STM timer compare register 1 usage. *Note: Availability of module is based on the Release Notes.*		
Multiplicity	1..1	**Type**	EcucEnumerationParamDef
Range	STM_CMP1_NOT_USED: STM timer compare register 1 is not used STM_CMP1_USED_BY_STM: STM timer compare register 1 is used by the STM STM_CMP1_USED_BY_WDG: STM timer compare register 1 is used by the WDG		
Default value	STM_CMP1_NOT_USED		
Post-build variant value	FALSE	**Post-build variant multiplicity**	-
Value configuration class	Pre-Compile	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	LOCAL
Dependency	-		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.4 Container: MCU_CB0_RESET

This container contains the configuration for the reset reason MCU_CB0_RESET

Post-Build Variant Multiplicity: -

Multiplicity Configuration Class: -

1.3.1.4.1 McuResetReason

Table 14 Specification for McuResetReason

Name	`McuResetReason`		
Description	Specifies the reset reason types available on the microcontroller. McuResetReason is microcontroller dependent and provided as fixed configuration which is non-modifiable by the user.		
Multiplicity	1..1	**Type**	EcucIntegerParamDef
Range	0 - 255		
Default value	11		
Post-build variant value	FALSE	**Post-build variant multiplicity**	-

(table continues...)

Table 14 (continued) Specification for McuResetReason

Value configuration class	Published-Information	**Multiplicity configuration class**	-
Origin	AUTOSAR_ECUC	**Scope**	ECU
Dependency	-		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.5 Container: MCU_CB1_RESET

This container contains the configuration for the reset reason MCU_CB1_RESET

Post-Build Variant Multiplicity: -

Multiplicity Configuration Class: -

1.3.1.5.1 McuResetReason

Table 15 Specification for McuResetReason

Name	`McuResetReason`		
Description	Specifies the reset reason types available on the microcontroller. McuResetReason is microcontroller dependent and provided as fixed configuration which is non-modifiable by the user.		
Multiplicity	1..1	**Type**	EcucIntegerParamDef
Range	0 - 255		
Default value	12		
Post-build variant value	FALSE	**Post-build variant multiplicity**	-
Value configuration class	Published-Information	**Multiplicity configuration class**	-
Origin	AUTOSAR_ECUC	**Scope**	ECU
Dependency	-		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.6 Container: MCU_CB3_RESET

This container contains the configuration for the reset reason MCU_CB3_RESET

Post-Build Variant Multiplicity: -

Multiplicity Configuration Class: -

1.3.1.6.1 McuResetReason

Table 16 Specification for McuResetReason

Name	McuResetReason		
Description	Specifies the reset reason types available on the microcontroller. McuResetReason is microcontroller dependent and provided as fixed configuration which is non-modifiable by the user.		
Multiplicity	1..1	**Type**	EcucIntegerParamDef
Range	0 - 255		
Default value	13		
Post-build variant value	FALSE	**Post-build variant multiplicity**	-
Value configuration class	Published-Information	**Multiplicity configuration class**	-
Origin	AUTOSAR_ECUC	**Scope**	ECU
Dependency	-		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.7 Container: MCU_ESR0_RESET

This container contains the configuration for the reset reason MCU_ESR0_RESET

Post-Build Variant Multiplicity: -

Multiplicity Configuration Class: -

1.3.1.7.1 McuResetReason

Table 17 Specification for McuResetReason

Name	McuResetReason		
Description	Specifies the reset reason types available on the microcontroller. McuResetReason is microcontroller dependent and provided as fixed configuration which is non-modifiable by the user.		
Multiplicity	1..1	**Type**	EcucIntegerParamDef
Range	0 - 255		
Default value	0		
Post-build variant value	FALSE	**Post-build variant multiplicity**	-
Value configuration class	Published-Information	**Multiplicity configuration class**	-
Origin	AUTOSAR_ECUC	**Scope**	ECU

(table continues...)

Table 17	(continued) Specification for McuResetReason
Dependency	-
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.

1.3.1.8 Container: MCU_ESR1_RESET

This container contains the configuration for the reset reason MCU_ESR1_RESET

Post-Build Variant Multiplicity: -

Multiplicity Configuration Class: -

1.3.1.8.1 McuResetReason

Table 18	Specification for McuResetReason		
Name	`McuResetReason`		
Description	Specifies the reset reason types available on the microcontroller. McuResetReason is microcontroller dependent and provided as fixed configuration which is non-modifiable by the user.		
Multiplicity	1..1	**Type**	EcucIntegerParamDef
Range	0 - 255		
Default value	1		
Post-build variant value	FALSE	**Post-build variant multiplicity**	-
Value configuration class	Published-Information	**Multiplicity configuration class**	-
Origin	AUTOSAR_ECUC	**Scope**	ECU
Dependency	-		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.9 Container: MCU_EVR33_RESET

This container contains the configuration for the reset reason MCU_EVR33_RESET

Post-Build Variant Multiplicity: -

Multiplicity Configuration Class: -

1.3.1.9.1 McuResetReason

Table 19	Specification for McuResetReason
Name	`McuResetReason`
Description	Specifies the reset reason types available on the microcontroller. McuResetReason is microcontroller dependent and provided as fixed configuration which is non-modifiable by the user.

(table continues...)

Table 19 (continued) Specification for McuResetReason

Multiplicity	1..1	**Type**	EcucIntegerParamDef
Range	0 - 255		
Default value	15		
Post-build variant value	FALSE	**Post-build variant multiplicity**	-
Value configuration class	Published-Information	**Multiplicity configuration class**	-
Origin	AUTOSAR_ECUC	**Scope**	ECU
Dependency	-		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.10 Container: MCU_EVRC_RESET

This container contains the configuration for the reset reason MCU_EVRC_RESET

Post-Build Variant Multiplicity: -

Multiplicity Configuration Class: -

1.3.1.10.1 McuResetReason

Table 20 Specification for McuResetReason

Name	`McuResetReason`		
Description	Specifies the reset reason types available on the microcontroller. McuResetReason is microcontroller dependent and provided as fixed configuration which is non-modifiable by the user.		
Multiplicity	1..1	**Type**	EcucIntegerParamDef
Range	0 - 255		
Default value	14		
Post-build variant value	FALSE	**Post-build variant multiplicity**	-
Value configuration class	Published-Information	**Multiplicity configuration class**	-
Origin	AUTOSAR_ECUC	**Scope**	ECU
Dependency	-		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.11 Container: MCU_LBIST_RESET

This container contains the configuration for the reset reason MCU_LBIST_RESET

Post-Build Variant Multiplicity: -

Multiplicity Configuration Class: -

1.3.1.11.1 McuResetReason

Table 21 Specification for McuResetReason

Name	McuResetReason		
Description	Specifies the reset reason types available on the microcontroller. McuResetReason is microcontroller dependent and provided as fixed configuration which is non-modifiable by the user.		
Multiplicity	1..1	**Type**	EcucIntegerParamDef
Range	0 - 255		
Default value	18		
Post-build variant value	FALSE	**Post-build variant multiplicity**	-
Value configuration class	Published-Information	**Multiplicity configuration class**	-
Origin	AUTOSAR_ECUC	**Scope**	ECU
Dependency	-		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.12 Container: MCU_POWER_ON_RESET

This container contains the configuration for the reset reason MCU_POWER_ON_RESET

Post-Build Variant Multiplicity: -

Multiplicity Configuration Class: -

1.3.1.12.1 McuResetReason

Table 22 Specification for McuResetReason

Name	McuResetReason		
Description	Specifies the reset reason types available on the microcontroller. McuResetReason is microcontroller dependent and provided as fixed configuration which is non-modifiable by the user.		
Multiplicity	1..1	**Type**	EcucIntegerParamDef
Range	0 - 255		
Default value	10		
Post-build variant value	FALSE	**Post-build variant multiplicity**	-
Value configuration class	Published-Information	**Multiplicity configuration class**	-

(table continues...)

Table 22 (continued) Specification for McuResetReason

Origin	AUTOSAR_ECUC	**Scope**	ECU
Dependency	-		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.13 Container: MCU_RESET_MULTIPLE

This container contains the configuration for the reset reason MCU_RESET_MULTIPLE

Post-Build Variant Multiplicity: -

Multiplicity Configuration Class: -

1.3.1.13.1 McuResetReason

Table 23 Specification for McuResetReason

Name	`McuResetReason`		
Description	Specifies the reset reason types available on the microcontroller. McuResetReason is microcontroller dependent and provided as fixed configuration which is non-modifiable by the user.		
Multiplicity	1..1	**Type**	EcucIntegerParamDef
Range	0 - 255		
Default value	254		
Post-build variant value	FALSE	**Post-build variant multiplicity**	-
Value configuration class	Published-Information	**Multiplicity configuration class**	-
Origin	AUTOSAR_ECUC	**Scope**	ECU
Dependency	-		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.14 Container: MCU_RESET_UNDEFINED

This container contains the configuration for the reset reason MCU_RESET_UNDEFINED

Post-Build Variant Multiplicity: -

Multiplicity Configuration Class: -

1.3.1.14.1 McuResetReason

Table 24 Specification for McuResetReason

Name	`McuResetReason`

(table continues...)

Table 24 (continued) Specification for McuResetReason

Description	Specifies the reset reason types available on the microcontroller. McuResetReason is microcontroller dependent and provided as fixed configuration which is non-modifiable by the user.		
Multiplicity	1..1	**Type**	EcucIntegerParamDef
Range	0 - 255		
Default value	255		
Post-build variant value	FALSE	**Post-build variant multiplicity**	-
Value configuration class	Published-Information	**Multiplicity configuration class**	-
Origin	AUTOSAR_ECUC	**Scope**	ECU
Dependency	-		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.15 Container: MCU_SMU_RESET

This container contains the configuration for the reset reason MCU_SMU_RESET

Post-Build Variant Multiplicity: -

Multiplicity Configuration Class: -

1.3.1.15.1 McuResetReason

Table 25 Specification for McuResetReason

Name	`McuResetReason`		
Description	Specifies the reset reason types available on the microcontroller. McuResetReason is microcontroller dependent and provided as fixed configuration which is non-modifiable by the user.		
Multiplicity	1..1	**Type**	EcucIntegerParamDef
Range	0 - 255		
Default value	2		
Post-build variant value	FALSE	**Post-build variant multiplicity**	-
Value configuration class	Published-Information	**Multiplicity configuration class**	-
Origin	AUTOSAR_ECUC	**Scope**	ECU
Dependency	-		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.16 Container: MCU_STBYR_RESET

This container contains the configuration for the reset reason MCU_STBYR_RESET

Post-Build Variant Multiplicity: -

Multiplicity Configuration Class: -

1.3.1.16.1 McuResetReason

Table 26 Specification for McuResetReason

Name	McuResetReason		
Description	Specifies the reset reason types available on the microcontroller. McuResetReason is microcontroller dependent and provided as fixed configuration which is non-modifiable by the user.		
Multiplicity	1..1	**Type**	EcucIntegerParamDef
Range	0 - 255		
Default value	17		
Post-build variant value	FALSE	**Post-build variant multiplicity**	-
Value configuration class	Published-Information	**Multiplicity configuration class**	-
Origin	AUTOSAR_ECUC	**Scope**	ECU
Dependency	-		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.17 Container: MCU_STM0_RESET

This container contains the configuration for the reset reason MCU_STM0_RESET

Post-Build Variant Multiplicity: -

Multiplicity Configuration Class: -

1.3.1.17.1 McuResetReason

Table 27 Specification for McuResetReason

Name	McuResetReason		
Description	Specifies the reset reason types available on the microcontroller. McuResetReason is microcontroller dependent and provided as fixed configuration which is non-modifiable by the user.		
Multiplicity	1..1	**Type**	EcucIntegerParamDef
Range	0 - 255		
Default value	4		

(table continues...)

Table 27 (continued) Specification for McuResetReason

Post-build variant value	FALSE	**Post-build variant multiplicity**	-
Value configuration class	Published-Information	**Multiplicity configuration class**	-
Origin	AUTOSAR_ECUC	**Scope**	ECU
Dependency	-		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.18 Container: MCU_STM1_RESET

This container contains the configuration for the reset reason MCU_STM1_RESET

Post-Build Variant Multiplicity: -

Multiplicity Configuration Class: -

1.3.1.18.1 McuResetReason

Table 28 Specification for McuResetReason

Name	`McuResetReason`		
Description	Specifies the reset reason types available on the microcontroller. McuResetReason is microcontroller dependent and provided as fixed configuration which is non-modifiable by the user.		
Multiplicity	1..1	**Type**	EcucIntegerParamDef
Range	0 - 255		
Default value	5		
Post-build variant value	FALSE	**Post-build variant multiplicity**	-
Value configuration class	Published-Information	**Multiplicity configuration class**	-
Origin	AUTOSAR_ECUC	**Scope**	ECU
Dependency	-		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.19 Container: MCU_STM2_RESET

This container contains the configuration for the reset reason MCU_STM2_RESET

Post-Build Variant Multiplicity: -

Multiplicity Configuration Class: -

1.3.1.19.1 McuResetReason

Table 29 Specification for McuResetReason

Name	McuResetReason		
Description	Specifies the reset reason types available on the microcontroller. McuResetReason is microcontroller dependent and provided as fixed configuration which is non-modifiable by the user.		
Multiplicity	1..1	**Type**	EcucIntegerParamDef
Range	0 - 255		
Default value	6		
Post-build variant value	FALSE	**Post-build variant multiplicity**	-
Value configuration class	Published-Information	**Multiplicity configuration class**	-
Origin	AUTOSAR_ECUC	**Scope**	ECU
Dependency	-		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.20 Container: MCU_STM3_RESET

This container contains the configuration for the reset reason MCU_STM3_RESET

Post-Build Variant Multiplicity: -

Multiplicity Configuration Class: -

1.3.1.20.1 McuResetReason

Table 30 Specification for McuResetReason

Name	McuResetReason		
Description	Specifies the reset reason types available on the microcontroller. McuResetReason is microcontroller dependent and provided as fixed configuration which is non-modifiable by the user.		
Multiplicity	1..1	**Type**	EcucIntegerParamDef
Range	0 - 255		
Default value	7		
Post-build variant value	FALSE	**Post-build variant multiplicity**	-
Value configuration class	Published-Information	**Multiplicity configuration class**	-
Origin	AUTOSAR_ECUC	**Scope**	ECU

(table continues...)

Table 30 (continued) Specification for McuResetReason	
Dependency	-
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.

1.3.1.21 Container: MCU_STM4_RESET

This container contains the configuration for the reset reason MCU_STM4_RESET

Post-Build Variant Multiplicity: -

Multiplicity Configuration Class: -

1.3.1.21.1 McuResetReason

Table 31 Specification for McuResetReason

Name	McuResetReason		
Description	Specifies the reset reason types available on the microcontroller. McuResetReason is microcontroller dependent and provided as fixed configuration which is non-modifiable by the user.		
Multiplicity	1..1	**Type**	EcucIntegerParamDef
Range	0 - 255		
Default value	8		
Post-build variant value	FALSE	**Post-build variant multiplicity**	-
Value configuration class	Published-Information	**Multiplicity configuration class**	-
Origin	AUTOSAR_ECUC	**Scope**	ECU
Dependency	-		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.22 Container: MCU_STM5_RESET

This container contains the configuration for the reset reason MCU_STM5_RESET

Post-Build Variant Multiplicity: -

Multiplicity Configuration Class: -

1.3.1.22.1 McuResetReason

Table 32 Specification for McuResetReason

Name	McuResetReason
Description	Specifies the reset reason types available on the microcontroller. McuResetReason is microcontroller dependent and provided as fixed configuration which is non-modifiable by the user.

(table continues...)

Table 32 (continued) Specification for McuResetReason

Multiplicity	1..1	**Type**	EcucIntegerParamDef
Range	0 - 255		
Default value	9		
Post-build variant value	FALSE	**Post-build variant multiplicity**	-
Value configuration class	Published-Information	**Multiplicity configuration class**	-
Origin	AUTOSAR_ECUC	**Scope**	ECU
Dependency	-		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.23 Container: MCU_SUPPLY_WDOG_RESET

This container contains the configuration for the reset reason MCU_SUPPLY_WDOG_RESET

Post-Build Variant Multiplicity: -

Multiplicity Configuration Class: -

1.3.1.23.1 McuResetReason

Table 33 Specification for McuResetReason

Name	`McuResetReason`		
Description	Specifies the reset reason types available on the microcontroller. McuResetReason is microcontroller dependent and provided as fixed configuration which is non-modifiable by the user.		
Multiplicity	1..1	**Type**	EcucIntegerParamDef
Range	0 - 255		
Default value	16		
Post-build variant value	FALSE	**Post-build variant multiplicity**	-
Value configuration class	Published-Information	**Multiplicity configuration class**	-
Origin	AUTOSAR_ECUC	**Scope**	ECU
Dependency	-		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.24 Container: MCU_SW_RESET

This container contains the configuration for the reset reason MCU_SW_RESET

Post-Build Variant Multiplicity: -

Multiplicity Configuration Class: -

1.3.1.24.1 McuResetReason

Table 34 Specification for McuResetReason

Name	McuResetReason		
Description	Specifies the reset reason types available on the microcontroller. McuResetReason is microcontroller dependent and provided as fixed configuration which is non-modifiable by the user.		
Multiplicity	1..1	**Type**	EcucIntegerParamDef
Range	0 - 255		
Default value	3		
Post-build variant value	FALSE	**Post-build variant multiplicity**	-
Value configuration class	Published-Information	**Multiplicity configuration class**	-
Origin	AUTOSAR_ECUC	**Scope**	ECU
Dependency	-		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.25 Container: CommonPublishedInformation

Container for common published information

Post-Build Variant Multiplicity: -

Multiplicity Configuration Class: -

1.3.1.25.1 ArMajorVersion

Table 35 Specification for ArMajorVersion

Name	ArMajorVersion		
Description	ArMajorVersion parameter provides the major version of the AUTOSAR specification.		
Multiplicity	1..1	**Type**	EcucIntegerParamDef
Range	0 - 255		
Default value	4		
Post-build variant value	FALSE	**Post-build variant multiplicity**	-
Value configuration class	Published-Information	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	LOCAL

(table continues...)

Table 35 (continued) Specification for ArMajorVersion

Dependency	-
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.

1.3.1.25.2 ArMinorVersion

Table 36 Specification for ArMinorVersion

Name	`ArMinorVersion`		
Description	ArMinorVersion parameter provides the minor version of the AUTOSAR Specification.		
Multiplicity	1..1	**Type**	EcucIntegerParamDef
Range	0 - 255		
Default value	As per the selected Autosar version		
Post-build variant value	FALSE	**Post-build variant multiplicity**	-
Value configuration class	Published-Information	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	LOCAL
Dependency	-		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.25.3 ArPatchVersion

Table 37 Specification for ArPatchVersion

Name	`ArPatchVersion`		
Description	ArPatchVersion parameter provides the patch version of the AUTOSAR Specification.		
Multiplicity	1..1	**Type**	EcucIntegerParamDef
Range	0 - 255		
Default value	As per the selected Autosar version		
Post-build variant value	FALSE	**Post-build variant multiplicity**	-
Value configuration class	Published-Information	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	LOCAL
Dependency	-		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.25.4 ModuleId

Table 38 Specification for ModuleId

Name	`ModuleId`		
Description	ModuleId provides the Module Id.		
Multiplicity	1..1	**Type**	EcucIntegerParamDef
Range	0 - 65535		
Default value	101		
Post-build variant value	FALSE	**Post-build variant multiplicity**	-
Value configuration class	Published-Information	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	LOCAL
Dependency	-		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.25.5 Release

Table 39 Specification for Release

Name	`Release`		
Description	Release parameter provides the TC3xx derivative used for the implementation.		
Multiplicity	1..1	**Type**	EcucStringParamDef
Range	String		
Default value	As per HW derivative		
Post-build variant value	FALSE	**Post-build variant multiplicity**	-
Value configuration class	Published-Information	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	LOCAL
Dependency	-		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.25.6 SwMajorVersion

Table 40 Specification for SwMajorVersion

Name	`SwMajorVersion`
Description	SwMajorVersion provides the major version of the Software.

(table continues...)

Table 40 (continued) Specification for SwMajorVersion

Multiplicity	1..1	**Type**	EcucIntegerParamDef
Range	0 - 255		
Default value	As per driver version		
Post-build variant value	FALSE	**Post-build variant multiplicity**	-
Value configuration class	Published-Information	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	LOCAL
Dependency	-		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.25.7 SwMinorVersion

Table 41 Specification for SwMinorVersion

Name	`SwMinorVersion`		
Description	SwMinorVersion provides the minor version of the Software.		
Multiplicity	1..1	**Type**	EcucIntegerParamDef
Range	0 - 255		
Default value	As per driver version		
Post-build variant value	FALSE	**Post-build variant multiplicity**	-
Value configuration class	Published-Information	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	LOCAL
Dependency	-		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.25.8 SwPatchVersion

Table 42 Specification for SwPatchVersion

Name	`SwPatchVersion`		
Description	SwPatchVersion provides the patch version of the Software.		
Multiplicity	1..1	**Type**	EcucIntegerParamDef
Range	0 - 255		
Default value	As per driver version		

(table continues...)

Table 42 (continued) Specification for SwPatchVersion

Post-build variant value	FALSE	**Post-build variant multiplicity**	-
Value configuration class	Published-Information	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	LOCAL
Dependency	-		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.25.9 VendorId

Table 43 Specification for VendorId

Name	`VendorId`		
Description	VendorId provides the Vendor Id.		
Multiplicity	1..1	**Type**	EcucIntegerParamDef
Range	0 - 65535		
Default value	17		
Post-build variant value	FALSE	**Post-build variant multiplicity**	-
Value configuration class	Published-Information	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	LOCAL
Dependency	-		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.26 Container: GtmAtomActionTimeBaseUnitConf

This container holds the configuration parameters for the actual TBU setting. The action TBU setting is required to generate a trigger that can copy from shadow register to the actual registers for period, duty cycle and channel clock source.

Post-Build Variant Multiplicity: -

Multiplicity Configuration Class: -

1.3.1.26.1 GtmAtomActionTimeBaseSelection

Table 44 Specification for GtmAtomActionTimeBaseSelection

Name	`GtmAtomActionTimeBaseSelection`
Description	Specifies time base selected to compare with the value configured in GtmAtomActionTimeBaseValue.

(table continues...)

Table 44 (continued) Specification for GtmAtomActionTimeBaseSelection

Multiplicity	1..1	**Type**	EcucEnumerationParamDef
Range	ATOM_ACT_TB_TBU_TS0: ATOM group level trigger is generated when GtmAtomActionTimeBaseValue matches TBU_TS0 ATOM_ACT_TB_TBU_TS1: ATOM group level trigger is generated when GtmAtomActionTimeBaseValue matches TBU_TS1 ATOM_ACT_TB_TBU_TS2: ATOM group level trigger is generated when GtmAtomActionTimeBaseValue matches TBU_TS2		
Default value	ATOM_ACT_TB_TBU_TS0		
Post-build variant value	TRUE	**Post-build variant multiplicity**	-
Value configuration class	Post-Build	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	ECU
Dependency	-		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.26.2 GtmAtomActionTimeBaseValue

Table 45 Specification for GtmAtomActionTimeBaseValue

Name	`GtmAtomActionTimeBaseValue`		
Description	Specifies the time base value for the ATOM group channel level trigger. A trigger at the AGC level is raised when TBU_TS[x] (x can be selected through GtmAtomActionTimeBaseSelection) value matches the value configured in this configuration parameter. The trigger request has to be explicitly enabled by the user by setting the ATOM_AGC_ACT_TB.TB_TRIG bitfield.		
Multiplicity	1..1	**Type**	EcucIntegerParamDef
Range	1 - 16777215		
Default value	1		
Post-build variant value	TRUE	**Post-build variant multiplicity**	-
Value configuration class	Post-Build	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	ECU
Dependency	-		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.27 Container: GtmAtomChannelConf

This container holds the configuration parameters for ATOM channel- level parameters required to be configured globally. Therefore multiplicity is always 8.

The short name for the container shall be GtmAtomChannelConf_<x>, where x is an integer.

Note: The above naming convention is by default followed in Tresos, when new containers are added or when project is created.

Post-Build Variant Multiplicity: -

Multiplicity Configuration Class: -

1.3.1.27.1 GtmAtomChInternalTriggerEnable

Table 46 Specification for GtmAtomChInternalTriggerEnable

Name	`GtmAtomChInternalTriggerEnable`		
Description	Enables/disables internal trigger from channel 0 of the corresponding group channel number. If a channel belongs to AGC0 (channel number 0 - 7), setting this configuration parameter for the corresponding channel enables the trigger from channel0. Values: TRUE: enable internal trigger from channel 0 tor 7 (based on the AGC a channel belong to) FALSE: disable internal trigger from channel 0 to 7 (based on the AGC a channel belong to)		
Multiplicity	1..1	**Type**	EcucBooleanParamDef
Range	TRUE FALSE		
Default value	FALSE		
Post-build variant value	TRUE	**Post-build variant multiplicity**	-
Value configuration class	Post-Build	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	ECU
Dependency	-		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.27.2 GtmAtomChResetCn0OnTriggerEnable

Table 47 Specification for GtmAtomChResetCn0OnTriggerEnable

Name	`GtmAtomChResetCn0OnTriggerEnable`

(table continues...)

Table 47 (continued) Specification for GtmAtomChResetCn0OnTriggerEnable

Description	Enables/disables the ATOM channel counter CN0 value that will be reset on global trigger from any of the trigger sources. Values: TRUE: resetting of ATOM channel CN0 on global trigger from any trigger source is enabled FALSE: resetting of ATOM channel CN0 on global trigger from any trigger source is disabled		
Multiplicity	1..1	**Type**	EcucBooleanParamDef
Range	TRUE FALSE		
Default value	FALSE		
Post-build variant value	TRUE	**Post-build variant multiplicity**	-
Value configuration class	Post-Build	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	ECU
Dependency	-		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.27.3 GtmTimerPortPinSelect

Table 48 Specification for GtmTimerPortPinSelect

Name	`GtmTimerPortPinSelect`		
Description	Specifies the port pin to which the timer is connected.		
Multiplicity	1..1	**Type**	EcucEnumerationParamDef
Range	NONE: Timer is not connected to any port pin. TOUT[x]_SEL[y]_[i]_PORT[z]_PIN[q]: Specifies the TOUT connection for the timer. [x]: TOUT number (0-270) [y]: Selection (A-L) [i]: value corresponding to selection (0 - 11) [z]: Port number [q]: Pin number		
Default value	NONE		
Post-build variant value	TRUE	**Post-build variant multiplicity**	-
Value configuration class	Post-Build	**Multiplicity configuration class**	-

(table continues...)

Table 48 (continued) Specification for GtmTimerPortPinSelect

Origin	IFX	**Scope**	LOCAL
Dependency	-		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.28 Container: GtmTimChannelConf

This container holds the configuration parameters for TIM channel- level parameters required to be configured globally. Therefore multiplicity is always 8.

The short name for the container shall be GtmTimChannelConf_<x>, where x is an integer.

Note: The above naming convention is by default followed in Tresos, when new containers are added or when project is created.

Post-Build Variant Multiplicity: -

Multiplicity Configuration Class: -

1.3.1.28.1 GtmTimInpPortPinSel

Table 49 Specification for GtmTimInpPortPinSel

Name	`GtmTimInpPortPinSel`		
Description	Parameter to configure the input port pin connection for TIM channels.		
Multiplicity	1..1	**Type**	EcucEnumerationParamDef
Range	SEL0_NONE: No input port pin is selected SEL[x]_PORT[y]_PIN[z]: Port[y] Pin[z] is selected as an input. [x]: value programmed in the register [y]: port number [z]: pin number		
Default value	SEL0_NONE		
Post-build variant value	TRUE	**Post-build variant multiplicity**	-
Value configuration class	Post-Build	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	LOCAL
Dependency	-		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.29 Container: GtmAtomGlobalConf

This container holds the configuration parameters for ATOM global parameters. Various instances of ATOM channels can be used by ADC, PWM, GPT and WDG drivers and, therefore the global configuration for these channels within one ATOM group channel (AGC) is taken care of by this container.

The short name for the container shall be GtmAtomGlobalConf_<x>, where x is an integer.

Note: The above naming convention is by default followed in Tresos, when new containers are added or when project is created.

Post-Build Variant Multiplicity: -

Multiplicity Configuration Class: -

1.3.1.30 Container: GtmAtomGroupConf

This container holds the configuration parameters for ATOM group channel parameters. ATOM module has one group and therefore the multiplicity is 1.

Post-Build Variant Multiplicity: -

Multiplicity Configuration Class: -

1.3.1.31 Container: GtmClusterConf

This container holds the cluster configuration. A cluster is organized as a set of GTM sub peripheral instances. As an example, cluster-0 contains one instance of (CMU, TBU, TOM0, ATOM0 TIM0 etc.). This container holds configuration parameters for all cluster configuration modules.

The short name for the container shall be GtmClusterConf_<x>, where x is an integer.

Note: The above naming convention is by default followed in Tresos, when new containers are added or when project is created.

Post-Build Variant Multiplicity: -

Multiplicity Configuration Class: -

1.3.1.31.1 GtmCmuClusterInputClockDividerEnable

Table 50 Specification for GtmCmuClusterInputClockDividerEnable

Name	`GtmCmuClusterInputClockDividerEnable`		
Description	Enables/disables the dividing of fGTM to CMU. The configuration value CLS0_CLK_DIV defines the primary input clock period for CMU. If CLS0_CLK_DIV is configured to a value 0b10 (that is clock divider 2), the maximum CMU clock frequency for all other cluster c=1..n is also limited to the configured CMU clock frequency of cluster 0. *Note: For the clusters greater than 4, (only 100 MHz capable), the allowed settings for the CLS_CLK_DIV are 00 and 10 (clock divider 2).*		
Multiplicity	1..1	**Type**	EcucEnumerationParamDef
Range	CLS_CLK_CFG_DISABLED_SEL0: cluster x is disabled CLS_CLK_CFG_ENABLED_WITHOUT_DIV_SEL1: cluster x is enabled without clock divider CLS_CLK_CFG_ENABLED_WITH_DIV_SEL2: cluster x is enabled with clock divider		
Default value	CLS_CLK_CFG_ENABLED_WITH_DIV_SEL2		

(table continues...)

Table 50 (continued) Specification for GtmCmuClusterInputClockDividerEnable

Post-build variant value	TRUE	**Post-build variant multiplicity**	-
Value configuration class	Post-Build	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	ECU
Dependency	-		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.32 Container: GtmClusterConfClockSetting

This container contains the configuration (parameters) for the GTM cluster clock settings

Post-Build Variant Multiplicity: -

Multiplicity Configuration Class: -

1.3.1.32.1 GtmClusterConfClock0Src

Table 51 Specification for GtmClusterConfClock0Src

Name	`GtmClusterConfClock0Src`		
Description	Specifies the input clock source for the current GTM cluster sub- peripheral using configurable clock 0. User is not allowed to change the name of the configuration parameter.		
Multiplicity	1..1	**Type**	EcucEnumerationParamDef
Range	CMU_CONF_CLOCK0_SEL0: configurable clock 0 is used for the clock CMU_CONF_CLOCK8_SEL1: configurable clock8 is used for the clock EXT_CAPTURE_SEL2: external capture source is used for the clock		
Default value	CMU_CONF_CLOCK0_SEL0		
Post-build variant value	TRUE	**Post-build variant multiplicity**	-
Value configuration class	Post-Build	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	ECU
Dependency	-		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.32.2 GtmClusterConfClock1Src

Table 52 Specification for GtmClusterConfClock1Src

Name	`GtmClusterConfClock1Src`		
Description	Specifies the input clock source for the current GTM cluster sub peripheral using configurable clock 1. User is not allowed to change the name of the configuration parameter.		
Multiplicity	1..1	**Type**	EcucEnumerationParamDef
Range	CMU_CONF_CLOCK1_SEL0: configurable clock 1 is used for the clock CMU_CONF_CLOCK8_SEL1: configurable clock8 is used for the clock EXT_CAPTURE_SEL2: external capture source is used for the clock		
Default value	CMU_CONF_CLOCK1_SEL0		
Post-build variant value	TRUE	**Post-build variant multiplicity**	-
Value configuration class	Post-Build	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	ECU
Dependency	-		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.32.3 GtmClusterConfClock2Src

Table 53 Specification for GtmClusterConfClock2Src

Name	`GtmClusterConfClock2Src`		
Description	Specifies the input clock source for the current GTM cluster sub peripheral using configurable clock 2. User is not allowed to change the name of the configuration parameter.		
Multiplicity	1..1	**Type**	EcucEnumerationParamDef
Range	CMU_CONF_CLOCK2_SEL0: configurable clock 2 is used for the clock CMU_CONF_CLOCK8_SEL1: configurable clock8 is used for the clock EXT_CAPTURE_SEL2: external capture source is used for the clock		
Default value	CMU_CONF_CLOCK2_SEL0		
Post-build variant value	TRUE	**Post-build variant multiplicity**	-
Value configuration class	Post-Build	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	ECU

(table continues...)

Table 53 (continued) Specification for GtmClusterConfClock2Src

Dependency	-
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.

1.3.1.32.4 GtmClusterConfClock3Src

Table 54 Specification for GtmClusterConfClock3Src

Name	`GtmClusterConfClock3Src`		
Description	Specifies the input clock source for the current GTM cluster sub peripheral using configurable clock 3. User is not allowed to change the name of the configuration parameter.		
Multiplicity	1..1	**Type**	EcucEnumerationParamDef
Range	CMU_CONF_CLOCK3_SEL0: configurable clock 3 is used for the clock CMU_CONF_CLOCK8_SEL1: configurable clock8 is used for the clock EXT_CAPTURE_SEL2: external capture source is used for the clock		
Default value	CMU_CONF_CLOCK3_SEL0		
Post-build variant value	TRUE	**Post-build variant multiplicity**	-
Value configuration class	Post-Build	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	ECU
Dependency	-		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.32.5 GtmClusterConfClock4Src

Table 55 Specification for GtmClusterConfClock4Src

Name	`GtmClusterConfClock4Src`		
Description	Specifies the input clock source for the current GTM cluster sub- peripheral using configurable clock 4. User is not allowed to change the name of the configuration parameter.		
Multiplicity	1..1	**Type**	EcucEnumerationParamDef
Range	CMU_CONF_CLOCK4_SEL0: configurable clock 4 is used for the clock CMU_CONF_CLOCK8_SEL1: configurable clock8 is used for the clock EXT_CAPTURE_SEL2: external capture source is used for the clock		
Default value	CMU_CONF_CLOCK4_SEL0		

(table continues...)

Table 55 (continued) Specification for GtmClusterConfClock4Src

Post-build variant value	TRUE	**Post-build variant multiplicity**	-
Value configuration class	Post-Build	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	ECU
Dependency	-		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.32.6 GtmClusterConfClock5Src

Table 56 Specification for GtmClusterConfClock5Src

Name	`GtmClusterConfClock5Src`		
Description	Specifies the input clock source for the current GTM cluster sub- peripheral using configurable clock 5. User is not allowed to change the name of the configuration parameter.		
Multiplicity	1..1	**Type**	EcucEnumerationParamDef
Range	CMU_CONF_CLOCK5_SEL0: configurable clock 5 is used for the clock CMU_CONF_CLOCK8_SEL1: configurable clock8 is used for the clock EXT_CAPTURE_SEL2: external capture source is used for the clock		
Default value	CMU_CONF_CLOCK5_SEL0		
Post-build variant value	TRUE	**Post-build variant multiplicity**	-
Value configuration class	Post-Build	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	ECU
Dependency	-		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.32.7 GtmClusterConfClock6Src

Table 57 Specification for GtmClusterConfClock6Src

Name	`GtmClusterConfClock6Src`
Description	Specifies the input clock source for the current GTM cluster sub- peripheral using configurable clock 6. User is not allowed to change the name of the configuration parameter.

(table continues...)

Table 57 (continued) Specification for GtmClusterConfClock6Src

Multiplicity	1..1	**Type**	EcucEnumerationParamDef
Range	CMU_CONF_CLOCK6_SEL0: configurable clock 6 is used for the clock CMU_CONF_CLOCK8_SEL1: configurable clock8 is used for the clock EXT_CAPTURE_SEL2: external capture source is used for the clock		
Default value	CMU_CONF_CLOCK6_SEL0		
Post-build variant value	TRUE	**Post-build variant multiplicity**	-
Value configuration class	Post-Build	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	ECU
Dependency	-		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.32.8 GtmClusterConfClock7Src

Table 58 Specification for GtmClusterConfClock7Src

Name	`GtmClusterConfClock7Src`		
Description	Specifies the input clock source for the current GTM cluster sub- peripheral using configurable clock 7. User is not allowed to change the name of the configuration parameter.		
Multiplicity	1..1	**Type**	EcucEnumerationParamDef
Range	CMU_CONF_CLOCK7_SEL0: configurable clock 7 is used for the clock CMU_CONF_CLOCK8_SEL1: configurable clock8 is used for the clock EXT_CAPTURE_SEL2: external capture source is used for the clock		
Default value	CMU_CONF_CLOCK7_SEL0		
Post-build variant value	TRUE	**Post-build variant multiplicity**	-
Value configuration class	Post-Build	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	ECU
Dependency	-		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.33 Container: GtmClusterFixedClockSetting

GtmClusterFixedClockSetting container contains the configuration (parameters) for GTM cluster fixed clock settings

Post-Build Variant Multiplicity: -
Multiplicity Configuration Class: -

1.3.1.33.1 GtmClusterFixedClockSrc

Table 59 Specification for GtmClusterFixedClockSrc

Name	`GtmClusterFixedClockSrc`		
Description	GtmClusterFixedClockSrc parameter specifies the input clock source for GTM cluster-x sub peripherals.		
Multiplicity	1..1	**Type**	EcucEnumerationParamDef
Range	CMU_CONF_CLOCK8_SEL1: Configurable clock8 will be used for clock CMU_FIXED_CLOCK0_SEL0: Fixed clock0 will be used for clock		
Default value	CMU_FIXED_CLOCK0_SEL0		
Post-build variant value	TRUE	**Post-build variant multiplicity**	-
Value configuration class	Post-Build	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	ECU
Dependency	-		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.34 Container: GtmConfigClockSetting

This container contains the configuration (parameters) for the GTM configuration clock settings.
Post-Build Variant Multiplicity: -
Multiplicity Configuration Class: -

1.3.1.34.1 GtmCmuConfigClock0Div

Table 60 Specification for GtmCmuConfigClock0Div

Name	`GtmCmuConfigClock0Div`		
Description	Specifies the configurable clock0 divider count value. Defines the count value for the clock divider of clock source CMU_CLK0. Value can only be modified when clock enable EN_CLK0 and EN_ECLK1 are disabled. This configuration parameter is applicable only if the CmuConfigClock0Enable is set to TRUE.		
Multiplicity	1..1	**Type**	EcucIntegerParamDef
Range	0 - 16777215		

(table continues...)

Table 60 (continued) Specification for GtmCmuConfigClock0Div			
Default value	0		
Post-build variant value	TRUE	**Post-build variant multiplicity**	-
Value configuration class	Post-Build	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	ECU
Dependency	GtmCmuConfigClock0Enable		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.34.2 GtmCmuConfigClock0Enable

Table 61 Specification for GtmCmuConfigClock0Enable			
Name	`GtmCmuConfigClock0Enable`		
Description	Enables the configurable clock0. Divider for configurable clock0 is defined by GtmCmuConfigClock0Div. Values: TRUE: CMU configurable clock0 is enabled FALSE: CMU configurable clock0 is disabled		
Multiplicity	1..1	**Type**	EcucBooleanParamDef
Range	TRUE FALSE		
Default value	TRUE		
Post-build variant value	TRUE	**Post-build variant multiplicity**	-
Value configuration class	Post-Build	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	ECU
Dependency	-		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.34.3 GtmCmuConfigClock1Div

Table 62 Specification for GtmCmuConfigClock1Div	
Name	`GtmCmuConfigClock1Div`

(table continues...)

Table 62 (continued) Specification for GtmCmuConfigClock1Div

Description	Specifies the configurable clock1 divider count value. Defines the count value for the clock divider of clock source CMU_CLK1. Value can only be modified when clock enable EN_CLK1 and EN_ECLK1 are disabled. This configuration parameter is applicable only if CmuConfigClock1Enable is set to TRUE.		
Multiplicity	1..1	**Type**	EcucIntegerParamDef
Range	0 - 16777215		
Default value	0		
Post-build variant value	TRUE	**Post-build variant multiplicity**	-
Value configuration class	Post-Build	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	ECU
Dependency	GtmCmuConfigClock1Enable		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.34.4 GtmCmuConfigClock1Enable

Table 63 Specification for GtmCmuConfigClock1Enable

Name	`GtmCmuConfigClock1Enable`		
Description	Enables the configurable clock1. Divider for configurable clock1 is defined by GtmCmuConfigClock1Div. Values: TRUE: CMU configurable clock1 is enabled FALSE: CMU configurable clock1 is disabled		
Multiplicity	1..1	**Type**	EcucBooleanParamDef
Range	TRUE FALSE		
Default value	TRUE		
Post-build variant value	TRUE	**Post-build variant multiplicity**	-
Value configuration class	Post-Build	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	ECU
Dependency	-		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.34.5 GtmCmuConfigClock2Div

Table 64 Specification for GtmCmuConfigClock2Div

Name	`GtmCmuConfigClock2Div`		
Description	Specifies the configurable clock2 divider count value. Defines the count value for the clock divider of clock source CMU_CLK2. Value can only be modified when clock enable EN_CLK2 and EN_ECLK1 are disabled. This configuration parameter is applicable only if CmuConfigClock2Enable is set to TRUE.		
Multiplicity	1..1	**Type**	EcucIntegerParamDef
Range	0 - 16777215		
Default value	0		
Post-build variant value	TRUE	**Post-build variant multiplicity**	-
Value configuration class	Post-Build	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	ECU
Dependency	GtmCmuConfigClock2Enable		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.34.6 GtmCmuConfigClock2Enable

Table 65 Specification for GtmCmuConfigClock2Enable

Name	`GtmCmuConfigClock2Enable`		
Description	Enables the configurable clock2. Divider for configurable clock2 is defined by GtmCmuConfigClock2Div. Values: TRUE: CMU configurable clock2 is enabled FALSE: CMU configurable clock2 is disabled		
Multiplicity	1..1	**Type**	EcucBooleanParamDef
Range	TRUE FALSE		
Default value	TRUE		
Post-build variant value	TRUE	**Post-build variant multiplicity**	-
Value configuration class	Post-Build	**Multiplicity configuration class**	-

(table continues...)

Table 65 (continued) Specification for GtmCmuConfigClock2Enable

Origin	IFX	**Scope**	ECU
Dependency	-		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.34.7 GtmCmuConfigClock3Div

Table 66 Specification for GtmCmuConfigClock3Div

Name	`GtmCmuConfigClock3Div`		
Description	Specifies the configurable clock3 divider count value. Defines the count value for the clock divider of clock source CMU_CLK3. Value can only be modified when clock enable EN_CLK3 and EN_ECLK1 are disabled. This configuration parameter is applicable only if CmuConfigClock3Enable is set to TRUE.		
Multiplicity	1..1	**Type**	EcucIntegerParamDef
Range	0 - 16777215		
Default value	0		
Post-build variant value	TRUE	**Post-build variant multiplicity**	-
Value configuration class	Post-Build	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	ECU
Dependency	GtmCmuConfigClock3Enable		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.34.8 GtmCmuConfigClock3Enable

Table 67 Specification for GtmCmuConfigClock3Enable

Name	`GtmCmuConfigClock3Enable`		
Description	Enables the configurable clock3. Divider for configurable clock3 is defined by GtmCmuConfigClock3Div. Values: TRUE: CMU configurable clock3 is enabled FALSE: CMU configurable clock3 is disabled		
Multiplicity	1..1	**Type**	EcucBooleanParamDef
Range	TRUE FALSE		

(table continues...)

Table 67 (continued) Specification for GtmCmuConfigClock3Enable

Default value	TRUE		
Post-build variant value	TRUE	**Post-build variant multiplicity**	-
Value configuration class	Post-Build	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	ECU
Dependency	-		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.34.9 GtmCmuConfigClock4Div

Table 68 Specification for GtmCmuConfigClock4Div

Name	`GtmCmuConfigClock4Div`		
Description	Specifies the configurable clock4 divider count value. Defines the count value for the clock divider of clock source CMU_CLK4. Value can only be modified when clock enable EN_CLK4 and EN_ECLK1 are disabled. This configuration parameter is applicable only if CmuConfigClock4Enable is set to TRUE.		
Multiplicity	1..1	**Type**	EcucIntegerParamDef
Range	0 - 16777215		
Default value	0		
Post-build variant value	TRUE	**Post-build variant multiplicity**	-
Value configuration class	Post-Build	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	ECU
Dependency	GtmCmuConfigClock4Enable		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.34.10 GtmCmuConfigClock4Enable

Table 69 Specification for GtmCmuConfigClock4Enable

Name	`GtmCmuConfigClock4Enable`

(table continues...)

Table 69 (continued) Specification for GtmCmuConfigClock4Enable

Description	Enables the configurable clock4. Divider for configurable clock4 is defined by GtmCmuConfigClock4Div. Values: TRUE: CMU configurable clock4 is enabled FALSE: CMU configurable clock4 is disabled		
Multiplicity	1..1	**Type**	EcucBooleanParamDef
Range	TRUE FALSE		
Default value	TRUE		
Post-build variant value	TRUE	**Post-build variant multiplicity**	-
Value configuration class	Post-Build	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	ECU
Dependency	-		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.34.11 GtmCmuConfigClock5Div

Table 70 Specification for GtmCmuConfigClock5Div

Name	`GtmCmuConfigClock5Div`		
Description	Specifies the configurable clock5 divider count value. Defines the count value for the clock divider of clock source CMU_CLK5. Value can only be modified when clock enable EN_CLK5 and EN_ECLK1 are disabled. This configuration parameter is applicable only if CmuConfigClock5Enable is set to TRUE.		
Multiplicity	1..1	**Type**	EcucIntegerParamDef
Range	0 - 16777215		
Default value	0		
Post-build variant value	TRUE	**Post-build variant multiplicity**	-
Value configuration class	Post-Build	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	ECU
Dependency	GtmCmuConfigClock5Enable		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.34.12 GtmCmuConfigClock5Enable

Table 71 Specification for GtmCmuConfigClock5Enable

Name	`GtmCmuConfigClock5Enable`		
Description	Enables the configurable clock5 Divider for configurable clock5 is defined by GtmCmuConfigClock5Div. Values: TRUE: CMU configurable clock5 is enabled FALSE: CMU configurable clock5 is disabled		
Multiplicity	1..1	**Type**	EcucBooleanParamDef
Range	TRUE FALSE		
Default value	TRUE		
Post-build variant value	TRUE	**Post-build variant multiplicity**	-
Value configuration class	Post-Build	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	ECU
Dependency	-		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.34.13 GtmCmuConfigClock6Div

Table 72 Specification for GtmCmuConfigClock6Div

Name	`GtmCmuConfigClock6Div`		
Description	Specifies the configurable clock6 divider count value. Defines the count value for the clock divider of clock source CMU_CLK6. Value can only be modified when clock enable EN_CLK6 and EN_ECLK1 are disabled. This configuration parameter is applicable only if CmuConfigClock6Enable is set to TRUE.		
Multiplicity	1..1	**Type**	EcucIntegerParamDef
Range	0 - 16777215		
Default value	0		
Post-build variant value	TRUE	**Post-build variant multiplicity**	-
Value configuration class	Post-Build	**Multiplicity configuration class**	-

(table continues...)

Table 72 (continued) Specification for GtmCmuConfigClock6Div

Origin	IFX	**Scope**	ECU
Dependency	GtmCmuConfigClock6Enable		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.34.14 GtmCmuConfigClock6Enable

Table 73 Specification for GtmCmuConfigClock6Enable

Name	`GtmCmuConfigClock6Enable`		
Description	Enables the configurable clock6 Divider for configurable clock6 is defined by GtmCmuConfigClock6Div. Values: TRUE: CMU configurable clock6 is enabled FALSE: CMU configurable clock6 is disabled		
Multiplicity	1..1	**Type**	EcucBooleanParamDef
Range	TRUE FALSE		
Default value	TRUE		
Post-build variant value	TRUE	**Post-build variant multiplicity**	-
Value configuration class	Post-Build	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	ECU
Dependency	-		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.34.15 GtmCmuConfigClock7Div

Table 74 Specification for GtmCmuConfigClock7Div

Name	`GtmCmuConfigClock7Div`		
Description	Specifies the configurable clock7 divider count value. Defines the count value for the clock divider of clock source CMU_CLK7. Value can only be modified when clock enable EN_CLK7 and EN_ECLK1 are disabled. This configuration parameter is applicable only if CmuConfigClock7Enable is set to TRUE.		
Multiplicity	1..1	**Type**	EcucIntegerParamDef
Range	0 - 16777215		

(table continues...)

Table 74 (continued) Specification for GtmCmuConfigClock7Div			
Default value	0		
Post-build variant value	TRUE	**Post-build variant multiplicity**	-
Value configuration class	Post-Build	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	ECU
Dependency	GtmCmuConfigClock7Enable		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.34.16 GtmCmuConfigClock7Enable

Table 75 Specification for GtmCmuConfigClock7Enable			
Name	`GtmCmuConfigClock7Enable`		
Description	Enables the configurable clock7 Divider for configurable clock7 is defined by GtmCmuConfigClock7Div. Values: TRUE: CMU configurable clock7 is enabled FALSE: CMU configurable clock7 is disabled		
Multiplicity	1..1	**Type**	EcucBooleanParamDef
Range	TRUE FALSE		
Default value	TRUE		
Post-build variant value	TRUE	**Post-build variant multiplicity**	-
Value configuration class	Post-Build	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	ECU
Dependency	-		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.34.17 GtmCmuConfigClock8SourceSelection

Table 76 Specification for GtmCmuConfigClock8SourceSelection	
Name	`GtmCmuConfigClock8SourceSelection`

(table continues...)

Table 76	(continued) Specification for GtmCmuConfigClock8SourceSelection		
Description	GtmCmuConfigClock8SourceSelection parameter specifies the clock source for CMU_CLK8 clock signal.		
Multiplicity	1..1	**Type**	EcucEnumerationParamDef
Range	CLS0_CLK_SEL0: Cluster 0 clock (CLS0_CLK) is used as source for CMU clock 8. CMU_ECLK0_SEL1: External clock 0 (CMU_ECLK0) is used as source for CMU clock 8.		
Default value	CLS0_CLK_SEL0		
Post-build variant value	TRUE	**Post-build variant multiplicity**	-
Value configuration class	Post-Build	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	ECU
Dependency	-		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.35 Container: GtmExtClockSetting

This container contains the configuration (parameters) for the GTM external clock settings.

Post-Build Variant Multiplicity: -

Multiplicity Configuration Class: -

1.3.1.35.1 GtmCmuExtClock0Denominator

Table 77	Specification for GtmCmuExtClock0Denominator		
Name	`GtmCmuExtClock0Denominator`		
Description	Specifies the denominator value for external clock 0. The GtmCmuExtClock0Numerator value should not be less than GtmCmuExtClock0Denominator.		
Multiplicity	1..1	**Type**	EcucIntegerParamDef
Range	1 - 16777215		
Default value	1		
Post-build variant value	TRUE	**Post-build variant multiplicity**	-
Value configuration class	Post-Build	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	ECU
Dependency	GtmCmuExtClock0Numerator, GtmCmuExtClock0Enable		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.35.2 GtmCmuExtClock0Enable

Table 78 Specification for GtmCmuExtClock0Enable

Name	`GtmCmuExtClock0Enable`		
Description	Specifies the numerator value for the external clock 0 All other configuration parameters relevant to CMU external clocks are enabled only when this configuration parameter is enabled. Values: TRUE: CMU external configurable clock 0 is enabled FALSE: CMU external configurable clock 0 is disabled		
Multiplicity	1..1	**Type**	EcucBooleanParamDef
Range	TRUE FALSE		
Default value	FALSE		
Post-build variant value	TRUE	**Post-build variant multiplicity**	-
Value configuration class	Post-Build	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	ECU
Dependency	-		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.35.3 GtmCmuExtClock0Numerator

Table 79 Specification for GtmCmuExtClock0Numerator

Name	`GtmCmuExtClock0Numerator`		
Description	Specifies the numerator value for external clock 0. The GtmCmuExtClock0Numerator value should not be less than GtmCmuExtClock0Denominator.		
Multiplicity	1..1	**Type**	EcucIntegerParamDef
Range	1 - 16777215		
Default value	1		
Post-build variant value	TRUE	**Post-build variant multiplicity**	-
Value configuration class	Post-Build	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	ECU

(table continues...)

Table 79 (continued) Specification for GtmCmuExtClock0Numerator	
Dependency	GtmCmuExtClock0Denominator, GtmCmuExtClock0Enable
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.

1.3.1.35.4 GtmCmuExtClock1Denominator

Table 80 Specification for GtmCmuExtClock1Denominator			
Name	`GtmCmuExtClock1Denominator`		
Description	Specifies the denominator value for the external clock 1. The GtmCmuExtClock1Numerator value should not be less than GtmCmuExtClock1Denominator.		
Multiplicity	1..1	**Type**	EcucIntegerParamDef
Range	1 - 16777215		
Default value	1		
Post-build variant value	TRUE	**Post-build variant multiplicity**	-
Value configuration class	Post-Build	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	ECU
Dependency	GtmCmuExtClock1Numerator, GtmCmuExtClock1Enable		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.35.5 GtmCmuExtClock1Enable

Table 81 Specification for GtmCmuExtClock1Enable			
Name	`GtmCmuExtClock1Enable`		
Description	Specifies the numerator value for the external clock 1. All other configuration parameters relevant to CMU external clocks are enabled only when this configuration parameter is enabled. Values: TRUE: CMU external configurable clock 1 is enabled FALSE: CMU external configurable clock 1 is disabled		
Multiplicity	1..1	**Type**	EcucBooleanParamDef
Range	TRUE FALSE		
Default value	FALSE		

(table continues...)

Table 81 (continued) Specification for GtmCmuExtClock1Enable

Post-build variant value	TRUE	**Post-build variant multiplicity**	-
Value configuration class	Post-Build	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	ECU
Dependency	-		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.35.6 GtmCmuExtClock1Numerator

Table 82 Specification for GtmCmuExtClock1Numerator

Name	`GtmCmuExtClock1Numerator`		
Description	Specifies the numerator value for the external clock 1. The GtmCmuExtClock1Numerator value should not be less than GtmCmuExtClock1Denominator.		
Multiplicity	1..1	**Type**	EcucIntegerParamDef
Range	1 - 16777215		
Default value	1		
Post-build variant value	TRUE	**Post-build variant multiplicity**	-
Value configuration class	Post-Build	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	ECU
Dependency	GtmCmuExtClock1Denominator, GtmCmuExtClock1Enable		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.35.7 GtmCmuExtClock2Denominator

Table 83 Specification for GtmCmuExtClock2Denominator

Name	`GtmCmuExtClock2Denominator`		
Description	Specifies the denominator value for the external clock 2. The GtmCmuExtClock2Numerator value should not be less than GtmCmuExtClock2Denominator.		
Multiplicity	1..1	**Type**	EcucIntegerParamDef
Range	1 - 16777215		
Default value	1		

(table continues...)

Table 83 (continued) Specification for GtmCmuExtClock2Denominator

Post-build variant value	TRUE	**Post-build variant multiplicity**	-
Value configuration class	Post-Build	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	ECU
Dependency	GtmCmuExtClock2Numerator, GtmCmuExtClock2Enable		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.35.8 GtmCmuExtClock2Enable

Table 84 Specification for GtmCmuExtClock2Enable

Name	`GtmCmuExtClock2Enable`		
Description	Specifies the numerator value for the external clock 2 All other configuration parameters relevant to CMU external clocks are enabled only when this configuration parameter is enabled. Values: TRUE: CMU external configurable clock 2 is enabled FALSE: CMU external configurable clock 2 is disabled		
Multiplicity	1..1	**Type**	EcucBooleanParamDef
Range	TRUE FALSE		
Default value	FALSE		
Post-build variant value	TRUE	**Post-build variant multiplicity**	-
Value configuration class	Post-Build	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	ECU
Dependency	-		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.35.9 GtmCmuExtClock2Numerator

Table 85 Specification for GtmCmuExtClock2Numerator

Name	`GtmCmuExtClock2Numerator`
Description	Specifies the numerator value for the external clock 2. GtmCmuExtClock2Numerator value should not be less than GtmCmuExtClock2Denominator.

(table continues...)

Table 85 (continued) Specification for GtmCmuExtClock2Numerator

Multiplicity	1..1	**Type**	EcucIntegerParamDef
Range	1 - 16777215		
Default value	1		
Post-build variant value	TRUE	**Post-build variant multiplicity**	-
Value configuration class	Post-Build	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	ECU
Dependency	GtmCmuExtClock2Denominator, GtmCmuExtClock2Enable		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.36 Container: GtmFixedClockSetting

This container contains the configuration (parameters) for the GTM fixed clock settings.

Post-Build Variant Multiplicity: -

Multiplicity Configuration Class: -

1.3.1.36.1 GtmCmuFixedClockEnable

Table 86 Specification for GtmCmuFixedClockEnable

Name	`GtmCmuFixedClockEnable`		
Description	Enables the fixed clock. The source for fixed clock is defined by GtmCmuFixedClockSel. Values: TRUE: CMU fixed clock is enabled FALSE: CMU fixed clock is disabled		
Multiplicity	1..1	**Type**	EcucBooleanParamDef
Range	TRUE FALSE		
Default value	FALSE		
Post-build variant value	TRUE	**Post-build variant multiplicity**	-
Value configuration class	Post-Build	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	ECU
Dependency	-		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.36.2 GtmCmuFixedClockSel

Table 87 Specification for GtmCmuFixedClockSel

Name	`GtmCmuFixedClockSel`		
Description	Specifies the source for the fixed clock.		
Multiplicity	1..1	**Type**	EcucEnumerationParamDef
Range	CMU_CLOCK0_SEL1: CMU0 is selected as the source for the fixed clock CMU_CLOCK1_SEL2: CMU1 is selected as the source for the fixed clock CMU_CLOCK2_SEL3: CMU2 is selected as the source for the fixed clock CMU_CLOCK3_SEL4: CMU3 is selected as the source for the fixed clock CMU_CLOCK4_SEL5: CMU4 is selected as the source for the fixed clock CMU_CLOCK5_SEL6: CMU5 is selected as the source for the fixed clock CMU_CLOCK6_SEL7: CMU6 is selected as the source for the fixed clock CMU_CLOCK7_SEL8: CMU7 is selected as the source for the fixed clock CMU_GLOBAL_CLOCK_SEL0: CMU global clock is selected as the source for the fixed clock		
Default value	CMU_GLOBAL_CLOCK_SEL0		
Post-build variant value	TRUE	**Post-build variant multiplicity**	-
Value configuration class	Post-Build	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	ECU
Dependency	-		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.37 Container: GtmGlobalConfiguration

This container holds the global (common) parameters of the GTM hardware. The GTM peripheral is used by multiple drivers. This container is responsible for initializing the common resources used by these drivers.

Note: This container is not available for derivatives not having GTM peripheral.

Post-Build Variant Multiplicity: -

Multiplicity Configuration Class: -

1.3.1.38 Container: GtmTBUChannelConf

This container holds the configuration parameters for the TBU channels of the GTM. The TBU can be used by TOM or ATOM trigger and TIM channels

Post-Build Variant Multiplicity: -

Multiplicity Configuration Class: -

1.3.1.38.1 GtmTbuChClockSourceSelection

Table 88 Specification for GtmTbuChClockSourceSelection

Name	GtmTbuChClockSourceSelection		
Description	Selects the configurable clock source selection for the corresponding TBU channel. This parameter is relevant only to the TBU channels 0, 1 and 2. This configuration parameter is applicable only if GtmTbuChannelEnable is set to TRUE.		
Multiplicity	1..1	**Type**	EcucEnumerationParamDef
Range	CMU_CLOCK0_SEL0: TBUx clock source is CMU0 CMU_CLOCK1_SEL1: TBUx clock source is CMU1 CMU_CLOCK2_SEL2: TBUx clock source is CMU2 CMU_CLOCK3_SEL3: TBUx clock source is CMU3 CMU_CLOCK4_SEL4: TBUx clock source is CMU4 CMU_CLOCK5_SEL5: TBUx clock source is CMU5 CMU_CLOCK6_SEL6: TBUx clock source is CMU6 CMU_CLOCK7_SEL7: TBUx clock source is CMU7		
Default value	CMU_CLOCK0_SEL0		
Post-build variant value	TRUE	**Post-build variant multiplicity**	-
Value configuration class	Post-Build	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	ECU
Dependency	GtmTbuChannelEnable		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.38.2 GtmTbuChMode

Table 89 Specification for GtmTbuChMode

Name	GtmTbuChMode		
Description	Selects the timer counting mode. This is applicable only to the TBU channels-1 and 2. This configuration parameter is applicable only if GtmTbuChannelEnable is set to TRUE.		
Multiplicity	1..1	**Type**	EcucEnumerationParamDef
Range	FORWARD_BACKWARD_SEL1: Forward/backward counter mode FREE_RUNNING_COUNTER_SEL0: Free- running counter mode		
Default value	FREE_RUNNING_COUNTER_SEL0		
Post-build variant value	TRUE	**Post-build variant multiplicity**	-

(table continues...)

Table 89 (continued) Specification for GtmTbuChMode

Value configuration class	Post-Build	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	ECU
Dependency	GtmTbuChannelEnable		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.38.3 GtmTbuChModuloCntrSel

Table 90 Specification for GtmTbuChModuloCntrSel

Name	`GtmTbuChModuloCntrSel`		
Description	Selects the channel selector for the modulo counter. This is applicable only to TBU channel 3. This configuration parameter is applicable only if GtmTbuChannelEnable is set to TRUE.		
Multiplicity	1..1	**Type**	EcucEnumerationParamDef
Range	TBU_CH1_SEL0: TBU_CH1 values used TBU_CH2_SEL1: TBU_CH2 values used		
Default value	TBU_CH1_SEL0		
Post-build variant value	TRUE	**Post-build variant multiplicity**	-
Value configuration class	Post-Build	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	ECU
Dependency	GtmTbuChannelEnable		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.38.4 GtmTbuChResolutionSel

Table 91 Specification for GtmTbuChResolutionSel

Name	`GtmTbuChResolutionSel`		
Description	Selects the resolution of time base values given by TBU_CH0_BASE. This configuration parameter is applicable only if GtmTbuChannelEnable is set to TRUE for the TBU channel0. This configuration parameter is applicable only for the TBU channel0.		
Multiplicity	1..1	**Type**	EcucEnumerationParamDef
Range	TBU_CH_LOWER_COUNT_BITS_SEL0: 0 to 23 bits of TBU_CH0_BASE is considered TBU_CH_UPPER_COUNT_BITS_SEL1: 3 to 26 bits of TBU_CH0_BASE is considered		

(table continues...)

Table 91 (continued) Specification for GtmTbuChResolutionSel

Default value	TBU_CH_LOWER_COUNT_BITS_SEL0		
Post-build variant value	TRUE	**Post-build variant multiplicity**	-
Value configuration class	Post-Build	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	ECU
Dependency	GtmTbuChannelEnable		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.38.5 GtmTbuChannelEnable

Table 92 Specification for GtmTbuChannelEnable

Name	`GtmTbuChannelEnable`		
Description	Defines if TBU channels are enabled. All other configuration parameters specific to the TBU channel are disabled if this configuration parameter is set to FALSE. Values: TRUE: Channel is enabled FALSE: Channel is disabled		
Multiplicity	1..1	**Type**	EcucBooleanParamDef
Range	TRUE FALSE		
Default value	FALSE		
Post-build variant value	TRUE	**Post-build variant multiplicity**	-
Value configuration class	Post-Build	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	ECU
Dependency	-		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.39 Container: GtmTomActionTimeBaseUnitConf

This container holds the configuration parameters for the actual TBU setting. The action TBU setting is required to generate a trigger that can copy from shadow register to the actual registers for period, duty cycle and channel clock source .

Post-Build Variant Multiplicity: -

Multiplicity Configuration Class: -

1.3.1.39.1 GtmTomActionTimeBaseSelection

Table 93 Specification for GtmTomActionTimeBaseSelection

Name	`GtmTomActionTimeBaseSelection`		
Description	Specifies the time base selected to compare with the value configured in GtmTomActionTimeBaseValue.		
Multiplicity	1..1	**Type**	EcucEnumerationParamDef
Range	TOM_ACT_TB_TBU_TS0: TOM group level trigger is generated when GtmTomActionTimeBaseValue matches TBU_TS0 TOM_ACT_TB_TBU_TS1: TOM group level trigger is generated when GtmTomActionTimeBaseValue matches TBU_TS1 TOM_ACT_TB_TBU_TS2: TOM group level trigger is generated when GtmTomActionTimeBaseValue matches TBU_TS2		
Default value	TOM_ACT_TB_TBU_TS0		
Post-build variant value	TRUE	**Post-build variant multiplicity**	-
Value configuration class	Post-Build	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	ECU
Dependency	-		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.39.2 GtmTomActionTimeBaseValue

Table 94 Specification for GtmTomActionTimeBaseValue

Name	`GtmTomActionTimeBaseValue`		
Description	Specifies the time base value for the TOM group channel level trigger. A trigger at the TGC level is raised when TBU_TS[x] (x can be selected through GtmActionTimeBaseSelection) value matches the value configured in this configuration parameter. The trigger request has to be explicitly enabled by the user by setting the TOM_TGC_ACT_TB.TB_TRIG bitfield.		
Multiplicity	1..1	**Type**	EcucIntegerParamDef
Range	1 - 16777215		
Default value	1		
Post-build variant value	TRUE	**Post-build variant multiplicity**	-

(table continues...)

Table 94 (continued) Specification for GtmTomActionTimeBaseValue

Value configuration class	Post-Build	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	ECU
Dependency	-		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.40 Container: GtmTomChannelConf

This container holds the configuration parameters for TOM channel-level parameters required to be configured globally

The short name for the container shall be GtmTomChannelConf_<x>, where x is an integer.

Note: The above naming convention is by default followed in Tresos, when new containers are added or when project is created.

Post-Build Variant Multiplicity: -

Multiplicity Configuration Class: -

1.3.1.40.1 GtmTimerPortPinSelect

Table 95 Specification for GtmTimerPortPinSelect

Name	`GtmTimerPortPinSelect`		
Description	Specifies the port pin to which the timer is connected.		
Multiplicity	1..1	**Type**	EcucEnumerationParamDef
Range	NONE: Timer is not connected to any port pin. TOUT[x]_SEL[y]_[i]_PORT[z]_PIN[q]: Specifies the TOUT connection for the timer. [x]: TOUT number (0-270) [y]: Selection (A-L) [i]: value corresponding to selection (0 - 11) [z]: Port number [q]: Pin number		
Default value	NONE		
Post-build variant value	TRUE	**Post-build variant multiplicity**	-
Value configuration class	Post-Build	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	LOCAL
Dependency	-		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.40.2 GtmTomChInternalTriggerEnable

Table 96 Specification for GtmTomChInternalTriggerEnable

Name	`GtmTomChInternalTriggerEnable`		
Description	Enables/disables the internal trigger from channel 0 of the corresponding group channel number. If a channel belong to TGC0 (channel number 0 - 15), setting this configuration parameter for the corresponding channel enables trigger from channel0. Values: TRUE: enable the internal trigger from channel 0 to 15 (based on the TGC a channel belong to) FALSE: disable the internal trigger from channel 0 to 15 (based on the TGC a channel belong to)		
Multiplicity	1..1	**Type**	EcucBooleanParamDef
Range	TRUE FALSE		
Default value	FALSE		
Post-build variant value	TRUE	**Post-build variant multiplicity**	-
Value configuration class	Post-Build	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	ECU
Dependency	-		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.40.3 GtmTomChResetCn0OnTriggerEnable

Table 97 Specification for GtmTomChResetCn0OnTriggerEnable

Name	`GtmTomChResetCn0OnTriggerEnable`		
Description	Enables/disables the TOM channel counter CN0 value that is reset by the global trigger from any of the trigger sources. Values: TRUE: resetting of TOM channel CN0 on global trigger from any trigger source is enabled FALSE: resetting of TOM channel CN0 on global trigger from any trigger source is disabled		
Multiplicity	1..1	**Type**	EcucBooleanParamDef
Range	TRUE FALSE		
Default value	FALSE		

(table continues...)

Table 97 (continued) Specification for GtmTomChResetCn0OnTriggerEnable

Post-build variant value	TRUE	**Post-build variant multiplicity**	-
Value configuration class	Post-Build	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	ECU
Dependency	-		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.41 Container: GtmTimGlobalConf

This container holds the configuration parameters for the TIM global parameters.

The short name for the container shall be GtmTimGlobalConf_<x>, where x is an integer.

Note: The above naming convention is by default followed in Tresos, when new containers are added or when project is created.

Post-Build Variant Multiplicity: -

Multiplicity Configuration Class: -

1.3.1.42 Container: GtmTomGlobalConf

This container holds the configuration parameters for the TOM global parameters. Various instances of TOM channels can be used by the ADC, PWM, GPT and WDG drivers and hence the global configuration for these channels within one TOM group channel (TGC) is taken care of by this container.

The short name for the container shall be GtmTomGroupConf_<x>, where x is an integer.

Note: The above naming convention is by default followed in Tresos, when new containers are added or when project is created.

Post-Build Variant Multiplicity: -

Multiplicity Configuration Class: -

1.3.1.43 Container: GtmTomGroupConf

This container contains the configuration (parameters) for the GTM TOM group settings

Post-Build Variant Multiplicity: -

Multiplicity Configuration Class: -

1.3.1.44 Container: GtmTriggerForAdc

This container defines the binding between the GTM timers and the ADC trigger lines

Post-Build Variant Multiplicity: -

Multiplicity Configuration Class: -

1.3.1.44.1 GtmAdcTrigger0Select

Table 98 Specification for GtmAdcTrigger0Select

Name	`GtmAdcTrigger0Select`		
Description	Defines the GTM timer slice output connected to the adc_trig0 signal. The user is provided with a drop down list of 16 values conforming to the following format. TRIG_'VAL'_NO_TRIGGER indicating that this trigger line is electrically disconnected from possible trigger sources. TRIG_'VAL': 'VAL' is the value programmed into the register. TOMx or ATOMx is the module containing channel which generates the trigger.		
Multiplicity	1..1	**Type**	EcucEnumerationParamDef
Range	TRIG_0_NO_TRIGGER: No trigger is selected TRIG_10: Trigger 10 is selected TRIG_11: Trigger 11 is selected TRIG_12: Trigger 12 is selected TRIG_13: Trigger 13 is selected TRIG_14: Trigger 14 is selected TRIG_15: Trigger 15 is selected TRIG_1: Trigger 1 is selected TRIG_2: Trigger 2 is selected TRIG_3: Trigger 3 is selected TRIG_4: Trigger 4 is selected TRIG_5: Trigger 5 is selected TRIG_6: Trigger 6 is selected TRIG_7: Trigger 7 is selected TRIG_8: Trigger 8 is selected TRIG_9: Trigger 9 is selected		
Default value	TRIG_0_NO_TRIGGER		
Post-build variant value	TRUE	**Post-build variant multiplicity**	-
Value configuration class	Post-Build	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	ECU
Dependency	-		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.44.2 GtmAdcTrigger1Select

Table 99 Specification for GtmAdcTrigger1Select

Name	`GtmAdcTrigger1Select`		
Description	Defines the GTM timer slice output connected to the adc_trig1 signal. The user is provided with a drop down list of 16 values conforming to the following format. TRIG_'VAL'_NO_TRIGGER indicating that this trigger line is electrically disconnected from possible trigger sources. TRIG_'VAL': 'VAL' is the value programmed into the register. TOMx or ATOMx is the module containing channel which generates the trigger.		
Multiplicity	1..1	**Type**	EcucEnumerationParamDef
Range	TRIG_0_NO_TRIGGER: No trigger is selected TRIG_10: Trigger 10 is selected TRIG_11: Trigger 11 is selected TRIG_12: Trigger 12 is selected TRIG_13: Trigger 13 is selected TRIG_14: Trigger 14 is selected TRIG_15: Trigger 15 is selected TRIG_1: Trigger 1 is selected TRIG_2: Trigger 2 is selected TRIG_3: Trigger 3 is selected TRIG_4: Trigger 4 is selected TRIG_5: Trigger 5 is selected TRIG_6: Trigger 6 is selected TRIG_7: Trigger 7 is selected TRIG_8: Trigger 8 is selected TRIG_9: Trigger 9 is selected		
Default value	TRIG_0_NO_TRIGGER		
Post-build variant value	TRUE	**Post-build variant multiplicity**	-
Value configuration class	Post-Build	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	ECU
Dependency	-		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.44.3 GtmAdcTrigger2Select

Table 100 Specification for GtmAdcTrigger2Select

Name	`GtmAdcTrigger2Select`		
Description	Defines the GTM timer slice output connected to the adc_trig2 signal. The user is provided with a drop down list of 16 values conforming to the following format. TRIG_'VAL'_NO_TRIGGER indicating that this trigger line is electrically disconnected from possible trigger sources. TRIG_'VAL': 'VAL' is the value programmed into the register. TOMx or ATOMx is the module containing channel which generates the trigger.		
Multiplicity	1..1	**Type**	EcucEnumerationParamDef
Range	TRIG_0_NO_TRIGGER: No Trigger is selected TRIG_10: Trigger 10 is selected TRIG_11: Trigger 11 is selected TRIG_12: Trigger 12 is selected TRIG_13: Trigger 13 is selected TRIG_14: Trigger 14 is selected TRIG_15: Trigger 15 is selected TRIG_1: Trigger 1 is selected TRIG_2: Trigger 2 is selected TRIG_3: Trigger 3 is selected TRIG_4: Trigger 4 is selected TRIG_5: Trigger 5 is selected TRIG_6: Trigger 6 is selected TRIG_7: Trigger 7 is selected TRIG_8: Trigger 8 is selected TRIG_9: Trigger 9 is selected		
Default value	TRIG_0_NO_TRIGGER		
Post-build variant value	TRUE	**Post-build variant multiplicity**	-
Value configuration class	Post-Build	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	ECU
Dependency	-		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.44.4 GtmAdcTrigger3Select

Table 101 Specification for GtmAdcTrigger3Select

Name	`GtmAdcTrigger3Select`		
Description	Defines the GTM timer slice output connected to the adc_trig3 signal. The user is provided with a drop down list of 16 values conforming to the following format. TRIG_'VAL'_NO_TRIGGER indicating that this trigger line is electrically disconnected from possible trigger sources. TRIG_'VAL': 'VAL' is the value programmed into the register. TOMx or ATOMx is the module containing channel which generates the trigger.		
Multiplicity	1..1	**Type**	EcucEnumerationParamDef
Range	TRIG_0_NO_TRIGGER: No trigger is selected TRIG_10: Trigger 10 is selected TRIG_11: Trigger 11 is selected TRIG_12: Trigger 12 is selected TRIG_13: Trigger 13 is selected TRIG_14: Trigger 14 is selected TRIG_15: Trigger 15 is selected TRIG_1: Trigger 1 is selected TRIG_2: Trigger 2 is selected TRIG_3: Trigger 3 is selected TRIG_4: Trigger 4 is selected TRIG_5: Trigger 5 is selected TRIG_6: Trigger 6 is selected TRIG_7: Trigger 7 is selected TRIG_8: Trigger 8 is selected TRIG_9: Trigger 9 is selected		
Default value	TRIG_0_NO_TRIGGER		
Post-build variant value	TRUE	**Post-build variant multiplicity**	-
Value configuration class	Post-Build	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	ECU
Dependency	-		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.44.5 GtmAdcTrigger4Select

Table 102 Specification for GtmAdcTrigger4Select

Name	`GtmAdcTrigger4Select`		
Description	Defines the GTM timer slice output connected to the adc_trig4 signal. The user is provided with a drop down list of 16 values conforming to the following format. TRIG_'VAL'_NO_TRIGGER indicating that this trigger line is electrically disconnected from possible trigger sources. TRIG_'VAL': 'VAL' is the value programmed into the register. TOMx or ATOMx is the module containing channel which generates the trigger.		
Multiplicity	1..1	**Type**	EcucEnumerationParamDef
Range	TRIG_0_NO_TRIGGER: No trigger is selected TRIG_10: Trigger 10 is selected TRIG_11: Trigger 11 is selected TRIG_12: Trigger 12 is selected TRIG_13: Trigger 13 is selected TRIG_14: Trigger 14 is selected TRIG_15: Trigger 15 is selected TRIG_1: Trigger 1 is selected TRIG_2: Trigger 2 is selected TRIG_3: Trigger 3 is selected TRIG_4: Trigger 4 is selected TRIG_5: Trigger 5 is selected TRIG_6: Trigger 6 is selected TRIG_7: Trigger 7 is selected TRIG_8: Trigger 8 is selected TRIG_9: Trigger 9 is selected		
Default value	TRIG_0_NO_TRIGGER		
Post-build variant value	TRUE	**Post-build variant multiplicity**	-
Value configuration class	Post-Build	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	ECU
Dependency	-		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.45 Container: GtmTriggerForDsadc

This container defines the binding between the GTM timers and the DSADC trigger lines

Post-Build Variant Multiplicity: -

Multiplicity Configuration Class: -

1.3.1.45.1 GtmDsadcTrigger0Select

Table 103 Specification for GtmDsadcTrigger0Select

Name	`GtmDsadcTrigger0Select`		
Description	Defines the GTM timer slice output connected to the Dsadc_trig0 signal. The user is provided with a drop down list of 16 values conforming to the following format. TRIG_[VAL]_NO_TRIGGER indicating that this trigger line is electrically disconnected from possible trigger sources. TRIG_[VAL]: [VAL] is the value programmed into the register. TOMx or ATOMx is the module containing channel which generates the trigger. The value of this parameter should be unique across all containers only when DSADC module is configured.		
Multiplicity	1..1	**Type**	EcucEnumerationParamDef
Range	TRIG_0_NO_TRIGGER: Trigger 0 indicates no trigger is selected TRIG_10: Trigger 10 is selected TRIG_11: Trigger 11 is selected TRIG_12: Trigger 12 is selected TRIG_13: Trigger 13 is selected TRIG_14: Trigger 14 is selected TRIG_15: Trigger 15 is selected TRIG_1: Trigger 1 is selected TRIG_2: Trigger 2 is selected TRIG_3: Trigger 3 is selected TRIG_4: Trigger 4 is selected TRIG_5: Trigger 5 is selected TRIG_6: Trigger 6 is selected TRIG_7: Trigger 7 is selected TRIG_8: Trigger 8 is selected TRIG_9: Trigger 9 is selected		
Default value	TRIG_0_NO_TRIGGER		
Post-build variant value	TRUE	**Post-build variant multiplicity**	-
Value configuration class	Post-Build	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	LOCAL
Dependency	-		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.45.2 GtmDsadcTrigger1Select

Table 104 Specification for GtmDsadcTrigger1Select

Name	`GtmDsadcTrigger1Select`		
Description	Defines the GTM timer slice output connected to the Dsadc_trig1 signal. The user is provided with a drop down list of 16 values conforming to the following format. TRIG_[VAL]_NO_TRIGGER indicating that this trigger line is electrically disconnected from possible trigger sources. TRIG_[VAL]: [VAL] is the value programmed into the register. TOMx or ATOMx is the module containing channel which generates the trigger. The value of this parameter should be unique across all containers only when DSADC module is configured.		
Multiplicity	1..1	**Type**	EcucEnumerationParamDef
Range	TRIG_0_NO_TRIGGER: Trigger 0 indicates no trigger is selected TRIG_10: Trigger 10 is selected TRIG_11: Trigger 11 is selected TRIG_12: Trigger 12 is selected TRIG_13: Trigger 13 is selected TRIG_14: Trigger 14 is selected TRIG_15: Trigger 15 is selected TRIG_1: Trigger 1 is selected TRIG_2: Trigger 2 is selected TRIG_3: Trigger 3 is selected TRIG_4: Trigger 4 is selected TRIG_5: Trigger 5 is selected TRIG_6: Trigger 6 is selected TRIG_7: Trigger 7 is selected TRIG_8: Trigger 8 is selected TRIG_9: Trigger 9 is selected		
Default value	TRIG_0_NO_TRIGGER		
Post-build variant value	TRUE	**Post-build variant multiplicity**	-
Value configuration class	Post-Build	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	LOCAL
Dependency	-		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.45.3 GtmDsadcTrigger2Select

Table 105 Specification for GtmDsadcTrigger2Select

Name	`GtmDsadcTrigger2Select`		
Description	Defines the GTM timer slice output connected to the Dsadc_trig2 signal. The user is provided with a drop down list of 16 values conforming to the following format. TRIG_[VAL]_NO_TRIGGER indicating that this trigger line is electrically disconnected from possible trigger sources. TRIG_[VAL]: [VAL] is the value programmed into the register. TOMx or ATOMx is the module containing channel which generates the trigger. The value of this parameter should be unique across all containers only when DSADC module is configured.		
Multiplicity	1..1	**Type**	EcucEnumerationParamDef
Range	TRIG_0_NO_TRIGGER: Trigger 0 indicates no trigger is selected TRIG_10: Trigger 10 is selected TRIG_11: Trigger 11 is selected TRIG_12: Trigger 12 is selected TRIG_13: Trigger 13 is selected TRIG_14: Trigger 14 is selected TRIG_15: Trigger 15 is selected TRIG_1: Trigger 1 is selected TRIG_2: Trigger 2 is selected TRIG_3: Trigger 3 is selected TRIG_4: Trigger 4 is selected TRIG_5: Trigger 5 is selected TRIG_6: Trigger 6 is selected TRIG_7: Trigger 7 is selected TRIG_8: Trigger 8 is selected TRIG_9: Trigger 9 is selected		
Default value	TRIG_0_NO_TRIGGER		
Post-build variant value	TRUE	**Post-build variant multiplicity**	-
Value configuration class	Post-Build	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	LOCAL
Dependency	-		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.45.4 GtmDsadcTrigger3Select

Table 106 Specification for GtmDsadcTrigger3Select

Name	`GtmDsadcTrigger3Select`		
Description	Defines the GTM timer slice output connected to the Dsadc_trig3 signal. The user is provided with a drop down list of 16 values conforming to the following format. TRIG_[VAL]_NO_TRIGGER indicating that this trigger line is electrically disconnected from possible trigger sources. TRIG_[VAL]: [VAL] is the value programmed into the register. TOMx or ATOMx is the module containing channel which generates the trigger. The value of this parameter should be unique across all containers only when DSADC module is configured.		
Multiplicity	1..1	**Type**	EcucEnumerationParamDef
Range	TRIG_0_NO_TRIGGER: Trigger 0 indicates no trigger is selected TRIG_1: Trigger 1 is selected TRIG_2: Trigger 2 is selected TRIG_3: Trigger 3 is selected TRIG_4: Trigger 4 is selected		
Default value	TRIG_0_NO_TRIGGER		
Post-build variant value	TRUE	**Post-build variant multiplicity**	-
Value configuration class	Post-Build	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	LOCAL
Dependency	-		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.46 Container: Mcu

Configuration of the Mcu (Microcontroller Unit) module.

Post-Build Variant Multiplicity: -

Multiplicity Configuration Class: -

1.3.1.47 Container: McuAscLinChannelAllocationConf

This container holds the ASCLIN channel allocation to different MCAL drivers.

Post-Build Variant Multiplicity: -

Multiplicity Configuration Class: -

1.3.1.47.1 McuAscLinChannelAllocationConf

Table 107 Specification for McuAscLinChannelAllocationConf

Name	`McuAscLinChannelAllocationConf`		
Description	Specifies which driver(s) have used or not used this particular AscLin channel. *Note: Availability of the module is based on the Release Notes.*		
Multiplicity	1..1	**Type**	EcucEnumerationParamDef
Range	ASCLIN_CH_NOT_USED: ASCLIN channel is not reserved for any driver ASCLIN_CH_USED_BY_LIN_DRIVER: ASCLIN channel is reserved for the LIN driver ASCLIN_CH_USED_BY_UART_DRIVER: ASCLIN channel is reserved for the UART driver		
Default value	ASCLIN_CH_NOT_USED		
Post-build variant value	FALSE	**Post-build variant multiplicity**	-
Value configuration class	Pre-Compile	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	LOCAL
Dependency	-		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.47.2 McuAsclinKernelId

Table 108 Specification for McuAsclinKernelId

Name	`McuAsclinKernelId`		
Description	Specifies the kernel Id used for the respective channel.		
Multiplicity	1..1	**Type**	EcucEnumerationParamDef
Range	ASCLIN0: Asclin kernel 0 ASCLINx: Asclin kernel x x: Depends on the hardware		
Default value	ASCLIN0		
Post-build variant value	FALSE	**Post-build variant multiplicity**	-
Value configuration class	Pre-Compile	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	LOCAL
Dependency	-		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.48 Container: McuAscLinAllocationConf

This container holds the ASCLIN channel allocation to different MCAL drivers.

Note: Availability of the module is based on the Release Notes.

Post-Build Variant Multiplicity: FALSE

Multiplicity Configuration Class: Pre-Compile

1.3.1.49 Container: McuCcu6ModuleAllocationConf

This container holds the CCU6 kernel allocation to different MCAL drivers

The short name for the container shall be McuCcu6ModuleAllocationConf_<x>, where x is an integer.

Note: The above naming convention is by default followed in Tresos, when new containers are added or when project is created.

Post-Build Variant Multiplicity: -

Multiplicity Configuration Class: -

1.3.1.49.1 McuCcu6ModuleAllocationConf

Table 109 Specification for McuCcu6ModuleAllocationConf

Name	`McuCcu6ModuleAllocationConf`		
Description	Specifies which driver have used this particular CCU6 module or this module is not used by any driver (unused).		
Multiplicity	1..1	**Type**	EcucEnumerationParamDef
Range	CCU6_MODULE_NOT_USED: CCU6 kernel is not used CCU6_MODULE_USED_BY_ADC_DRIVER: CCU6 kernel is reserved for the ADC driver CCU6_MODULE_USED_BY_ICU_DRIVER: CCU6 kernel is reserved for the ICU driver CCU6_MODULE_USED_BY_PWM_DRIVER: CCU6 kernel is reserved for the PWM driver		
Default value	CCU6_MODULE_NOT_USED		
Post-build variant value	FALSE	**Post-build variant multiplicity**	-
Value configuration class	Pre-Compile	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	ECU
Dependency	-		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.50 Container: McuClockReferencePoint

This container defines a reference point in the MCU clock tree. This container defines the frequency which then can be used by other modules as an input value. Lower multiplicity is 1, as even in the simplest case (only one frequency is used), there is one frequency to be defined.

Post-Build Variant Multiplicity: TRUE
Multiplicity Configuration Class: Post-Build

1.3.1.50.1 McuClockRefSelection

Table 110 Specification for McuClockRefSelection

Name	`McuClockRefSelection`		
Description	Selects the source of clock reference, based on which McuClockReferencePointFrequency is populated with frequency.		
Multiplicity	1..1	**Type**	EcucEnumerationParamDef

(table continues...)

Table 110 (continued) Specification for McuClockRefSelection

Range	MCU_ADAS_FREQUENCY: ADAS frequency MCU_ADC_FREQUENCY: ADC frequency MCU_ASCLINFAST_FREQUENCY: ASCLIN FAST frequency MCU_ASCLINSLOW_FREQUENCY: ASCLIN SLOW frequency MCU_BBB_FREQUENCY: Back Bone Bus frequency MCU_CPU0_FREQUENCY: CPU0 frequency MCU_CPU1_FREQUENCY: CPU1 frequency MCU_CPU2_FREQUENCY: CPU2 frequency MCU_CPU3_FREQUENCY: CPU3 frequency MCU_CPU4_FREQUENCY: CPU4 frequency MCU_CPU5_FREQUENCY: CPU5 frequency MCU_EBU_FREQUENCY: EBU frequency MCU_ERAY_FREQUENCY: ERAY frequency MCU_FSI2_FREQUENCY: FSI2 frequency MCU_FSI_FREQUENCY: FSI frequency MCU_GETH_FREQUENCY: Gigabit Ethernet frequency MCU_GTM_FREQUENCY: GTM frequency MCU_HSCT_FREQUENCY: HSCT frequency MCU_HSPDM160_FREQUENCY: HSPDM160 frequency MCU_HSPDM320_FREQUENCY: HSPDM320 frequency MCU_I2C_FREQUENCY: I2C frequency MCU_MCANH_FREQUENCY: MCANH frequency MCU_MCAN_FREQUENCY: MCAN frequency MCU_MSC_FREQUENCY: MSC frequency MCU_QSPI_FREQUENCY: QSPI frequency MCU_REF_FREQUENCY_1: REFERENCE 1 frequency MCU_REF_FREQUENCY_2: REFERENCE 2 frequency MCU_SOURCE0_FREQUENCY: fSource0 frequency MCU_SOURCE1_FREQUENCY: fSource1 frequency MCU_SOURCE2_FREQUENCY: fSource2 frequency MCU_SPB_FREQUENCY: SPB frequency MCU_SRI_FREQUENCY: SRI frequency MCU_STM_FREQUENCY: STM frequency MCU_USER_DEFINED_FREQUENCY: Frequency defined by user		
Default value	MCU_USER_DEFINED_FREQUENCY		
Post-build variant value	TRUE	**Post-build variant multiplicity**	-
Value configuration class	Post-Build	**Multiplicity configuration class**	-

(table continues...)

Table 110 (continued) Specification for McuClockRefSelection

Origin	IFX	**Scope**	LOCAL
Dependency	-		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.50.2 McuClockReferencePointFrequency

Table 111 Specification for McuClockReferencePointFrequency

Name	`McuClockReferencePointFrequency`		
Description	Defines the frequency for the specific instance of the McuClockReferencePoint container. The frequency is always expressed in Hertz (Hz). The frequency is already calculated in Infineon defined containers. The value entered here by the user will not be validated and is only for information purpose.		
Multiplicity	1..1	**Type**	EcucFloatParamDef
Range	0 - 320000000		
Default value	0		
Post-build variant value	TRUE	**Post-build variant multiplicity**	-
Value configuration class	Post-Build	**Multiplicity configuration class**	-
Origin	AUTOSAR_ECUC	**Scope**	ECU
Dependency	McuClockRefSelection		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.51 Container: McuClockReferencePointConfig

This container holds sub-container for the configuration of the MCU clock tree.
Post-Build Variant Multiplicity: -
Multiplicity Configuration Class: -

1.3.1.52 Container: McuClockSettingConfig

This container contains the configuration (parameters) for the clock settings of the MCU.
Post-Build Variant Multiplicity: FALSE
Multiplicity Configuration Class: Pre-Compile

1.3.1.52.1 McuClockSettingId

Table 112 Specification for McuClockSettingId

Name	`McuClockSettingId`

(table continues...)

Table 112 (continued) Specification for McuClockSettingId

Description	The Id of this parameter is used as an argument for the Mcu_InitClock() API call.		
Multiplicity	1..1	**Type**	EcucIntegerParamDef
Range	0 - 255		
Default value	0		
Post-build variant value	FALSE	**Post-build variant multiplicity**	-
Value configuration class	Pre-Compile	**Multiplicity configuration class**	-
Origin	AUTOSAR_ECUC	**Scope**	LOCAL
Dependency	-		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.53 Container: McuDemEventParameterRefs

This is a container for the references to the DemEventParameter elements which are invoked using the Mcal_Wrapper_Dem_ReportErrorStatus() API for AS422 and Mcal_Wrapper_Dem_SetEventStatus() API for AS440 in case the corresponding errors occur. The EventId is taken from the referenced DemEventParameter's DemEventId symbolic name. The standardized errors are provided in the container and can be extended by vendor-specific error references.

Post-Build Variant Multiplicity: FALSE

Multiplicity Configuration Class: Pre-Compile

1.3.1.53.1 MCU_E_CLOCK_FAILURE

Table 113 Specification for MCU_E_CLOCK_FAILURE

Name	`MCU_E_CLOCK_FAILURE`		
Description	Provides the provision to enable or disable the production error event on clock failure reported through Mcal_Wrapper. This configuration container is kept disabled, just to conform to AUTOSAR schema model.		
Multiplicity	0..1	**Type**	EcucSymbolicNameReferenceDef
Range	Reference to Node: DemEventParameter		
Default value	NULL		
Post-build variant value	FALSE	**Post-build variant multiplicity**	FALSE
Value configuration class	Pre-Compile	**Multiplicity configuration class**	Pre-Compile
Origin	AUTOSAR_ECUC	**Scope**	LOCAL

(table continues...)

Table 113 (continued) Specification for MCU_E_CLOCK_FAILURE

Dependency	-
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.

1.3.1.54 Container: McuDemEventParameterRefsConf

This is a container for the references to the DemEventParameter elements which are invoked using the Mcal_Wrapper_Dem_ReportErrorStatus() API for AS422 and Mcal_Wrapper_Dem_SetEventStatus() API for AS440 in case the corresponding errors occur. The EventId is taken from the referenced DemEventParameter's DemEventId symbolic name. The standardized errors are provided in the container and can be extended by vendor-specific error references. All DEM event parameters are implemented as pre compile parameters.

Post-Build Variant Multiplicity: FALSE

Multiplicity Configuration Class: Pre-Compile

1.3.1.54.1 MCU_E_CCU6_CLC_DISABLE_ERR

Table 114 Specification for MCU_E_CCU6_CLC_DISABLE_ERR

Name	MCU_E_CCU6_CLC_DISABLE_ERR		
Description	This error is reported when the CCU6 kernel CLC bit cannot be turned OFF within the specified time.		
Multiplicity	0..1	**Type**	EcucSymbolicNameReferenceDef
Range	Reference to Node: DemEventParameter		
Default value	NULL		
Post-build variant value	FALSE	**Post-build variant multiplicity**	FALSE
Value configuration class	Pre-Compile	**Multiplicity configuration class**	Pre-Compile
Origin	IFX	**Scope**	LOCAL
Dependency	-		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.54.2 MCU_E_CCU6_CLC_ENABLE_ERR

Table 115 Specification for MCU_E_CCU6_CLC_ENABLE_ERR

Name	MCU_E_CCU6_CLC_ENABLE_ERR		
Description	This error is reported when the CCU6 kernel CLC bit cannot be turned ON within the specified time.		
Multiplicity	0..1	**Type**	EcucSymbolicNameReferenceDef

(table continues...)

Table 115 (continued) Specification for MCU_E_CCU6_CLC_ENABLE_ERR

Range	Reference to Node: DemEventParameter		
Default value	NULL		
Post-build variant value	FALSE	**Post-build variant multiplicity**	FALSE
Value configuration class	Pre-Compile	**Multiplicity configuration class**	Pre-Compile
Origin	IFX	**Scope**	LOCAL
Dependency	-		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.54.3 MCU_E_CCUCON_UPDATE_ERR

Table 116 Specification for MCU_E_CCUCON_UPDATE_ERR

Name	`MCU_E_CCUCON_UPDATE_ERR`		
Description	This error is reported when the LCK bit is not reset within the specified time.		
Multiplicity	0..1	**Type**	EcucSymbolicNameReferenceDef
Range	Reference to Node: DemEventParameter		
Default value	NULL		
Post-build variant value	FALSE	**Post-build variant multiplicity**	FALSE
Value configuration class	Pre-Compile	**Multiplicity configuration class**	Pre-Compile
Origin	IFX	**Scope**	LOCAL
Dependency	-		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.54.4 MCU_E_CONVCTRL_CLC_DISABLE_ERR

Table 117 Specification for MCU_E_CONVCTRL_CLC_DISABLE_ERR

Name	`MCU_E_CONVCTRL_CLC_DISABLE_ERR`		
Description	This error is reported when the CONVCTRL CLC bit cannot be turned OFF within the specified time.		
Multiplicity	0..1	**Type**	EcucSymbolicNameReferenceDef
Range	Reference to Node: DemEventParameter		

(table continues...)

Table 117 (continued) Specification for MCU_E_CONVCTRL_CLC_DISABLE_ERR

Default value	NULL		
Post-build variant value	FALSE	**Post-build variant multiplicity**	FALSE
Value configuration class	Pre-Compile	**Multiplicity configuration class**	Pre-Compile
Origin	IFX	**Scope**	LOCAL
Dependency	-		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.54.5 MCU_E_CONVCTRL_CLC_ENABLE_ERR

Table 118 Specification for MCU_E_CONVCTRL_CLC_ENABLE_ERR

Name	MCU_E_CONVCTRL_CLC_ENABLE_ERR		
Description	This error is reported if the CONVCTRL CLC bit cannot be turned ON within the specified time.		
Multiplicity	0..1	**Type**	EcucSymbolicNameReferenceDef
Range	Reference to Node: DemEventParameter		
Default value	NULL		
Post-build variant value	FALSE	**Post-build variant multiplicity**	FALSE
Value configuration class	Pre-Compile	**Multiplicity configuration class**	Pre-Compile
Origin	IFX	**Scope**	LOCAL
Dependency	-		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.54.6 MCU_E_GPT12_CLC_DISABLE_ERR

Table 119 Specification for MCU_E_GPT12_CLC_DISABLE_ERR

Name	MCU_E_GPT12_CLC_DISABLE_ERR		
Description	This error is reported if the GPT12 CLC bit cannot be turned OFF within the specified time.		
Multiplicity	0..1	**Type**	EcucSymbolicNameReferenceDef
Range	Reference to Node: DemEventParameter		
Default value	NULL		

(table continues...)

Table 119 (continued) Specification for MCU_E_GPT12_CLC_DISABLE_ERR

Post-build variant value	FALSE	**Post-build variant multiplicity**	FALSE
Value configuration class	Pre-Compile	**Multiplicity configuration class**	Pre-Compile
Origin	IFX	**Scope**	LOCAL
Dependency	-		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.54.7 MCU_E_GPT12_CLC_ENABLE_ERR

Table 120 Specification for MCU_E_GPT12_CLC_ENABLE_ERR

Name	MCU_E_GPT12_CLC_ENABLE_ERR		
Description	This error is reported if the GPT12 CLC bit cannot be turned ON within the specified time.		
Multiplicity	0..1	**Type**	EcucSymbolicNameReferenceDef
Range	Reference to Node: DemEventParameter		
Default value	NULL		
Post-build variant value	FALSE	**Post-build variant multiplicity**	FALSE
Value configuration class	Pre-Compile	**Multiplicity configuration class**	Pre-Compile
Origin	IFX	**Scope**	LOCAL
Dependency	-		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.54.8 MCU_E_GTM_CLC_DISABLE_ERR

Table 121 Specification for MCU_E_GTM_CLC_DISABLE_ERR

Name	MCU_E_GTM_CLC_DISABLE_ERR		
Description	This error is reported if the GTM CLC bit cannot be turned OFF within the specified time.		
Multiplicity	0..1	**Type**	EcucSymbolicNameReferenceDef
Range	Reference to Node: DemEventParameter		
Default value	NULL		
Post-build variant value	FALSE	**Post-build variant multiplicity**	FALSE

(table continues...)

Table 121 (continued) Specification for MCU_E_GTM_CLC_DISABLE_ERR

Value configuration class	Pre-Compile	**Multiplicity configuration class**	Pre-Compile
Origin	IFX	**Scope**	LOCAL
Dependency	-		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.54.9 MCU_E_GTM_CLC_ENABLE_ERR

Table 122 Specification for MCU_E_GTM_CLC_ENABLE_ERR

Name	MCU_E_GTM_CLC_ENABLE_ERR		
Description	This error is reported if the GTM CLC bit cannot be turned ON within the specified time.		
Multiplicity	0..1	**Type**	EcucSymbolicNameReferenceDef
Range	Reference to Node: DemEventParameter		
Default value	NULL		
Post-build variant value	FALSE	**Post-build variant multiplicity**	FALSE
Value configuration class	Pre-Compile	**Multiplicity configuration class**	Pre-Compile
Origin	IFX	**Scope**	LOCAL
Dependency	-		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.54.10 MCU_E_OSC_FAILURE

Table 123 Specification for MCU_E_OSC_FAILURE

Name	MCU_E_OSC_FAILURE		
Description	This error is reported when the oscillator develops a failure. This error can be reported both at Init as well as run time. MCU_E_OSC_FAILURE can only be enabled if the ClockSourceFailureNotification parameter is enabled provided that the Mcu_InitClock() API is available.		
Multiplicity	0..1	**Type**	EcucSymbolicNameReferenceDef
Range	Reference to Node: DemEventParameter		
Default value	NULL		
Post-build variant value	FALSE	**Post-build variant multiplicity**	FALSE

(table continues...)

Table 123 (continued) Specification for MCU_E_OSC_FAILURE

Value configuration class	Pre-Compile	**Multiplicity configuration class**	Pre-Compile
Origin	IFX	**Scope**	LOCAL
Dependency	McuInitClock, McuClockSourceFailureNotification		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.54.11 MCU_E_PERIPHERAL_PLL_LOCK_LOSS

Table 124 Specification for MCU_E_PERIPHERAL_PLL_LOCK_LOSS

Name	`MCU_E_PERIPHERAL_PLL_LOCK_LOSS`		
Description	This error is reported at run time when the peripheral PLL develops loss of lock. This error can only be enabled if the parameter ClockSourceFailureNotification is enabled.		
Multiplicity	0..1	**Type**	EcucSymbolicNameReferenceDef
Range	Reference to Node: DemEventParameter		
Default value	NULL		
Post-build variant value	FALSE	**Post-build variant multiplicity**	FALSE
Value configuration class	Pre-Compile	**Multiplicity configuration class**	Pre-Compile
Origin	IFX	**Scope**	LOCAL
Dependency	McuClockSourceFailureNotification		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.54.12 MCU_E_PERIPHERAL_PLL_TIMEOUT_ERR

Table 125 Specification for MCU_E_PERIPHERAL_PLL_TIMEOUT_ERR

Name	`MCU_E_PERIPHERAL_PLL_TIMEOUT_ERR`		
Description	This error is reported when the peripheral PLL does not lock within the specified time during the clock initialization. This error can only be enabled if the ClockSourceFailureNotification parameter is enabled.		
Multiplicity	0..1	**Type**	EcucSymbolicNameReferenceDef
Range	Reference to Node: DemEventParameter		
Default value	NULL		
Post-build variant value	FALSE	**Post-build variant multiplicity**	FALSE

(table continues...)

Table 125 (continued) Specification for MCU_E_PERIPHERAL_PLL_TIMEOUT_ERR

Value configuration class	Pre-Compile	**Multiplicity configuration class**	Pre-Compile
Origin	IFX	**Scope**	LOCAL
Dependency	McuClockSourceFailureNotification		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.54.13 MCU_E_PMSWCR_UPDATE_ERR

Table 126 Specification for MCU_E_PMSWCR_UPDATE_ERR

Name	MCU_E_PMSWCR_UPDATE_ERR		
Description	This error is reported when the PMSWCRx register cannot be written because the BUSY bit is always set (register update is not allowed).		
Multiplicity	0..1	**Type**	EcucSymbolicNameReferenceDef
Range	Reference to Node: DemEventParameter		
Default value	NULL		
Post-build variant value	FALSE	**Post-build variant multiplicity**	FALSE
Value configuration class	Pre-Compile	**Multiplicity configuration class**	Pre-Compile
Origin	IFX	**Scope**	LOCAL
Dependency	-		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.54.14 MCU_E_SYSTEM_PLL_LOCK_LOSS

Table 127 Specification for MCU_E_SYSTEM_PLL_LOCK_LOSS

Name	MCU_E_SYSTEM_PLL_LOCK_LOSS		
Description	This error is reported at run time when the system PLL develops loss of lock. This error can only be enabled if the ClockSourceFailureNotification parameter is enabled.		
Multiplicity	0..1	**Type**	EcucSymbolicNameReferenceDef
Range	Reference to Node: DemEventParameter		
Default value	NULL		
Post-build variant value	FALSE	**Post-build variant multiplicity**	FALSE

(table continues...)

Table 127 (continued) Specification for MCU_E_SYSTEM_PLL_LOCK_LOSS

Value configuration class	Pre-Compile	**Multiplicity configuration class**	Pre-Compile
Origin	IFX	**Scope**	LOCAL
Dependency	McuClockSourceFailureNotification		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.54.15 MCU_E_SYSTEM_PLL_TIMEOUT_ERR

Table 128 Specification for MCU_E_SYSTEM_PLL_TIMEOUT_ERR

Name	MCU_E_SYSTEM_PLL_TIMEOUT_ERR		
Description	This error is reported when the System PLL does not lock within the specified time during clock initialization sequence. This error can only be enabled if the ClockSourceFailureNotification parameter is enabled.		
Multiplicity	0..1	**Type**	EcucSymbolicNameReferenceDef
Range	Reference to Node: DemEventParameter		
Default value	NULL		
Post-build variant value	FALSE	**Post-build variant multiplicity**	FALSE
Value configuration class	Pre-Compile	**Multiplicity configuration class**	Pre-Compile
Origin	IFX	**Scope**	LOCAL
Dependency	McuClockSourceFailureNotification		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.55 Container: McuEruAllocationConf

This container holds the ownership information of the input(ERS) and the output(OGU) channels of the ERU

The short name for the container shall be McuEruAllocationConf_<x>, where x is an integer.

Note: The above naming convention is by default followed in Tresos, when new containers are added or when project is created.

Post-Build Variant Multiplicity: -

Multiplicity Configuration Class: -

1.3.1.56 Container: McuEruChannelInputLineConf

This container holds the ownership information of the input (ERS) channels of the ERU.

Post-Build Variant Multiplicity: -

Multiplicity Configuration Class: -

1.3.1.56.1 McuEruChannelInputLineConf

Table 129 Specification for McuEruChannelInputLineConf

Name	`McuEruChannelInputLineConf`		
Description	Specifies the user of this particular ERU input line.		
Multiplicity	1..1	**Type**	EcucEnumerationParamDef
Range	ERU_CHANNEL_INP_NOT_USED: ERU input channel is not used ERU_CHANNEL_INP_USED_BY_ADC_DRIVER: ERU input channel is reserved for the ADC driver ERU_CHANNEL_INP_USED_BY_DSADC_DRIVER: ERU input channel is reserved for the DSADC driver ERU_CHANNEL_INP_USED_BY_ICU_DRIVER: ERU input channel is reserved for the ICU driver		
Default value	ERU_CHANNEL_INP_NOT_USED		
Post-build variant value	FALSE	**Post-build variant multiplicity**	-
Value configuration class	Pre-Compile	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	ECU
Dependency	-		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.57 Container: McuEruChannelOutputUnitConf

This container holds the ownership information of the output (OGU) channels of the ERU

Post-Build Variant Multiplicity: -

Multiplicity Configuration Class: -

1.3.1.57.1 McuEruChannelOutputUnitConf

Table 130 Specification for McuEruChannelOutputUnitConf

Name	`McuEruChannelOutputUnitConf`		
Description	Specifies the user of this particular ERU output line.		
Multiplicity	1..1	**Type**	EcucEnumerationParamDef

(table continues...)

Table 130 (continued) Specification for McuEruChannelOutputUnitConf

Range	ERU_CHANNEL_OUT_NOT_USED: ERU output channel is not used ERU_CHANNEL_OUT_USED_BY_ADC_DRIVER: ERU output channel is reserved for the ADC driver ERU_CHANNEL_OUT_USED_BY_DSADC_DRIVER: ERU output channel is reserved for the DSADC driver ERU_CHANNEL_OUT_USED_BY_ICU_DRIVER: ERU output channel is reserved for the ICU driver		
Default value	ERU_CHANNEL_OUT_NOT_USED		
Post-build variant value	FALSE	**Post-build variant multiplicity**	-
Value configuration class	Pre-Compile	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	ECU
Dependency	-		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.58 Container: McuEruGlobalConf

This container holds the input filter configuration parameters of the ERU.

Post-Build Variant Multiplicity: -

Multiplicity Configuration Class: -

1.3.1.58.1 McuEruInputFilterRegVal

Table 131 Specification for McuEruInputFilterRegVal

Name	`McuEruInputFilterRegVal`		
Description	Enables/disables the glitch filter and also the glitch filter pre-divider and filters depth. (EIFILT register). A value of zero in this register disables all glitch filtering. In case 0 is passed for bit fields which are reserved according to the Target Specification, the value will be masked out.		
Multiplicity	1..1	**Type**	EcucIntegerParamDef
Range	0 - 4278321151		
Default value	0		
Post-build variant value	TRUE	**Post-build variant multiplicity**	-
Value configuration class	Post-Build	**Multiplicity configuration class**	-

(table continues...)

Table 131 (continued) Specification for McuEruInputFilterRegVal

Origin	IFX	**Scope**	LOCAL
Dependency	-		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.59 Container: McuExternalClockOutputConfig

This container defines the configuration (parameters) for the external clock out of the MCU.

Post-Build Variant Multiplicity: -

Multiplicity Configuration Class: -

1.3.1.59.1 McuExtClock0Enable

Table 132 Specification for McuExtClock0Enable

Name	`McuExtClock0Enable`		
Description	Enables/disables the EXTCLK0 signal. Values : TRUE: EXTCLK0 signal is available on the external pad FALSE: EXTCLK0 signal is not available on the external pad		
Multiplicity	1..1	**Type**	EcucBooleanParamDef
Range	TRUE FALSE		
Default value	FALSE		
Post-build variant value	TRUE	**Post-build variant multiplicity**	-
Value configuration class	Post-Build	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	LOCAL
Dependency	-		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.59.2 McuExtClock1Enable

Table 133 Specification for McuExtClock1Enable

Name	`McuExtClock1Enable`

(table continues...)

Table 133 (continued) Specification for McuExtClock1Enable

Description	Enables/disables the EXTCLK1 signal. Values : TRUE: EXTCLK1 signal is available on the external pad FALSE: EXTCLK1 signal is not available on the external pad		
Multiplicity	1..1	**Type**	EcucBooleanParamDef
Range	TRUE FALSE		
Default value	FALSE		
Post-build variant value	TRUE	**Post-build variant multiplicity**	-
Value configuration class	Post-Build	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	LOCAL
Dependency	-		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.59.3 McuExtClock1Inverted

Table 134 Specification for McuExtClock1Inverted

Name	`McuExtClock1Inverted`		
Description	Enables/disables the inversion of EXTCLK1. Values : TRUE: output signal is inverted of the actual signal for the EXTCLK1 FALSE: output signal is not inverted of the actual signal for the EXTCLK1		
Multiplicity	1..1	**Type**	EcucBooleanParamDef
Range	TRUE FALSE		
Default value	FALSE		
Post-build variant value	TRUE	**Post-build variant multiplicity**	-
Value configuration class	Post-Build	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	LOCAL
Dependency	McuExtClock1Enable		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.59.4 McuExtClockOutSel0

Table 135 Specification for McuExtClockOutSel0

Name	`McuExtClockOutSel0`		
Description	Specifies the clock source that is selected as the output for EXTCLK0. *Note: ALT mode for corresponding port pin must be configured in the PORT driver to observe the output at a port pin.*		
Multiplicity	1..1	**Type**	EcucEnumerationParamDef
Range	BACKUP_EXT_CLOCK0_SEL4: fBACK is selected for EXTCLK0 BBB_EXT_CLOCK0_SEL6: fBBB is selected for EXTCLK0 ERAY_MT0_EXT_CLOCK0_SEL15: fERAY is selected for EXTCLK0 FOUT_EXT_CLOCK0_SEL0: fOUT is selected for EXTCLK0 FSI2_EXT_CLOCK0_SEL14: fFSI2 is selected for EXTCLK0 FSI_EXT_CLOCK0_SEL10: fFSI is selected for EXTCLK0 GTM_EXT_CLOCK0_SEL12: fGTM is selected for EXTCLK0 OSC0_EXT_CLOCK0_SEL3: fOSC0 is selected for EXTCLK0 PLL0_EXT_CLOCK0_SEL1: fPLL0 is selected for EXTCLK0 PLL1_EXT_CLOCK0_SEL2: fPLL1 is selected for EXTCLK0 PLL2_EXT_CLOCK0_SEL5: fPLL2 is selected for EXTCLK0 SPB_EXT_CLOCK0_SEL9: fSPB is selected for EXTCLK0 SRI_EXT_CLOCK0_SEL8: fSRI is selected for EXTCLK0 STM_EXT_CLOCK0_SEL11: fSTM is selected for EXTCLK0		
Default value	FOUT_EXT_CLOCK0_SEL0		
Post-build variant value	TRUE	**Post-build variant multiplicity**	-
Value configuration class	Post-Build	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	LOCAL
Dependency	McuExtClock0Enable		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.59.5 McuExtClockOutSel1

Table 136 Specification for McuExtClockOutSel1

Name	`McuExtClockOutSel1`
Description	Specifies the clock source that is selected as the output for EXTCLK1. *Note: ALT mode for corresponding port pin must be configured in the PORT driver to observe the output at a port pin.*

(table continues...)

Table 136 (continued) Specification for McuExtClockOutSel1

Multiplicity	1..1	**Type**	EcucEnumerationParamDef
Range	ADC_EXT_CLOCK1_SEL6: fADC is selected for EXTCLK1 ASCLINF_EXT_CLOCK1_SEL13: fASCLINF is selected for EXTCLK1 ASCLINS_EXT_CLOCK1_SEL14: fASCLINS is selected for EXTCLK1 BACKUP_EXT_CLOCK1_SEL4: fBACK is selected for EXTCLK1 EBU_EXT_CLOCK1_SEL3: fEBU is selected for EXTCLK1 ERAY_EXT_CLOCK1_SEL12: fERAY is selected for EXTCLK1 FOUT_EXT_CLOCK1_SEL0: fOUT is selected for EXTCLK1 I2C_EXT_CLOCK1_SEL10: fI2C is selected for EXTCLK1 MCAN_EXT_CLOCK1_SEL5: fMCAN is selected for EXTCLK1 MSC_EXT_CLOCK1_SEL11: fMSC is selected for EXTCLK1 PLL0_EXT_CLOCK1_SEL1: fPLL0 is selected for EXTCLK1 PLL1_EXT_CLOCK1_SEL2: fPLL1 is selected for EXTCLK1 QSPI_EXT_CLOCK1_SEL7: fQSPI is selected for EXTCLK1 SPB_EXT_CLOCK1_SEL9: fSPB is selected for EXTCLK1 SRI_EXT_CLOCK1_SEL8: fSRI is selected for EXTCLK1		
Default value	FOUT_EXT_CLOCK1_SEL0		
Post-build variant value	TRUE	**Post-build variant multiplicity**	-
Value configuration class	Post-Build	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	LOCAL
Dependency	McuExtClock1Enable		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.59.6 McuFoutClockDiv

Table 137 Specification for McuFoutClockDiv

Name	`McuFoutClockDiv`		
Description	Determines the divider for fOUT clock (for EXTCLK1 only). The fOUT frequency for EXTCLK1 can be calculated as below: fOUT = fSPB/ McuFoutClockDiv. *Note: McuFoutClockDiv value is editable and considered for calculation when McuExtClockOutSel1 is set to FOUT_EXT_CLOCK1_SEL0 and McuExtClock1Enable is set to True.*		
Multiplicity	1..1	**Type**	EcucIntegerParamDef
Range	1 - 256		
Default value	1		

(table continues...)

Table 137 (continued) Specification for McuFoutClockDiv

Post-build variant value	TRUE	**Post-build variant multiplicity**	-
Value configuration class	Post-Build	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	LOCAL
Dependency	McuExtClockOutSel1, McuExtClock1Enable		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.60 Container: McuGeneralConfiguration

This container holds the general configuration parameters of the MCU driver.

Post-Build Variant Multiplicity: -

Multiplicity Configuration Class: -

1.3.1.60.1 McuCCU61SleepModeEnabled

Table 138 Specification for McuCCU61SleepModeEnabled

Name	`McuCCU61SleepModeEnabled`		
Description	Specifies whether CCU6 kernel 1 is configured to go to sleep or not. TRUE: CCU6 kernel 1 will go to sleep when system is put to sleep FALSE: CCU6 kernel 1 will not go to sleep when system is put to sleep		
Multiplicity	1..1	**Type**	EcucBooleanParamDef
Range	TRUE FALSE		
Default value	FALSE		
Post-build variant value	TRUE	**Post-build variant multiplicity**	-
Value configuration class	Pre-Compile	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	LOCAL
Dependency	-		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.60.2 McuCcu60SleepModeEnabled

Table 139 Specification for McuCcu60SleepModeEnabled

Name	`McuCcu60SleepModeEnabled`

(table continues...)

Table 139 (continued) Specification for McuCcu60SleepModeEnabled

Description	Specifies whether CCU6 kernel 0 is configured to go to sleep or not. TRUE: CCU6 kernel 0 will go to sleep when system is put to sleep FALSE: CCU6 kernel 0 will not go to sleep when system is put to sleep		
Multiplicity	1..1	**Type**	EcucBooleanParamDef
Range	TRUE FALSE		
Default value	FALSE		
Post-build variant value	FALSE	**Post-build variant multiplicity**	-
Value configuration class	Pre-Compile	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	LOCAL
Dependency	-		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.60.3 McuClearColdResetStatusApi

Table 140 Specification for McuClearColdResetStatusApi

Name	`McuClearColdResetStatusApi`		
Description	Pre-processor switch to enable/disable the Mcu_ClearColdResetStatus() API. Values: TRUE: enables Mcu_ClearColdResetStatus FALSE: disables Mcu_ClearColdResetStatus		
Multiplicity	1..1	**Type**	EcucBooleanParamDef
Range	TRUE FALSE		
Default value	FALSE		
Post-build variant value	FALSE	**Post-build variant multiplicity**	-
Value configuration class	Pre-Compile	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	LOCAL
Dependency	-		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.60.4 McuClockSourceFailureNotification

Table 141 Specification for McuClockSourceFailureNotification

Name	`McuClockSourceFailureNotification`		
Description	Clock failure related production errors are reported to the application when this parameter is enabled. Values: TRUE: Clock failure-related production errors are reported FALSE: Clock failure-related production errors are not reported		
Multiplicity	1..1	**Type**	EcucBooleanParamDef
Range	TRUE FALSE		
Default value	FALSE		
Post-build variant value	FALSE	**Post-build variant multiplicity**	-
Value configuration class	Pre-Compile	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	LOCAL
Dependency	-		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.60.5 McuDevErrorDetect

Table 142 Specification for McuDevErrorDetect

Name	`McuDevErrorDetect`		
Description	Pre-processor switch for enabling the development error detection and reporting. Values: TRUE: Development error detection is enabled FALSE: Development error detection is disabled		
Multiplicity	1..1	**Type**	EcucBooleanParamDef
Range	TRUE FALSE		
Default value	FALSE		
Post-build variant value	FALSE	**Post-build variant multiplicity**	-

(table continues...)

Table 142 (continued) Specification for McuDevErrorDetect

Value configuration class	Pre-Compile	**Multiplicity configuration class**	-
Origin	AUTOSAR_ECUC	**Scope**	LOCAL
Dependency	-		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.60.6 McuEcucPartitionRef

Table 143 Specification for McuEcucPartitionRef

Name	`McuEcucPartitionRef`		
Description	Parameter support is added only for AUTOSAR schema compliance, this parameter is not used in code generation logic, hence this parameter is made editable false.		
Multiplicity	0..*	**Type**	EcucReferenceDef
Range	Reference to Node: EcucPartition		
Default value	NULL		
Post-build variant value	TRUE	**Post-build variant multiplicity**	TRUE
Value configuration class	Pre-Compile	**Multiplicity configuration class**	Pre-Compile
Origin	AUTOSAR_ECUC	**Scope**	ECU
Dependency	-		
Autosar Version	Applicable for Autosar version 4.4.0.		

1.3.1.60.7 McuGetRamStateApi

Table 144 Specification for McuGetRamStateApi

Name	`McuGetRamStateApi`		
Description	Pre-processor switch to enable/disable the Mcu_GetRamState API. Values: TRUE: Mcu_GetRamState() is enabled FALSE: Mcu_GetRamState() is disabled		
Multiplicity	1..1	**Type**	EcucBooleanParamDef
Range	TRUE FALSE		
Default value	FALSE		

(table continues...)

Table 144 (continued) Specification for McuGetRamStateApi

Post-build variant value	FALSE	**Post-build variant multiplicity**	-
Value configuration class	Pre-Compile	**Multiplicity configuration class**	-
Origin	AUTOSAR_ECUC	**Scope**	LOCAL
Dependency	-		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.60.8 McuGpt12SleepModeEnabled

Table 145 Specification for McuGpt12SleepModeEnabled

Name	`McuGpt12SleepModeEnabled`		
Description	Specifies whether GPT12 is configured to go to sleep or not. TRUE: GPT12 will go to sleep when system is put to sleep FALSE: GPT12 will not go to sleep when system is put to sleep		
Multiplicity	1..1	**Type**	EcucBooleanParamDef
Range	TRUE FALSE		
Default value	FALSE		
Post-build variant value	FALSE	**Post-build variant multiplicity**	-
Value configuration class	Pre-Compile	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	LOCAL
Dependency	-		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.60.9 McuGtmSleepModeEnabled

Table 146 Specification for McuGtmSleepModeEnabled

Name	`McuGtmSleepModeEnabled`
Description	Specifies if GTM peripheral has to go into the Sleep mode when the complete system is put into the Sleep mode. TRUE: enables the Sleep mode for the GTM peripheral FALSE : disables the Sleep mode for the GTM peripheral

(table continues...)

Table 146 (continued) Specification for McuGtmSleepModeEnabled

Multiplicity	1..1	**Type**	EcucBooleanParamDef
Range	TRUE FALSE		
Default value	FALSE		
Post-build variant value	TRUE	**Post-build variant multiplicity**	-
Value configuration class	Post-Build	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	ECU
Dependency	-		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.60.10 McuIdleModeCpuCore

Table 147 Specification for McuIdleModeCpuCore

Name	`McuIdleModeCpuCore`		
Description	Defines which core can trigger the Idle mode.		
Multiplicity	1..1	**Type**	EcucEnumerationParamDef
Range	CPU_IDLE_CORE0_SEL1: CPU0 Idle request will send all CPUs in the Idle state CPU_IDLE_CORE1_SEL2: CPU1 Idle request will send all CPUs in the Idle state CPU_IDLE_CORE2_SEL3: CPU2 Idle request will send all CPUs in the Idle state CPU_IDLE_CORE3_SEL4: CPU3 Idle request will send all CPUs in the Idle state CPU_IDLE_CORE4_SEL5: CPU4 Idle request will send all CPUs in the Idle state CPU_IDLE_CORE5_SEL6: CPU5 Idle request will send all CPUs in the Idle state INDIVIDUAL_IDLE_CORES_SEL0: Entry to the respective Idle mode is decided by each individual CPU		
Default value	INDIVIDUAL_IDLE_CORES_SEL0		
Post-build variant value	FALSE	**Post-build variant multiplicity**	-
Value configuration class	Pre-Compile	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	LOCAL
Dependency	-		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.60.11 McuIfxCpuCcuconApi

Table 148 Specification for McuIfxCpuCcuconApi

Name	`McuIfxCpuCcuconApi`		
Description	Enables/disables the availability of CPU clock configuration register update API defined by Infineon namely Mcu_UpdateCpuCcuconReg. Values: TRUE: CPU clock configuration register update API is available FALSE: CPU clock configuration register update API is not available		
Multiplicity	1..1	**Type**	EcucBooleanParamDef
Range	TRUE FALSE		
Default value	FALSE		
Post-build variant value	FALSE	**Post-build variant multiplicity**	-
Value configuration class	Pre-Compile	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	LOCAL
Dependency	-		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.60.12 McuIfxDeInitApi

Table 149 Specification for McuIfxDeInitApi

Name	`McuIfxDeInitApi`		
Description	Enables/disables the availability of MCU de-initialization API, Mcu_DeInit. Values: TRUE: Mcu_DeInit() API is available FALSE: Mcu_DeInit() API is not available		
Multiplicity	1..1	**Type**	EcucBooleanParamDef
Range	TRUE FALSE		
Default value	FALSE		
Post-build variant value	FALSE	**Post-build variant multiplicity**	-

(table continues...)

Table 149 (continued) Specification for McuIfxDeInitApi

Value configuration class	Pre-Compile	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	LOCAL
Dependency	-		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.60.13 McuIfxLpmApi

Table 150 Specification for McuIfxLpmApi

Name	`McuIfxLpmApi`		
Description	Enables/disables the availability of low power mode APIs defined by Infineon namely Mcu_GetCpuIdleModeInitiator, Mcu_GetCpuState, Mcu_GetWakeupCause and Mcu_ClearWakeupCause. Values: TRUE: Low power mode APIs are available FALSE: Low power mode APIs are not available		
Multiplicity	1..1	**Type**	EcucBooleanParamDef
Range	TRUE FALSE		
Default value	FALSE		
Post-build variant value	FALSE	**Post-build variant multiplicity**	-
Value configuration class	Pre-Compile	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	LOCAL
Dependency	-		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.60.14 McuIfxTrapApi

Table 151 Specification for McuIfxTrapApi

Name	`McuIfxTrapApi`

(table continues...)

Table 151 (continued) Specification for McuIfxTrapApi

Description	Enables/disables the availability of trap related APIs defined by Infineon namely Mcu_GetTrapCause, Mcu_SetTrapRequest and Mcu_ClearTrapRequest. Values: TRUE: Trap-related APIs are available FALSE: Trap-related APIs are not available		
Multiplicity	1..1	**Type**	EcucBooleanParamDef
Range	TRUE FALSE		
Default value	FALSE		
Post-build variant value	FALSE	**Post-build variant multiplicity**	-
Value configuration class	Pre-Compile	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	LOCAL
Dependency	-		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.60.15 McuInitCheckApi

Table 152 Specification for McuInitCheckApi

Name	`McuInitCheckApi`		
Description	Enables/disables the availability of the Mcu_InitCheck() API. Values: TRUE: Mcu_InitCheck() API is available FALSE: Mcu_InitCheck() API is not available		
Multiplicity	1..1	**Type**	EcucBooleanParamDef
Range	TRUE FALSE		
Default value	FALSE		
Post-build variant value	FALSE	**Post-build variant multiplicity**	-
Value configuration class	Pre-Compile	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	LOCAL

(table continues...)

Table 152 (continued) Specification for McuInitCheckApi

Dependency	-
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.

1.3.1.60.16 McuInitClock

Table 153 Specification for McuInitClock

Name	`McuInitClock`		
Description	If McuInitClock is set to FALSE, the clock initialization has to be disabled from the MCU driver. This concept applies when there are some write once clock registers, and a bootloader is present. If this parameter is set to TRUE, the MCU driver is responsible of the clock initialization. Values: TRUE: Mcu_InitClock() API is available FALSE: Mcu_InitClock() API is not available		
Multiplicity	1..1	**Type**	EcucBooleanParamDef
Range	TRUE FALSE		
Default value	TRUE		
Post-build variant value	FALSE	**Post-build variant multiplicity**	-
Value configuration class	Pre-Compile	**Multiplicity configuration class**	-
Origin	AUTOSAR_ECUC	**Scope**	LOCAL
Dependency	-		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.60.17 McuInitDeInitApiMode

Table 154 Specification for McuInitDeInitApiMode

Name	`McuInitDeInitApiMode`		
Description	Operating modes for MCU initialization/de-initialization APIs.		
Multiplicity	1..1	**Type**	EcucEnumerationParamDef
Range	MCU_MCAL_SUPERVISOR: Initialization APIs are run in the Supervisor mode MCU_MCAL_USER1: Initialization APIs are run in the User 1 mode		
Default value	MCU_MCAL_SUPERVISOR		

(table continues...)

Table 154 (continued) Specification for McuInitDeInitApiMode

Post-build variant value	FALSE	**Post-build variant multiplicity**	-
Value configuration class	Pre-Compile	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	LOCAL
Dependency	-		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.60.18 McuMainOscillatorFrequency

Table 155 Specification for McuMainOscillatorFrequency

Name	`McuMainOscillatorFrequency`		
Description	Denotes the external crystal frequency value in MHz. External crystal frequency value (in MHz): (16 MHz to 40 MHz): External crystal mode is selected (4 MHz to 40 MHz): Direct input mode is selected, if the shaper is not bypassed		
Multiplicity	1..1	**Type**	EcucIntegerParamDef
Range	4MHz - 40MHz		
Default value	20MHz		
Post-build variant value	FALSE	**Post-build variant multiplicity**	-
Value configuration class	Pre-Compile	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	ECU
Dependency	-		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.60.19 McuMultiCoreErrorDetect

Table 156 Specification for McuMultiCoreErrorDetect

Name	`McuMultiCoreErrorDetect`
Description	Pre-processor switch for enabling the multicore error detection and reporting. Values: TRUE: Multicore error detection is enabled FALSE: Multicore error detection is disabled McuMultiCoreErrorDetect shall be set to false for devices with only one CPU

(table continues...)

Table 156 (continued) Specification for McuMultiCoreErrorDetect

Multiplicity	1..1	**Type**	EcucBooleanParamDef
Range	TRUE FALSE		
Default value	FALSE		
Post-build variant value	FALSE	**Post-build variant multiplicity**	-
Value configuration class	Pre-Compile	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	LOCAL
Dependency	-		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.60.20 McuNoPll

Table 157 Specification for McuNoPll

Name	`McuNoPll`		
Description	McuNoPll is set to TRUE, if the hardware does not have a system PLL or the system PLL circuitry enabled after the power on without software intervention. In this case MCU_DistributePllClock should be disabled and MCU_GetPllStatus should return MCU_PLL_STATUS_UNDEFINED. McuNoPll is always disabled as the TC3xx micro-controller supports PLL. Values: TRUE: MCU does not have to intervene in the PLL-related setup. FALSE: MCU is responsible to get the PLLs up and running.		
Multiplicity	1..1	**Type**	EcucBooleanParamDef
Range	TRUE FALSE		
Default value	FALSE		
Post-build variant value	FALSE	**Post-build variant multiplicity**	-
Value configuration class	Pre-Compile	**Multiplicity configuration class**	-
Origin	AUTOSAR_ECUC	**Scope**	LOCAL
Dependency	-		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.60.21 McuOscAmpRegulationEnable

Table 158 Specification for McuOscAmpRegulationEnable

Name	`McuOscAmpRegulationEnable`		
Description	Selects whether oscillator amplitude regulation is enabled or disabled. TRUE: Amplitude regulation is enabled FALSE: Amplitude regulation is disabled		
Multiplicity	1..1	**Type**	EcucBooleanParamDef
Range	TRUE FALSE		
Default value	FALSE		
Post-build variant value	FALSE	**Post-build variant multiplicity**	-
Value configuration class	Pre-Compile	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	LOCAL
Dependency	-		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.60.22 McuOscCapacitance0Enable

Table 159 Specification for McuOscCapacitance0Enable

Name	`McuOscCapacitance0Enable`		
Description	Selects that load capacitance CL0 is enabled or disabled. TRUE: Capacitance CL0 is enabled FALSE: Capacitance CL0 is disabled		
Multiplicity	1..1	**Type**	EcucBooleanParamDef
Range	TRUE FALSE		
Default value	FALSE		
Post-build variant value	FALSE	**Post-build variant multiplicity**	-
Value configuration class	Pre-Compile	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	LOCAL
Dependency	McuOscAmpRegulationEnable		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.60.23 McuOscCapacitance1Enable

Table 160 Specification for McuOscCapacitance1Enable

Name	`McuOscCapacitance1Enable`		
Description	Selects that load capacitance CL1 is enabled or disabled. TRUE: Capacitance CL1 is enabled FALSE: Capacitance CL1 is disabled		
Multiplicity	1..1	**Type**	EcucBooleanParamDef
Range	TRUE FALSE		
Default value	FALSE		
Post-build variant value	FALSE	**Post-build variant multiplicity**	-
Value configuration class	Pre-Compile	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	LOCAL
Dependency	McuOscAmpRegulationEnable		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.60.24 McuOscCapacitance2Enable

Table 161 Specification for McuOscCapacitance2Enable

Name	`McuOscCapacitance2Enable`		
Description	Selects that load capacitance CL2 is enabled or disabled. TRUE: Capacitance CL2 is enabled FALSE: Capacitance CL2 is disabled		
Multiplicity	1..1	**Type**	EcucBooleanParamDef
Range	TRUE FALSE		
Default value	FALSE		
Post-build variant value	FALSE	**Post-build variant multiplicity**	-
Value configuration class	Pre-Compile	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	LOCAL
Dependency	McuOscAmpRegulationEnable		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.60.25 McuOscCapacitance3Enable

Table 162 Specification for McuOscCapacitance3Enable

Name	`McuOscCapacitance3Enable`		
Description	Selects that load capacitance CL3 is enabled or disabled. TRUE: Capacitance CL3 is enabled FALSE: Capacitance CL3 is disabled		
Multiplicity	1..1	**Type**	EcucBooleanParamDef
Range	TRUE FALSE		
Default value	FALSE		
Post-build variant value	FALSE	**Post-build variant multiplicity**	-
Value configuration class	Pre-Compile	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	LOCAL
Dependency	McuOscAmpRegulationEnable		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.60.26 McuOscillatorMode

Table 163 Specification for McuOscillatorMode

Name	`McuOscillatorMode`		
Description	Pre-processor switch to select the oscillator mode.		
Multiplicity	1..1	**Type**	EcucEnumerationParamDef
Range	EXT_CRYSTAL_CERAMIC_RES_MODE_SEL0: external crystal or ceramic resonator mode is selected EXT_INPUT_CLOCK_MODE_SEL2: external input clock source mode is selected OSC_DISABLED_MODE_SEL3: Oscillator is disabled		
Default value	EXT_CRYSTAL_CERAMIC_RES_MODE_SEL0		
Post-build variant value	FALSE	**Post-build variant multiplicity**	-
Value configuration class	Pre-Compile	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	LOCAL
Dependency	-		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.60.27 McuPerformResetApi

Table 164 Specification for McuPerformResetApi

Name	`McuPerformResetApi`		
Description	Pre-processor switch to enable/disable the availability of the Mcu_PerformReset() API. Values: TRUE: Mcu_PerformReset() API is available FALSE: Mcu_PerformReset() API is not available		
Multiplicity	1..1	**Type**	EcucBooleanParamDef
Range	TRUE FALSE		
Default value	FALSE		
Post-build variant value	FALSE	**Post-build variant multiplicity**	-
Value configuration class	Pre-Compile	**Multiplicity configuration class**	-
Origin	AUTOSAR_ECUC	**Scope**	LOCAL
Dependency	-		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.60.28 McuRuntimeApiMode

Table 165 Specification for McuRuntimeApiMode

Name	`McuRuntimeApiMode`		
Description	Operating modes for MCU runtime APIs.		
Multiplicity	1..1	**Type**	EcucEnumerationParamDef
Range	MCU_MCAL_SUPERVISOR: run time APIs are run in the Supervisor mode MCU_MCAL_USER1: run time APIs are run in the User 1 mode		
Default value	MCU_MCAL_SUPERVISOR		
Post-build variant value	FALSE	**Post-build variant multiplicity**	-
Value configuration class	Pre-Compile	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	LOCAL
Dependency	-		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.60.29 McuSafetyEnable

Table 166 Specification for McuSafetyEnable

Name	`McuSafetyEnable`		
Description	Enables/disables safety checks and features of the MCU driver. Values: TRUE: Safety features are available FALSE: Safety features are disabled		
Multiplicity	1..1	**Type**	EcucBooleanParamDef
Range	TRUE FALSE		
Default value	TRUE		
Post-build variant value	FALSE	**Post-build variant multiplicity**	-
Value configuration class	Pre-Compile	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	LOCAL
Dependency	-		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.60.30 McuStandbyEntryMode

Table 167 Specification for McuStandbyEntryMode

Name	`McuStandbyEntryMode`		
Description	Pre-processor parameter to select the standby mode entry criteria.		
Multiplicity	1..1	**Type**	EcucEnumerationParamDef
Range	STANDBY_ENTRY_ESR_SEL4: entry to the standby mode domain is through ESR1/NMI assertion. Configuration of proper ALT selection for the corresponding port pin has to be done in the PORT driver. STANDBY_ENTRY_REQ_SLEEP_SEL0: entry to the standby domain is through PMSWCR1. STBYEV. This can be done by calling Mcu_SetMode (STANDBY_MODE).		
Default value	STANDBY_ENTRY_REQ_SLEEP_SEL0		
Post-build variant value	FALSE	**Post-build variant multiplicity**	-
Value configuration class	Pre-Compile	**Multiplicity configuration class**	-

(table continues...)

Table 167 (continued) Specification for McuStandbyEntryMode

Origin	IFX	**Scope**	LOCAL
Dependency	-		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.60.31 McuSysClkFrequency

Table 168 Specification for McuSysClkFrequency

Name	`McuSysClkFrequency`		
Description	Specifies the input signal frequency value in MHz applied at the SYSCLK port pad.		
Multiplicity	1..1	**Type**	EcucIntegerParamDef
Range	16 MHz - 40 MHz		
Default value	20 MHz		
Post-build variant value	FALSE	**Post-build variant multiplicity**	-
Value configuration class	Pre-Compile	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	LOCAL
Dependency	-		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.60.32 McuSystemModeCpuCore

Table 169 Specification for McuSystemModeCpuCore

Name	`McuSystemModeCpuCore`		
Description	Defines which core can trigger system modes (sleep/standby).		
Multiplicity	1..1	**Type**	EcucEnumerationParamDef
Range	CPU_SYSTEM_CORE0_SEL0: Only CPU0 can trigger the power down modes CPU_SYSTEM_CORE1_SEL1: Only CPU1 can trigger the power down modes CPU_SYSTEM_CORE2_SEL2: Only CPU2 can trigger the power down modes CPU_SYSTEM_CORE3_SEL3: Only CPU3 can trigger the power down modes CPU_SYSTEM_CORE4_SEL4: Only CPU4 can trigger the power down modes CPU_SYSTEM_CORE5_SEL5: Only CPU5 can trigger the power down modes UNANIMOUS_SYSTEM_ALL_CORES_SEL6: Entry to power down modes is unanimously decided by all the CPUs		
Default value	CPU_SYSTEM_CORE0_SEL0		

(table continues...)

Table 169 (continued) Specification for McuSystemModeCpuCore

Post-build variant value	FALSE	**Post-build variant multiplicity**	-
Value configuration class	Pre-Compile	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	LOCAL
Dependency	-		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.60.33 McuVersionInfoApi

Table 170 Specification for McuVersionInfoApi

Name	`McuVersionInfoApi`		
Description	Pre-processor switch to enable/disable the API to read out the driver version information. If this parameter is set to TRUE then, following macro is generated. #define MCU_VERSION_INFO_API (STD_ON) #else #define MCU_VERSION_INFO_API (STD_OFF) Mcu_GetVersionInfo() is guarded by above generated macro. Values: TRUE: Version information API is enabled FALSE: Version information API is disabled		
Multiplicity	1..1	**Type**	EcucBooleanParamDef
Range	TRUE FALSE		
Default value	FALSE		
Post-build variant value	FALSE	**Post-build variant multiplicity**	-
Value configuration class	Pre-Compile	**Multiplicity configuration class**	-
Origin	AUTOSAR_ECUC	**Scope**	LOCAL
Dependency	-		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.61 Container: McuGpt12ModuleAllocationConf

This container holds the GPT timer allocation to the different MCAL drivers.

The short name for the container shall be McuGpt12ModuleAllocationConf_<x>, where x is an integer.

Note: The above naming convention is by default followed in Tresos, when new containers are added or when project is created.

Post-Build Variant Multiplicity: -

Multiplicity Configuration Class: -

1.3.1.61.1 McuGpt12ModuleAllocationConf

Table 171 Specification for McuGpt12ModuleAllocationConf

Name	`McuGpt12ModuleAllocationConf`		
Description	Specifies which driver(s) have used this particular GPT timer or this module is not used by any driver (unused).		
Multiplicity	1..1	**Type**	EcucEnumerationParamDef
Range	GPT_TIMER_NOT_USED: GPT timer is not used GPT_TIMER_USED_BY_GPT_DRIVER: GPT timer is reserved for the GPT driver GPT_TIMER_USED_BY_ICU_DRIVER: GPT timer is reserved for the ICU driver		
Default value	GPT_TIMER_NOT_USED		
Post-build variant value	FALSE	**Post-build variant multiplicity**	-
Value configuration class	Pre-Compile	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	LOCAL
Dependency	Gpt2BlockPrescalerSel, Gpt1BlockPrescalerSel		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.61.2 McuGpt12TimerAllocation

Table 172 Specification for McuGpt12TimerAllocation

Name	`McuGpt12TimerAllocation`		
Description	Specifies the timer to be reserved.		
Multiplicity	1..1	**Type**	EcucEnumerationParamDef
Range	GPT_TIMER_2: GPT timer T2 is reserved for the allocation. GPT_TIMER_3: GPT timer T3 is used for resource allocation GPT_TIMER_4: GPT timer T4 is used for resource allocation GPT_TIMER_5: GPT timer T5 is used for resource allocation GPT_TIMER_6: GPT timer T6 is used for resource allocation		
Default value	GPT_TIMER_2		

(table continues...)

Table 172 (continued) Specification for McuGpt12TimerAllocation

Post-build variant value	FALSE	**Post-build variant multiplicity**	-
Value configuration class	Pre-Compile	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	LOCAL
Dependency	-		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.62 Container: McuGtmAllocationConf

This container holds the ownership information of the sub-modules of GTM peripherals such as TOM, ATOM and TIM. The number of instances of the TIM, TOM and ATOM container depends on the underlying derivative.

The short name for the container shall be McuGtmAllocationConf_<x>, where x is an integer.

Note: The above naming convention is by default followed in Tresos, when new containers are added or when project is created.

Post-Build Variant Multiplicity: -

Multiplicity Configuration Class: -

1.3.1.63 Container: McuGtmAtomAllocationConf

This container holds the GTM ATOM allocation. Multiplicity of this container depends on the underlying derivative.

User is not allowed to change the name of the parameters in this container.

Post-Build Variant Multiplicity: -

Multiplicity Configuration Class: -

1.3.1.64 Container: McuGtmAtomChannelAllocationConf

This container holds the GTM ATOM channel allocation.

Post-Build Variant Multiplicity: -

Multiplicity Configuration Class: -

1.3.1.64.1 McuAtomChannelEventHandledByDsadc

Table 173 Specification for McuAtomChannelEventHandledByDsadc

Name	`McuAtomChannelEventHandledByDsadc`

(table continues...)

Table 173 (continued) Specification for McuAtomChannelEventHandledByDsadc

Description	Specifies whether callback of DSADC or the driver reserving the resource will be invoked when an event occurs. TRUE : The callback of DSADC is invoked on an event FALSE: The callback of the module which has configured the channel is invoked on an event *Note: This parameter can only be selected in case the user of ATOM channel is PWM.*		
Multiplicity	1..1	**Type**	EcucBooleanParamDef
Range	TRUE FALSE		
Default value	FALSE		
Post-build variant value	FALSE	**Post-build variant multiplicity**	-
Value configuration class	Pre-Compile	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	LOCAL
Dependency	-		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.64.2 McuGtmAtomChannelAllocationConf

Table 174 Specification for McuGtmAtomChannelAllocationConf

Name	`McuGtmAtomChannelAllocationConf`		
Description	Specifies which driver(s) have used or not used this particular ATOM channel		
Multiplicity	1..1	**Type**	EcucEnumerationParamDef
Range	GTM_ATOM_CHANNEL_NOT_USED: ATOM channel is not used GTM_ATOM_CHANNEL_USED_BY_ADC: ATOM channel is reserved for the ADC driver GTM_ATOM_CHANNEL_USED_BY_GPT: ATOM channel is reserved for the GPT driver GTM_ATOM_CHANNEL_USED_BY_OCU: ATOM channel is reserved for the OCU driver GTM_ATOM_CHANNEL_USED_BY_PWM: ATOM channel is reserved for the PWM driver GTM_ATOM_CHANNEL_USED_BY_WDG: ATOM channel is reserved for the WDG driver		
Default value	GTM_ATOM_CHANNEL_NOT_USED		
Post-build variant value	FALSE	**Post-build variant multiplicity**	-
Value configuration class	Pre-Compile	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	ECU

(table continues...)

Table 174	(continued) Specification for McuGtmAtomChannelAllocationConf
Dependency	-
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.

1.3.1.65 Container: McuGtmClockManagementConf

This container deals with configuration of the CMU parameters
Post-Build Variant Multiplicity: -
Multiplicity Configuration Class: -

1.3.1.65.1 GtmCmuGlobalClockDenominator

Table 175 Specification for GtmCmuGlobalClockDenominator

Name	`GtmCmuGlobalClockDenominator`		
Description	Used to configure the global denominator value for configurable clock and fixed clock GtmCmuGlobalClockNumerator should not be less than GtmCmuGlobalClockDenominator.		
Multiplicity	1..1	**Type**	EcucIntegerParamDef
Range	1 - 16777215		
Default value	1		
Post-build variant value	TRUE	**Post-build variant multiplicity**	-
Value configuration class	Post-Build	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	ECU
Dependency	GtmCmuGlobalClockNumerator		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.65.2 GtmCmuGlobalClockNumerator

Table 176 Specification for GtmCmuGlobalClockNumerator

Name	`GtmCmuGlobalClockNumerator`		
Description	Used to configure the global numerator value for configurable clock and fixed clock GtmCmuGlobalClockNumerator should not be less than GtmCmuGlobalClockDenominator.		
Multiplicity	1..1	**Type**	EcucIntegerParamDef
Range	1 - 16777215		
Default value	1		
Post-build variant value	TRUE	**Post-build variant multiplicity**	-

(table continues...)

Table 176 (continued) Specification for GtmCmuGlobalClockNumerator

Value configuration class	Post-Build	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	ECU
Dependency	GtmCmuGlobalClockDenominator		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.66 Container: McuGtmTimAllocationConf

This container holds the GTM TIM allocation. The multiplicity of this container depends on the underlying derivative.

User is not allowed to change the name of the configuration parameters in this container.

Post-Build Variant Multiplicity: -

Multiplicity Configuration Class: -

1.3.1.67 Container: McuGtmTimChannelAllocationConf

This container holds the GTM TIM channel allocation.

Post-Build Variant Multiplicity: -

Multiplicity Configuration Class: -

1.3.1.67.1 McuGtmTimChannelAllocationConf

Table 177 Specification for McuGtmTimChannelAllocationConf

Name	`McuGtmTimChannelAllocationConf`		
Description	Specifies which driver(s) have used or not used this particular TIM channel.		
Multiplicity	1..1	**Type**	EcucEnumerationParamDef
Range	GTM_TIM_CHANNEL_NOT_USED: TIM channel is not used GTM_TIM_CHANNEL_USED_BY_ICU: TIM channel is reserved for the ICU driver		
Default value	GTM_TIM_CHANNEL_NOT_USED		
Post-build variant value	FALSE	**Post-build variant multiplicity**	-
Value configuration class	Pre-Compile	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	ECU
Dependency	-		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.68 Container: McuGtmTomAllocationConf

This container holds the GTM TOM allocation. The multiplicity of this container depends on the underlying derivative.

User is not allowed to change the name of the parameters in this container.

Post-Build Variant Multiplicity: -

Multiplicity Configuration Class: -

1.3.1.69 Container: McuGtmTomChannelAllocationConf

This container holds the GTM TOM channel allocation.

Post-Build Variant Multiplicity: -

Multiplicity Configuration Class: -

1.3.1.69.1 McuGtmTomChannelAllocationConf

Table 178 Specification for McuGtmTomChannelAllocationConf

Name	`McuGtmTomChannelAllocationConf`		
Description	Specifies which driver(s) have used or not used this particular TOM channel.		
Multiplicity	1..1	**Type**	EcucEnumerationParamDef
Range	GTM_TOM_CHANNEL_NOT_USED: TOM channel is not used GTM_TOM_CHANNEL_USED_BY_ADC: TOM channel is reserved for the ADC driver GTM_TOM_CHANNEL_USED_BY_GPT: TOM channel is reserved for the GPT driver GTM_TOM_CHANNEL_USED_BY_OCU: TOM channel is reserved for the OCU driver GTM_TOM_CHANNEL_USED_BY_PWM: TOM channel is reserved for the PWM driver GTM_TOM_CHANNEL_USED_BY_WDG: TOM channel is reserved for the WDG driver		
Default value	GTM_TOM_CHANNEL_NOT_USED		
Post-build variant value	FALSE	**Post-build variant multiplicity**	-
Value configuration class	Pre-Compile	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	ECU
Dependency	-		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.69.2 McuTomChannelEventHandledByDsadc

Table 179 Specification for McuTomChannelEventHandledByDsadc

Name	`McuTomChannelEventHandledByDsadc`

(table continues...)

Table 179 (continued) Specification for McuTomChannelEventHandledByDsadc

Description	Specifies whether callback of DSADC or the driver reserving the resource will be invoked when an event occurs. TRUE : The callback of DSADC is invoked on an event FALSE: The callback of the module which has configured the channel is invoked on an event *Note: This parameter can only be selected in case the user of TOM channel is PWM.*		
Multiplicity	1..1	**Type**	EcucBooleanParamDef
Range	TRUE FALSE		
Default value	FALSE		
Post-build variant value	FALSE	**Post-build variant multiplicity**	-
Value configuration class	Pre-Compile	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	LOCAL
Dependency	-		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.70 Container: McuHardwareResourceAllocationConf

This container holds the hardware resource allocation for the peripherals whose unique instances are used by multiple modules such as GTM, ASCLIN, CCU, ADC and ERU.

Post-Build Variant Multiplicity: -

Multiplicity Configuration Class: -

1.3.1.71 Container: McuModeSettingConf

This container holds the configuration (parameters) for the mode setting of the MCU.

Post-Build Variant Multiplicity: FALSE

Multiplicity Configuration Class: Pre-Compile

1.3.1.71.1 McuEvrcLPMOnSleepReqEnable

Table 180 Specification for McuEvrcLPMOnSleepReqEnable

Name	`McuEvrcLPMOnSleepReqEnable`

(table continues...)

Table 180 (continued) Specification for McuEvrcLPMOnSleepReqEnable

Description	Enables EVRC low power mode when the sleep mode is enabled. McuEvrcLPMOnSleepReqEnable is enabled only if McuMode is selected as MCU_SLEEP. TRUE: entering into the low power mode for EVRC on sleep mode request is enabled FALSE: Entering into the low power mode for EVRC on sleep mode request is disabled **Caution:** When McuEvrcLPMOnSleepReqEnable is enabled, ensure smooth current ramp-down before entering into the Sleep mode. High current jumps during mode transition may lead to unintended device reset.		
Multiplicity	1..1	**Type**	EcucBooleanParamDef
Range	TRUE FALSE		
Default value	FALSE		
Post-build variant value	TRUE	**Post-build variant multiplicity**	-
Value configuration class	Post-Build	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	LOCAL
Dependency	McuMode		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.71.2 McuMode

Table 181 Specification for McuMode

Name	`McuMode`		
Description	Refers to the modes supported other than the RUN mode (for example SLEEP mode, IDLE mode, STANDBY mode). Mcu_SetMode entertains only the configured modes, However for the Sleep or Standby mode, other CPUs are put to Idle mode. For a given ConfigSet of the MCU driver, there could be a maximum of 3 set of modes: 0 - IDLE mode 1 - SLEEP mode 2 - STANDBY mode		
Multiplicity	1..1	**Type**	EcucIntegerParamDef
Range	0 - 2		
Default value	0		
Post-build variant value	FALSE	**Post-build variant multiplicity**	-

(table continues...)

Table 181 (continued) Specification for McuMode

Value configuration class	Pre-Compile	**Multiplicity configuration class**	-
Origin	AUTOSAR_ECUC	**Scope**	LOCAL
Dependency	-		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.72 Container: McuModuleConfiguration

McuModuleConfiguration container contains the configuration (parameters) of the MCU driver

Post-Build Variant Multiplicity: -

Multiplicity Configuration Class: -

1.3.1.72.1 McuClockSrcFailureNotification

Table 182 Specification for McuClockSrcFailureNotification

Name	`McuClockSrcFailureNotification`		
Description	Enables/disables the clock source failure notification. This parameter is disabled and is included here for completeness.		
Multiplicity	1..1	**Type**	EcucEnumerationParamDef
Range	DISABLED: clock source failure notification is disabled ENABLED: clock source failure notification is enabled		
Default value	DISABLED		
Post-build variant value	FALSE	**Post-build variant multiplicity**	-
Value configuration class	Post-Build	**Multiplicity configuration class**	-
Origin	AUTOSAR_ECUC	**Scope**	LOCAL
Dependency	-		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.72.2 McuNumberOfMcuModes

Table 183 Specification for McuNumberOfMcuModes

Name	`McuNumberOfMcuModes`		
Description	Represents the number of modes available for the MCU. McuNumberOfMcuModes is disabled and is included here for completeness.		
Multiplicity	1..1	**Type**	EcucIntegerParamDef

(table continues...)

Table 183 (continued) Specification for McuNumberOfMcuModes

Range	1 - 255		
Default value	1		
Post-build variant value	TRUE	**Post-build variant multiplicity**	-
Value configuration class	Post-Build	**Multiplicity configuration class**	-
Origin	AUTOSAR_ECUC	**Scope**	LOCAL
Dependency	-		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.72.3 McuRamSectors

Table 184 Specification for McuRamSectors

Name	`McuRamSectors`		
Description	Represents the number of RAM sectors available for the MCU. This parameter is disabled and is included here for completeness.		
Multiplicity	1..1	**Type**	EcucIntegerParamDef
Range	0 - 4294967295		
Default value	0		
Post-build variant value	TRUE	**Post-build variant multiplicity**	-
Value configuration class	Post-Build	**Multiplicity configuration class**	-
Origin	AUTOSAR_ECUC	**Scope**	LOCAL
Dependency	-		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.72.4 McuResetSetting

Table 185 Specification for McuResetSetting

Name	`McuResetSetting`		
Description	Relates to the MCU specific reset configuration. McuResetSetting is disabled and is included here for completeness. *Note: The postbuild variant value for the McuResetSetting is deviated from AUTOSAR.*		
Multiplicity	0..1	**Type**	EcucIntegerParamDef
Range	1 - 255		

(table continues...)

Table 185 (continued) Specification for McuResetSetting

Default value	1		
Post-build variant value	FALSE	**Post-build variant multiplicity**	FALSE
Value configuration class	Pre-Compile	**Multiplicity configuration class**	Pre-Compile
Origin	AUTOSAR_ECUC	**Scope**	LOCAL
Dependency	-		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.73 Container: McuPeripheralPllSettingConfig

This container contains the configuration (parameters) for the peripheral clock settings.

Post-Build Variant Multiplicity: -

Multiplicity Configuration Class: -

1.3.1.73.1 McuClockReferencePointFrequency1

Table 186 Specification for McuClockReferencePointFrequency1

Name	`McuClockReferencePointFrequency1`		
Description	Users have to configure the resulting target frequency after configuring the N, P and K2 dividers for the peripheral PLL. The configured value should be divided by 2 if McuFreqSource1ClockDivSelect is configured with DIV_FACTOR_2_NOT_BYPASSED_SEl1. A calculation button is provided for updating this values (in Hz). The McuClockReferencePointFrequency1 for NORMAL_MODE should be in the range: 20 to 320 MHz. If McuClockDistributionInpClockSel is selected as BACKUP_INPUT_CLOCK_SRC_SELECT, then manually configure this clock to Fback = 100 MHz. fSOURCE1 is McuClockReferencePointFrequency1		
Multiplicity	1..1	**Type**	EcucFloatParamDef
Range	20000000.0 - 320000000.0		
Default value	160000000.0		
Post-build variant value	TRUE	**Post-build variant multiplicity**	-
Value configuration class	Post-Build	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	LOCAL

(table continues...)

Table 186	(continued) Specification for McuClockReferencePointFrequency1
Dependency	McuClockDistributionInpClockSel, McuPeripheralPllK2Divider, McuFreqSource1ClockDivSelect, McuPeripheralPllNDivider, McuPeripheralPllPDivider, McuPllInputSrcSelection
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.

1.3.1.73.2 McuClockReferencePointFrequency2

Table 187	Specification for McuClockReferencePointFrequency2		
Name	`McuClockReferencePointFrequency2`		
Description	Users have to configure the resulting target frequency after configuring the N, P and K3 dividers for the peripheral PLL. A configuration button is provided for updating this value (in Hz). The McuClockReferencePointFrequency2 for NORMAL_MODE should be in the range: 20 to 200 MHz. If McuClockDistributionInpClockSel is selected as BACKUP_INPUT_CLOCK_SRC_SELECT, then manually configure this clock to Fback = 100 MHz. fSOURCE2 is McuClockReferencePointFrequency2		
Multiplicity	1..1	**Type**	EcucFloatParamDef
Range	20000000.0 - 200000000.0		
Default value	200000000.0		
Post-build variant value	TRUE	**Post-build variant multiplicity**	-
Value configuration class	Post-Build	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	LOCAL
Dependency	McuPll2DivSelect, McuClockDistributionInpClockSel, McuPeripheralPllK3Divider, McuPeripheralPllNDivider, McuPeripheralPllPDivider, McuPllInputSrcSelection		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.73.3 McuFreqSource1ClockDivSelect

Table 188	Specification for McuFreqSource1ClockDivSelect		
Name	`McuFreqSource1ClockDivSelect`		
Description	Specifies whether Fpll1 is divided by a factor of two or divider is bypassed.		
Multiplicity	1..1	**Type**	EcucEnumerationParamDef

(table continues...)

Table 188	(continued) Specification for McuFreqSource1ClockDivSelect		
Range	DIV_FACTOR_2_BYPASSED_SEL1: divider factor of two is bypassed. (Fpll1 = Fsource1) DIV_FACTOR_2_NOT_BYPASSED_SEL0: divider factor of two is not bypassed (Fpll1 = Fsource1 / 2)		
Default value	DIV_FACTOR_2_NOT_BYPASSED_SEL0		
Post-build variant value	TRUE	**Post-build variant multiplicity**	-
Value configuration class	Post-Build	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	LOCAL
Dependency	McuClockDistributionInpClockSel		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.73.4 McuPerPllK2DivStepDownChangeDelay

Table 189	Specification for McuPerPllK2DivStepDownChangeDelay		
Name	`McuPerPllK2DivStepDownChangeDelay`		
Description	Delay required to configure the step changes between two consecutive changes in the K2 divider value of the peripheral PLL. This is a common delay used for peripheral PLL1 frequency ramp up sequences through the K2 divider. *Note : The value is expressed in microseconds (us).*		
Multiplicity	1..1	**Type**	EcucIntegerParamDef
Range	5 - 100		
Default value	10		
Post-build variant value	TRUE	**Post-build variant multiplicity**	-
Value configuration class	Post-Build	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	LOCAL
Dependency	McuClockDistributionInpClockSel		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.73.5 McuPerPllK2DivStepUpChangeDelay

Table 190	Specification for McuPerPllK2DivStepUpChangeDelay
Name	`McuPerPllK2DivStepUpChangeDelay`

(table continues...)

Table 190 (continued) Specification for McuPerPllK2DivStepUpChangeDelay

Description	Delay required to configure the step changes between two consecutive changes in the K2 divider value of the peripheral PLL. This is a common delay used for the peripheral PLL1 frequency ramp up sequences through the K2 divider. *Note : The value is expressed in microseconds (us).*		
Multiplicity	1..1	**Type**	EcucIntegerParamDef
Range	5 - 100		
Default value	10		
Post-build variant value	TRUE	**Post-build variant multiplicity**	-
Value configuration class	Post-Build	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	LOCAL
Dependency	McuClockDistributionInpClockSel		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.73.6 McuPerPllK3DivStepDownChangeDelay

Table 191 Specification for McuPerPllK3DivStepDownChangeDelay

Name	`McuPerPllK3DivStepDownChangeDelay`		
Description	Delay required to configure the step changes between two consecutive changes in the K3 divider value of the peripheral PLL. This is a common delay used for the peripheral PLL2 frequency ramp down sequences through the K3 divider. *Note : The value is expressed in microseconds (us).*		
Multiplicity	1..1	**Type**	EcucIntegerParamDef
Range	5 - 100		
Default value	10		
Post-build variant value	TRUE	**Post-build variant multiplicity**	-
Value configuration class	Post-Build	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	LOCAL
Dependency	McuClockDistributionInpClockSel		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.73.7 McuPerPllK3DivStepUpChangeDelay

Table 192 Specification for McuPerPllK3DivStepUpChangeDelay

Name	`McuPerPllK3DivStepUpChangeDelay`		
Description	Delay required to configure the step changes between two consecutive changes in the K3 divider value of the peripheral PLL. This is a common delay used for the peripheral PLL2 frequency ramp up sequences through the K3 divider. *Note : The value is expressed in microseconds (us).*		
Multiplicity	1..1	**Type**	EcucIntegerParamDef
Range	5 - 100		
Default value	10		
Post-build variant value	TRUE	**Post-build variant multiplicity**	-
Value configuration class	Post-Build	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	LOCAL
Dependency	McuClockDistributionInpClockSel		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.73.8 McuPeripheralPllK2Divider

Table 193 Specification for McuPeripheralPllK2Divider

Name	`McuPeripheralPllK2Divider`		
Description	3-bit output divider. Even values are preferred to get 50% duty cycle. Clock equations are incremented by 1 to this parameter. *Note : Changing the system operation frequency by changing the value of the K2-divider has a direct coupling to the power consumption of the device. Therefore, this must be done carefully.*		
Multiplicity	1..1	**Type**	EcucIntegerParamDef
Range	0 - 7		
Default value	1		
Post-build variant value	TRUE	**Post-build variant multiplicity**	-
Value configuration class	Post-Build	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	LOCAL
Dependency	McuClockDistributionInpClockSel		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.73.9 McuPeripheralPllK3Divider

Table 194 Specification for McuPeripheralPllK3Divider

Name	`McuPeripheralPllK3Divider`		
Description	3-bit output divider. Even values are preferred to get 50% duty cycle. Clock equations are incremented by 1 to this parameter. *Note: Changing the system operation frequency by changing the value of the K3-divider has a direct coupling to the power consumption of the device. Therefore, this must be done carefully.*		
Multiplicity	1..1	**Type**	EcucIntegerParamDef
Range	0 - 7		
Default value	1		
Post-build variant value	TRUE	**Post-build variant multiplicity**	-
Value configuration class	Post-Build	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	LOCAL
Dependency	McuClockDistributionInpClockSel		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.73.10 McuPeripheralPllNDivider

Table 195 Specification for McuPeripheralPllNDivider

Name	`McuPeripheralPllNDivider`		
Description	7-bit feedback divider value used for generating the system clock. Clock equations are incremented by 1 to this parameter.		
Multiplicity	1..1	**Type**	EcucIntegerParamDef
Range	0 - 127		
Default value	31		
Post-build variant value	TRUE	**Post-build variant multiplicity**	-
Value configuration class	Post-Build	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	LOCAL
Dependency	McuClockDistributionInpClockSel		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.73.11 McuPeripheralPllPDivider

Table 196 Specification for McuPeripheralPllPDivider

Name	`McuPeripheralPllPDivider`		
Description	Frequency divider of main oscillator (3 bits). Clock equations are incremented by 1 to this parameter.		
Multiplicity	1..1	**Type**	EcucIntegerParamDef
Range	0 - 7		
Default value	0		
Post-build variant value	TRUE	**Post-build variant multiplicity**	-
Value configuration class	Post-Build	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	LOCAL
Dependency	McuClockDistributionInpClockSel		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.73.12 McuPll2DivSelect

Table 197 Specification for McuPll2DivSelect

Name	`McuPll2DivSelect`		
Description	Specifies whether divider factor in before the K3 divider is bypassed or not.		
Multiplicity	1..1	**Type**	EcucEnumerationParamDef
Range	MCU_K3_DIV_FACTOR_BYPASSED_SEL1: divider factor for K3 is bypassed MCU_K3_DIV_FACTOR_NOT_BYPASSED_SEL0: divider factor for K3 is not bypassed		
Default value	MCU_K3_DIV_FACTOR_NOT_BYPASSED_SEL0		
Post-build variant value	TRUE	**Post-build variant multiplicity**	-
Value configuration class	Post-Build	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	LOCAL
Dependency	McuClockDistributionInpClockSel		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.74 Container: McuPllDistributionSettingConfig

This container holds the configuration (parameters) for PLL distribution and frequencies to various hardware modules within the clock tree.

Post-Build Variant Multiplicity: -

Multiplicity Configuration Class: -

1.3.1.74.1 McuAdasFrequency

Table 198 Specification for McuAdasFrequency

Name	McuAdasFrequency		
Description	Specifies the ADAS peripheral frequency in Hz. The ratio between ADAS frequency and McuClockReferencePointFrequency0 should be within the range as specified in the target specification. In order to facilitate the clearing of SRAM support hardware registers, this frequency is also configurable for non-ADAS devices. However, the default value for such devices is kept to 0, which disables the ADAS clock. The default value is according to the clocking system example with 20 MHz crystal as provided in hardware user manual.		
Multiplicity	1..1	**Type**	EcucFloatParamDef
Range	0.0 - 300000000.0		
Default value	300000000.0		
Post-build variant value	TRUE	**Post-build variant multiplicity**	-
Value configuration class	Post-Build	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	LOCAL
Dependency	McuClockReferencePointFrequency0, McuLowPowerDivValue		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.74.2 McuAdcFrequency

Table 199 Specification for McuAdcFrequency

Name	McuAdcFrequency		
Description	Specifies the clock frequency for the ADC peripheral. The ADC clock frequency is always the same as McuClockReferencePointFrequency1. Unit is expressed in Hz. The default value is according to the clocking system example with 20 MHz crystal as provided in hardware user manual.		
Multiplicity	1..1	**Type**	EcucFloatParamDef
Range	20000000.0 - 160000000.0		
Default value	160000000.0		
Post-build variant value	TRUE	**Post-build variant multiplicity**	-

(table continues...)

Table 199 (continued) Specification for McuAdcFrequency

Value configuration class	Post-Build	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	ECU
Dependency	McuClockReferencePointFrequency1		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.74.3 McuAscLinFastFrequency

Table 200 Specification for McuAscLinFastFrequency

Name	`McuAscLinFastFrequency`		
Description	Specifies the clock frequency for the ASCLIN peripheral for the fast mode. To disable the ASCLIN peripheral frequency for fast mode, a value of 0 should be configured to this configuration parameter. If not disabled, the intended target frequency to be configured should be McuClockReferencePointFrequency2 perfectly divisible by one of the divider values as specified in Target Specification. Unit is in Hz. The default value is according to the clocking system example with 20 MHz crystal as provided in hardware user manual.		
Multiplicity	1..1	**Type**	EcucFloatParamDef
Range	0.0 - 200000000.0		
Default value	200000000.0		
Post-build variant value	TRUE	**Post-build variant multiplicity**	-
Value configuration class	Post-Build	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	ECU
Dependency	McuClockReferencePointFrequency2		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.74.4 McuAscLinSlowClockSourceSelection

Table 201 Specification for McuAscLinSlowClockSourceSelection

Name	`McuAscLinSlowClockSourceSelection`
Description	Specifies the input clock source for the ASCLIN peripheral slow frequency. Frequency calculation of the ASCLIN is done in the McuAscLinSlowFrequency configuration parameter. By default, the ASCLIN slow clock is switched OFF.

(table continues...)

Table 201 (continued) Specification for McuAscLinSlowClockSourceSelection

Multiplicity	1..1	**Type**	EcucEnumerationParamDef
Range	ASCLINS_CLOCK_SOURCE_ASCLINSI_SEL1: McuAscLinSlowFrequency is used as the input clock source for the ASCLIN dividers ASCLINS_CLOCK_SOURCE_DISABLED_SEL0: ASCLIN peripheral frequency is disabled ASCLINS_CLOCK_SOURCE_OSC0_SEL2: McuMainOscillatorFrequency is used as the input clock source for the ASCLIN dividers		
Default value	ASCLINS_CLOCK_SOURCE_DISABLED_SEL0		
Post-build variant value	TRUE	**Post-build variant multiplicity**	-
Value configuration class	Post-Build	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	LOCAL
Dependency	-		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.74.5 McuAscLinSlowFrequency

Table 202 Specification for McuAscLinSlowFrequency

Name	`McuAscLinSlowFrequency`		
Description	Specifies the clock frequency for the ASCLIN peripheral for slow mode. To disable the ASCLIN peripheral frequency for slow mode, a value of 0 should be configured to this configuration parameter. If not disabled, the intended target frequency to be configured should be McuClockReferencePointFrequency1 perfectly divisible by one of the divider values as specified in Target Specification. Unit is expressed in Hz. The default value is according to the clocking system example with 20 MHz crystal as provided in hardware user manual.		
Multiplicity	1..1	**Type**	EcucFloatParamDef
Range	0.0 - 200000000.0		
Default value	80000000.0		
Post-build variant value	TRUE	**Post-build variant multiplicity**	-
Value configuration class	Post-Build	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	ECU
Dependency	McuClockReferencePointFrequency1, McuAscLinSlowClockSourceSelection		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.74.6 McuBBBFrequency

Table 203 Specification for McuBBBFrequency

Name	McuBBBFrequency		
Description	Specifies the Back Bone Bus (BBB) frequency. The BBB frequency output can be stopped by configuring 0 to this configuration parameter. If enabled, the possible divider values are provided in the Target Specification If enabled, the Fbbb must be faster than or equal to Fspb. Unit is expressed in Hz. The default value is according to the clocking system example with 20 MHz crystal as provided in hardware user manual.		
Multiplicity	1..1	**Type**	EcucFloatParamDef
Range	0.0 - 150000000.0		
Default value	150000000.0		
Post-build variant value	TRUE	**Post-build variant multiplicity**	-
Value configuration class	Post-Build	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	LOCAL
Dependency	McuLowPowerDivValue		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.74.7 McuCPU0Frequency

Table 204 Specification for McuCPU0Frequency

Name	McuCPU0Frequency		
Description	Specifies the intended target CPU0 frequency. The user should enter the intended target frequency expected for CPU0 operation. McuCPU0Frequency configuration requires adherence to the following formula: McuCPU0Frequency = McuSRIFrequency * (64 - CPU0DIV) / 64 *Note: Possible range for CPU0DIV is from 0 to 63. Unit is expressed in Hz.*		
Multiplicity	1..1	**Type**	EcucFloatParamDef
Range	1.0 - 300000000.0		
Default value	300000000.0		
Post-build variant value	TRUE	**Post-build variant multiplicity**	-
Value configuration class	Post-Build	**Multiplicity configuration class**	-

(table continues...)

Table 204 (continued) Specification for McuCPU0Frequency

Origin	IFX	**Scope**	LOCAL
Dependency	McuLowPowerDivValue, McuSRIFrequency		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.74.8 McuCPU1Frequency

Table 205 Specification for McuCPU1Frequency

Name	`McuCPU1Frequency`		
Description	Specifies the intended target CPU1 frequency. The user should enter the intended target frequency expected for CPU1 operation. McuCPU1Frequency configuration requires adherence to the following formula: McuCPU1Frequency = McuSRIFrequency * (64 - CPU1DIV) / 64 *Note: Possible range for CPU1DIV is from 0 to 63. Unit is expressed in Hz.*		
Multiplicity	1..1	**Type**	EcucFloatParamDef
Range	1.0 - 300000000.0		
Default value	300000000.0		
Post-build variant value	TRUE	**Post-build variant multiplicity**	-
Value configuration class	Post-Build	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	LOCAL
Dependency	McuLowPowerDivValue, McuSRIFrequency		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.74.9 McuCPU2Frequency

Table 206 Specification for McuCPU2Frequency

Name	`McuCPU2Frequency`		
Description	Specifies the intended target CPU2 frequency. The user should enter the intended target frequency expected for CPU2 operation. McuCPU2Frequency configuration requires adherence to the following formula: McuCPU2Frequency = McuSRIFrequency * (64 - CPU2DIV) / 64 *Note: Possible range for CPU2DIV is from 0 to 63. Unit is expressed in Hz.*		
Multiplicity	1..1	**Type**	EcucFloatParamDef
Range	1.0 - 300000000.0		
Default value	300000000.0		

(table continues...)

Table 206 (continued) Specification for McuCPU2Frequency

Post-build variant value	TRUE	**Post-build variant multiplicity**	-
Value configuration class	Post-Build	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	LOCAL
Dependency	McuLowPowerDivValue, McuSRIFrequency		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.74.10 McuCPU3Frequency

Table 207 Specification for McuCPU3Frequency

Name	`McuCPU3Frequency`		
Description	Specifies the intended target CPU3 frequency. The user should enter the intended target frequency expected for CPU3 operation. McuCPU3Frequency configuration requires adherence to the following formula: McuCPU3Frequency = McuSRIFrequency * (64 - CPU3DIV) / 64 *Note: Possible range for CPU3DIV is from 0 to 63. Unit is expressed in Hz.*		
Multiplicity	1..1	**Type**	EcucFloatParamDef
Range	1.0 - 300000000.0		
Default value	300000000.0		
Post-build variant value	TRUE	**Post-build variant multiplicity**	-
Value configuration class	Post-Build	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	LOCAL
Dependency	McuLowPowerDivValue, McuSRIFrequency		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.74.11 McuCPU4Frequency

Table 208 Specification for McuCPU4Frequency

Name	`McuCPU4Frequency`

(table continues...)

Table 208 (continued) Specification for McuCPU4Frequency

Description	Specifies the intended target CPU4 frequency. The user should enter the intended target frequency expected for CPU1 operation. McuCPU4Frequency configuration requires adherence to the following formula: McuCPU4Frequency = McuSRIFrequency * (64 - CPU4DIV) / 64 *Note: Possible range for CPU4DIV is from 0 to 63. Unit is expressed in Hz.*		
Multiplicity	1..1	**Type**	EcucFloatParamDef
Range	1.0 - 300000000.0		
Default value	300000000.0		
Post-build variant value	TRUE	**Post-build variant multiplicity**	-
Value configuration class	Post-Build	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	LOCAL
Dependency	McuLowPowerDivValue, McuSRIFrequency		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.74.12 McuCPU5Frequency

Table 209 Specification for McuCPU5Frequency

Name	`McuCPU5Frequency`		
Description	Specifies the intended target CPU5 frequency. The user should enter the intended target frequency expected for CPU5 operation. McuCPU5Frequency configuration requires adherence to the following formula: McuCPU5Frequency = McuSRIFrequency * (64 - CPU5DIV) / 64 *Note: Possible range for CPU5DIV is from 0 to 63. Unit is expressed in Hz.*		
Multiplicity	1..1	**Type**	EcucFloatParamDef
Range	1.0 - 300000000.0		
Default value	300000000.0		
Post-build variant value	TRUE	**Post-build variant multiplicity**	-
Value configuration class	Post-Build	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	LOCAL
Dependency	McuLowPowerDivValue, McuSRIFrequency		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.74.13 McuClockDistributionInpClockSel

Table 210 Specification for McuClockDistributionInpClockSel

Name	`McuClockDistributionInpClockSel`		
Description	Specifies the input clock source selection for the clock distribution unit. Either the back up clock or the PLLx can be selected as an input clock source to the clock distribution unit.		
Multiplicity	1..1	**Type**	EcucEnumerationParamDef
Range	BACKUP_INPUT_CLOCK_SRC_SELECT_SEL0: Backup clock is selected as an input clock source to SPB, reference clock frequency1, reference clock frequency2, BBB, GTM, STM, MSC, MCAN, ASCLINF, ASCLINS, QSPI, ADC, I2C and EBU PLL_INPUT_CLOCK_SRC_SELECT_SEL1: If PLL is selected as an input clock source then, - fSOURCE0 is selected as the clock source for SRI, SPB, CPU0, CPU1, CPU2, CPU3, CPU4, CPU5, FSI, FSI2, reference clock frequency1, BBB, GTM, STM, MCAN, GETH and ADAS - fSRC1 is selected as the clock source for reference clock frequency2, ERAY, MSC, MCAN, ASCLINS, QSPI, ADC, EBU, HSPDM_320 and HSPDM_160 - fSOURCE2 is selected as the clock source for MSC, ASCLINF, QSPI and I2C		
Default value	PLL_INPUT_CLOCK_SRC_SELECT_SEL1		
Post-build variant value	TRUE	**Post-build variant multiplicity**	-
Value configuration class	Post-Build	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	LOCAL
Dependency	-		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.74.14 McuConvCtrlPhaseSynchConf

Table 211 Specification for McuConvCtrlPhaseSynchConf

Name	`McuConvCtrlPhaseSynchConf`		
Description	Specifies the phase shift frequency divider for the converter control block. McuConvCtrlPhaseSynchConf is included here as it is common across the ADC and DSADC modules.		
Multiplicity	1..1	**Type**	EcucEnumerationParamDef

(table continues...)

Table 211 (continued) Specification for McuConvCtrlPhaseSynchConf

Range	PHASE_SYNCH_CONST_ACTIVE_SEL0: constant phase signal is active PHASE_SYNCH_PER_FREQ_BY_10_SEL9: phase synchronization is generated at fPER by 10 PHASE_SYNCH_PER_FREQ_BY_11_SEL10: phase synchronization is generated at fPER by 11 PHASE_SYNCH_PER_FREQ_BY_12_SEL11: phase synchronization is generated at fPER by 12 PHASE_SYNCH_PER_FREQ_BY_13_SEL12: phase synchronization is generated at fPER by 13 PHASE_SYNCH_PER_FREQ_BY_14_SEL13: phase synchronization is generated at fPER by 14 PHASE_SYNCH_PER_FREQ_BY_15_SEL14: phase synchronization is generated at fPER by 15 PHASE_SYNCH_PER_FREQ_BY_16_SEL15: phase synchronization is generated at fPER by 16 PHASE_SYNCH_PER_FREQ_BY_2_SEL1: phase synchronization is generated at fPER by 2 PHASE_SYNCH_PER_FREQ_BY_3_SEL2: phase synchronization is generated at fPER by 3 PHASE_SYNCH_PER_FREQ_BY_4_SEL3: phase synchronization is generated at fPER by 4 PHASE_SYNCH_PER_FREQ_BY_5_SEL4: phase synchronization is generated at fPER by 5 PHASE_SYNCH_PER_FREQ_BY_6_SEL5: phase synchronization is generated at fPER by 6 PHASE_SYNCH_PER_FREQ_BY_7_SEL6: phase synchronization is generated at fPER by 7 PHASE_SYNCH_PER_FREQ_BY_8_SEL7: phase synchronization is generated at fPER by 9 PHASE_SYNCH_PER_FREQ_BY_9_SEL8: phase synchronization is generated at fPER by 9		
Default value	PHASE_SYNCH_CONST_ACTIVE_SEL0		
Post-build variant value	TRUE	**Post-build variant multiplicity**	-
Value configuration class	Post-Build	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	LOCAL
Dependency	-		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.74.15 McuEbuClkEnable

Table 212 Specification for McuEbuClkEnable

Name	`McuEbuClkEnable`		
Description	Specifies if the frequency provided for the EBU module, McuEbuFrequency is enabled or not. TRUE: McuEbuFrequency is enabled FALSE: McuEbuFrequency is disabled This parameter is enabled if the EBU is available in the hardware By default, the EBU clock is kept disabled. The user can enable the clock when required.		
Multiplicity	1..1	**Type**	EcucBooleanParamDef
Range	TRUE FALSE		

(table continues...)

Table 212 (continued) Specification for McuEbuClkEnable

Default value	FALSE		
Post-build variant value	TRUE	**Post-build variant multiplicity**	-
Value configuration class	Post-Build	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	LOCAL
Dependency	-		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.74.16 McuEbuFrequency

Table 213 Specification for McuEbuFrequency

Name	`McuEbuFrequency`		
Description	Specifies the EBU peripheral frequency. This clock frequency is always the same as McuClockReferencePointFrequency1. Unit is expressed in Hz. The default value is according to the clocking system example with 20 MHz crystal as provided in hardware user manual.		
Multiplicity	1..1	**Type**	EcucFloatParamDef
Range	0.0 - 160000000.0		
Default value	160000000.0		
Post-build variant value	TRUE	**Post-build variant multiplicity**	-
Value configuration class	Post-Build	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	LOCAL
Dependency	McuClockReferencePointFrequency1, McuEbuClkEnable		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.74.17 McuErayClkEnable

Table 214 Specification for McuErayClkEnable

Name	`McuErayClkEnable`

(table continues...)

Table 214 (continued) Specification for McuErayClkEnable

Description	Specifies if the frequency provided for the ERAY module, McuErayFrequency is enabled or not. Values: TRUE: McuErayFrequency is enabled FALSE: McuErayFrequency is disabled By default, the ERAY clock is disabled. Based on the use case the user can enable it.		
Multiplicity	1..1	**Type**	EcucBooleanParamDef
Range	TRUE FALSE		
Default value	FALSE		
Post-build variant value	TRUE	**Post-build variant multiplicity**	-
Value configuration class	Post-Build	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	ECU
Dependency	-		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.74.18 McuErayFrequency

Table 215 Specification for McuErayFrequency

Name	`McuErayFrequency`		
Description	Specifies the ERAY frequency. The resultant ERAY frequency is always equal to peripheral PLL frequency (McuClockReferencePointFrequency1) divided by fixed divider 2. The ERAY would not be functional when the BACKUP clock is selected as distribution source. Unit is expressed in Hz. The default value is according to the clocking system example with 20 MHz crystal as provided in hardware user manual.		
Multiplicity	1..1	**Type**	EcucFloatParamDef
Range	0.0 - 80000000.0		
Default value	80000000.0		
Post-build variant value	TRUE	**Post-build variant multiplicity**	-
Value configuration class	Post-Build	**Multiplicity configuration class**	-

(table continues...)

Table 215 (continued) Specification for McuErayFrequency

Origin	IFX	**Scope**	ECU
Dependency	McuClockReferencePointFrequency1, McuErayClkEnable		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.74.19 McuFSI2Frequency

Table 216 Specification for McuFSI2Frequency

Name	`McuFSI2Frequency`		
Description	Specifies the intended target FSI2 frequency. The user should enter the intended target frequency expected for the FSI2. The FSI2 cannot be disabled. FSI2 and SRI should follow: - FSI2 can be same as SRI - If FSI2 is intended to be half of SRI then SRIDIV must be either 1 or 2 - If FSI2 is intended to be one third of SRI then SRIDIV must be either 1 or 2 The user must ensure that points 2 and 3 are taken care of. The possible divider values are available in the Target Specification. Unit is expressed in Hz. The default value is according to the clocking system example with 20 MHz crystal as provided in hardware user manual.		
Multiplicity	1..1	**Type**	EcucFloatParamDef
Range	1.0 - 300000000.0		
Default value	300000000.0		
Post-build variant value	TRUE	**Post-build variant multiplicity**	-
Value configuration class	Post-Build	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	LOCAL
Dependency	McuLowPowerDivValue		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.74.20 McuFSIFrequency

Table 217 Specification for McuFSIFrequency

Name	`McuFSIFrequency`

(table continues...)

Table 217 (continued) Specification for McuFSIFrequency

Description	Specifies the intended target FSI frequency. The user should enter the intended target frequency expected for the FSI. FSI cannot be disabled FSI and SRI should follow: - FSI can be same as SRI - If FSI is intended to be half of SRI then SRIDIV must be either 1 or 2 - If FSI is intended to be one third of SRI then SRIDIV must be either 1 or 2 The user must ensure that points 2 and 3 are taken care of. The possible divider values are available in the Target Specification. Unit is expressed in Hz. The default value is according to the clocking system example with 20 MHz crystal as provided in hardware user manual.		
Multiplicity	1..1	**Type**	EcucFloatParamDef
Range	20000000.0 - 100000000.0		
Default value	100000000.0		
Post-build variant value	TRUE	**Post-build variant multiplicity**	-
Value configuration class	Post-Build	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	LOCAL
Dependency	McuLowPowerDivValue		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.74.21 McuGEthFrequency

Table 218 Specification for McuGEthFrequency

Name	`McuGEthFrequency`		
Description	Specifies the Gigabit Ethernet peripheral frequency. The Gigabit Ethernet frequency should be divisible by McuClockReferencePointFrequency0 with the divider values specified in Target Specification. Unit is expressed in Hz. The module frequency to Gigabit Ethernet can be disabled by setting McuGEthFrequency to 0. The default value is according to the clocking system example with 20 MHz crystal as provided in hardware user manual.		
Multiplicity	1..1	**Type**	EcucFloatParamDef
Range	100000000.0 - 150000000.0		
Default value	150000000.0		
Post-build variant value	TRUE	**Post-build variant multiplicity**	-

(table continues...)

Table 218 (continued) Specification for McuGEthFrequency

Value configuration class	Post-Build	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	ECU
Dependency	McuLowPowerDivValue		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.74.22 McuGTMFrequency

Table 219 Specification for McuGTMFrequency

Name	`McuGTMFrequency`		
Description	Specifies the GTM peripheral frequency. To disable the GTM peripheral frequency, a value of 0 has to be configured to this configuration parameter. The GTM frequency, if enabled, is derived by dividing the fSOURCEGTM frequency by one of the following factors: 1, 2, 3, 4, 5, 6, 8, 10, 12, 15. fSOURCEGTM is derived using following formula: if GTMDIV = 1, fSOURCEGTM = McuSPBFrequency * 2, otherwise fSOURCEGTM = McuClockReferencePointFrequency0 Therefore, GTM should be configured either equal to = McuSPBFrequency * 2 or a fraction of McuClockReferencePointFrequency0. (Valid fraction values are available in Target Specification). Unit is expressed in Hz. The default value is according to the clocking system example with 20 MHz crystal as provided in hardware user manual.		
Multiplicity	1..1	**Type**	EcucFloatParamDef
Range	0.0 - 200000000.0		
Default value	200000000.0		
Post-build variant value	TRUE	**Post-build variant multiplicity**	-
Value configuration class	Post-Build	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	ECU
Dependency	McuLowPowerDivValue		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.74.23 McuHsctFrequency

Table 220 Specification for McuHsctFrequency

Name	`McuHsctFrequency`

(table continues...)

Table 220 (continued) Specification for McuHsctFrequency

Description	Specifies the clock frequency for HSCT. The HSCT clock frequency is (McuMainOscillatorFrequency * (McuPeripheralNDivider + 1)) / ((McuPeripheralPDivider + 1) * 2) Unit is expressed in Hz. The default value is according to the clocking system example with 20 MHz crystal as provided in hardware user manual.		
Multiplicity	1..1	**Type**	EcucFloatParamDef
Range	0.0 - 400000000.0		
Default value	320000000.0		
Post-build variant value	TRUE	**Post-build variant multiplicity**	-
Value configuration class	Post-Build	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	LOCAL
Dependency	-		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.74.24 McuHspdm160Frequency

Table 221 Specification for McuHspdm160Frequency

Name	`McuHspdm160Frequency`		
Description	Specifies the HSPDM160 peripheral frequency. The HSPDM160 clock frequency is always equal to McuClockReferencePointFrequency1. Unit is expressed in Hz. The default value is according to the clocking system example with 20 MHz crystal as provided in hardware user manual.		
Multiplicity	1..1	**Type**	EcucFloatParamDef
Range	20000000.0 - 160000000.0		
Default value	160000000.0		
Post-build variant value	TRUE	**Post-build variant multiplicity**	-
Value configuration class	Post-Build	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	LOCAL
Dependency	McuHspdmClkEnable		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.74.25 McuHspdm320Frequency

Table 222 Specification for McuHspdm320Frequency

Name	`McuHspdm320Frequency`		
Description	Specifies the HSPDM320 peripheral frequency. The HSPDM320 clock frequency is always equal to fPLL1 or fBACKUP(based on McuClockDistributionInpClockSel). Unit is expressed in Hz. The default value is according to the clocking system example with 20 MHz crystal as provided in hardware user manual.		
Multiplicity	1..1	**Type**	EcucFloatParamDef
Range	20000000.0 - 320000000.0		
Default value	320000000.0		
Post-build variant value	TRUE	**Post-build variant multiplicity**	-
Value configuration class	Post-Build	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	LOCAL
Dependency	McuHspdmClkEnable		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.74.26 McuHspdmClkEnable

Table 223 Specification for McuHspdmClkEnable

Name	`McuHspdmClkEnable`		
Description	Specifies if frequencies provided for the HSPDM modules, fHSPDM160 and fHSPDM320 are enabled or not. TRUE : fHSPDM160 and fHSPDM320 are enabled FALSE: fHSPDM160 and fHSPDM320 are disabled McuHspdmClkEnable is enabled if the HSPDM is available in the hardware. By default, the HSPDM clock is kept disabled.		
Multiplicity	1..1	**Type**	EcucBooleanParamDef
Range	TRUE FALSE		
Default value	FALSE		
Post-build variant value	TRUE	**Post-build variant multiplicity**	-

(table continues...)

Table 223 (continued) Specification for McuHspdmClkEnable

Value configuration class	Post-Build	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	LOCAL
Dependency	-		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.74.27 McuI2CFrequency

Table 224 Specification for McuI2CFrequency

Name	`McuI2CFrequency`		
Description	Specifies the I2C peripheral frequency. The I2C frequency, if enabled, should be divisible by McuClockReferencePointFrequency2 with the divider values specified in the Target Specification. Unit is expressed in Hz. The default value is according to the clocking system example with 20 MHz crystal as provided in hardware user manual.		
Multiplicity	1..1	**Type**	EcucFloatParamDef
Range	0.0 - 100000000.0		
Default value	66666667.0		
Post-build variant value	TRUE	**Post-build variant multiplicity**	-
Value configuration class	Post-Build	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	LOCAL
Dependency	McuClockReferencePointFrequency2		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.74.28 McuLowPowerDivValue

Table 225 Specification for McuLowPowerDivValue

Name	`McuLowPowerDivValue`		
Description	Specifies whether low power divider feature is enabled or disabled. The McuLowPowerDivValue divider is also applicable to the frequencies derived from SRI and SPB. If this parameter is enabled, the configuration of dividers done in the CCUCON register is no longer valid.		
Multiplicity	1..1	**Type**	EcucEnumerationParamDef

(table continues...)

Table 225 (continued) Specification for McuLowPowerDivValue

Range	LOW_POWER_DIVIDER_DISABLE_SEL0: low power mode is disabled LOW_POWER_DIVIDE_BY_120_SEL3: low power mode clock divider is set to 120 LOW_POWER_DIVIDE_BY_240_SEL4: low power mode clock divider is set to 240 LOW_POWER_DIVIDE_BY_30_SEL1: low power mode clock divider is set to 30 LOW_POWER_DIVIDE_BY_60_SEL2: low power mode clock divider is set to 60		
Default value	LOW_POWER_DIVIDER_DISABLE_SEL0		
Post-build variant value	TRUE	**Post-build variant multiplicity**	-
Value configuration class	Post-Build	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	LOCAL
Dependency	-		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.74.29 McuMCanClockSourceSelection

Table 226 Specification for McuMCanClockSourceSelection

Name	`McuMCanClockSourceSelection`		
Description	Specifies the input clock source for the MCAN peripheral. The frequency calculation for the MCAN peripheral is done in McuMCanFrequency configuration parameter. By, default, the MCAN clock source is disabled.		
Multiplicity	1..1	**Type**	EcucEnumerationParamDef
Range	MCAN_CLOCK_SOURCE_DISABLED_SEL0: MCAN frequency is disabled MCAN_CLOCK_SOURCE_MCANI_SEL1: McuMCanFrequency is used as input clock source for the MCAN peripheral MCAN_CLOCK_SOURCE_OSC_SEL2: McuMainOscillatorFrequency is used as input clock source for the MCAN peripheral		
Default value	MCAN_CLOCK_SOURCE_DISABLED_SEL0		
Post-build variant value	TRUE	**Post-build variant multiplicity**	-
Value configuration class	Post-Build	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	ECU
Dependency	-		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.74.30 McuMCanFrequency

Table 227 Specification for McuMCanFrequency

Name	McuMCanFrequency		
Description	Specifies the clock frequency for the MCAN peripheral. The McuMCanFrequency is applicable only if McuMCANClockSourceSelection is not set to MCAN_CLOCK_SOURCE_DISABLED. The target frequency to be configured should be perfectly divisible by the divider values specified in Target Specification. Unit is expressed in Hz. The default value is according to the clocking system example with 20 MHz crystal as provided in hardware user manual.		
Multiplicity	1..1	**Type**	EcucFloatParamDef
Range	0.0 - 80000000.0		
Default value	80000000.0		
Post-build variant value	TRUE	**Post-build variant multiplicity**	-
Value configuration class	Post-Build	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	ECU
Dependency	McuMCanClockSourceSelection		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.74.31 McuMcanHFrequency

Table 228 Specification for McuMcanHFrequency

Name	McuMcanHFrequency		
Description	Specifies the MCANH peripheral frequency. The MCANH frequency should be divisible by McuClockReferencePointFrequency0 with the divider values specified in the Target Specification. Unit is expressed in Hz. The default value is according to the clocking system example with 20 MHz crystal as provided in hardware user manual.		
Multiplicity	1..1	**Type**	EcucFloatParamDef
Range	0.0 - 100000000.0		
Default value	100000000.0		
Post-build variant value	TRUE	**Post-build variant multiplicity**	-
Value configuration class	Post-Build	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	ECU

(table continues...)

Table 228	(continued) Specification for McuMcanHFrequency
Dependency	McuClockReferencePointFrequency0
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.

1.3.1.74.32 McuMscClockSourceSelection

Table 229	Specification for McuMscClockSourceSelection		
Name	`McuMscClockSourceSelection`		
Description	Specifies the input clock source for the MSC peripheral. The frequency calculation for the MSC peripheral is done in McuMscFrequency configuration parameter. By default, the MSC clock source is disabled.		
Multiplicity	1..1	**Type**	EcucEnumerationParamDef
Range	MSC_CLOCK_SOURCE_DISABLED_SEL0: MSC frequency is disabled MSC_CLOCK_SOURCE_SOURCE1_SEL1: McuClockReferencePointFrequency1 is used as input clock source for the MSC dividers MSC_CLOCK_SOURCE_SOURCE2_SEL2: McuClockReferencePointFrequency2 is used as input clock source for the MSC dividers		
Default value	MSC_CLOCK_SOURCE_DISABLED_SEL0		
Post-build variant value	TRUE	**Post-build variant multiplicity**	-
Value configuration class	Post-Build	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	LOCAL
Dependency	-		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.74.33 McuMscFrequency

Table 230	Specification for McuMscFrequency
Name	`McuMscFrequency`
Description	Specifies the clock frequency for the MSC peripheral. The McuMscFrequency is applicable only if McuMscClockSourceSelection is not set to MSC_CLOCK_SOURCE_DISABLED. The target frequency to be configured should be perfectly divisible by the divider values specified in the Target Specification. Unit is expressed in Hz. The default value is according to the clocking system example with 20 MHz crystal as provided in hardware user manual.

(table continues...)

Table 230 (continued) Specification for McuMscFrequency

Multiplicity	1..1	**Type**	EcucFloatParamDef
Range	0.0 - 200000000.0		
Default value	200000000.0		
Post-build variant value	TRUE	**Post-build variant multiplicity**	-
Value configuration class	Post-Build	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	LOCAL
Dependency	McuMscClockSourceSelection		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.74.34 McuQspiClockSourceSelection

Table 231 Specification for McuQspiClockSourceSelection

Name	`McuQspiClockSourceSelection`		
Description	Specifies the input clock source for the QSPI peripheral. The frequency calculation for the QSPI peripheral is done in the McuQspiFrequency configuration parameter. By default, the QSPI clock is switched OFF.		
Multiplicity	1..1	**Type**	EcucEnumerationParamDef
Range	QSPI_CLOCK_SOURCE_DISABLED_SEL0: QSPI peripheral frequency is disabled QSPI_CLOCK_SOURCE_SOURCE1_SEL1: McuClockReferencePointFrequency1 is used as input clock source for the QSPI dividers QSPI_CLOCK_SOURCE_SOURCE2_SEL2: McuClockReferencePointFrequency2 is used as input clock source for the QSPI dividers		
Default value	QSPI_CLOCK_SOURCE_DISABLED_SEL0		
Post-build variant value	TRUE	**Post-build variant multiplicity**	-
Value configuration class	Post-Build	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	LOCAL
Dependency	-		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.74.35 McuQspiFrequency

Table 232 Specification for McuQspiFrequency

Name	`McuQspiFrequency`		
Description	Specifies the clock frequency for the QSPI peripheral. The McuQspiFrequency is applicable only if McuQspiClockSourceSelection is not set to QSPI_CLOCK_SOURCE_DISABLED. The target frequency to be configured should be perfectly divisible by one of the dividers mentioned in the Target Specification. Unit is expressed in Hz. The default value is according to the clocking system example with 20 MHz crystal as provided in hardware user manual.		
Multiplicity	1..1	**Type**	EcucFloatParamDef
Range	0.0 - 200000000.0		
Default value	200000000.0		
Post-build variant value	TRUE	**Post-build variant multiplicity**	-
Value configuration class	Post-Build	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	ECU
Dependency	McuQspiClockSourceSelection		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.74.36 McuReferenceFrequency1

Table 233 Specification for McuReferenceFrequency1

Name	`McuReferenceFrequency1`		
Description	Specifies the reference frequency 1 for the MCDS. McuReferenceFrequency1 is calculated as follows: McuReferenceFrequency1 = McuClockReferencePointFrequency0 / 24 Unit is expressed in Hz. The default value is according to the clocking system example with 20 MHz crystal as provided in hardware user manual.		
Multiplicity	1..1	**Type**	EcucFloatParamDef
Range	0.0 - 100000000.0		
Default value	12500000.0		
Post-build variant value	TRUE	**Post-build variant multiplicity**	-
Value configuration class	Post-Build	**Multiplicity configuration class**	-

(table continues...)

Table 233 (continued) Specification for McuReferenceFrequency1

Origin	IFX	**Scope**	LOCAL
Dependency	McuClockReferencePointFrequency0		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.74.37 McuReferenceFrequency2

Table 234 Specification for McuReferenceFrequency2

Name	`McuReferenceFrequency2`		
Description	Specifies the reference frequency 2 for the MCDS. McuReferenceFrequency2 is calculated as follows: McuReferenceFrequency2 = McuClockReferencePointFrequency1 / 24. Unit is expressed in Hz. The default value is according to the clocking system example with 20 MHz crystal as provided in hardware user manual.		
Multiplicity	1..1	**Type**	EcucFloatParamDef
Range	0.0 - 100000000.0		
Default value	6666667.0		
Post-build variant value	TRUE	**Post-build variant multiplicity**	-
Value configuration class	Post-Build	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	LOCAL
Dependency	McuClockReferencePointFrequency1		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.74.38 McuSPBFrequency

Table 235 Specification for McuSPBFrequency

Name	`McuSPBFrequency`		
Description	Specifies the intended target SPB frequency. The user should enter the intended target frequency expected for the SPB. The SPB should always be proportionate to McuClockReferencePointFrequency0. The possible divider values are available in the Target Specification. Unit is expressed in Hz. The default value is according to the clocking system example with 20 MHz crystal as provided in hardware user manual.		
Multiplicity	1..1	**Type**	EcucFloatParamDef
Range	1.0 - 100000000.0		

(table continues...)

Table 235 (continued) Specification for McuSPBFrequency

Default value	100000000.0		
Post-build variant value	TRUE	**Post-build variant multiplicity**	-
Value configuration class	Post-Build	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	ECU
Dependency	McuLowPowerDivValue		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.74.39 McuSRIFrequency

Table 236 Specification for McuSRIFrequency

Name	`McuSRIFrequency`		
Description	Specifies the intended target SRI frequency. The user should enter the intended target frequency expected for the SRI. The SRI should always be proportionate to McuClockReferencePointFrequency0. The possible divider values are available in the Target Specification. Unit is expressed in Hz. The default value is according to the clocking system example with 20 MHz crystal as provided in hardware user manual.		
Multiplicity	1..1	**Type**	EcucFloatParamDef
Range	1.0 - 300000000.0		
Default value	300000000.0		
Post-build variant value	TRUE	**Post-build variant multiplicity**	-
Value configuration class	Post-Build	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	LOCAL
Dependency	McuLowPowerDivValue		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.74.40 McuSTMFrequency

Table 237 Specification for McuSTMFrequency

Name	`McuSTMFrequency`

(table continues...)

Table 237 (continued) Specification for McuSTMFrequency

Description	Specifies the STM peripheral frequency. To disable the STM peripheral frequency, a value of 0 has to be configured to this configuration parameter. The STM frequency, if enabled, should be divisible by McuClockReferencePointFrequency0 with the divider values specified in the Target Specification. The STM frequency can be slower or faster or equal to the SPB frequency. Unit is expressed in Hz. The default value is according to the clocking system example with 20 MHz crystal as provided in hardware user manual.		
Multiplicity	1..1	**Type**	EcucFloatParamDef
Range	0.0 - 100000000.0		
Default value	100000000.0		
Post-build variant value	TRUE	**Post-build variant multiplicity**	-
Value configuration class	Post-Build	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	LOCAL
Dependency	McuClockReferencePointFrequency0		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.75 Container: McuPublishedInformation

This container holds all the MCU-specific published information parameters.

Post-Build Variant Multiplicity: -

Multiplicity Configuration Class: -

1.3.1.76 Container: McuRamSectorSettingConf

This container holds the configuration (parameters) for the RAM Sector setting.

Post-Build Variant Multiplicity: FALSE

Multiplicity Configuration Class: Pre-Compile

1.3.1.76.1 McuRamDefaultValue

Table 238 Specification for McuRamDefaultValue

Name	`McuRamDefaultValue`		
Description	Preset value used to fill the configured RAM section.		
Multiplicity	1..1	**Type**	EcucIntegerParamDef
Range	0 - 255		
Default value	0		

(table continues...)

Table 238 (continued) Specification for McuRamDefaultValue

Post-build variant value	TRUE	**Post-build variant multiplicity**	-
Value configuration class	Post-Build	**Multiplicity configuration class**	-
Origin	AUTOSAR_ECUC	**Scope**	LOCAL
Dependency	-		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.76.2 McuRamSectionBaseAddress

Table 239 Specification for McuRamSectionBaseAddress

Name	`McuRamSectionBaseAddress`		
Description	Represents the MCU RAM section base address. The default value for this parameter is CPU0 DSPR0 base address.		
Multiplicity	1..1	**Type**	EcucIntegerParamDef
Range	0 - 4294967295		
Default value	1879048192		
Post-build variant value	TRUE	**Post-build variant multiplicity**	-
Value configuration class	Post-Build	**Multiplicity configuration class**	-
Origin	AUTOSAR_ECUC	**Scope**	LOCAL
Dependency	-		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.76.3 McuRamSectionSize

Table 240 Specification for McuRamSectionSize

Name	`McuRamSectionSize`		
Description	Represents the MCU RAM section size in bytes. McuRamSectionBaseAddress+ McuRamSectionSize should not exceed boundary for the RAM section.		
Multiplicity	1..1	**Type**	EcucIntegerParamDef
Range	0 - 4294967295		
Default value	8		

(table continues...)

Table 240 (continued) Specification for McuRamSectionSize

Post-build variant value	TRUE	**Post-build variant multiplicity**	-
Value configuration class	Post-Build	**Multiplicity configuration class**	-
Origin	AUTOSAR_ECUC	**Scope**	LOCAL
Dependency	-		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.76.4 McuRamSectionWriteSize

Table 241 Specification for McuRamSectionWriteSize

Name	`McuRamSectionWriteSize`		
Description	Defines the size in bytes of data which can be written into RAM at once. *Note: Since the underlying hardware supports writing only 1, 2, 4 and 8 bytes at once, so only a value of 1, 2, 4 and 8 can be programmed into the configuration parameter.*		
Multiplicity	1..1	**Type**	EcucIntegerParamDef
Range	1 - 8		
Default value	8		
Post-build variant value	TRUE	**Post-build variant multiplicity**	-
Value configuration class	Post-Build	**Multiplicity configuration class**	-
Origin	AUTOSAR_ECUC	**Scope**	LOCAL
Dependency	-		
Autosar Version	Applicable for Autosar version 4.4.0.		

1.3.1.76.5 McuRamSectorSettingId

Table 242 Specification for McuRamSectorSettingId

Name	`McuRamSectorSettingId`		
Description	Used as an argument for the Mcu_InitRamSection() API call.		
Multiplicity	1..1	**Type**	EcucIntegerParamDef
Range	0 - 255		
Default value	0		
Post-build variant value	FALSE	**Post-build variant multiplicity**	-

(table continues...)

Table 242 (continued) Specification for McuRamSectorSettingId

Value configuration class	Pre-Compile	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	LOCAL
Dependency	-		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.77 Container: McuResetReasonConf

An instance of this multi-instance container publishes one reset reason types available on the microcontroller. Reset reasons are provided as a pre-configuration file.

Post-Build Variant Multiplicity: -

Multiplicity Configuration Class: -

1.3.1.78 Container: McuStdByModeESR0Conf

This container defines the configuration (parameters) for the ESR0 in the standby mode.

Post-Build Variant Multiplicity: -

Multiplicity Configuration Class: -

1.3.1.78.1 McuStdbyModeESR0EdgeDetection

Table 243 Specification for McuStdbyModeESR0EdgeDetection

Name	`McuStdbyModeESR0EdgeDetection`		
Description	Specifies if the trigger is generated on rising edge detection, falling edge detection, or both. McuStdbyModeESR0EdgeDetection is applicable only if McuMode is 2 (STANDBY) and McuStdbyModeESR0WakeupEnable is set to TRUE.		
Multiplicity	1..1	**Type**	EcucEnumerationParamDef
Range	ESR0_TRIG_FALLING_EDGE_SEL2: a trigger is generated on the falling edge detection ESR0_TRIG_RISING_EDGE_SEL1: a trigger is generated on the rising edge detection ESR0_TRIG_RISING_FALLING_EDGE_SEL3: a trigger is generated on both the rising edge detection and the falling edge detection		
Default value	ESR0_TRIG_RISING_EDGE_SEL1		
Post-build variant value	TRUE	**Post-build variant multiplicity**	-
Value configuration class	Post-Build	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	LOCAL
Dependency	McuStdbyModeESR0WakeupEnable, McuMode		

(table continues...)

Table 243	(continued) Specification for McuStdbyModeESR0EdgeDetection
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.

1.3.1.78.2 McuStdbyModeESR0FltEnable

Table 244 Specification for McuStdbyModeESR0FltEnable

Name	`McuStdbyModeESR0FltEnable`		
Description	Specifies if the digital filter is enabled for the ESR0 to wake up from the standby mode. McuStdbyModeESR0FltEnable is applicable only if McuMode is 2 (STANDBY) and McuStdbyModeESR0WakeupEnable is set to TRUE. Values: TRUE: digital filter is enabled for the ESR0 wakeup from the standby mode FALSE: digital filter is disabled for the ESR0 wakeup from the standby mode		
Multiplicity	1..1	**Type**	EcucBooleanParamDef
Range	TRUE FALSE		
Default value	FALSE		
Post-build variant value	TRUE	**Post-build variant multiplicity**	-
Value configuration class	Post-Build	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	LOCAL
Dependency	McuStdbyModeESR0WakeupEnable, McuMode		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.78.3 McuStdbyModeESR0WakeupEnable

Table 245 Specification for McuStdbyModeESR0WakeupEnable

Name	`McuStdbyModeESR0WakeupEnable`		
Description	Specifies if the wakeup from the standby mode is enabled through ESR0. McuStdbyModeESR0WakeupEnable is applicable only if McuMode is 2 (STANDBY). Values: TRUE: wakeup from the standby mode through ESR0 is enabled FALSE: wakeup from the standby mode through ESR0 is disabled		
Multiplicity	1..1	**Type**	EcucBooleanParamDef

(table continues...)

Table 245 (continued) Specification for McuStdbyModeESR0WakeupEnable

Range	TRUE FALSE		
Default value	FALSE		
Post-build variant value	TRUE	**Post-build variant multiplicity**	-
Value configuration class	Post-Build	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	LOCAL
Dependency	McuMode		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.79 Container: McuStdByModeESR1Conf

This container defines the configuration (parameters) for ESR1 in the standby mode.

Post-Build Variant Multiplicity: -

Multiplicity Configuration Class: -

1.3.1.79.1 McuStdbyModeESR1EdgeDetection

Table 246 Specification for McuStdbyModeESR1EdgeDetection

Name	`McuStdbyModeESR1EdgeDetection`		
Description	Specifies if the trigger is generated on rising edge detection, falling edge detection or both. McuStdbyModeESR1EdgeDetection is applicable only if McuMode is 2 (STANDBY) and McuStdbyModeESR1WakeupEnable is set to TRUE.		
Multiplicity	1..1	**Type**	EcucEnumerationParamDef
Range	ESR1_TRIG_FALLING_EDGE_SEL2: a trigger is generated on the falling edge detection ESR1_TRIG_RISING_EDGE_SEL1: a trigger is generated on the rising edge detection ESR1_TRIG_RISING_FALLING_EDGE_SEL3: a trigger is generated on both the rising edge detection and the falling edge detection		
Default value	ESR1_TRIG_RISING_EDGE_SEL1		
Post-build variant value	TRUE	**Post-build variant multiplicity**	-
Value configuration class	Post-Build	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	LOCAL
Dependency	McuStdbyModeESR1WakeupEnable, McuMode		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.79.2 McuStdbyModeESR1FltEnable

Table 247 Specification for McuStdbyModeESR1FltEnable

Name	`McuStdbyModeESR1FltEnable`		
Description	Specifies if the digital filter is enabled for the ESR1 to wake up from the standby mode. McuStdbyModeESR1FltEnable is applicable only if McuMode is 2 (STANDBY) and McuStdbyModeESR1WakeupEnable is set to TRUE. Values: TRUE: digital filter is enabled for ESR1 wakeup from the standby mode FALSE: digital filter is disabled for ESR1 wakeup from the standby mode		
Multiplicity	1..1	**Type**	EcucBooleanParamDef
Range	TRUE FALSE		
Default value	FALSE		
Post-build variant value	TRUE	**Post-build variant multiplicity**	-
Value configuration class	Post-Build	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	LOCAL
Dependency	McuStdbyModeESR1WakeupEnable, McuMode		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.79.3 McuStdbyModeESR1WakeupEnable

Table 248 Specification for McuStdbyModeESR1WakeupEnable

Name	`McuStdbyModeESR1WakeupEnable`		
Description	Specifies if the wakeup from the standby mode is enabled through ESR1. McuStdbyModeESR1WakeupEnable is applicable only if McuMode is 2 (STANDBY). Values: TRUE: wakeup from the standby mode through ESR1 is enabled FALSE: wakeup from the standby mode through ESR1 is disabled		
Multiplicity	1..1	**Type**	EcucBooleanParamDef
Range	TRUE FALSE		
Default value	FALSE		
Post-build variant value	TRUE	**Post-build variant multiplicity**	-

(table continues...)

Table 248 (continued) Specification for McuStdbyModeESR1WakeupEnable

Value configuration class	Post-Build	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	LOCAL
Dependency	McuMode		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.80 Container: McuStdByModePinAConf

This container contains the configuration (parameters) for the standby PinA mode.

Post-Build Variant Multiplicity: -

Multiplicity Configuration Class: -

1.3.1.80.1 McuStdbyModePinAEdgeDetection

Table 249 Specification for McuStdbyModePinAEdgeDetection

Name	`McuStdbyModePinAEdgeDetection`		
Description	Specifies if the trigger will be generated on rising edge detection, falling edge detection or both. McuStdbyModePinAEdgeDetection is applicable only if McuMode is 2 (STANDBY) and McuStdbyModePinAWakeupEnable is set to TRUE.		
Multiplicity	1..1	**Type**	EcucEnumerationParamDef
Range	PINA_TRIG_FALLING_EDGE_SEL2: a trigger is generated on the falling edge detection PINA_TRIG_RISING_EDGE_SEL1: a trigger is generated on the rising edge detection PINA_TRIG_RISING_FALLING_EDGE_SEL3: a trigger is generated on both the rising edge detection and the falling edge detection		
Default value	PINA_TRIG_RISING_EDGE_SEL1		
Post-build variant value	TRUE	**Post-build variant multiplicity**	-
Value configuration class	Post-Build	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	LOCAL
Dependency	McuStdbyModePinAWakeupEnable, McuMode		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.80.2 McuStdbyModePinAFltEnable

Table 250 Specification for McuStdbyModePinAFltEnable

Name	`McuStdbyModePinAFltEnable`		
Description	Specifies if the digital filter is enabled for PinA to wake up from the standby mode. McuStdbyModePinAFltEnable is applicable only if McuMode is 2 (STANDBY) and McuStdbyModePinAWakeupEnable is set to TRUE. Values: TRUE: digital filter is enabled for PinA wakeup from the standby mode FALSE: digital filter is disabled for PinA wakeup from the standby mode		
Multiplicity	1..1	**Type**	EcucBooleanParamDef
Range	TRUE FALSE		
Default value	FALSE		
Post-build variant value	TRUE	**Post-build variant multiplicity**	-
Value configuration class	Post-Build	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	LOCAL
Dependency	McuStdbyModePinAWakeupEnable, McuMode		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.80.3 McuStdbyModePinAWakeupEnable

Table 251 Specification for McuStdbyModePinAWakeupEnable

Name	`McuStdbyModePinAWakeupEnable`		
Description	Specifies if the wake up from the standby mode is enabled through PinA. McuStdbyModePinAWakeupEnable is applicable only if McuMode is 2 (STANDBY). Values: TRUE: wakeup from the standby mode through PinA is enabled FALSE: wakeup from the standby mode through PinA is disabled		
Multiplicity	1..1	**Type**	EcucBooleanParamDef
Range	TRUE FALSE		
Default value	FALSE		

(table continues...)

Table 251 (continued) Specification for McuStdbyModePinAWakeupEnable

Post-build variant value	TRUE	**Post-build variant multiplicity**	-
Value configuration class	Post-Build	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	LOCAL
Dependency	McuMode		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.81 Container: McuStdByModePinBConf

This container contains the configuration (parameters) for the standby PinB mode.

Post-Build Variant Multiplicity: -

Multiplicity Configuration Class: -

1.3.1.81.1 McuStdbyModePinBEdgeDetection

Table 252 Specification for McuStdbyModePinBEdgeDetection

Name	`McuStdbyModePinBEdgeDetection`		
Description	Secifies if the trigger will be generated on rising edge detection, falling edge detection or both. McuStdbyModePinBEdgeDetection is applicable only if McuMode is 2 (STANDBY) and McuStdbyModePinBWakeupEnable is set to TRUE.		
Multiplicity	1..1	**Type**	EcucEnumerationParamDef
Range	PINB_TRIG_FALLING_EDGE_SEL2: a trigger is generated on the falling edge detection PINB_TRIG_RISING_EDGE_SEL1: a trigger is generated on the rising edge detection. PINB_TRIG_RISING_FALLING_EDGE_SEL3: a trigger is generated on both the rising edge detection and the falling edge detection		
Default value	PINB_TRIG_RISING_EDGE_SEL1		
Post-build variant value	TRUE	**Post-build variant multiplicity**	-
Value configuration class	Post-Build	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	LOCAL
Dependency	McuStdbyModePinBWakeupEnable, McuMode		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.81.2 McuStdbyModePinBFltEnable

Table 253 Specification for McuStdbyModePinBFltEnable

Name	`McuStdbyModePinBFltEnable`		
Description	Specifies if the digital filter is enabled for Pin B to wake up from the standby mode. McuStdbyModePinBFltEnable is applicable only if McuMode is 2 (STANDBY) and McuStdbyModePinBWakeupEnable is set to TRUE. Values: TRUE: digital filter is enabled for PinB wakeup from the standby mode FALSE: digital filter is disabled for PinB wakeup from the standby mode		
Multiplicity	1..1	**Type**	EcucBooleanParamDef
Range	TRUE FALSE		
Default value	FALSE		
Post-build variant value	TRUE	**Post-build variant multiplicity**	-
Value configuration class	Post-Build	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	LOCAL
Dependency	McuStdbyModePinBWakeupEnable, McuMode		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.81.3 McuStdbyModePinBWakeupEnable

Table 254 Specification for McuStdbyModePinBWakeupEnable

Name	`McuStdbyModePinBWakeupEnable`		
Description	Specifies if the wakeup from the standby mode is enabled through Pin B. McuStdbyModePinBWakeupEnable is applicable only if McuMode is 2 (STANDBY). Values: TRUE: wakeup from the standby mode through Pin B is enabled FALSE: wakeup from the standby mode through Pin B is disabled		
Multiplicity	1..1	**Type**	EcucBooleanParamDef
Range	TRUE FALSE		
Default value	FALSE		

(table continues...)

Table 254 (continued) Specification for McuStdbyModePinBWakeupEnable

Post-build variant value	TRUE	**Post-build variant multiplicity**	-
Value configuration class	Post-Build	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	LOCAL
Dependency	McuMode		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.82 Container: McuStdByModeWakeupTimerConf

This container contains the configuration (parameters) for the standby wakeup timer.

Post-Build Variant Multiplicity: -

Multiplicity Configuration Class: -

1.3.1.82.1 McuStdbyModeWakeupTimerClkDiv

Table 255 Specification for McuStdbyModeWakeupTimerClkDiv

Name	`McuStdbyModeWakeupTimerClkDiv`		
Description	Specifies the wakeup timer clock source selection. McuStdbyModeWakeupTimerClkDiv is applicable only if McuStdbyModeWakeupTimerEnable is set to TRUE.		
Multiplicity	1..1	**Type**	EcucEnumerationParamDef
Range	WUT_70KHZ_DIV_CLK_SEL1: wake up timer runs on 70 kHz frequency divided by 1024 divider value WUT_70KHZ_NO_DIV_CLK_SEL0: wake up timer runs on 70 kHz frequency		
Default value	WUT_70KHZ_NO_DIV_CLK_SEL0		
Post-build variant value	TRUE	**Post-build variant multiplicity**	-
Value configuration class	Post-Build	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	LOCAL
Dependency	McuStdbyModeWakeupTimerEnable, McuMode		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.82.2 McuStdbyModeWakeupTimerEnable

Table 256 Specification for McuStdbyModeWakeupTimerEnable

Name	`McuStdbyModeWakeupTimerEnable`		
Description	Specifies if the wake up from the standby mode is supported through the wake up timer. If McuStdbyModeWakeupTimerEnable is set to TRUE, the wake up timer holds the capability to wake up from the standby mode. Values: TRUE: wakeup from the standby mode with the wake up timer is enabled FALSE: wakeup from the standby mode with the wake up timer is disabled		
Multiplicity	1..1	**Type**	EcucBooleanParamDef
Range	TRUE FALSE		
Default value	FALSE		
Post-build variant value	TRUE	**Post-build variant multiplicity**	-
Value configuration class	Post-Build	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	LOCAL
Dependency	McuMode		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.82.3 McuStdbyModeWakeupTimerMode

Table 257 Specification for McuStdbyModeWakeupTimerMode

Name	`McuStdbyModeWakeupTimerMode`		
Description	Specifies the wakeup timer mode. McuStdbyModeWakeupTimerMode is applicable only if McuStdbyModeWakeupTimerEnable is set to TRUE.		
Multiplicity	1..1	**Type**	EcucEnumerationParamDef
Range	WUT_AUTO_RELOAD_MODE_SEL0: counter starts from McuStdbyModeWakeupTimerValue. On counter underflow, the wakeup counter value is reloaded with McuStdbyModeWakeupTimerValue WUT_AUTO_STOP_MODE_SEL1: counter starts from McuStdbyModeWakeupTimerValue. On counter underflow, wakeup timer stops		
Default value	WUT_AUTO_RELOAD_MODE_SEL0		
Post-build variant value	TRUE	**Post-build variant multiplicity**	-

(table continues...)

Table 257 (continued) Specification for McuStdbyModeWakeupTimerMode

Value configuration class	Post-Build	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	LOCAL
Dependency	McuMode, McuStdbyModeWakeupTimerEnable		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.82.4 McuStdbyModeWakeupTimerValue

Table 258 Specification for McuStdbyModeWakeupTimerValue

Name	`McuStdbyModeWakeupTimerValue`		
Description	Specifies the wakeup timer reload value. McuStdbyModeWakeupTimerValue is applicable only if McuStdbyModeWakeupTimerEnable is set to TRUE.		
Multiplicity	1..1	**Type**	EcucIntegerParamDef
Range	0 - 16777215		
Default value	16777215		
Post-build variant value	TRUE	**Post-build variant multiplicity**	-
Value configuration class	Post-Build	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	LOCAL
Dependency	McuStdbyModeWakeupTimerEnable, McuMode		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.83 Container: McuStdbyModeSettingConf

This container contains the configuration (parameters) for the MCU standby mode setting

Post-Build Variant Multiplicity: -

Multiplicity Configuration Class: -

1.3.1.83.1 McuStdbyModeBlankingFilterDelay

Table 259 Specification for McuStdbyModeBlankingFilterDelay

Name	`McuStdbyModeBlankingFilterDelay`

(table continues...)

Table 259 (continued) Specification for McuStdbyModeBlankingFilterDelay

Description	Specifies the delay for the blanking filter. The blanking filter delay ensures that valid event of VEXT rampup is detected as wakeup from the standby mode for a specified time interval. Actual value may be +/- 30% of mentioned value. This parameter is applicable only if McuMode is 2 (STANDBY) and . McuStdbyModeWakeupFromEVR is TRUE.		
Multiplicity	1..1	**Type**	EcucEnumerationParamDef
Range	DELAY_0_MS_SEL0: 0 ms blanking filter delay DELAY_10240_MS_SEL13: 10240 ms blanking filter delay DELAY_10_MS_SEL3: 10 ms blanking filter delay DELAY_1280_MS_SEL10: 1280 ms blanking filter delay DELAY_160_MS_SEL7: 160 ms blanking filter delay DELAY_20_MS_SEL4: 20 ms blanking filter delay DELAY_2560_MS_SEL11: 2560 ms blanking filter delay DELAY_2_5_MS_SEL1: 2.5 ms blanking filter delay DELAY_320_MS_SEL8: 320 ms blanking filter delay DELAY_40_MS_SEL5: 40 ms blanking filter delay DELAY_5120_MS_SEL12: 5120 ms blanking filter delay DELAY_5_MS_SEL2: 5 ms blanking filter delay DELAY_640_MS_SEL9: 640 ms blanking filter delay DELAY_80_MS_SEL6: 80 ms blanking filter delay		
Default value	DELAY_0_MS_SEL0		
Post-build variant value	TRUE	**Post-build variant multiplicity**	-
Value configuration class	Post-Build	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	LOCAL
Dependency	McuStdbyModeWakeupFromEVR, McuMode		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.83.2 McuStdbyModeClkSelection

Table 260 Specification for McuStdbyModeClkSelection

Name	`McuStdbyModeClkSelection`

(table continues...)

Table 260 (continued) Specification for McuStdbyModeClkSelection

Description	Specifies the active oscillator clock during the standby mode operation. McuStdbyModeClkSelection is applicable only if McuMode is 2 (STANDBY). The parameter is kept disabled as Standby controller is not in scope of the Mcu driver and responsibility lies on user to configure it. *Note: For non-Tresos users, a change in parameter value will lead to change in generated configuration value. The generated configuration value for this parameter is ignored and PMSWCR4 is not initialized by the Mcu driver.*		
Multiplicity	1..1	**Type**	EcucEnumerationParamDef
Range	SCR_CLOCK_SEL0: Selecting this option configures PMSWCR4.SCRCLKSEL to 0. 100 MHz clock is enabled or disabled based on request from SCR in standby mode. SCR_CLOCK_SEL1: Selecting this option configures PMSWCR4.SCRCLKSEL to 1. 100 MHz clock is always available		
Default value	SCR_CLOCK_SEL0		
Post-build variant value	TRUE	**Post-build variant multiplicity**	-
Value configuration class	Post-Build	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	LOCAL
Dependency	McuMode		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.83.3 McuStdbyModeESR0TriStateEnable

Table 261 Specification for McuStdbyModeESR0TriStateEnable

Name	`McuStdbyModeESR0TriStateEnable`		
Description	Specifies if the ESR0 is in tristate while in the standby mode. McuStdbyModeESR0TriStateEnable is applicable only if McuMode is 2 (STANDBY). Values: TRUE: tristate is enabled for ESR0 while in the standby mode FALSE: tristate will be disabled for ESR0 while in the standby mode		
Multiplicity	1..1	**Type**	EcucBooleanParamDef
Range	TRUE FALSE		
Default value	FALSE		
Post-build variant value	TRUE	**Post-build variant multiplicity**	-

(table continues...)

Table 261 (continued) Specification for McuStdbyModeESR0TriStateEnable

Value configuration class	Post-Build	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	LOCAL
Dependency	McuMode		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.83.4 McuStdbyModePORSTFilterEnable

Table 262 Specification for McuStdbyModePORSTFilterEnable

Name	`McuStdbyModePORSTFilterEnable`		
Description	Specifies if the PORST digital filter is enabled or disabled. If McuStdbyModePORSTFilterEnable is set to FALSE, the PORST configuration delay = Analog PORST pad filter delay. If McuStdbyModePORSTFilterEnable is set to TRUE, the PORST configuration delay = Analog PORST pad filter delay + Digital filter delay. McuStdbyModePORSTFilterEnable is applicable only if McuMode is 2 (STANDBY). Values: TRUE: PORST digital filter is enabled FALSE: PORST digital filter is disabled		
Multiplicity	1..1	**Type**	EcucBooleanParamDef
Range	TRUE FALSE		
Default value	FALSE		
Post-build variant value	TRUE	**Post-build variant multiplicity**	-
Value configuration class	Post-Build	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	LOCAL
Dependency	McuMode		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.83.5 McuStdbyModePortTriStateEnable

Table 263 Specification for McuStdbyModePortTriStateEnable

Name	`McuStdbyModePortTriStateEnable`

(table continues...)

Table 263 (continued) Specification for McuStdbyModePortTriStateEnable

Description	Specifies if the pads are in tristate while in the standby mode. McuStdbyModePortTriStateEnable is applicable only if McuMode is 2 (STANDBY). Values: TRUE: tristate is enabled for port pins while in the standby mode FALSE: tristate is disabled for port pins while in the standby mode		
Multiplicity	1..1	**Type**	EcucBooleanParamDef
Range	TRUE FALSE		
Default value	FALSE		
Post-build variant value	TRUE	**Post-build variant multiplicity**	-
Value configuration class	Post-Build	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	LOCAL
Dependency	McuMode		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.83.6 McuStdbyModeRamEnable

Table 264 Specification for McuStdbyModeRamEnable

Name	`McuStdbyModeRamEnable`		
Description	Selects the LMU blocks which stay powered up during the standby mode of operation. McuStdbyModeRamEnable is applicable only if McuMode is 2 (STANDBY).		
Multiplicity	1..1	**Type**	EcucEnumerationParamDef

(table continues...)

Table 264 (continued) Specification for McuStdbyModeRamEnable

Range	MCU_STANDBYRAM_CPU0_BLK0_BLK1_NONCACHED_SEL2: CPU0 dLMU Block0 Block1 non-cached memory is used as StandByRam MCU_STANDBYRAM_CPU0_BLK0_BLK1_SEL2: CPU0 dLMU Block0 Block1 cached memory is used as StandByRam MCU_STANDBYRAM_CPU0_BLK0_NONCACHED_SEL1: CPU0 dLMU Block0 non-cached memory is used as StandByRam MCU_STANDBYRAM_CPU0_BLK0_SEL1: CPU0 dLMU Block0 cached memory is used as StandByRam MCU_STANDBYRAM_CPU0_CPU1_BLK0_BLK1_NONCACHED_SEL7: CPU0, CPU1s dLMU Block0 and Block 1 non-cached memory is used as StandByRam MCU_STANDBYRAM_CPU0_CPU1_BLK0_BLK1_SEL7: CPU0, CPU1s dLMU Block0 and Block 1 cached memory is used as StandByRam MCU_STANDBYRAM_CPU1_BLK0_BLK1_NONCACHED_SEL4: CPU1 dLMU Block0 Block 1 non-cached memory is used as StandByRam MCU_STANDBYRAM_CPU1_BLK0_BLK1_SEL4: CPU1 dLMU Block0 Block 1 cached memory is used as StandByRam MCU_STANDBYRAM_DISABLED_SEL0: StandByRam is disabled		
Default value	MCU_STANDBYRAM_DISABLED_SEL0		
Post-build variant value	FALSE	**Post-build variant multiplicity**	-
Value configuration class	Pre-Compile	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	LOCAL
Dependency	McuMode		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.83.7 McuStdbyModeWakeupFromEVR

Table 265 Specification for McuStdbyModeWakeupFromEVR

Name	`McuStdbyModeWakeupFromEVR`		
Description	Specifies if the wakeup from the standby mode is enabled through the wakeup timer. McuStdbyModeWakeupFromEVR is applicable only if McuMode is 2 (STANDBY). Values: TRUE: wakeup from the standby mode through EVR is enabled FALSE: wakeup from the standby mode through EVR is disabled		
Multiplicity	1..1	**Type**	EcucBooleanParamDef
Range	TRUE FALSE		

(table continues...)

Table 265 (continued) Specification for McuStdbyModeWakeupFromEVR

Default value	FALSE		
Post-build variant value	TRUE	**Post-build variant multiplicity**	-
Value configuration class	Post-Build	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	LOCAL
Dependency	McuMode		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.83.8 McuStdbyModeWakeupFromPORST

Table 266 Specification for McuStdbyModeWakeupFromPORST

Name	`McuStdbyModeWakeupFromPORST`		
Description	Specifies if the wakeup from the standby mode is enabled through PORST. McuStdbyModeWakeupFromPORST is applicable only if McuMode is 2 (STANDBY). Values: TRUE: wakeup from the standby mode through PORST is enabled FALSE: wakeup from the standby mode through PORST is disabled		
Multiplicity	1..1	**Type**	EcucBooleanParamDef
Range	TRUE FALSE		
Default value	FALSE		
Post-build variant value	TRUE	**Post-build variant multiplicity**	-
Value configuration class	Post-Build	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	LOCAL
Dependency	McuMode		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.83.9 McuStdbyModeWakeupFromSCR

Table 267 Specification for McuStdbyModeWakeupFromSCR

Name	`McuStdbyModeWakeupFromSCR`

(table continues...)

Table 267 (continued) Specification for McuStdbyModeWakeupFromSCR

Description	Specifies if the wakeup from the standby mode through controller is enabled. McuStdbyModeWakeupFromSCR is applicable only if McuMode is 2 (STANDBY). Values: TRUE: wakeup from the standby mode through the standby mode controller is enabled FALSE: wakeup from the standby mode through the standby mode controller is disabled		
Multiplicity	1..1	**Type**	EcucBooleanParamDef
Range	TRUE FALSE		
Default value	FALSE		
Post-build variant value	TRUE	**Post-build variant multiplicity**	-
Value configuration class	Post-Build	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	LOCAL
Dependency	McuMode		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.84 Container: McuStdbyModeVddVextConf

This container contains the configuration (parameters) for the standby mode setting for VDD and VEXT supply.

Container is available only when McuMode is set to 2 (standby mode).
Post-Build Variant Multiplicity: -
Multiplicity Configuration Class: -

1.3.1.84.1 McuStdbyModeEntryOnVDDRampDown

Table 268 Specification for McuStdbyModeEntryOnVDDRampDown

Name	`McuStdbyModeEntryOnVDDRampDown`		
Description	Specifies if the standby entry on VDD supply ramp down is enabled or not McuStdbyModeEntryOnVDDRampDown is applicable only if McuMode is 2 (STANDBY). Values: TRUE: standby mode entry on VDD supply ramp-down is enabled FALSE: standby mode entry on VDD supply ramp-down is disabled		
Multiplicity	1..1	**Type**	EcucBooleanParamDef
Range	TRUE FALSE		

(table continues...)

Table 268 (continued) Specification for McuStdbyModeEntryOnVDDRampDown

Default value	FALSE		
Post-build variant value	TRUE	**Post-build variant multiplicity**	-
Value configuration class	Post-Build	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	LOCAL
Dependency	McuMode		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.84.2 McuStdbyModeEntryOnVEXTRampDown

Table 269 Specification for McuStdbyModeEntryOnVEXTRampDown

Name	`McuStdbyModeEntryOnVEXTRampDown`		
Description	Specifies if the standby entry on VEXT supply ramp down is enabled or not McuStdbyModeEntryOnVEXTRampDown is applicable only if McuMode is 2 (STANDBY). Values: TRUE: standby mode entry on VEXT supply ramp-down is enabled FALSE: standby mode entry on VEXT supply ramp-down is disabled		
Multiplicity	1..1	**Type**	EcucBooleanParamDef
Range	TRUE FALSE		
Default value	FALSE		
Post-build variant value	TRUE	**Post-build variant multiplicity**	-
Value configuration class	Post-Build	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	LOCAL
Dependency	McuMode		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.84.3 McuStdbyModeVddUMMonMode

Table 270 Specification for McuStdbyModeVddUMMonMode

Name	`McuStdbyModeVddUMMonMode`

(table continues...)

Table 270 (continued) Specification for McuStdbyModeVddUMMonMode			
Description	Specifies the VDD under voltage monitoring mode. The default value is selected according to the reset value of SFR bit-field as specified in the hardware UM.		
Multiplicity	1..1	**Type**	EcucEnumerationParamDef
Range	VDD_UV_MON_MODE_SEL0: Under voltage monitoring is inactive VDD_UV_MON_MODE_SEL1: An under-voltage event is triggered when the threshold is crossed in a lower to higher voltage transition. Greater than or equal compare is used. VDD_UV_MON_MODE_SEL2: An under-voltage event is triggered when the threshold is crossed in a higher to lower voltage transition. Less than or equal compare is used. VDD_UV_MON_MODE_SEL3: An under-voltage event is triggered when the threshold is crossed in either direction. Less than or equal compare is used.		
Default value	VDD_UV_MON_MODE_SEL2		
Post-build variant value	TRUE	**Post-build variant multiplicity**	-
Value configuration class	Post-Build	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	LOCAL
Dependency	McuStdbyModeEntryOnVDDRampDown		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.84.4 McuStdbyModeVddUVThres

Table 271 Specification for McuStdbyModeVddUVThres			
Name	`McuStdbyModeVddUVThres`		
Description	Specifies the secondary under voltage threshold value of VDD. The default value is selected according to the reset value of SFR bit-field as specified in the hardware UM.		
Multiplicity	1..1	**Type**	EcucIntegerParamDef
Range	0 - 255		
Default value	184		
Post-build variant value	TRUE	**Post-build variant multiplicity**	-
Value configuration class	Post-Build	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	LOCAL
Dependency	McuStdbyModeEntryOnVDDRampDown		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.84.5 McuStdbyModeVextUMMonMode

Table 272 Specification for McuStdbyModeVextUMMonMode

Name	`McuStdbyModeVextUMMonMode`		
Description	Specifies the VEXT under voltage monitoring mode. The default value is selected according to the reset value of SFR bit-field as specified in the hardware UM.		
Multiplicity	1..1	**Type**	EcucEnumerationParamDef
Range	VEXT_UV_MON_MODE_SEL0: Under voltage monitoring is inactive VEXT_UV_MON_MODE_SEL1: An under-voltage event is triggered when the threshold is crossed in a lower to higher voltage transition. Greater than or equal compare is used. VEXT_UV_MON_MODE_SEL2: An under-voltage event is triggered when the threshold is crossed in a higher to lower voltage transition. Less than or equal compare is used. VEXT_UV_MON_MODE_SEL3: An under-voltage event is triggered when the threshold is crossed in either direction. Less than or equal compare is used.		
Default value	VEXT_UV_MON_MODE_SEL2		
Post-build variant value	TRUE	**Post-build variant multiplicity**	-
Value configuration class	Post-Build	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	LOCAL
Dependency	McuVextStdbyCtrl, McuStdbyModeEntryOnVEXTRampDown		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.84.6 McuStdbyModeVextUVThres

Table 273 Specification for McuStdbyModeVextUVThres

Name	`McuStdbyModeVextUVThres`		
Description	Specifies the secondary under voltage threshold value of VEXT. The default value is selected according to the reset value of SFR bit-field as specified in the hardware UM.		
Multiplicity	1..1	**Type**	EcucIntegerParamDef
Range	0 - 255		
Default value	117		
Post-build variant value	TRUE	**Post-build variant multiplicity**	-
Value configuration class	Post-Build	**Multiplicity configuration class**	-

(table continues...)

Table 273 (continued) Specification for McuStdbyModeVextUVThres

Origin	IFX	**Scope**	LOCAL
Dependency	McuVextStdbyCtrl, McuStdbyModeEntryOnVEXTRampDown		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.84.7 McuVextStdbyCtrl

Table 274 Specification for McuVextStdbyCtrl

Name	`McuVextStdbyCtrl`		
Description	Specifies if the API Mcu_VextStdbyCtrl is available or not McuVextStdbyCtrl is applicable only if McuMode is 2 (STANDBY). Values: TRUE: API Mcu_VextStdbyCtrl is available. FALSE: API Mcu_VextStdbyCtrl is not available.		
Multiplicity	1..1	**Type**	EcucBooleanParamDef
Range	TRUE FALSE		
Default value	FALSE		
Post-build variant value	TRUE	**Post-build variant multiplicity**	-
Value configuration class	Post-Build	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	LOCAL
Dependency	McuMode		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.85 Container: McuSystemPllSettingConfig

This container holds the configuration (parameters) for the System PLL clock settings.
Post-Build Variant Multiplicity: -
Multiplicity Configuration Class: -

1.3.1.85.1 McuClockReferencePointFrequency0

Table 275 Specification for McuClockReferencePointFrequency0

Name	`McuClockReferencePointFrequency0`

(table continues...)

Table 275 (continued) Specification for McuClockReferencePointFrequency0

Description	User should configure the resulting target frequency after configuring the N, P and K2 divider for system PLL. By using the default value generation option this frequency can be auto-calculated with the configured values of McuMainOscillatorFrequency, McuSystemPllPDivider, McuSystemPllNDivider, and McuSystemPllK2Divider dividers. Unit is expressed in Hz. The McuClockReferencePointFrequency0 for NORMAL_MODE should be in the range from: 20 to 300 MHz. If McuClockDistributionInpClockSel is selected as BACKUP_INPUT_CLOCK_SRC_SELECT then manually configure this clock to Fback = 100 MHz. fSOURCE0 is McuClockReferencePointFrequency0.		
Multiplicity	1..1	**Type**	EcucFloatParamDef
Range	20000000.0 - 300000000.0		
Default value	300000000.0		
Post-build variant value	TRUE	**Post-build variant multiplicity**	-
Value configuration class	Post-Build	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	LOCAL
Dependency	McuMainOscillatorFrequency, McuSystemPllK2Divider, McuSystemPllNDivider, McuSystemPllPDivider, McuPllInputSrcSelection		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.85.2 McuFMPllModAmp

Table 276 Specification for McuFMPllModAmp

Name	`McuFMPllModAmp`		
Description	McuFMPllModAmp is the percentage value for modulation amplitude for PLL frequency modulation. MODCFG[9:0] bits of SCU_SYSPLLCON2 is used and is equated as = (64 * McuFMPllModAmp/100 * McuMainOscillatorFrequency/McuPllPDivider * McuPllNDivider/3.6) ; where (McuFMPllModAmp is expressed in percentage and McuMainOscillatorFrequency in MHz).		
Multiplicity	1..1	**Type**	EcucFloatParamDef
Range	0.0 - 2.0		
Default value	1.25		
Post-build variant value	TRUE	**Post-build variant multiplicity**	-

(table continues...)

Table 276 (continued) Specification for McuFMPllModAmp

Value configuration class	Post-Build	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	LOCAL
Dependency	McuFmPllEnable, McuClockDistributionInpClockSel		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.85.3 McuFmPllEnable

Table 277 Specification for McuFmPllEnable

Name	`McuFmPllEnable`		
Description	Configuration to enable/disable PLL frequency modulation. Values: TRUE: enables PLL frequency modulation FALSE: disables PLL frequency modulation		
Multiplicity	1..1	**Type**	EcucBooleanParamDef
Range	TRUE FALSE		
Default value	FALSE		
Post-build variant value	TRUE	**Post-build variant multiplicity**	-
Value configuration class	Post-Build	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	LOCAL
Dependency	McuClockDistributionInpClockSel		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.85.4 McuPllInputSrcSelection

Table 278 Specification for McuPllInputSrcSelection

Name	`McuPllInputSrcSelection`
Description	Configuration to select the input clock source for both the PLLs. *Note: When Backup clock is selected as source to PLL, oscillator watchdog may raise a SMU alarm (OSC clock frequency out of range) since OSC Watchdog can monitor in range of 16-40MHz. The SMU alarm for oscillator watchdog should be disabled when using Backup clock as source to PLLs.*

(table continues...)

Table 278 (continued) Specification for McuPllInputSrcSelection

Multiplicity	1..1	**Type**	EcucEnumerationParamDef
Range	BACKUP_CLOCK_SRC_SELECT_SEL0: backup clock is selected as an input source for the system and peripheral PLLs OSC_CLOCK_SRC_SELECT_SEL1: oscillator clock is selected as an input source for the system and peripheral PLLs SYSCLK_SRC_SELECT_SEL2: SYSCLK pin is selected as an input source for the system and peripheral PLLs		
Default value	OSC_CLOCK_SRC_SELECT_SEL1		
Post-build variant value	TRUE	**Post-build variant multiplicity**	-
Value configuration class	Post-Build	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	LOCAL
Dependency	McuClockDistributionInpClockSel		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.85.5 McuSysPllK2DivStepDownChangeDelay

Table 279 Specification for McuSysPllK2DivStepDownChangeDelay

Name	`McuSysPllK2DivStepDownChangeDelay`		
Description	The delay required to configure the step changes between two consecutive changes in the K2 divider value. McuSysPllK2DivStepDownChangeDelay is a common delay used for system Pll0 frequency ramp down sequences through the K2 divider. *Note : The value is expressed in microseconds (us).*		
Multiplicity	1..1	**Type**	EcucIntegerParamDef
Range	5 - 100		
Default value	10		
Post-build variant value	TRUE	**Post-build variant multiplicity**	-
Value configuration class	Post-Build	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	LOCAL
Dependency	McuClockDistributionInpClockSel		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.85.6 McuSysPllK2DivStepUpChangeDelay

Table 280 Specification for McuSysPllK2DivStepUpChangeDelay

Name	`McuSysPllK2DivStepUpChangeDelay`		
Description	The delay required to configure the step changes between two consecutive changes in the K2 divider value.McuSysPllK2DivStepUpChangeDelay is a common delay used for system Pll0 frequency ramp up sequences through the K2 divider. *Note : The value is expressed in microseconds (us).*		
Multiplicity	1..1	**Type**	EcucIntegerParamDef
Range	5 - 100		
Default value	10		
Post-build variant value	TRUE	**Post-build variant multiplicity**	-
Value configuration class	Post-Build	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	LOCAL
Dependency	McuClockDistributionInpClockSel		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.85.7 McuSystemPllK2Divider

Table 281 Specification for McuSystemPllK2Divider

Name	`McuSystemPllK2Divider`		
Description	Three bit output divider. Even values are preferred to get 50% duty cycle. Clock equations are incremented by 1 to this parameter. *Note : Changing the system operation frequency by changing the value of the K2-divider has a direct coupling to the power consumption of the device. Therefore this should be done carefully.*		
Multiplicity	1..1	**Type**	EcucIntegerParamDef
Range	0 - 7		
Default value	1		
Post-build variant value	TRUE	**Post-build variant multiplicity**	-
Value configuration class	Post-Build	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	LOCAL
Dependency	McuClockDistributionInpClockSel		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.85.8 McuSystemPllNDivider

Table 282 Specification for McuSystemPllNDivider

Name	`McuSystemPllNDivider`		
Description	Seven bit feedback divider value used for the generation of system clock. Clock equations are incremented by 1 to this parameter.		
Multiplicity	1..1	**Type**	EcucIntegerParamDef
Range	0 - 127		
Default value	29		
Post-build variant value	TRUE	**Post-build variant multiplicity**	-
Value configuration class	Post-Build	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	LOCAL
Dependency	McuClockDistributionInpClockSel		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.85.9 McuSystemPllPDivider

Table 283 Specification for McuSystemPllPDivider

Name	`McuSystemPllPDivider`		
Description	Frequency divider of main oscillator (3 bits) Clock equations are incremented by 1 to this parameter.		
Multiplicity	1..1	**Type**	EcucIntegerParamDef
Range	0 - 7		
Default value	0		
Post-build variant value	TRUE	**Post-build variant multiplicity**	-
Value configuration class	Post-Build	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	LOCAL
Dependency	McuClockDistributionInpClockSel		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.86 Container: McuResetSettingConf

This container defines the configuration parameters for the reset settings.

Post-Build Variant Multiplicity: -

Multiplicity Configuration Class: -

1.3.1.86.1 McuESR0ResetConf

Table 284 Specification for McuESR0ResetConf

Name	McuESR0ResetConf		
Description	Refers to the response of the ESR0 reset request.		
Multiplicity	1..1	**Type**	EcucEnumerationParamDef
Range	MCU_ESR0_APPLICATION_RESET_SEL2: application reset request is triggered MCU_ESR0_NO_RESET_SEL0: no reset request is triggered MCU_ESR0_SYSTEM_RESET_SEL1: system reset request is triggered		
Default value	MCU_ESR0_NO_RESET_SEL0		
Post-build variant value	TRUE	**Post-build variant multiplicity**	-
Value configuration class	Post-Build	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	LOCAL
Dependency	-		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.86.2 McuESR1ResetConf

Table 285 Specification for McuESR1ResetConf

Name	McuESR1ResetConf		
Description	Refers to the response of the ESR1 reset request.		
Multiplicity	1..1	**Type**	EcucEnumerationParamDef
Range	MCU_ESR1_APPLICATION_RESET_SEL2: application reset request is triggered MCU_ESR1_NO_RESET_SEL0: no reset request is triggered MCU_ESR1_SYSTEM_RESET_SEL1: system reset request is triggered		
Default value	MCU_ESR1_NO_RESET_SEL0		
Post-build variant value	TRUE	**Post-build variant multiplicity**	-
Value configuration class	Post-Build	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	LOCAL
Dependency	-		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.86.3 McuSMUResetConf

Table 286 Specification for McuSMUResetConf

Name	McuSMUResetConf		
Description	Refers to the response of the SMU reset request.		
Multiplicity	1..1	**Type**	EcucEnumerationParamDef
Range	MCU_SMU_APPLICATION_RESET_SEL2: application reset request is triggered MCU_SMU_NO_RESET_SEL0: no reset request is triggered MCU_SMU_SYSTEM_RESET_SEL1: system reset request is triggered		
Default value	MCU_SMU_NO_RESET_SEL0		
Post-build variant value	TRUE	**Post-build variant multiplicity**	-
Value configuration class	Post-Build	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	LOCAL
Dependency	-		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.86.4 McuSTM0ResetConf

Table 287 Specification for McuSTM0ResetConf

Name	McuSTM0ResetConf		
Description	Refers to the response of the STM0 reset request.		
Multiplicity	1..1	**Type**	EcucEnumerationParamDef
Range	MCU_STM0_APPLICATION_RESET_SEL2: application reset request is triggered MCU_STM0_NO_RESET_SEL0: no reset request is triggered MCU_STM0_SYSTEM_RESET_SEL1: system reset request is triggered		
Default value	MCU_STM0_NO_RESET_SEL0		
Post-build variant value	TRUE	**Post-build variant multiplicity**	-
Value configuration class	Post-Build	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	LOCAL
Dependency	-		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.86.5 McuSTM0ResetOnApplResetEnable

Table 288 Specification for McuSTM0ResetOnApplResetEnable

Name	McuSTM0ResetOnApplResetEnable		
Description	Refers to the enabling of resetting the value of STM0 when an application reset is requested. TRUE: STM0 is reset when the application reset is triggered FALSE: STM0 is not reset when the application reset is triggered		
Multiplicity	1..1	**Type**	EcucBooleanParamDef
Range	TRUE FALSE		
Default value	TRUE		
Post-build variant value	TRUE	**Post-build variant multiplicity**	-
Value configuration class	Post-Build	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	LOCAL
Dependency	-		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.86.6 McuSTM1ResetConf

Table 289 Specification for McuSTM1ResetConf

Name	McuSTM1ResetConf		
Description	Refers to the response of the STM1 reset request. If the STM1 does not exist on the hardware, the parameter is disabled.		
Multiplicity	1..1	**Type**	EcucEnumerationParamDef
Range	MCU_STM1_APPLICATION_RESET_SEL2: application reset request is triggered MCU_STM1_NO_RESET_SEL0: no reset request is triggered MCU_STM1_SYSTEM_RESET_SEL1: system reset request is triggered		
Default value	MCU_STM1_NO_RESET_SEL0		
Post-build variant value	TRUE	**Post-build variant multiplicity**	-
Value configuration class	Post-Build	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	LOCAL
Dependency	-		

(table continues...)

Table 289 (continued) Specification for McuSTM1ResetConf

Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.

1.3.1.86.7 McuSTM1ResetOnApplResetEnable

Table 290 Specification for McuSTM1ResetOnApplResetEnable

Name	`McuSTM1ResetOnApplResetEnable`		
Description	Refers to the enabling of resetting the value of STM1 when an application reset is requested. TRUE: STM1 is reset when the application reset is triggered FALSE: STM1 is not reset when the application reset is triggered If the STM1 does not exist on the hardware, the parameter is disabled.		
Multiplicity	1..1	**Type**	EcucBooleanParamDef
Range	TRUE FALSE		
Default value	TRUE		
Post-build variant value	TRUE	**Post-build variant multiplicity**	-
Value configuration class	Post-Build	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	LOCAL
Dependency	-		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.86.8 McuSTM2ResetConf

Table 291 Specification for McuSTM2ResetConf

Name	`McuSTM2ResetConf`		
Description	Refers to the response of the STM2 reset request. If the STM2 does not exist on the hardware, the parameter is disabled.		
Multiplicity	1..1	**Type**	EcucEnumerationParamDef
Range	MCU_STM2_APPLICATION_RESET_SEL2: application reset request is triggered MCU_STM2_NO_RESET_SEL0: no reset request is triggered MCU_STM2_SYSTEM_RESET_SEL1: system reset request is triggered		
Default value	MCU_STM2_NO_RESET_SEL0		
Post-build variant value	TRUE	**Post-build variant multiplicity**	-

(table continues...)

Table 291 (continued) Specification for McuSTM2ResetConf

Value configuration class	Post-Build	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	LOCAL
Dependency	-		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.86.9 McuSTM2ResetOnApplResetEnable

Table 292 Specification for McuSTM2ResetOnApplResetEnable

Name	`McuSTM2ResetOnApplResetEnable`		
Description	Refers to the enabling of resetting the value of STM2 when an application reset is requested. TRUE: STM2 is reset when the application reset is triggered FALSE: STM2 is not reset when the application reset is triggered If the STM2 does not exist on the hardware, the parameter is disabled.		
Multiplicity	1..1	**Type**	EcucBooleanParamDef
Range	TRUE FALSE		
Default value	TRUE		
Post-build variant value	TRUE	**Post-build variant multiplicity**	-
Value configuration class	Post-Build	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	LOCAL
Dependency	-		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.86.10 McuSTM3ResetConf

Table 293 Specification for McuSTM3ResetConf

Name	`McuSTM3ResetConf`		
Description	Refers to the response of the STM3 reset request. If the STM3 does not exist on the hardware, the parameter is disabled.		
Multiplicity	1..1	**Type**	EcucEnumerationParamDef

(table continues...)

Table 293 (continued) Specification for McuSTM3ResetConf

Range	MCU_STM3_APPLICATION_RESET_SEL2: application reset request is triggered MCU_STM3_NO_RESET_SEL0: no reset request is triggered MCU_STM3_SYSTEM_RESET_SEL1: system reset request is triggered		
Default value	MCU_STM3_NO_RESET_SEL0		
Post-build variant value	TRUE	**Post-build variant multiplicity**	-
Value configuration class	Post-Build	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	LOCAL
Dependency	-		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.86.11 McuSTM3ResetOnApplResetEnable

Table 294 Specification for McuSTM3ResetOnApplResetEnable

Name	`McuSTM3ResetOnApplResetEnable`		
Description	Refers to the enabling of resetting the value of STM3 when an application reset is requested. TRUE: STM3 is reset when the application reset is triggered FALSE: STM3 is not reset when the application reset is triggered If the STM3 does not exist on the hardware, the parameter is disabled.		
Multiplicity	1..1	**Type**	EcucBooleanParamDef
Range	TRUE FALSE		
Default value	TRUE		
Post-build variant value	TRUE	**Post-build variant multiplicity**	-
Value configuration class	Post-Build	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	LOCAL
Dependency	-		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.86.12 McuSTM4ResetConf

Table 295 Specification for McuSTM4ResetConf

Name	McuSTM4ResetConf		
Description	Refers to the response of the STM4 reset request. If the STM4 does not exist on the hardware, the parameter is disabled.		
Multiplicity	1..1	**Type**	EcucEnumerationParamDef
Range	MCU_STM4_APPLICATION_RESET_SEL2: application reset request is triggered MCU_STM4_NO_RESET_SEL0: no reset request is triggered MCU_STM4_SYSTEM_RESET_SEL1: system reset request is triggered		
Default value	MCU_STM4_NO_RESET_SEL0		
Post-build variant value	TRUE	**Post-build variant multiplicity**	-
Value configuration class	Post-Build	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	LOCAL
Dependency	-		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.86.13 McuSTM4ResetOnApplResetEnable

Table 296 Specification for McuSTM4ResetOnApplResetEnable

Name	McuSTM4ResetOnApplResetEnable		
Description	Refers to the enabling of resetting the value of STM4 when an application reset is requested. TRUE: STM4 is reset when the application reset is triggered FALSE: STM4 is not reset when the application reset is triggered If the STM4 does not exist on the hardware, the parameter is disabled.		
Multiplicity	1..1	**Type**	EcucBooleanParamDef
Range	TRUE FALSE		
Default value	TRUE		
Post-build variant value	TRUE	**Post-build variant multiplicity**	-
Value configuration class	Post-Build	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	LOCAL

(table continues...)

Table 296	(continued) Specification for McuSTM4ResetOnApplResetEnable
Dependency	-
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.

1.3.1.86.14 McuSTM5ResetConf

Table 297	Specification for McuSTM5ResetConf		
Name	`McuSTM5ResetConf`		
Description	Refers to the response of the STM5 reset request. If the STM5 does not exist on the hardware, the parameter is disabled.		
Multiplicity	1..1	**Type**	EcucEnumerationParamDef
Range	MCU_STM5_APPLICATION_RESET_SEL2: application reset request is triggered MCU_STM5_NO_RESET_SEL0: no reset request is triggered MCU_STM5_SYSTEM_RESET_SEL1: system reset request is triggered		
Default value	MCU_STM5_NO_RESET_SEL0		
Post-build variant value	TRUE	**Post-build variant multiplicity**	-
Value configuration class	Post-Build	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	LOCAL
Dependency	-		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.86.15 McuSTM5ResetOnApplResetEnable

Table 298	Specification for McuSTM5ResetOnApplResetEnable		
Name	`McuSTM5ResetOnApplResetEnable`		
Description	Refers to enabling of resetting the value of STM5 when an application reset is requested. TRUE: STM5 is reset when the application reset is triggered FALSE: STM5 is not reset when the application reset is triggered If the STM5 does not exist on the hardware, the parameter is disabled.		
Multiplicity	1..1	**Type**	EcucBooleanParamDef
Range	TRUE FALSE		
Default value	TRUE		

(table continues...)

Table 298 (continued) Specification for McuSTM5ResetOnApplResetEnable

Post-build variant value	TRUE	**Post-build variant multiplicity**	-
Value configuration class	Post-Build	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	LOCAL
Dependency	-		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.86.16 McuSWResetConf

Table 299 Specification for McuSWResetConf

Name	`McuSWResetConf`		
Description	Refers to the response of the software reset request.		
Multiplicity	1..1	**Type**	EcucEnumerationParamDef
Range	MCU_SW_APPLICATION_RESET_SEL2: application reset request is triggered MCU_SW_NO_RESET_SEL0: no reset request is triggered MCU_SW_SYSTEM_RESET_SEL1: system reset request is triggered		
Default value	MCU_SW_NO_RESET_SEL0		
Post-build variant value	TRUE	**Post-build variant multiplicity**	-
Value configuration class	Post-Build	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	LOCAL
Dependency	-		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.87 Container: McuTrapSettingConf

This container defines the configuration parameters for the trap settings.
Post-Build Variant Multiplicity: -
Multiplicity Configuration Class: -

1.3.1.87.1 McuCPU0ESR0TrapEnable

Table 300 Specification for McuCPU0ESR0TrapEnable

Name	`McuCPU0ESR0TrapEnable`

(table continues...)

Table 300 (continued) Specification for McuCPU0ESR0TrapEnable

Description	Enables the trap request for CPU0 from the ESR0 source. TRUE: MCU CPU0 trap can be generated from the ESR0 source FALSE: MCU CPU0 trap cannot be generated from the ESR0 source		
Multiplicity	1..1	**Type**	EcucBooleanParamDef
Range	TRUE FALSE		
Default value	FALSE		
Post-build variant value	TRUE	**Post-build variant multiplicity**	-
Value configuration class	Post-Build	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	LOCAL
Dependency	-		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.87.2 McuCPU0ESR1TrapEnable

Table 301 Specification for McuCPU0ESR1TrapEnable

Name	`McuCPU0ESR1TrapEnable`		
Description	Enables the trap request for CPU0 from the ESR1 source. TRUE: MCU CPU0 trap can be generated from the ESR1 source FALSE: MCU CPU0 trap cannot be generated from the ESR1 source		
Multiplicity	1..1	**Type**	EcucBooleanParamDef
Range	TRUE FALSE		
Default value	FALSE		
Post-build variant value	TRUE	**Post-build variant multiplicity**	-
Value configuration class	Post-Build	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	LOCAL
Dependency	-		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.87.3 McuCPU0SMUTrapEnable

Table 302 Specification for McuCPU0SMUTrapEnable

Name	`McuCPU0SMUTrapEnable`		
Description	Enables the trap request for CPU0 from the SMU source. TRUE: MCU CPU0 trap can be generated from the SMU source FALSE: MCU CPU0 trap cannot be generated from the SMU source		
Multiplicity	1..1	**Type**	EcucBooleanParamDef
Range	TRUE FALSE		
Default value	FALSE		
Post-build variant value	TRUE	**Post-build variant multiplicity**	-
Value configuration class	Post-Build	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	LOCAL
Dependency	-		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.87.4 McuCPU0Trap2Enable

Table 303 Specification for McuCPU0Trap2Enable

Name	`McuCPU0Trap2Enable`		
Description	Enables the trap request for CPU0 from the TRAP2 source. TRUE: MCU CPU0 trap can be generated from the TRAP2 source FALSE: MCU CPU0 trap cannot be generated from the TRAP2 source		
Multiplicity	1..1	**Type**	EcucBooleanParamDef
Range	TRUE FALSE		
Default value	FALSE		
Post-build variant value	TRUE	**Post-build variant multiplicity**	-
Value configuration class	Post-Build	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	LOCAL
Dependency	-		

(table continues...)

Table 303 (continued) Specification for McuCPU0Trap2Enable

Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.

1.3.1.87.5 McuCPU1ESR0TrapEnable

Table 304 Specification for McuCPU1ESR0TrapEnable

Name	`McuCPU1ESR0TrapEnable`		
Description	Enables the trap request for CPU1 from the ESR0 source. TRUE: MCU CPU1 trap can be generated from the ESR0 source FALSE: MCU CPU1 trap cannot be generated from the ESR0 source If CPU1 is not available on the hardware, this parameter is disabled.		
Multiplicity	1..1	**Type**	EcucBooleanParamDef
Range	TRUE FALSE		
Default value	FALSE		
Post-build variant value	TRUE	**Post-build variant multiplicity**	-
Value configuration class	Post-Build	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	LOCAL
Dependency	-		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.87.6 McuCPU1ESR1TrapEnable

Table 305 Specification for McuCPU1ESR1TrapEnable

Name	`McuCPU1ESR1TrapEnable`		
Description	Enables the trap request for CPU1 from the ESR1 source. TRUE: MCU CPU1 trap can be generated from the ESR1 source FALSE: MCU CPU1 trap cannot be generated from the ESR1 source If CPU1 is not available on the hardware, this parameter is disabled.		
Multiplicity	1..1	**Type**	EcucBooleanParamDef
Range	TRUE FALSE		
Default value	FALSE		

(table continues...)

Table 305 (continued) Specification for McuCPU1ESR1TrapEnable

Post-build variant value	TRUE	**Post-build variant multiplicity**	-
Value configuration class	Post-Build	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	LOCAL
Dependency	-		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.87.7 McuCPU1SMUTrapEnable

Table 306 Specification for McuCPU1SMUTrapEnable

Name	`McuCPU1SMUTrapEnable`		
Description	Enables the trap request for CPU1 from the SMU source. TRUE: MCU CPU1 trap can be generated from the SMU source FALSE: MCU CPU1 trap cannot be generated from the SMU source If CPU1 is not available on the hardware, this parameter is disabled.		
Multiplicity	1..1	**Type**	EcucBooleanParamDef
Range	TRUE FALSE		
Default value	FALSE		
Post-build variant value	TRUE	**Post-build variant multiplicity**	-
Value configuration class	Post-Build	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	LOCAL
Dependency	-		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.87.8 McuCPU1Trap2Enable

Table 307 Specification for McuCPU1Trap2Enable

Name	`McuCPU1Trap2Enable`

(table continues...)

Table 307 (continued) Specification for McuCPU1Trap2Enable

Description	Enables the trap request for CPU1 from the TRAP2 source. TRUE: MCU CPU1 trap can be generated from the TRAP2 source FALSE: MCU CPU1 trap cannot be generated from the TRAP2 source If CPU1 is not available on the hardware, this parameter is disabled.		
Multiplicity	1..1	**Type**	EcucBooleanParamDef
Range	TRUE FALSE		
Default value	FALSE		
Post-build variant value	TRUE	**Post-build variant multiplicity**	-
Value configuration class	Post-Build	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	LOCAL
Dependency	-		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.87.9 McuCPU2ESR0TrapEnable

Table 308 Specification for McuCPU2ESR0TrapEnable

Name	`McuCPU2ESR0TrapEnable`		
Description	Enables the trap request for CPU2 from the ESR0 source. TRUE: MCU CPU2 trap can be generated from the ESR0 source FALSE: MCU CPU2 trap cannot be generated from the ESR0 source If CPU2 is not available on the hardware, this parameter is disabled.		
Multiplicity	1..1	**Type**	EcucBooleanParamDef
Range	TRUE FALSE		
Default value	FALSE		
Post-build variant value	TRUE	**Post-build variant multiplicity**	-
Value configuration class	Post-Build	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	LOCAL
Dependency	-		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.87.10 McuCPU2ESR1TrapEnable

Table 309 Specification for McuCPU2ESR1TrapEnable

Name	`McuCPU2ESR1TrapEnable`		
Description	Enables the trap request for CPU2 from the ESR1 source. TRUE: MCU CPU2 trap can be generated from the ESR1 source FALSE: MCU CPU2 trap cannot be generated from the ESR1 source If CPU2 is not available on the hardware, this parameter is disabled.		
Multiplicity	1..1	**Type**	EcucBooleanParamDef
Range	TRUE FALSE		
Default value	FALSE		
Post-build variant value	TRUE	**Post-build variant multiplicity**	-
Value configuration class	Post-Build	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	LOCAL
Dependency	-		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.87.11 McuCPU2SMUTrapEnable

Table 310 Specification for McuCPU2SMUTrapEnable

Name	`McuCPU2SMUTrapEnable`		
Description	Enables the trap request for CPU2 from the SMU source. TRUE: MCU CPU2 trap can be generated from the SMU source FALSE: MCU CPU2 trap cannot be generated from the SMU source If CPU2 is not available on the hardware, this parameter is disabled.		
Multiplicity	1..1	**Type**	EcucBooleanParamDef
Range	TRUE FALSE		
Default value	FALSE		
Post-build variant value	TRUE	**Post-build variant multiplicity**	-
Value configuration class	Post-Build	**Multiplicity configuration class**	-

(table continues...)

Table 310 (continued) Specification for McuCPU2SMUTrapEnable

Origin	IFX	**Scope**	LOCAL
Dependency	-		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.87.12 McuCPU2Trap2Enable

Table 311 Specification for McuCPU2Trap2Enable

Name	`McuCPU2Trap2Enable`		
Description	Enables the trap request for CPU2 from the TRAP2 source. TRUE: MCU CPU2 trap can be generated from the TRAP2 source FALSE: MCU CPU2 trap cannot be generated from the TRAP2 source If CPU2 is not available on the hardware, this parameter is disabled.		
Multiplicity	1..1	**Type**	EcucBooleanParamDef
Range	TRUE FALSE		
Default value	FALSE		
Post-build variant value	TRUE	**Post-build variant multiplicity**	-
Value configuration class	Post-Build	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	LOCAL
Dependency	-		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.87.13 McuCPU3ESR0TrapEnable

Table 312 Specification for McuCPU3ESR0TrapEnable

Name	`McuCPU3ESR0TrapEnable`		
Description	Enables the trap request for CPU3 from the ESR0 source. TRUE: MCU CPU3 trap can be generated from the ESR0 source FALSE: MCU CPU3 trap cannot be generated from the ESR0 source If CPU3 is not available on the hardware, this parameter is disabled.		
Multiplicity	1..1	**Type**	EcucBooleanParamDef
Range	TRUE FALSE		

(table continues...)

Table 312 (continued) Specification for McuCPU3ESR0TrapEnable

Default value	FALSE		
Post-build variant value	TRUE	**Post-build variant multiplicity**	-
Value configuration class	Post-Build	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	LOCAL
Dependency	-		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.87.14 McuCPU3ESR1TrapEnable

Table 313 Specification for McuCPU3ESR1TrapEnable

Name	`McuCPU3ESR1TrapEnable`		
Description	Enables the trap request for CPU3 from the ESR1 source. TRUE: MCU CPU3 trap can be generated from the ESR1 source FALSE: MCU CPU3 trap cannot be generated from the ESR1 source If CPU3 is not available on the hardware, this parameter is disabled.		
Multiplicity	1..1	**Type**	EcucBooleanParamDef
Range	TRUE FALSE		
Default value	FALSE		
Post-build variant value	TRUE	**Post-build variant multiplicity**	-
Value configuration class	Post-Build	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	LOCAL
Dependency	-		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.87.15 McuCPU3SMUTrapEnable

Table 314 Specification for McuCPU3SMUTrapEnable

Name	`McuCPU3SMUTrapEnable`

(table continues...)

Table 314 (continued) Specification for McuCPU3SMUTrapEnable

Description	Enables the trap request for CPU3 from the SMU source. TRUE: MCU CPU3 trap can be generated from the SMU source FALSE: MCU CPU3 trap cannot be generated from the SMU source If CPU3 is not available on the hardware, this parameter is disabled.		
Multiplicity	1..1	**Type**	EcucBooleanParamDef
Range	TRUE FALSE		
Default value	FALSE		
Post-build variant value	TRUE	**Post-build variant multiplicity**	-
Value configuration class	Post-Build	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	LOCAL
Dependency	-		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.87.16 McuCPU3Trap2Enable

Table 315 Specification for McuCPU3Trap2Enable

Name	`McuCPU3Trap2Enable`		
Description	Enables the trap request for CPU3 from the TRAP2 source TRUE: MCU CPU3 trap can be generated from the TRAP2 source FALSE: MCU CPU3 trap cannot be generated from the TRAP2 source If CPU3 is not available on the hardware, this parameter is disabled.		
Multiplicity	1..1	**Type**	EcucBooleanParamDef
Range	TRUE FALSE		
Default value	FALSE		
Post-build variant value	TRUE	**Post-build variant multiplicity**	-
Value configuration class	Post-Build	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	LOCAL
Dependency	-		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.87.17 McuCPU4ESR0TrapEnable

Table 316 Specification for McuCPU4ESR0TrapEnable

Name	McuCPU4ESR0TrapEnable		
Description	Enables the trap request for CPU4 from the ESR0 source. TRUE: MCU CPU4 trap can be generated from the ESR0 source FALSE: MCU CPU4 trap cannot be generated from the ESR0 source If CPU4 is not available on the hardware, this parameter is disabled.		
Multiplicity	1..1	**Type**	EcucBooleanParamDef
Range	TRUE FALSE		
Default value	FALSE		
Post-build variant value	TRUE	**Post-build variant multiplicity**	-
Value configuration class	Post-Build	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	LOCAL
Dependency	-		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.87.18 McuCPU4ESR1TrapEnable

Table 317 Specification for McuCPU4ESR1TrapEnable

Name	McuCPU4ESR1TrapEnable		
Description	Enables the trap request for CPU4 from the ESR1 source. TRUE: MCU CPU4 trap can be generated from the ESR1 source FALSE: MCU CPU4 trap cannot be generated from the ESR1 source If CPU4 is not available on the hardware, this parameter is disabled.		
Multiplicity	1..1	**Type**	EcucBooleanParamDef
Range	TRUE FALSE		
Default value	FALSE		
Post-build variant value	TRUE	**Post-build variant multiplicity**	-
Value configuration class	Post-Build	**Multiplicity configuration class**	-

(table continues...)

Table 317 (continued) Specification for McuCPU4ESR1TrapEnable

Origin	IFX	**Scope**	LOCAL
Dependency	-		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.87.19 McuCPU4SMUTrapEnable

Table 318 Specification for McuCPU4SMUTrapEnable

Name	`McuCPU4SMUTrapEnable`		
Description	Enables the trap request for CPU4 from the SMU source. TRUE: MCU CPU4 trap can be generated from the SMU source FALSE: MCU CPU4 trap cannot be generated from the SMU source If CPU4 is not available on the hardware, this parameter is disabled.		
Multiplicity	1..1	**Type**	EcucBooleanParamDef
Range	TRUE FALSE		
Default value	FALSE		
Post-build variant value	TRUE	**Post-build variant multiplicity**	-
Value configuration class	Post-Build	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	LOCAL
Dependency	-		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.87.20 McuCPU4Trap2Enable

Table 319 Specification for McuCPU4Trap2Enable

Name	`McuCPU4Trap2Enable`		
Description	Enables the trap request for CPU4 from the TRAP2 source. TRUE: MCU CPU4 trap can be generated from the TRAP2 source FALSE: MCU CPU4 trap cannot be generated from the TRAP2 source If CPU4 is not available on the hardware, this parameter is disabled.		
Multiplicity	1..1	**Type**	EcucBooleanParamDef
Range	TRUE FALSE		

(table continues...)

Table 319 (continued) Specification for McuCPU4Trap2Enable

Default value	FALSE		
Post-build variant value	TRUE	**Post-build variant multiplicity**	-
Value configuration class	Post-Build	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	LOCAL
Dependency	-		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.87.21 McuCPU5ESR0TrapEnable

Table 320 Specification for McuCPU5ESR0TrapEnable

Name	`McuCPU5ESR0TrapEnable`		
Description	Enables the trap request for CPU5 from the ESR0 source. TRUE: MCU CPU5 trap can be generated from the ESR0 source FALSE: MCU CPU5 trap cannot be generated from the ESR0 source If CPU5 is not available on the hardware, this parameter is disabled.		
Multiplicity	1..1	**Type**	EcucBooleanParamDef
Range	TRUE FALSE		
Default value	FALSE		
Post-build variant value	TRUE	**Post-build variant multiplicity**	-
Value configuration class	Post-Build	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	LOCAL
Dependency	-		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.87.22 McuCPU5ESR1TrapEnable

Table 321 Specification for McuCPU5ESR1TrapEnable

Name	`McuCPU5ESR1TrapEnable`

(table continues...)

Table 321 (continued) Specification for McuCPU5ESR1TrapEnable

Description	Enables the trap request for CPU5 from the ESR1 source. TRUE: MCU CPU5 trap can be generated from the ESR1 source FALSE: MCU CPU5 trap cannot be generated from the ESR1 source If CPU5 is not available on the hardware, this parameter is disabled.		
Multiplicity	1..1	**Type**	EcucBooleanParamDef
Range	TRUE FALSE		
Default value	FALSE		
Post-build variant value	TRUE	**Post-build variant multiplicity**	-
Value configuration class	Post-Build	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	LOCAL
Dependency	-		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.87.23 McuCPU5SMUTrapEnable

Table 322 Specification for McuCPU5SMUTrapEnable

Name	`McuCPU5SMUTrapEnable`		
Description	Enables the trap request for CPU5 from the SMU source. TRUE: MCU CPU5 trap can be generated from the SMU source FALSE: MCU CPU5 trap cannot be generated from the SMU source If CPU5 is not available on the hardware, this parameter is disabled.		
Multiplicity	1..1	**Type**	EcucBooleanParamDef
Range	TRUE FALSE		
Default value	FALSE		
Post-build variant value	TRUE	**Post-build variant multiplicity**	-
Value configuration class	Post-Build	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	LOCAL
Dependency	-		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.1.87.24 McuCPU5Trap2Enable

Table 323 Specification for McuCPU5Trap2Enable

Name	`McuCPU5Trap2Enable`		
Description	Enables the trap request for CPU5 from the TRAP2 source. TRUE: MCU CPU5 trap can be generated from the TRAP2 source FALSE: MCU CPU5 trap cannot be generated from the TRAP2 source If CPU5 is not available on the hardware, this parameter is disabled.		
Multiplicity	1..1	**Type**	EcucBooleanParamDef
Range	TRUE FALSE		
Default value	FALSE		
Post-build variant value	TRUE	**Post-build variant multiplicity**	-
Value configuration class	Post-Build	**Multiplicity configuration class**	-
Origin	IFX	**Scope**	LOCAL
Dependency	-		
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.		

1.3.2 Functions - Type definitions

This section lists all the data type of the MCU driver.

1.3.2.1 Mcu_17_Ccu6_TimerChIntType

Table 324 Specification for Mcu_17_Ccu6_TimerChIntType

Syntax	`Mcu_17_Ccu6_TimerChIntType`	
Type	Structure	
File	`Mcu_17_TimerIp.h`	
Range	Mcu_17_Ccu6_TimerChIdentifierType TimerId	CCU6 Timer Id
	uint32 IEnBitPos	Bit position of interrupt to be enabled
	uint32 IEnLen	Length of interrupt to be enabled
	uint32 RegVal	Value to be written in register
Description	Data type for configuring interrupts in CCU6.	
Source	IFX	
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.	

1.3.2.2 Mcu_17_Eru_SrcIdentifierType

Table 325 Specification for Mcu_17_Eru_SrcIdentifierType

Syntax	`Mcu_17_Eru_SrcIdentifierType`	
Type	uint8	
File	`Mcu_17_TimerIp.h`	
Range	0-255	Range of uint8
Description	Data type for user of ERU.	
Source	IFX	
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.	

1.3.2.3 Mcu_17_Gpt12_ClkPrescalarType

Table 326 Specification for Mcu_17_Gpt12_ClkPrescalarType

Syntax	`Mcu_17_Gpt12_ClkPrescalarType`	
Type	uint8	
File	`Mcu_17_TimerIp.h`	
Range	0 - MCU_GPT12_GPT1_CLOCK_DIV8	GPT1 block clock divider 8
	1 - MCU_GPT12_GPT1_CLOCK_DIV4	GPT1 block clock divider 4
	2 - MCU_GPT12_GPT1_CLOCK_DIV32	GPT1 block clock divider 32
	3 - MCU_GPT12_GPT1_CLOCK_DIV16	GPT1 block clock divider 16
	0 - MCU_GPT12_GPT2_CLOCK_DIV4	GPT2 block clock divider 4
	1 - MCU_GPT12_GPT2_CLOCK_DIV2	GPT2 block clock divider 2
	2 - MCU_GPT12_GPT2_CLOCK_DIV16	GPT2 block clock divider 16
	3 - MCU_GPT12_GPT2_CLOCK_DIV8	GPT2 block clock divider 8
Description	This type indicates clock divider value for fGPT for a particular block.	
Source	IFX	
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.	

1.3.2.4 Mcu_17_Gpt12_TimerBlockType

Table 327 Specification for Mcu_17_Gpt12_TimerBlockType

Syntax	`Mcu_17_Gpt12_TimerBlockType`	
Type	uint8	
File	`Mcu_17_TimerIp.h`	
Range	MCU_GPT12_GPT1_BLOCK	GPT1 block
	MCU_GPT12_GPT2_BLOCK	GPT2 block
Description	This type indicates whether the GPT timer block is - GPT1 or GPT2.	

(table continues...)

Table 327 (continued) Specification for Mcu_17_Gpt12_TimerBlockType

Source	IFX
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.

1.3.2.5 Mcu_17_Gtm_AtomCh

Table 328 Specification for Mcu_17_Gtm_AtomCh

Syntax	`Mcu_17_Gtm_AtomCh`	
Type	Structure	
File	`Mcu_17_TimerIp.h`	
Range	Ifx_GTM_ATOM_CH CH	ATOM channels
	uint8 Reserved1[20]	Reserved bits
Description	Structure of ATOM channels.	
Source	IFX	
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.	

1.3.2.6 Mcu_17_Gtm_AtomChArray

Table 329 Specification for Mcu_17_Gtm_AtomChArray

Syntax	`Mcu_17_Gtm_AtomChArray`	
Type	Structure	
File	`Mcu_17_TimerIp.h`	
Range	Mcu_17_Gtm_AtomCh ATOM_CHANNEL[8]	ATOM channel array
Description	Array of size of number of ATOM channels.	
Source	IFX	
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.	

1.3.2.7 Mcu_17_Gtm_MappedPortTimerOutType

Table 330 Specification for Mcu_17_Gtm_MappedPortTimerOutType

Syntax	`Mcu_17_Gtm_MappedPortTimerOutType`	
Type	uint8	
File	`Mcu_17_TimerIp.h`	
Range	0-MCU_OUT_TIMER_MAPPED_COL_A	Timer output mapped to column A
	1-MCU_OUT_TIMER_MAPPED_COL_B	Timer output mapped to column B
	2-MCU_OUT_TIMER_MAPPED_COL_C	Timer output mapped to column C
	3-MCU_OUT_TIMER_MAPPED_COL_D	Timer output mapped to column D

(table continues...)

Table 330 (continued) Specification for Mcu_17_Gtm_MappedPortTimerOutType

	4-MCU_OUT_TIMER_MAPPED_COL_E	Timer output mapped to column E
	5-MCU_OUT_TIMER_MAPPED_COL_F	Timer output mapped to column F
	6-MCU_OUT_TIMER_MAPPED_COL_G	Timer output mapped to column G
	7-MCU_OUT_TIMER_MAPPED_COL_H	Timer output mapped to column H
	8-MCU_OUT_TIMER_MAPPED_COL_I	Timer output mapped to column I
	9-MCU_OUT_TIMER_MAPPED_COL_J	Timer output mapped to column J
	10-MCU_OUT_TIMER_MAPPED_COL_K	Timer output mapped to column K
	11-MCU_OUT_TIMER_MAPPED_COL_L	Timer output mapped to column L
Description	Mcu_17_Gtm_MappedPortTimerOutType defines the column series to connect the GTM timers TOM/ATOM to port pins.	
Source	IFX	
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.	

1.3.2.8 Mcu_17_Gtm_TimCh

Table 331 Specification for Mcu_17_Gtm_TimCh

Syntax	`Mcu_17_Gtm_TimCh`	
Type	Structure	
File	`Mcu_17_TimerIp.h`	
Range	Ifx_GTM_TIM_CH CH	TIM channel
	uint8 Reserved1[64]	Reserved bits
Description	Structure of TIM channels.	
Source	IFX	
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.	

1.3.2.9 Mcu_17_Gtm_TimChArray

Table 332 Specification for Mcu_17_Gtm_TimChArray

Syntax	`Mcu_17_Gtm_TimChArray`	
Type	Structure	
File	`Mcu_17_TimerIp.h`	
Range	Mcu_17_Gtm_TimCh TIM_CHANNEL[8]	TIM channel array
Description	Array of size of number of TIM channels.	
Source	IFX	
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.	

1.3.2.10 Mcu_17_Gtm_TimerEnableType

Table 333 Specification for Mcu_17_Gtm_TimerEnableType

Syntax	`Mcu_17_Gtm_TimerEnableType`	
Type	uint8	
File	`Mcu_17_TimerIp.h`	
Range	MCU_GTM_TIMER_DISABLE	GTM Timer is disabled
	MCU_GTM_TIMER_ENABLE	GTM Timer is enabled
Description	This type identifies if the GTM output timer is either enabled or disabled.	
Source	IFX	
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.	

1.3.2.11 Mcu_17_Gtm_TimerEnTriggerType

Table 334 Specification for Mcu_17_Gtm_TimerEnTriggerType

Syntax	`Mcu_17_Gtm_TimerEnTriggerType`	
Type	Enumeration	
File	`Mcu_17_TimerIp.h`	
Range	0 - MCU_NOCHANGE_ON_TRIGGER	No change on trigger
	1 - MCU_DISABLE_ON_TRIGGER	Disable on trigger
	2 - MCU_ENABLE_ON_TRIGGER	Enable on trigger
Description	Data type for enabling channel on trigger.	
Source	IFX	
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.	

1.3.2.12 Mcu_17_Gtm_TimerOutputEnableType

Table 335 Specification for Mcu_17_Gtm_TimerOutputEnableType

Syntax	`Mcu_17_Gtm_TimerOutputEnableType`	
Type	uint8	
File	`Mcu_17_TimerIp.h`	
Range	MCU_GTM_TIMER_OUT_DISABLE	Disable timer output
	MCU_GTM_TIMER_OUT_ENABLE	Enable timer output
Description	This type indicates if the timer output is connected or not to the rest of the controller.	
Source	IFX	
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.	

1.3.2.13 Mcu_17_Gtm_TimerOutputEnTriggerType

Table 336 Specification for Mcu_17_Gtm_TimerOutputEnTriggerType

Syntax	`Mcu_17_Gtm_TimerOutputEnTriggerType`	
Type	Enumeration	
File	`Mcu_17_TimerIp.h`	
Range	0 - MCU_NOCHANGE_OUT_ON_TRIGGER	No change in output on trigger
	1 - MCU_DISABLE_OUT_ON_TRIGGER	Disable output on trigger
	2 - MCU_ENABLE_OUT_ON_TRIGGER	Enable output on trigger
Description	Data type for enabling the timer output on a trigger.	
Source	IFX	
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.	

1.3.2.14 Mcu_17_Gtm_TimerUpdateEnableType

Table 337 Specification for Mcu_17_Gtm_TimerUpdateEnableType

Syntax	`Mcu_17_Gtm_TimerUpdateEnableType`	
Type	uint8	
File	`Mcu_17_TimerIp.h`	
Range	MCU_GTM_TIMER_UPDATE_DISABLE	GTM Timer update is disabled
	MCU_GTM_TIMER_UPDATE_ENABLE	GTM Timer update is enabled
Description	Mcu_17_Gtm_TimerUpdateEnableType specifies whether timer update is enabled or disabled.	
Source	IFX	
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.	

1.3.2.15 Mcu_17_Gtm_TomCh

Table 338 Specification for Mcu_17_Gtm_TomCh

Syntax	`Mcu_17_Gtm_TomCh`	
Type	Structure	
File	`Mcu_17_TimerIp.h`	
Range	Ifx_GTM_TOM_CH CH	TOM channels
	uint8 Reserved1[20]	Reserved bits
Description	Structure of TOM channels.	
Source	IFX	
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.	

1.3.2.16 Mcu_17_Gtm_TomChArray

Table 339 Specification for Mcu_17_Gtm_TomChArray

Syntax	`Mcu_17_Gtm_TomChArray`	
Type	Structure	
File	`Mcu_17_TimerIp.h`	
Range	Mcu_17_Gtm_TomCh TOM_CHANNEL[16]	Tom channel array
Description	Array of size of number of TOM channels.	
Source	IFX	
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.	

1.3.2.17 Mcu_17_Gtm_TomTgc

Table 340 Specification for Mcu_17_Gtm_TomTgc

Syntax	`Mcu_17_Gtm_TomTgc`	
Type	Structure	
File	`Mcu_17_TimerIp.h`	
Range	Ifx_GTM_TOM_TGC_GLB_CTRL TGC_GLB_CTRL	TOM global control
	Ifx_GTM_TOM_TGC_ACT_TB TGC_ACT_TB	TOM time base
	Ifx_GTM_TOM_TGC_FUPD_CTRL TGC_FUPD_CTRL	TOM force update control
	Ifx_GTM_TOM_TGC_INT_TRIG TGC_INT_TRIG	Internal trigger
	uint8 Reserved2[48]	Reserved bits
	Ifx_GTM_TOM_TGC_ENDIS_CTRL TGC_ENDIS_CTRL	Enable/disable control
	Ifx_GTM_TOM_TGC_ENDIS_STAT TGC_ENDIS_STAT	Enable/disable status
	Ifx_GTM_TOM_TGC_OUTEN_CTRL TGC_OUTEN_CTRL	TOM output enable control
	Ifx_GTM_TOM_TGC_OUTEN_STAT TGC_OUTEN_STAT	TOM output enable status
	uint8 Reserved3[432]	None
Description	Data type for TOM TGC.	
Source	IFX	
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.	

1.3.2.18 Mcu_17_Gtm_TomTgcArray

Table 341 Specification for Mcu_17_Gtm_TomTgcArray

Syntax	`Mcu_17_Gtm_TomTgcArray`	
Type	Structure	
File	`Mcu_17_TimerIp.h`	
Range	uint8 Reserved1[48]	Reserved bits
	Mcu_17_Gtm_TomTgc TOM_TGC	TOM global control register
Description	Array of type of TOM TGC.	
Source	IFX	
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.	

1.3.2.19 Mcu_17_Stm_ComIntEnableType

Table 342 Specification for Mcu_17_Stm_ComIntEnableType

Syntax	`Mcu_17_Stm_ComIntEnableType`	
Type	uint8	
File	`Mcu_17_TimerIp.h`	
Range	0-255	Range of uint8
Description	Data type for interrupt of STM compare match.	
Source	IFX	
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.	

1.3.2.20 Mcu_17_Stm_StmCmpIdentifierType

Table 343 Specification for Mcu_17_Stm_StmCmpIdentifierType

Syntax	`Mcu_17_Stm_StmCmpIdentifierType`	
Type	uint8	
File	`Mcu_17_TimerIp.h`	
Range	0-255	Range of Uint8
Description	Data type to identify STM comparator type.	
Source	IFX	
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.	

1.3.2.21 Mcu_17_Stm_StmIdentifierType

Table 344 Specification for Mcu_17_Stm_StmIdentifierType

Syntax	`Mcu_17_Stm_StmIdentifierType`

(table continues...)

Table 344 (continued) Specification for Mcu_17_Stm_StmIdentifierType

Type	uint32	
File	`Mcu_17_TimerIp.h`	
Range	0-4294967295	Range of uint32
Description	Data type for STM timers.	
Source	IFX	
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.	

1.3.2.22 Mcu_17_Stm_TimerConfigType

Table 345 Specification for Mcu_17_Stm_TimerConfigType

Syntax	`Mcu_17_Stm_TimerConfigType`	
Type	Structure	
File	`Mcu_17_TimerIp.h`	
Range	uint32 CompareRegVal	Compare register value
	unsigned_int StmTimerId	STM Timer
	unsigned_int CMPRegId	Compare register ID
	unsigned_int CmconRegVal	Compare match control register value
	unsigned_int reserved	Reserved
Description	Configuration structure for STM configuration.	
Source	IFX	
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.	

1.3.2.23 Mcu_17_Timer_CallbackFuncPtrType

Table 346 Specification for Mcu_17_Timer_CallbackFuncPtrType

Syntax	`Mcu_17_Timer_CallbackFuncPtrType`
Type	Pointer to a function of type void Function_Name (const uint32 Channel, const uint32 Flags)
File	`Mcu_17_TimerIp.h`
Description	Function pointer type for the call back functions, associated with TIM/TOM/ATOM. The input parameter for the callback function is the logical channel ID of the GTM timer channel.
Source	IFX
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.

1.3.2.24 Mcu_RamStateType

Table 347 Specification for Mcu_RamStateType

Syntax	`Mcu_RamStateType`	
Type	Enumeration	
File	`Mcu.h`	
Range	0 - MCU_RAMSTATE_INVALID	Ram contents got corrupted in last power down.
	1 - MCU_RAMSTATE_VALID	Ram contents are valid after last power down.
Description	Return type for Mcu_GetRamState. MCU_RAMSTATE_INVALID: RAM contents got corrupted MCU_RAMSTATE_VALID: RAM contents are valid	
Source	AUTOSAR	
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.	

1.3.2.25 Mcu_CpuIdType

Table 348 Specification for Mcu_CpuIdType

Syntax	`Mcu_CpuIdType`	
Type	Enumeration	
File	`Mcu.h`	
Range	0 - MCU_CPU0	CPU0 identifier
	1 - MCU_CPU1	CPU1 identifier
	2 - MCU_CPU2	CPU2 identifier
	3 - MCU_CPU3	CPU3 identifier
	4 - MCU_CPU4	CPU4 identifier
	5 - MCU_CPU5	CPU5 identifier
Description	Identification for CPU core id.	
Source	IFX	
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.	

1.3.2.26 Mcu_CpuModeType

Table 349 Specification for Mcu_CpuModeType

Syntax	`Mcu_CpuModeType`
Type	Enumeration
File	`Mcu.h`

(table continues...)

Table 349 (continued) Specification for Mcu_CpuModeType

Range	1 - MCU_CPU_NORMAL_MODE	CPU is in normal state.
	2 - MCU_CPU_IDLE_MODE_REQ	CPU is in idle mode requested state.
	3 - MCU_CPU_IDLE_MODE_ACK	CPU is in idle mode acknowledged state.
	4 - MCU_CPU_SLEEP_MODE_REQ	CPU is in sleep mode requested state
	6 - MCU_CPU_STBY_MODE_REQ	CPU is in standby mode requested state
	255 - MCU_CPU_UNDEFINED_MODE	CPU mode is undefined
Description	Type to specify the current CPU power mode.	
Source	IFX	
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.	

1.3.2.27 Mcu_TrapRequestType

Table 350 Specification for Mcu_TrapRequestType

Syntax	`Mcu_TrapRequestType`	
Type	Enumeration	
File	`Mcu.h`	
Range	0 - MCU_TRAP_ESR0	ESR0 trap request
	1 - MCU_TRAP_ESR1	ESR1 trap request
	2 - MCU_TRAP_TRAP2	TRAP bit 2 trap request
	3 - MCU_TRAP_SMU	SMU trap request
	4 - MCU_TRAP_INVALID	Invalid trap source request
Description	Type to specify the TRAP type.	
Source	IFX	
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.	

1.3.2.28 Mcu_ConfigType

Table 351 Specification for Mcu_ConfigType

Syntax	`Mcu_ConfigType`	
Type	Structure	
File	`Mcu.h`	
Range	-	The elements of the data structure are specific to the microcontroller.
Description	A pointer to such a structure is provided to the MCU initialization routines for configuration.	
Source	AUTOSAR	
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.	

1.3.2.29 Mcu_PllStatusType

Table 352 Specification for Mcu_PllStatusType

Syntax	`Mcu_PllStatusType`	
Type	Enumeration	
File	`Mcu.h`	
Range	0 - MCU_PLL_LOCKED	The status of both the PLLs is locked.
	1 - MCU_PLL_UNLOCKED	The status of system and/or peripheral PLL is unlocked.
	2 - MCU_PLL_STATUS_UNDEFINED	The status of PLLs is not known.
Description	This is a status value returned by the Mcu_GetPllStatus function of the MCU module. This type provides the status of PLL lock.	
Source	AUTOSAR	
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.	

1.3.2.30 Mcu_ClockType

Table 353 Specification for Mcu_ClockType

Syntax	`Mcu_ClockType`	
Type	uint32	
File	`Mcu.h`	
Range	0 - 255	The range is dependent on the number of different clock settings provided in the configuration structure.
Description	Identification for the clock setting, which is configured in the configuration structure.	
Source	AUTOSAR	
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.	

1.3.2.31 Mcu_ResetType

Table 354 Specification for Mcu_ResetType

Syntax	`Mcu_ResetType`	
Type	Enumeration	
File	`Mcu.h`	
Range	0 - MCU_ESR0_RESET	The previous reset type is ESR0 reset
	1 - MCU_ESR1_RESET	The previous reset type is ESR1 reset
	2 - MCU_SMU_RESET	The previous reset type is SMU reset
	3 - MCU_SW_RESET	The previous reset type is software reset
	4 - MCU_STM0_RESET	The previous reset type is STM 0 reset

(table continues...)

Table 354 (continued) Specification for Mcu_ResetType

	5 - MCU_STM1_RESET	The previous reset type is STM 1 reset
	6 - MCU_STM2_RESET	The previous reset type is STM 2 reset
	7 - MCU_STM3_RESET	The previous reset type is STM 3 reset
	8 - MCU_STM4_RESET	The previous reset type is STM 4 reset
	9 - MCU_STM5_RESET	The previous reset type is STM 5 reset
	10 - MCU_POWER_ON_RESET	The previous reset type is power on reset
	11 - MCU_CB0_RESET	The previous reset type is CB0 reset
	12 - MCU_CB1_RESET	The previous reset type is CB1 reset
	13 - MCU_CB3_RESET	The previous reset type is CB3 reset
	14 - MCU_EVRC_RESET	The previous reset type is EVRC reset
	15 - MCU_EVR33_RESET	The previous reset type is EVR 3.3V reset
	16 - MCU_SUPPLY_WDOG_RESET	The previous reset type is Supply Watchdog reset
	17 - MCU_STBYR_RESET	The previous reset type is Standby Mode reset
	18 - MCU_LBIST_RESET	The previous reset type is reset from LBIST completion
	254 - MCU_RESET_MULTIPLE	There were multiple resets reasons, on which power on reset is one
	255 - MCU_RESET_UNDEFINED	The previous reset type is undefined
Description	This type provides the reset reason types.	
Source	AUTOSAR	
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.	

1.3.2.32 Mcu_RawResetType

Table 355 Specification for Mcu_RawResetType

Syntax	`Mcu_RawResetType`	
Type	uint32	
File	`Mcu.h`	
Range	0 - 0xFFFFFFFF	
Description	This type specifies the reset reason in raw register format read from a reset status register. For the range, bitfields [31], [17], [15-11], [2] are always zero.	
Source	AUTOSAR	
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.	

1.3.2.33 Mcu_RamSectionType

Table 356 Specification for Mcu_RamSectionType

Syntax	`Mcu_RamSectionType`	
Type	uint32	
File	`Mcu.h`	
Range	0 - (Number of Ram sections - 1)	The range is dependent on the number of RAM sections provided in the configuration structure.
Description	Identification for RAM section, which is configured in the configuration structure.	
Source	AUTOSAR	
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.	

1.3.2.34 Mcu_ModeType

Table 357 Specification for Mcu_ModeType

Syntax	`Mcu_ModeType`	
Type	uint8	
File	`Mcu.h`	
Range	0 - 2	TC3xx supports 3 power modes: Idle, Sleep and Standby modes
Description	Identification for MCU mode, which is configured in the configuration structure.	
Source	AUTOSAR	
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.	

1.3.2.35 Mcu_17_Gtm_TimChConfigType

Table 358 Specification for Mcu_17_Gtm_TimChConfigType

Syntax	`Mcu_17_Gtm_TimChConfigType`	
Type	Structure	
File	`Mcu_17_TimerIp.h`	
Range	Mcu_17_Gtm_TimerChIdentifierType TimerId	Tim channel user identifier.
	uint32 TimChCtrlReg	Tim channel control registers value.
	uint32 TimChExtendedCtrlReg	Tim channel extended control register value
	uint32 TimChFltRisingEdge	Tim channel filter rising edge parameter.
	uint32 TimChFltFallingEdge	Tim channel filter falling edge parameter.

(table continues...)

Table 358 (continued) Specification for Mcu_17_Gtm_TimChConfigType

	uint32 TimChIntEnMode	Tim channel interrupt enable and interrupt mode values are encoded in this structure member Bit 0 specifies new value interrupt enable Bit 1 specifies ECNT overflow interrupt enable Bit 2 specifies CNT overflow interrupt enable Bit 3 specifies GPR overflow interrupt enable Bit 4 specifies timeout detection interrupt enable Bit 5 specifies glitch detection interrupt enable Bits [6,7] specifies interrupt mode configured for the channel and are encoded as: 00-Level Mode, 01-Pulse Mode, 10- Pulse Notify Mode, 11- Single Pulse Mode
Description	This structure holds the TIM channel specific parameters details required for the TIM channel initialization.	
Source	IFX	
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.	

1.3.2.36 Mcu_17_Gtm_TimerChIdentifierType

Table 359 Specification for Mcu_17_Gtm_TimerChIdentifierType

Syntax	`Mcu_17_Gtm_TimerChIdentifierType`	
Type	uint32	
File	`Mcu_17_TimerIp.h`	
Range	0 - 0xFFFFFFFF	Range of uint32
Description	Contains the information on the user of the channel. Bit[15:8] - Module number Bit[7:0] - Channel number	
Source	IFX	
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.	

1.3.2.37 Mcu_17_Gtm_TimerOutType

Table 360 Specification for Mcu_17_Gtm_TimerOutType

Syntax	`Mcu_17_Gtm_TimerOutType`	
Type	uint32	
File	`Mcu_17_TimerIp.h`	
Range	MCU_GTM_TIMER_TOM	Tom channel

(table continues...)

Table 360 (continued) Specification for Mcu_17_Gtm_TimerOutType

	MCU_GTM_TIMER_ATOM	Atom channel
Description	This type identifies if the GTM output timer is either TOM or ATOM type.	
Source	IFX	
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.	

1.3.2.38 Mcu_17_Gtm_TomAtomChConfigType

Table 361 Specification for Mcu_17_Gtm_TomAtomChConfigType

Syntax	`Mcu_17_Gtm_TomAtomChConfigType`	
Type	Structure	
File	`Mcu_17_TimerIp.h`	
Range	Mcu_17_Gtm_TimerOutType TimerType	TOM or ATOM channel ID
	Mcu_17_Gtm_TimerChIdentifierType TimerId	TOM/ATOM channel user identifier
	uint32 TimerChCtrlReg	TOM/ATOM channel control registers value
	uint32 TimerChCN0Reg	TOM/ATOM channel CN0 register value
	uint32 TimerChCM0Reg	TOM/ATOM channel CM0 register value
	uint32 TimerChCM1Reg	TOM/ATOM channel CM1 register value
	uint32 TimerChSR0Reg	TOM/ATOM channel SR0 register value
	uint32 TimerChSR1Reg	TOM/ATOM channel SR1 register value
	uint32 TimerChIntEnMode	TOM/ATOM channel interrupt enable and interrupt mode values are encoded in this structure member Bit 0 specifies CCU0 interrupt enable Bit 1 specifies CCU1 interrupt enable Bits [7, 6] specifies interrupt mode configured for the channel and are encoded as: 00-Level Mode, 01-Pulse Mode, 10- Pulse Notify Mode, 11- Single Pulse Mode
Description	This structure holds the TOM/ATOM channel-specific initialization parameters.	
Source	IFX	
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.	

1.3.2.39 Mcu_17_Gtm_TimerStatusType

Table 362 Specification for Mcu_17_Gtm_TimerStatusType

Syntax	`Mcu_17_Gtm_TimerStatusType`
Type	uint8

(table continues...)

Table 362 (continued) Specification for Mcu_17_Gtm_TimerStatusType

File	`Mcu_17_TimerIp.h`	
Range	MCU_GTM_TIMER_STOPPED	GTM timer channel is stopped
	MCU_GTM_TIMER_RUNNING	GTM timer channel is enabled/running
Description	This type informs the running state of the GTM timer channel.	
Source	IFX	
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.	

1.3.2.40 Mcu_17_Ccu6_ComparatorType

Table 363 Specification for Mcu_17_Ccu6_ComparatorType

Syntax	`Mcu_17_Ccu6_ComparatorType`	
Type	uint8	
File	`Mcu_17_TimerIp.h`	
Range	MCU_CCU6_COMPARATOR_CCU60	CCU60 Comparator
	MCU_CCU6_COMPARATOR_CCU61	CCU61 Comparator
	MCU_CCU6_COMPARATOR_CCU62	CCU62 Comparator
	MCU_CCU6_COMPARATOR_CCU63	CCU63 Comparator
Description	This type identifies the CCU6 comparator used for a kernel.	
Source	IFX	
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.	

1.3.2.41 Mcu_17_Ccu6_KernelIdentifierType

Table 364 Specification for Mcu_17_Ccu6_KernelIdentifierType

Syntax	`Mcu_17_Ccu6_KernelIdentifierType`	
Type	uint8	
File	`Mcu_17_TimerIp.h`	
Range	CCU6_KERNEL_0	CCU6 Kernel 0
	CCU6_KERNEL_1	CCU6 Kernel 1
Description	This type identifies the CCU6 kernel used.	
Source	IFX	
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.	

1.3.2.42 Mcu_17_Ccu6_TimerChIdentifierType

Table 365 Specification for Mcu_17_Ccu6_TimerChIdentifierType

Syntax	`Mcu_17_Ccu6_TimerChIdentifierType`	
Type	uint32	
File	`Mcu_17_TimerIp.h`	
Range	0 - 0xFFFFFF	
Description	This type provides the user information of the CCU6 timer channel. Bits[7:0] - Kernel used Bits[15:8] - T12/T13 used Bits[23:16] - Comparator used	
Source	IFX	
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.	

1.3.2.43 Mcu_17_Ccu6_TimerConfigType

Table 366 Specification for Mcu_17_Ccu6_TimerConfigType

Syntax	`Mcu_17_Ccu6_TimerConfigType`	
Type	Structure	
File	`Mcu_17_TimerIp.h`	
Range	Mcu_17_Ccu6_TimerChIdentifierType TimerId	CCU6 timer channel user identifier
	uint32 TimerCtrlReg0	CCU6 Timer channel control register 0 contents For T12 - [2-0] - Timer T12 Input Clock Select [3] - Timer T12 Prescaler Bit [7] - T12 Operating Mode For T13 - [10-8] - Timer T13 Input Clock Select [11] - Timer T13 Prescaler Bit
	uint32 ModCtrlReg	For T12 - [1-0] - Timer T12 modulation enable for comparator For T13 - [2] - Enable Compare Timer T13 Output
	uint32 PasStateLvlReg	For T12 - [1-0] - Compare Outputs Passive State Level of comparator For T13 - [2] - Passive State Level of Output COUT63
	uint32 TimerCntReg	CCU6 timer channel counter channel contents
	uint32 TimerPeriodReg	CCU6 timer channel period register contents
	uint32 Ccu6ShadowReg	CCU6 timer channel shadow register contents

(table continues...)

Table 366 (continued) Specification for Mcu_17_Ccu6_TimerConfigType

	uint8 TimerModeSelectReg	CCU6 timer mode select register contents for the input kernel
	uint8 PortInSelReg0	Port Input Select register contents for a kernel
	uint8 IntEnReg	CCU6 timer channel interrupt enable register contents For T12 timer Bits [2] - CCU6 Falling edge Bits [1] - CCU6 Rising edge Bits [0] - T12 Period match For T13 timer Bits [1] - T13 Compare match Bits [0] - T13 Period match
	uint8 IntNodePointerReg	Interrupt Node Pointer register contents. [3:2] - T12/T13 Interrupt node pointer contents [1:0] - CC6x Interrupt node pointer contents
Description	This structure holds the CCU6 timer channel specific initialization parameters.	
Source	IFX	
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.	

1.3.2.44 Mcu_17_Ccu6_TimerType

Table 367 Specification for Mcu_17_Ccu6_TimerType

Syntax	`Mcu_17_Ccu6_TimerType`	
Type	uint8	
File	`Mcu_17_TimerIp.h`	
Range	MCU_CCU6_TIMER_T12	CCU6 T12 timer
	MCU_CCU6_TIMER_T13	CCU6 T13 timer
Description	This type identifies if the CCU6 timer is T12 or T13.	
Source	IFX	
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.	

1.3.2.45 Mcu_17_Gpt12_TimerChIdentifierType

Table 368 Specification for Mcu_17_Gpt12_TimerChIdentifierType

Syntax	`Mcu_17_Gpt12_TimerChIdentifierType`	
Type	uint32	
File	`Mcu_17_TimerIp.h`	
Range	MCU_GPT12_TIMER2	T2 timer of GPT12
	MCU_GPT12_TIMER3	T3 timer of GPT12
	MCU_GPT12_TIMER4	T4 timer of GPT12

(table continues...)

Table 368 (continued) Specification for Mcu_17_Gpt12_TimerChIdentifierType

	MCU_GPT12_TIMER5	T5 timer of GPT12
	MCU_GPT12_TIMER6	T6 timer of GPT12
Description	This type identifies the GPT12 timer used.	
Source	IFX	
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.	

1.3.2.46 Mcu_17_Gpt12_TimerConfigType

Table 369 Specification for Mcu_17_Gpt12_TimerConfigType

Syntax	`Mcu_17_Gpt12_TimerConfigType`	
Type	Structure	
File	`Mcu_17_TimerIp.h`	
Range	Mcu_17_Gpt12_TimerChIdentifierType TimerId	GPT12 user identifier
	uint32 TimerCtrlReg	GPT Timer control register contents
	uint32 TimerCntReg	GPT timer counter register contents
	uint32 PortInSelReg	Port Input Select Register Contents for the input GPT timer Bits[3:2] - Input select for TxEUD Bits[1:0] - Input select for TxIN
Description	This structure holds the GPT12 timer channel-specific initialization parameters.	
Source	IFX	
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.	

1.3.3 Functions - APIs

This section lists all the APIs of the MCU driver.

1.3.3.1 Mcu_17_Gtm_ConnectTimerOutToPortPin

Table 370 Specification for `Mcu_17_Gtm_ConnectTimerOutToPortPin` API

Syntax	`void Mcu_17_Gtm_ConnectTimerOutToPortPin`
	`(`
	`  const uint16 Tout_IndexNumber,`
	`  const Mcu_17_Gtm_MappedPortTimerOutType TimerOutColumnSelect`
	`)`

Service ID	0xA0
Sync/Async	Synchronous
Safety Level	Refer to the release notes for the safety related info

(table continues...)

Table 370 (continued) Specification for `Mcu_17_Gtm_ConnectTimerOutToPortPin` API

Re-entrancy	Non Reentrant	
Parameters (in)	Tout_IndexNumber TimerOutColumnSelect	Timer output index number Represents mapped column for the table GTM output to Port Connection in the hardware manual
Parameters (out)	-	-
Parameters (in - out)	-	-
Return	void	-
Description	Mcu_17_Gtm_ConnectTimerOutToPortPin is used to connect an output GTM channel(TOM/ ATOM) to a port pin. The selected port pin is based on Tout_IndexNumber value and channel is based on TimerOutColumnSelect parameter.	
Source	IFX	
Error handling	-	
Configuration dependencies	-	
User hints	User shall be aware of configuring TOUTSELx register at runtime and ensure it does not conflict with configured TOUTSELx done by Mcu_Init as this may lead to a glitch on TOM/ ATOM channels.	
SFR accessed	GTM_TOUTSEL(rw) *Note : The list includes all the SFRs accessed in the context of the API. It lists the SFRs accessed by the driver and called interfaces from other drivers. During runtime, the SFRs accessed from this list may vary based on configuration and execution context.*	
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.	

1.3.3.2 Mcu_GetRamState

Table 371 Specification for `Mcu_GetRamState` API

Syntax	`Mcu_RamStateType Mcu_GetRamState ( void )`	
Service ID	0x0A	
Sync/Async	Synchronous	
Safety Level	Refer to the release notes for the safety related info	
Re-entrancy	Reentrant	
Parameters (in)	-	-

(table continues...)

Table 371 (continued) Specification for `Mcu_GetRamState` API

Parameters (out)	-	-
Parameters (in - out)	-	-
Return	Mcu_RamStateType	Enumeration depicting state of RAM after a power down cycle
Description	Mcu_GetRamState returns the RAM state. MCU_RAMSTATE_INVALID: RAM contents got corrupted MCU_RAMSTATE_VALID: RAM contents are valid	
Source	AUTOSAR	
Error handling	MCU_E_UNINIT	
Configuration dependencies	-	
User hints	None	
SFR accessed	CPU_CORE_ID(r), SCU_RSTCON2(r) *Note : The list includes all the SFRs accessed in the context of the API. It lists the SFRs accessed by the driver and called interfaces from other drivers. During runtime, the SFRs accessed from this list may vary based on configuration and execution context.*	
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.	

1.3.3.3 Mcu_Init

Table 372 Specification for `Mcu_Init` API

Syntax	`void Mcu_Init`
	`(`
	`  const Mcu_ConfigType * const ConfigPtr`
	`)`	

Service ID	0x00	
Sync/Async	Synchronous	
Safety Level	Refer to the release notes for the safety related info	
Re-entrancy	Non Reentrant	
Parameters (in)	ConfigPtr	Pointer to the MCU driver configuration set
Parameters (out)	-	-
Parameters (in - out)	-	-
Return	void	-

(table continues...)

Table 372 (continued) Specification for `Mcu_Init` API

Description	Mcu_Init initializes the MCU driver. Mcu_Init initializes the power modes, reset, trap and timer global configurations registers. If the interface Mcu_ClearColdResetStatus is unavailable, then Mcu_Init clears the reset status bit-fields. It also initializes the module clock for GTM, CCU6, GPT12 and Converter control block. Apart from module clock it also initializes cluster clocks, GTM triggers to ADC and DSADC and block pre-scalers for GPT12.
Source	AUTOSAR
Error handling	MCU_E_PARAM_CONFIG, MCU_E_INIT_FAILED, MCU_E_GTM_CLC_ENABLE_ERR, MCU_E_CCU6_CLC_ENABLE_ERR, MCU_E_GPT12_CLC_ENABLE_ERR, MCU_E_CORE_MISMATCH, MCU_E_CONVCTRL_CLC_ENABLE_ERR
Configuration dependencies	McuClearColdResetStatusApi
User hints	-
SFR accessed	CCU6_CLC(rw), CCU6_ISR(w), CONVERTER_CLC(rw), CPU_COMPAT(w), CPU_CORE_ID(r), CPU_SYSCON(w), CPU_TPS_EXTIM_CLASS_EN(w), CPU_TPS_EXTIM_ENTRY_LVAL(w), CPU_TPS_EXTIM_EXIT_LVAL(w), GPT12_CLC(rw), GPT12_T3CON(w), GPT12_T6CON(w), GTM_ADCTRIG_OUT0(w), GTM_ADCTRIG_OUT1(w), GTM_ATOM_AGC_ACT_TB(w), GTM_ATOM_AGC_FUPD_CTRL(w), GTM_ATOM_AGC_INT_TRIG(w), GTM_CCM_CFG(w), GTM_CCM_CMU_CLK_CFG(w), GTM_CCM_CMU_FXCLK_CFG(w), GTM_CCM_PROT(w), GTM_CLC(rw), GTM_CLS_CLK_CFG(rw), GTM_CMU_CLK_CTRL(rw), GTM_CMU_CLK_EN(w), GTM_CMU_CLK_z_CTRL(w), GTM_CMU_ECLK_DEN(w), GTM_CMU_ECLK_NUM(w), GTM_CMU_FXCLK_CTRL(w), GTM_CMU_GCLK_DEN(w), GTM_CMU_GCLK_NUM(w), GTM_CTRL(w), GTM_DSADC_OUTSEL0(w), GTM_DSADC_OUTSEL1(w), GTM_TBU_CH0_CTRL(w), GTM_TBU_CH1_CTRL(w), GTM_TBU_CH2_CTRL(w), GTM_TBU_CH3_CTRL(w), GTM_TBU_CHEN(w), GTM_TIMINSEL(w), GTM_TOM_TGC0_ACT_TB(w), GTM_TOM_TGC0_FUPD_CTRL(w), GTM_TOM_TGC0_INT_TRIG(w), GTM_TOM_TGC1_ACT_TB(w), GTM_TOM_TGC1_FUPD_CTRL(w), GTM_TOM_TGC1_INT_TRIG(w), GTM_TOUTSEL(rw), PMS_MONCTRL(rw), PMS_PMSWCR0(w), PMS_PMSWCR5(rw), PMS_UVMON(rw), SCU_ARSTDIS(w), SCU_CCUCON0(r), SCU_EICON0(rw), SCU_EIFILT(w), SCU_OSCCON(r), SCU_PMSWCR1(rw), SCU_PMTRCSR0(rw), SCU_RSTCON(w), SCU_RSTCON2(rw), SCU_RSTSTAT(r), SCU_SEICON0(rw), SCU_SYSPLLCON0(r), SCU_SYSPLLCON1(r), SCU_TRAPDIS0(w), SCU_TRAPDIS1(w), STM_TIM0(r) *Note : The list includes all the SFRs accessed in the context of the API. It lists the SFRs accessed by the driver and called interfaces from other drivers. During runtime, the SFRs accessed from this list may vary based on configuration and execution context.*
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.

1.3.3.4 Mcu_InitRamSection

Table 373 Specification for `Mcu_InitRamSection` API

Syntax	`Std_ReturnType Mcu_InitRamSection ( const Mcu_RamSectionType RamSection )`	
Service ID	0x01	
Sync/Async	Synchronous	
Safety Level	Refer to the release notes for the safety related info	
Re-entrancy	Reentrant for other RAM sections	
Parameters (in)	RamSection	Selects RAM memory section provided in the configuration set
Parameters (out)	-	-
Parameters (in - out)	-	-
Return	Std_ReturnType	E_OK – RAM successfully initialized E_NOT_OK – RAM initialization failed
Description	Mcu_InitRamSection initializes the specified RAM section.	
Source	AUTOSAR	
Error handling	MCU_E_PARAM_RAMSECTION , MCU_E_UNINIT	
Configuration dependencies	-	
User hints	Protection of the RAM initialization through MPU protection for the RAM address passed in configuration shall be responsibility of the user.	
SFR accessed	-	
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.	

1.3.3.5 Mcu_InitClock

Table 374 Specification for `Mcu_InitClock` API

Syntax	`Std_ReturnType Mcu_InitClock ( const Mcu_ClockType ClockSetting )`
Service ID	0x02
Sync/Async	Synchronous
Safety Level	Refer to the release notes for the safety related info
Re-entrancy	Non re-entrant

(table continues...)

Table 374 (continued) Specification for `Mcu_InitClock` API

Parameters (in)	ClockSetting	Clock setting ID
Parameters (out)	-	-
Parameters (in - out)	-	-
Return	Std_ReturnType	E_OK: Clock successfully initialized E_NOT_OK: Clock not initialized
Description	Mcu_InitClock initializes the system PLL, peripheral PLL and other MCU specific clock options (peripheral clock selection and dividers).	
Source	AUTOSAR	
Error handling	MCU_E_PARAM_CLOCK , MCU_E_UNINIT, MCU_E_OSC_FAILURE, MCU_E_PERIPHERAL_PLL_TIMEOUT_ERR, MCU_E_SYSTEM_PLL_TIMEOUT_ERR, MCU_E_CCUCON_UPDATE_ERR, MCU_E_CORE_MISMATCH, MCU_E_PHSCFG_UPDATE_ERR	
Configuration dependencies	McuInitClock	
User hints	For low power divider configuration scenario, user shall verify the validity of configured clock values as per inter-relationship between different clocks and configuration generation script will not perform data integrity checks for this configuration scenario.	
SFR accessed	CONVERTER_CCCTRL(rw), CONVERTER_PHSCFG(rw), CPU_COMPAT(w), CPU_CORE_ID(r), CPU_SYSCON(w), CPU_TPS_EXTIM_CLASS_EN(w), CPU_TPS_EXTIM_ENTRY_LVAL(w), CPU_TPS_EXTIM_EXIT_LVAL(w), SCU_CCUCON0(rw), SCU_CCUCON1(rw), SCU_CCUCON10(w), SCU_CCUCON11(w), SCU_CCUCON2(rw), SCU_CCUCON3(rw), SCU_CCUCON4(rw), SCU_CCUCON5(rw), SCU_CCUCON6(w), SCU_CCUCON7(w), SCU_CCUCON8(w), SCU_CCUCON9(w), SCU_EICON0(rw), SCU_EXTCON(w), SCU_OSCCON(rw), SCU_PERPLLCON0(rw), SCU_PERPLLCON1(rw), SCU_PERPLLSTAT(r), SCU_SEICON0(rw), SCU_SYSPLLCON0(rw), SCU_SYSPLLCON1(rw), SCU_SYSPLLCON2(w), SCU_SYSPLLSTAT(r), STM_TIM0(r) *Note : The list includes all the SFRs accessed in the context of the API. It lists the SFRs accessed by the driver and called interfaces from other drivers. During runtime, the SFRs accessed from this list may vary based on configuration and execution context.*	
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.	

1.3.3.6 Mcu_VextStdbyCtrl

Table 375 Specification for `Mcu_VextStdbyCtrl` API

Syntax	`void Mcu_VextStdbyCtrl`
	`(`
	`  const uint8 SetValue`
	`)`

Service ID	0x5B

(table continues...)

Table 375 (continued) Specification for `Mcu_VextStdbyCtrl` API

Sync/Async	Synchronous	
Safety Level	Refer to the release notes for the safety related info	
Re-entrancy	Non Reentrant	
Parameters (in)	SetValue	0x0 - To disable Standby entry on Vext supply Ramp down, 0x1 - To enable Standby entry on Vext supply ramp down
Parameters (out)	-	-
Parameters (in - out)	-	-
Return	void	-
Description	Mcu_VextStdbyCtrl is used to enable or disable the ability to enter standby mode on Vext supply ramp down.	
Source	IFX	
Error handling	MCU_E_UNINIT, MCU_E_PARAM_STDBY	
Configuration dependencies	McuVextStdbyCtrl	
User hints	-	
SFR accessed	CPU_COMPAT(w), CPU_SYSCON(w), CPU_TPS_EXTIM_CLASS_EN(w), CPU_TPS_EXTIM_ENTRY_LVAL(w), CPU_TPS_EXTIM_EXIT_LVAL(w), PMS_PMSWCR0(rw), SCU_CCUCON0(r), SCU_OSCCON(r), SCU_SEICON0(rw), SCU_SYSPLLCON0(r), SCU_SYSPLLCON1(r), STM_TIM0(r) *Note : The list includes all the SFRs accessed in the context of the API. It lists the SFRs accessed by the driver and called interfaces from other drivers. During runtime, the SFRs accessed from this list may vary based on configuration and execution context.*	
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.	

1.3.3.7 Mcu_DistributePllClock

Table 376 Specification for `Mcu_DistributePllClock` API

Syntax	`Std_ReturnType Mcu_DistributePllClock ( void )`	
Service ID	0x03	
Sync/Async	Synchronous	
Safety Level	Refer to the release notes for the safety related info	
Re-entrancy	Non Reentrant	
Parameters (in)	-	-

(table continues...)

Table 376 (continued) Specification for `Mcu_DistributePllClock` API

Parameters (out)	-	-
Parameters (in - out)	-	-
Return	Std_ReturnType	E_OK: Clock distribution successful. E_NOT_OK: Clock distribution unsuccessful.
Description	Mcu_DistributePllClock switches the clock source to PLL output.	
Source	AUTOSAR	
Error handling	MCU_E_UNINIT, MCU_E_PLL_NOT_LOCKED, MCU_E_SYSTEM_PLL_TIMEOUT_ERR, MCU_E_CCUCON_UPDATE_ERR, MCU_E_CORE_MISMATCH	
Configuration dependencies	McuNoPll	
User hints	Upper layer calls Distribute PLL Clock API, in case MCU module needs a separate request to activate the system PLL and peripheral PLL clock after the system PLL and peripheral PLL is locked. Status of the system and peripheral PLL lock as locked, is checked by the upper layer before calling this API.	
SFR accessed	CPU_COMPAT(w), CPU_CORE_ID(r), CPU_SYSCON(w), CPU_TPS_EXTIM_CLASS_EN(w), CPU_TPS_EXTIM_ENTRY_LVAL(w), CPU_TPS_EXTIM_EXIT_LVAL(w), SCU_CCUCON0(rw), SCU_OSCCON(r), SCU_PERPLLCON1(rw), SCU_PERPLLSTAT(r), SCU_SEICON0(rw), SCU_SYSPLLCON0(r), SCU_SYSPLLCON1(rw), SCU_SYSPLLSTAT(r), STM_TIM0(r) *Note : The list includes all the SFRs accessed in the context of the API. It lists the SFRs accessed by the driver and called interfaces from other drivers. During runtime, the SFRs accessed from this list may vary based on configuration and execution context.*	
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.	

1.3.3.8 Mcu_GetPllStatus

Table 377 Specification for `Mcu_GetPllStatus` API

Syntax	`Mcu_PllStatusType  Mcu_GetPllStatus`
	`(`
	`  void`
	`)`	

Service ID	0x04	
Sync/Async	Synchronous	
Safety Level	Refer to the release notes for the safety related info	
Re-entrancy	Reentrant	
Parameters (in)	-	-

(table continues...)

Table 377 (continued) Specification for `Mcu_GetPllStatus` API

Parameters (out)	-	-
Parameters (in - out)	-	-
Return	Mcu_PllStatusType	A 32-bit enumerator denoting status of PLL
Description	Mcu_GetPllStatus provides the lock status of system and peripheral PLL.	
Source	AUTOSAR	
Error handling	MCU_E_UNINIT	
Configuration dependencies	-	
User hints	-	
SFR accessed	SCU_PERPLLSTAT(r), SCU_SYSPLLSTAT(r) *Note : The list includes all the SFRs accessed in the context of the API. It lists the SFRs accessed by the driver and called interfaces from other drivers. During runtime, the SFRs accessed from this list may vary based on configuration and execution context.*	
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.	

1.3.3.9 Mcu_GetResetReason

Table 378 Specification for `Mcu_GetResetReason` API

Syntax	`Mcu_ResetType Mcu_GetResetReason ( void )`	
Service ID	0x05	
Sync/Async	Synchronous	
Safety Level	Refer to the release notes for the safety related info	
Re-entrancy	Reentrant	
Parameters (in)	-	-
Parameters (out)	-	-
Parameters (in - out)	-	-
Return	Mcu_ResetType	A 32-bit enumerator denoting the cause of reset
Description	Mcu_GetResetReason reads the reset type from the hardware.	
Source	AUTOSAR	
Error handling	MCU_E_UNINIT	

(table continues...)

Table 378 (continued) Specification for `Mcu_GetResetReason` API

Configuration dependencies	-
User hints	-
SFR accessed	-
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.

1.3.3.10 Mcu_GetResetRawValue

Table 379 Specification for `Mcu_GetResetRawValue` API

Syntax	`Mcu_RawResetType Mcu_GetResetRawValue ( void )`	
Service ID	0x06	
Sync/Async	Synchronous	
Safety Level	Refer to the release notes for the safety related info	
Re-entrancy	Reentrant	
Parameters (in)	-	-
Parameters (out)	-	-
Parameters (in - out)	-	-
Return	Mcu_RawResetType	32-bit unsigned integer denoting raw reset value
Description	Mcu_GetResetRawValue reads the reset type from the hardware register.	
Source	AUTOSAR	
Error handling	MCU_E_UNINIT	
Configuration dependencies	-	
User hints	-	
SFR accessed	-	
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.	

1.3.3.11 Mcu_PerformReset

Table 380 Specification for `Mcu_PerformReset` API

Syntax	`void Mcu_PerformReset ( void )`	
Service ID	0x07	
Sync/Async	Synchronous	
Safety Level	Refer to the release notes for the safety related info	
Re-entrancy	Non Reentrant	
Parameters (in)	-	-
Parameters (out)	-	-
Parameters (in - out)	-	-
Return	void	-
Description	Mcu_PerformReset performs a microcontroller reset(software reset).	
Source	AUTOSAR	
Error handling	MCU_E_UNINIT, MCU_E_SW_RESET_FAILED	
Configuration dependencies	McuPerformResetApi	
User hints	-	
SFR accessed	SCU_CCUCON0(r), SCU_EICON0(rw), SCU_OSCCON(r), SCU_SWRSTCON(rw), SCU_SYSPLLCON0(r), SCU_SYSPLLCON1(r), STM_TIM0(r) *Note : The list includes all the SFRs accessed in the context of the API. It lists the SFRs accessed by the driver and called interfaces from other drivers. During runtime, the SFRs accessed from this list may vary based on configuration and execution context.*	
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.	

1.3.3.12 Mcu_SetMode

Table 381 Specification for `Mcu_SetMode` API

Syntax	`void Mcu_SetMode ( const Mcu_ModeType McuMode )`
Service ID	0x08
Sync/Async	Synchronous

(table continues...)

Table 381 (continued) Specification for `Mcu_SetMode` API

Safety Level	Refer to the release notes for the safety related info	
Re-entrancy	Concurrency Safe for IDLE mode transition requests and non re-entrant for other transitions	
Parameters (in)	McuMode	Set different MCU power modes configured in the configuration set
Parameters (out)	-	-
Parameters (in - out)	-	-
Return	void	-
Description	Mcu_SetMode activates the MCU power modes. The 3 power modes supported are Idle, Sleep and StandBy. The API is re-entrant and concurrency safe for Idle mode, but for Sleep and Stand By mode, it is not concurrency safe and non - reentrant.	
Source	AUTOSAR	
Error handling	MCU_E_PARAM_MODE , MCU_E_UNINIT, MCU_E_UNAUTHORIZED_REQUESTER, MCU_E_PERIPHERAL_PLL_TIMEOUT_ERR, MCU_E_SYSTEM_PLL_TIMEOUT_ERR, MCU_E_PMSWCR_UPDATE_ERR	
Configuration dependencies	-	
User hints	The API Mcu_SetMode assumes that all interrupts are disabled prior to the call of API by the calling instance. For SLEEP or STANDBY modes, user shall start a timer with notification before calling Mcu_SetMode(), such that the timer expires and provides notification, if system has not entered SLEEP or STANDBY mode.	
SFR accessed	CPU_BIV(w), CPU_BTV(w), CPU_COMPAT(w), CPU_CORE_ID(r), CPU_DCON0(w), CPU_ISP(w), CPU_PCON0(w), CPU_PMA0(w), CPU_PMA1(w), CPU_SEGEN(w), CPU_SYSCON(w), CPU_TPS_EXTIM_CLASS_EN(w), CPU_TPS_EXTIM_ENTRY_LVAL(w), CPU_TPS_EXTIM_EXIT_LVAL(w), PMS_PMSWCR3(rw), SCU_CCUCON0(rw), SCU_OSCCON(r), SCU_PERPLLCON0(rw), SCU_PERPLLCON1(rw), SCU_PERPLLSTAT(r), SCU_PMCSR0(rw), SCU_PMCSR1(rw), SCU_PMCSR2(rw), SCU_PMCSR3(rw), SCU_PMCSR4(rw), SCU_PMCSR5(rw), SCU_PMSWCR1(rw), SCU_SEICON0(rw), SCU_SYSPLLCON0(rw), SCU_SYSPLLCON1(rw), SCU_SYSPLLSTAT(r), SCU_WDTCPU_CON0(rw), SCU_WDTCPU_SR(r), STM_TIM0(r) *Note : The list includes all the SFRs accessed in the context of the API. It lists the SFRs accessed by the driver and called interfaces from other drivers. During runtime, the SFRs accessed from this list may vary based on configuration and execution context.*	
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.	

1.3.3.13 Mcu_GetVersionInfo

Table 382 Specification for `Mcu_GetVersionInfo` API

Syntax	`void Mcu_GetVersionInfo ( const Std_VersionInfoType * const versioninfo )`	
Service ID	0x09	
Sync/Async	Synchronous	
Safety Level	Refer to the release notes for the safety related info	
Re-entrancy	Reentrant	
Parameters (in)	versioninfo	Pointer to where to store the version information of this module.
Parameters (out)	-	-
Parameters (in - out)	-	-
Return	void	-
Description	Mcu_GetVersionInfo returns the version information of this module.	
Source	AUTOSAR	
Error handling	MCU_E_PARAM_POINTER	
Configuration dependencies	McuVersionInfoApi	
User hints	-	
SFR accessed	-	
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.	

1.3.3.14 Mcu_ClearColdResetStatus

Table 383 Specification for `Mcu_ClearColdResetStatus` API

Syntax	`void Mcu_ClearColdResetStatus ( void )`	
Service ID	0x50	
Sync/Async	Synchronous	
Safety Level	Refer to the release notes for the safety related info	
Re-entrancy	Non-reentrant	
Parameters (in)	-	-

(table continues...)

Table 383 (continued) Specification for `Mcu_ClearColdResetStatus` API

Parameters (out)	-	-
Parameters (in - out)	-	-
Return	void	-
Description	Mcu_ClearColdResetStatus is used to clear the cause of the cold reset.	
Source	IFX	
Error handling	MCU_E_UNINIT	
Configuration dependencies	McuClearColdResetStatusApi	
User hints	-	
SFR accessed	SCU_CCUCON0(r), SCU_EICON0(rw), SCU_OSCCON(r), SCU_RSTCON2(rw), SCU_SYSPLLCON0(r), SCU_SYSPLLCON1(r), STM_TIM0(r) *Note : The list includes all the SFRs accessed in the context of the API. It lists the SFRs accessed by the driver and called interfaces from other drivers. During runtime, the SFRs accessed from this list may vary based on configuration and execution context.*	
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.	

1.3.3.15 Mcu_DeInit

Table 384 Specification for `Mcu_DeInit` API

Syntax	`void Mcu_DeInit ( void )`	
Service ID	0x51	
Sync/Async	Synchronous	
Safety Level	Refer to the release notes for the safety related info	
Re-entrancy	Non-reentrant	
Parameters (in)	-	-
Parameters (out)	-	-
Parameters (in - out)	-	-
Return	void	-

(table continues...)

Table 384 (continued) Specification for `Mcu_DeInit` API

Description	Mcu_DeInit de-initializes the MCU driver. Mcu_DeInit puts all the resources used by the MCU for reset configuration and power management in the reset state. PLL is not de-initialized by this function. Mcu_DeInit also de-initializes the module clock for GTM, CCU6, GPT12 and Converter control block. Mcu_DeInit also resets all the global variables to uninitialized state.
Source	IFX
Error handling	MCU_E_GTM_CLC_DISABLE_ERR, MCU_E_GPT12_CLC_DISABLE_ERR, MCU_E_CCU6_CLC_DISABLE_ERR, MCU_E_UNINIT, MCU_E_CORE_MISMATCH, MCU_E_CONVCTRL_CLC_DISABLE_ERR
Configuration dependencies	McuIfxDeInitApi
User hints	-
SFR accessed	CCU6_CLC(rw), CCU6_ISR(w), CONVERTER_CLC(rw), CPU_COMPAT(w), CPU_CORE_ID(r), CPU_SYSCON(w), CPU_TPS_EXTIM_CLASS_EN(w), CPU_TPS_EXTIM_ENTRY_LVAL(w), CPU_TPS_EXTIM_EXIT_LVAL(w), GPT12_CLC(rw), GPT12_T3CON(w), GPT12_T6CON(w), GTM_ADCTRIG_OUT0(w), GTM_ADCTRIG_OUT1(w), GTM_ATOM_AGC_ACT_TB(w), GTM_ATOM_AGC_FUPD_CTRL(w), GTM_ATOM_AGC_INT_TRIG(w), GTM_CCM_CFG(w), GTM_CCM_CMU_CLK_CFG(w), GTM_CCM_CMU_FXCLK_CFG(w), GTM_CCM_PROT(w), GTM_CLC(rw), GTM_CLS_CLK_CFG(rw), GTM_CMU_CLK_CTRL(w), GTM_CMU_CLK_EN(w), GTM_CMU_CLK_z_CTRL(w), GTM_CMU_ECLK_DEN(w), GTM_CMU_ECLK_NUM(w), GTM_CMU_FXCLK_CTRL(w), GTM_CMU_GCLK_DEN(w), GTM_CMU_GCLK_NUM(w), GTM_CTRL(w), GTM_DSADC_OUTSEL0(w), GTM_DSADC_OUTSEL1(w), GTM_TBU_CH0_CTRL(w), GTM_TBU_CH1_CTRL(w), GTM_TBU_CH2_CTRL(w), GTM_TBU_CH3_CTRL(w), GTM_TBU_CHEN(w), GTM_TIMINSEL(w), GTM_TOM_TGC0_ACT_TB(w), GTM_TOM_TGC0_FUPD_CTRL(w), GTM_TOM_TGC0_INT_TRIG(w), GTM_TOM_TGC1_ACT_TB(w), GTM_TOM_TGC1_FUPD_CTRL(w), GTM_TOM_TGC1_INT_TRIG(w), GTM_TOUTSEL(rw), PMS_MONCTRL(rw), PMS_PMSWCR0(w), PMS_PMSWCR3(w), PMS_PMSWCR5(rw), PMS_UVMON(rw), SCU_ARSTDIS(w), SCU_CCUCON0(r), SCU_EICON0(rw), SCU_EIFILT(w), SCU_OSCCON(r), SCU_PMSWCR1(w), SCU_PMTRCSR0(rw), SCU_RSTCON(w), SCU_SEICON0(rw), SCU_SYSPLLCON0(r), SCU_SYSPLLCON1(r), SCU_TRAPDIS0(w), SCU_TRAPDIS1(w), STM_TIM0(r) *Note : The list includes all the SFRs accessed in the context of the API. It lists the SFRs accessed by the driver and called interfaces from other drivers. During runtime, the SFRs accessed from this list may vary based on configuration and execution context.*
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.

1.3.3.16 Mcu_GetCpuIdleModeInitiator

Table 385 Specification for `Mcu_GetCpuIdleModeInitiator` API

Syntax	`uint32 Mcu_GetCpuIdleModeInitiator ( void )`	
Service ID	0x52	
Sync/Async	Synchronous	
Safety Level	Refer to the release notes for the safety related info	
Re-entrancy	Reentrant	
Parameters (in)	-	-
Parameters (out)	-	-
Parameters (in - out)	-	-
Return	uint32	CPU Id in case a CPU is setup as initiator of idle mode 0xFFFFFFFFU in case each CPU is responsible for its power state transition 7U in case idle mode is not configured
Description	The CPU responsible for initiating the idle mode entry of other CPUs is returned by the interface.	
Source	IFX	
Error handling	MCU_E_UNINIT	
Configuration dependencies	McuIfxLpmApi	
User hints	-	
SFR accessed	SCU_PMSWCR1(r) *Note : The list includes all the SFRs accessed in the context of the API. It lists the SFRs accessed by the driver and called interfaces from other drivers. During runtime, the SFRs accessed from this list may vary based on configuration and execution context.*	
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.	

1.3.3.17 Mcu_GetCpuState

Table 386 Specification for `Mcu_GetCpuState` API

Syntax	`Mcu_CpuModeType Mcu_GetCpuState ( const Mcu_CpuIdType CpuId )`

(table continues...)

Table 386 (continued) Specification for `Mcu_GetCpuState` API

Service ID	0x53	
Sync/Async	Synchronous	
Safety Level	Refer to the release notes for the safety related info	
Re-entrancy	Reentrant	
Parameters (in)	CpuId	CpuId CPU Identifier
Parameters (out)	-	-
Parameters (in - out)	-	-
Return	Mcu_CpuModeType	Cpu state for the input Cpu ID
Description	A valid power state is returned by the interface for valid CPUs. MCU_CPU_UNDEFINED_MODE is returned as a power state for invalid CPUs OR when CPU state is indicating reserved states.	
Source	IFX	
Error handling	MCU_E_UNINIT, MCU_E_PARAM_CPUID	
Configuration dependencies	McuIfxLpmApi	
User hints	-	
SFR accessed	SCU_PMCSR0(r), SCU_PMCSR1(r), SCU_PMCSR2(r), SCU_PMCSR3(r), SCU_PMCSR4(r), SCU_PMCSR5(r) *Note : The list includes all the SFRs accessed in the context of the API. It lists the SFRs accessed by the driver and called interfaces from other drivers. During runtime, the SFRs accessed from this list may vary based on configuration and execution context.*	
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.	

1.3.3.18 Mcu_GetWakeupCause

Table 387 Specification for `Mcu_GetWakeupCause` API

Syntax	`uint32 Mcu_GetWakeupCause`
	`(`
	`  void`
	`)`	

Service ID	0x54	
Sync/Async	Synchronous	
Safety Level	Refer to the release notes for the safety related info	
Re-entrancy	Reentrant	
Parameters (in)	-	-

(table continues...)

Table 387 (continued) Specification for `Mcu_GetWakeupCause` API

Parameters (out)	-	-
Parameters (in - out)	-	-
Return	uint32	Standby mode wakeup cause
Description	A bit-mask indicating events responsible for wakeup from the standby mode is returned back to the caller. In case the API is called prior to MCU initialization, it returns a value of 0xFFFFFFFF.	
Source	IFX	
Error handling	MCU_E_UNINIT	
Configuration dependencies	McuIfxLpmApi	
User hints	-	
SFR accessed	PMS_PMSWSTAT2(r) *Note : The list includes all the SFRs accessed in the context of the API. It lists the SFRs accessed by the driver and called interfaces from other drivers. During runtime, the SFRs accessed from this list may vary based on configuration and execution context.*	
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.	

1.3.3.19 Mcu_ClearWakeupCause

Table 388 Specification for `Mcu_ClearWakeupCause` API

Syntax	`void Mcu_ClearWakeupCause ( const uint32 WakeupCause )`	
Service ID	0x55	
Sync/Async	Synchronous	
Safety Level	Refer to the release notes for the safety related info	
Re-entrancy	Reentrant	
Parameters (in)	WakeupCause	Wakeup causes to be cleared by this API
Parameters (out)	-	-
Parameters (in - out)	-	-
Return	void	-

(table continues...)

Table 388 (continued) Specification for `Mcu_ClearWakeupCause` API

Description	Mcu_ClearWakeupCause clears the reason for wakeup from the standby mode. The input parameter passed is masked accordingly and written in the register to clear the standby wake up cause.
Source	IFX
Error handling	MCU_E_UNINIT
Configuration dependencies	McuIfxLpmApi
User hints	User should ensure that the wake-up cause(s) which triggered wakeup during STANDBY, shall be cleared explicitly before next STANDBY entry.
SFR accessed	CPU_COMPAT(w), CPU_SYSCON(w), CPU_TPS_EXTIM_CLASS_EN(w), CPU_TPS_EXTIM_ENTRY_LVAL(w), CPU_TPS_EXTIM_EXIT_LVAL(w), PMS_PMSWSTATCLR(w), SCU_CCUCON0(r), SCU_OSCCON(r), SCU_SEICON0(rw), SCU_SYSPLLCON0(r), SCU_SYSPLLCON1(r), STM_TIM0(r) *Note : The list includes all the SFRs accessed in the context of the API. It lists the SFRs accessed by the driver and called interfaces from other drivers. During runtime, the SFRs accessed from this list may vary based on configuration and execution context.*
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.

1.3.3.20 Mcu_GetTrapCause

Table 389 Specification for `Mcu_GetTrapCause` API

Syntax	`uint32 Mcu_GetTrapCause ( void )`	
Service ID	0x56	
Sync/Async	Synchronous	
Safety Level	Refer to the release notes for the safety related info	
Re-entrancy	Reentrant	
Parameters (in)	-	-
Parameters (out)	-	-
Parameters (in - out)	-	-
Return	uint32	Returns the reason for the occurrence of the trap
Description	A bit-mask indicating events responsible for the current trap/last trap serviced is returned back to the caller. In case the API is called prior to MCU initialization, it returns a value of 0xFFFFFFFF.	
Source	IFX	

(table continues...)

Table 389 (continued) Specification for `Mcu_GetTrapCause` API

Error handling	MCU_E_UNINIT
Configuration dependencies	McuIfxTrapApi
User hints	-
SFR accessed	SCU_TRAPSTAT(r) *Note : The list includes all the SFRs accessed in the context of the API. It lists the SFRs accessed by the driver and called interfaces from other drivers. During runtime, the SFRs accessed from this list may vary based on configuration and execution context.*
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.

1.3.3.21 Mcu_SetTrapRequest

Table 390 Specification for `Mcu_SetTrapRequest` API

Syntax	`void Mcu_SetTrapRequest ( const Mcu_TrapRequestType TrapRequestId )`	
Service ID	0x57	
Sync/Async	Synchronous	
Safety Level	Refer to the release notes for the safety related info	
Re-entrancy	Reentrant for other Trap Ids	
Parameters (in)	TrapRequestId	Type of the trap request to be set
Parameters (out)	-	-
Parameters (in - out)	-	-
Return	void	-
Description	Mcu_SetTrapRequest is used to manually assert the specified trap request.	
Source	IFX	
Error handling	MCU_E_UNINIT, MCU_E_PARAM_TRAPID	
Configuration dependencies	McuIfxTrapApi	
User hints	-	
SFR accessed	SCU_CCUCON0(r), SCU_EICON0(rw), SCU_OSCCON(r), SCU_SYSPLLCON0(r), SCU_SYSPLLCON1(r), SCU_TRAPSET(w), STM_TIM0(r) *Note : The list includes all the SFRs accessed in the context of the API. It lists the SFRs accessed by the driver and called interfaces from other drivers. During runtime, the SFRs accessed from this list may vary based on configuration and execution context.*	

(table continues...)

Table 390 (continued) Specification for `Mcu_SetTrapRequest` API	
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.

1.3.3.22 Mcu_ClearTrapRequest

Table 391 Specification for `Mcu_ClearTrapRequest` API		
Syntax	`void Mcu_ClearTrapRequest ( const Mcu_TrapRequestType TrapRequestId )`	
Service ID	0x58	
Sync/Async	Synchronous	
Safety Level	Refer to the release notes for the safety related info	
Re-entrancy	Reentrant for other Trap IDs	
Parameters (in)	TrapRequestId	Type of the trap request to be cleared
Parameters (out)	-	-
Parameters (in - out)	-	-
Return	void	-
Description	Mcu_ClearTrapRequest is used to clear the trap status currently set.	
Source	IFX	
Error handling	MCU_E_UNINIT, MCU_E_PARAM_TRAPID	
Configuration dependencies	McuIfxTrapApi	
User hints	-	
SFR accessed	SCU_TRAPCLR(w) *Note : The list includes all the SFRs accessed in the context of the API. It lists the SFRs accessed by the driver and called interfaces from other drivers. During runtime, the SFRs accessed from this list may vary based on configuration and execution context.*	
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.	

1.3.3.23 Mcu_UpdateCpuCcuconReg

Table 392 Specification for `Mcu_UpdateCpuCcuconReg` API

Syntax	`void Mcu_UpdateCpuCcuconReg ( const Mcu_CpuIdType CpuId, const uint8 DivVal, const uint8 Delay )`	
Service ID	0x59	
Sync/Async	Synchronous	
Safety Level	Refer to the release notes for the safety related info	
Re-entrancy	Reentrant for other cores	
Parameters (in)	CpuId DivVal Delay	CpuId of core-x to update its CCUCONx divider value New divider value for update Delay in microseconds after CCUCONx register update
Parameters (out)	-	-
Parameters (in - out)	-	-
Return	void	-
Description	Mcu_UpdateCpuCcuconReg is used to update the CCUCONx divider value of CPUx to the user provided value.	
Source	IFX	
Error handling	MCU_E_UNINIT, MCU_E_PARAM_CPUID, MCU_E_PARAM_DIV_VAL	
Configuration dependencies	McuIfxCpuCcuconApi	
User hints	-	
SFR accessed	CPU_COMPAT(w), CPU_SYSCON(w), CPU_TPS_EXTIM_CLASS_EN(w), CPU_TPS_EXTIM_ENTRY_LVAL(w), CPU_TPS_EXTIM_EXIT_LVAL(w), SCU_CCUCON0(r), SCU_CCUCON10(w), SCU_CCUCON11(w), SCU_CCUCON6(w), SCU_CCUCON7(w), SCU_CCUCON8(w), SCU_CCUCON9(w), SCU_OSCCON(r), SCU_SEICON0(rw), SCU_SYSPLLCON0(r), SCU_SYSPLLCON1(r), STM_TIM0(r) *Note : The list includes all the SFRs accessed in the context of the API. It lists the SFRs accessed by the driver and called interfaces from other drivers. During runtime, the SFRs accessed from this list may vary based on configuration and execution context.*	
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.	

1.3.3.24 Mcu_InitCheck

Table 393 Specification for `Mcu_InitCheck` API

Syntax	`Std_ReturnType Mcu_InitCheck ( const Mcu_ConfigType * const ConfigPtr )`	
Service ID	0x5A	
Sync/Async	Synchronous	
Safety Level	Refer to the release notes for the safety related info	
Re-entrancy	Non-reentrant	
Parameters (in)	ConfigPtr	Pointer to MCU driver configuration set.
Parameters (out)	-	-
Parameters (in - out)	-	-
Return	Std_ReturnType	E_OK: Initcheck is successful E_NOT_OK: In case of - Driver is not initialized - Global variables or SFR is not set as expected - Invalid input paramter - Clock setting is invalid
Description	Mcu_InitCheck verifies the initialization done by the MCU driver in Mcu_Init(), Mcu_InitClock() and Mcu_DistributePllClock() APIs.	
Source	IFX	
Error handling	-	
Configuration dependencies	McuInitCheckApi	
User hints	None	

(table continues...)

Table 393 (continued) Specification for `Mcu_InitCheck` API

SFR accessed	CCU6_CLC(r), CONVERTER_CLC(r), CONVERTER_PHSCFG(r), GPT12_CLC(r), GPT12_T3CON(r), GPT12_T6CON(r), GTM_ADCTRIG_OUT0(r), GTM_ADCTRIG_OUT1(r), GTM_ATOM_AGC_ACT_TB(r), GTM_ATOM_AGC_FUPD_CTRL(r), GTM_ATOM_AGC_INT_TRIG(r), GTM_CCM_CFG(r), GTM_CCM_CMU_CLK_CFG(r), GTM_CCM_CMU_FXCLK_CFG(r), GTM_CLC(r), GTM_CLS_CLK_CFG(r), GTM_CMU_CLK_CTRL(r), GTM_CMU_CLK_EN(r), GTM_CMU_CLK_z_CTRL(r), GTM_CMU_ECLK_DEN(r), GTM_CMU_ECLK_NUM(r), GTM_CMU_FXCLK_CTRL(r), GTM_CMU_GCLK_DEN(r), GTM_CMU_GCLK_NUM(r), GTM_DSADC_OUTSEL0(r), GTM_DSADC_OUTSEL1(r), GTM_TBU_CH0_CTRL(r), GTM_TBU_CH1_CTRL(r), GTM_TBU_CH2_CTRL(r), GTM_TBU_CH3_CTRL(r), GTM_TBU_CHEN(r), GTM_TIMINSEL(r), GTM_TOM_TGC0_ACT_TB(r), GTM_TOM_TGC0_FUPD_CTRL(r), GTM_TOM_TGC0_INT_TRIG(r), GTM_TOM_TGC1_ACT_TB(r), GTM_TOM_TGC1_FUPD_CTRL(r), GTM_TOM_TGC1_INT_TRIG(r), GTM_TOUTSEL(r), PMS_MONCTRL(r), PMS_PMSWCR0(r), PMS_PMSWCR5(r), PMS_UVMON(r), SCU_ARSTDIS(r), SCU_CCUCON0(r), SCU_CCUCON1(r), SCU_CCUCON10(r), SCU_CCUCON11(r), SCU_CCUCON2(r), SCU_CCUCON3(r), SCU_CCUCON4(r), SCU_CCUCON5(r), SCU_CCUCON6(r), SCU_CCUCON7(r), SCU_CCUCON8(r), SCU_CCUCON9(r), SCU_EIFILT(r), SCU_EXTCON(r), SCU_OSCCON(r), SCU_PERPLLCON0(r), SCU_PERPLLCON1(r), SCU_PMSWCR1(r), SCU_PMTRCSR0(r), SCU_RSTCON(r), SCU_SYSPLLCON0(r), SCU_SYSPLLCON1(r), SCU_SYSPLLCON2(r), SCU_TRAPDIS0(r), SCU_TRAPDIS1(r) *Note : The list includes all the SFRs accessed in the context of the API. It lists the SFRs accessed by the driver and called interfaces from other drivers. During runtime, the SFRs accessed from this list may vary based on configuration and execution context.*
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.

1.3.3.25 Mcu_17_Gtm_AtomChannelInit

Table 394 Specification for `Mcu_17_Gtm_AtomChannelInit` API

Syntax	`void Mcu_17_Gtm_AtomChannelInit ( const Mcu_17_Gtm_TomAtomChConfigType * const ConfigPtr )`	
Service ID	0x64	
Sync/Async	Synchronous	
Safety Level	Refer to the release notes for the safety related info	
Re-entrancy	Reentrant for other channels	
Parameters (in)	ConfigPtr	Pointer to the configuration data of an ATOM channel
Parameters (out)	-	-
Parameters (in - out)	-	-
Return	void	-

(table continues...)

Table 394 (continued) Specification for `Mcu_17_Gtm_AtomChannelInit` API

Description	Mcu_17_Gtm_AtomChannelInit configures an instance of an ATOM channel. User of an ATOM channel invokes this interface at the time of initialization.
Source	IFX
Error handling	-
Configuration dependencies	-
User hints	-
SFR accessed	GTM_ATOM_CH_CM0(w), GTM_ATOM_CH_CM1(w), GTM_ATOM_CH_CN0(w), GTM_ATOM_CH_CTRL(w), GTM_ATOM_CH_IRQ_EN(w), GTM_ATOM_CH_IRQ_MODE(w), GTM_ATOM_CH_IRQ_NOTIFY(w), GTM_ATOM_CH_SR0(w), GTM_ATOM_CH_SR1(w) *Note : The list includes all the SFRs accessed in the context of the API. It lists the SFRs accessed by the driver and called interfaces from other drivers. During runtime, the SFRs accessed from this list may vary based on configuration and execution context.*
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.

1.3.3.26 Mcu_17_Gtm_AtomChInitCheck

Table 395 Specification for `Mcu_17_Gtm_AtomChInitCheck` API

Syntax	`Std_ReturnType  Mcu_17_Gtm_AtomChInitCheck`
	`(`
	`  const Mcu_17_Gtm_TomAtomChConfigType * const ConfigPtr`
	`)`	

Service ID	0x7B	
Sync/Async	Synchronous	
Safety Level	Refer to the release notes for the safety related info	
Re-entrancy	Reentrant for other channels	
Parameters (in)	ConfigPtr	Configuration of the ATOM channel that is to be verified
Parameters (out)	-	-
Parameters (in - out)	-	-
Return	Std_ReturnType	E_OK: ATOM initcheck is successful E_NOT_OK: ATOM initcheck failed
Description	Mcu_17_Gtm_AtomChInitCheck verifies the initialization done by the MCU driver in the Mcu_17_Gtm_AtomChannelInit() API for the input ATOM channel.	
Source	IFX	
Error handling	-	

(table continues...)

Table 395 (continued) Specification for `Mcu_17_Gtm_AtomChInitCheck` API

Configuration dependencies	-
User hints	None
SFR accessed	GTM_ATOM_AGC_ENDIS_STAT(r), GTM_ATOM_CH_CM0(r), GTM_ATOM_CH_CM1(r), GTM_ATOM_CH_CN0(r), GTM_ATOM_CH_CTRL(r), GTM_ATOM_CH_IRQ_EN(r), GTM_ATOM_CH_IRQ_MODE(r), GTM_ATOM_CH_SR0(r), GTM_ATOM_CH_SR1(r) *Note : The list includes all the SFRs accessed in the context of the API. It lists the SFRs accessed by the driver and called interfaces from other drivers. During runtime, the SFRs accessed from this list may vary based on configuration and execution context.*
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.

1.3.3.27 Mcu_17_Gtm_AtomChannelDeInit

Table 396 Specification for `Mcu_17_Gtm_AtomChannelDeInit` API

Syntax	`void Mcu_17_Gtm_AtomChannelDeInit ( const uint8 Module, const uint8 Channel )`	
Service ID	0x66	
Sync/Async	Synchronous	
Safety Level	Refer to the release notes for the safety related info	
Re-entrancy	Reentrant for other channels	
Parameters (in)	Module Channel	ATOM module number ATOM channel number
Parameters (out)	-	-
Parameters (in - out)	-	-
Return	void	-
Description	Mcu_17_Gtm_AtomChannelDeInit resets an ATOM channel to reset values.	
Source	IFX	
Error handling	-	
Configuration dependencies	-	
User hints	-	

(table continues...)

Table 396 (continued) Specification for `Mcu_17_Gtm_AtomChannelDeInit` API	
SFR accessed	GTM_ATOM_AGC_GLB_CTRL(w), GTM_ATOM_CH_IRQ_NOTIFY(w), SCU_CCUCON0(r), SCU_OSCCON(r), SCU_SYSPLLCON0(r), SCU_SYSPLLCON1(r), STM_TIM0(r) *Note : The list includes all the SFRs accessed in the context of the API. It lists the SFRs accessed by the driver and called interfaces from other drivers. During runtime, the SFRs accessed from this list may vary based on configuration and execution context.*
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.

1.3.3.28 Mcu_17_Gtm_AtomChannelEnable

Table 397 Specification for `Mcu_17_Gtm_AtomChannelEnable` API

Syntax	`void Mcu_17_Gtm_AtomChannelEnable ( const uint8 Module, const uint8 Channel, const Mcu_17_Gtm_TimerOutputEnableType TimerOutputEn )`	
Service ID	0x6A	
Sync/Async	Synchronous	
Safety Level	Refer to the release notes for the safety related info	
Re-entrancy	Reentrant for other channels	
Parameters (in)	Module Channel TimerOutputEn	ATOM module number ATOM channel number ATOM output enable configuration
Parameters (out)	-	-
Parameters (in - out)	-	-
Return	void	-
Description	Mcu_17_Gtm_AtomChannelEnable starts the specified timer. Applications that use the timer slice for PWM functionality must enable the output (TimerOutPutEn = 1). Applications that use the timer for counting (timebase) purpose can disable the output.	
Source	IFX	
Error handling	-	
Configuration dependencies	-	
User hints	-	

(table continues...)

Table 397 (continued) Specification for `Mcu_17_Gtm_AtomChannelEnable` API

SFR accessed	GTM_ATOM_AGC_ENDIS_CTRL(w), GTM_ATOM_AGC_ENDIS_STAT(w), GTM_ATOM_AGC_OUTEN_CTRL(w), GTM_ATOM_AGC_OUTEN_STAT(w), SCU_CCUCON0(r), SCU_OSCCON(r), SCU_SYSPLLCON0(r), SCU_SYSPLLCON1(r), STM_TIM0(r) *Note : The list includes all the SFRs accessed in the context of the API. It lists the SFRs accessed by the driver and called interfaces from other drivers. During runtime, the SFRs accessed from this list may vary based on configuration and execution context.*
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.

1.3.3.29 Mcu_17_Gtm_AtomChannelDisable

Table 398 Specification for `Mcu_17_Gtm_AtomChannelDisable` API

Syntax	`void Mcu_17_Gtm_AtomChannelDisable ( const uint8 Module, const uint8 Channel )`	
Service ID	0x71	
Sync/Async	Synchronous	
Safety Level	Refer to the release notes for the safety related info	
Re-entrancy	Reentrant for other channels	
Parameters (in)	Module Channel	ATOM module number ATOM channel number
Parameters (out)	-	-
Parameters (in - out)	-	-
Return	void	-
Description	Mcu_17_Gtm_AtomChannelDisable stops the specified timer. The timer output is unconditionally disabled.	
Source	IFX	
Error handling	-	
Configuration dependencies	-	
User hints	-	
SFR accessed	GTM_ATOM_AGC_ENDIS_CTRL(w), GTM_ATOM_AGC_ENDIS_STAT(w), GTM_ATOM_AGC_OUTEN_CTRL(w), GTM_ATOM_AGC_OUTEN_STAT(w), SCU_CCUCON0(r), SCU_OSCCON(r), SCU_SYSPLLCON0(r), SCU_SYSPLLCON1(r), STM_TIM0(r) *Note : The list includes all the SFRs accessed in the context of the API. It lists the SFRs accessed by the driver and called interfaces from other drivers. During runtime, the SFRs accessed from this list may vary based on configuration and execution context.*	

(table continues...)

Table 398 (continued) Specification for `Mcu_17_Gtm_AtomChannelDisable` API

Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.

1.3.3.30 Mcu_17_Gtm_IsAtomChannelEnabled

Table 399 Specification for `Mcu_17_Gtm_IsAtomChannelEnabled` API

Syntax	`Mcu_17_Gtm_TimerStatusType Mcu_17_Gtm_IsAtomChannelEnabled ( const uint8 Module, const uint8 Channel )`	
Service ID	0x6F	
Sync/Async	Synchronous	
Safety Level	Refer to the release notes for the safety related info	
Re-entrancy	Reentrant	
Parameters (in)	Module Channel	ATOM module number ATOM channel number
Parameters (out)	-	-
Parameters (in - out)	-	-
Return	Mcu_17_Gtm_TimerStatusType	MCU_GTM_TIMER_RUNNING : Timer is running. MCU_GTM_TIMER_STOPPED : Timer is stopped
Description	Mcu_17_Gtm_IsAtomChannelEnabled confirms whether or not the specified timer slice is running.	
Source	IFX	
Error handling	-	
Configuration dependencies	-	
User hints	-	
SFR accessed	GTM_ATOM_AGC_ENDIS_STAT(r) *Note : The list includes all the SFRs accessed in the context of the API. It lists the SFRs accessed by the driver and called interfaces from other drivers. During runtime, the SFRs accessed from this list may vary based on configuration and execution context.*	
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.	

1.3.3.31 Mcu_17_Gtm_AtomChannelShadowTransfer

Table 400 Specification for `Mcu_17_Gtm_AtomChannelShadowTransfer` API

Syntax	`void Mcu_17_Gtm_AtomChannelShadowTransfer ( const uint8 Module, const uint8 Channel )`	
Service ID	0x65	
Sync/Async	Synchronous	
Safety Level	Refer to the release notes for the safety related info	
Re-entrancy	Reentrant	
Parameters (in)	Module Channel	ATOM module number ATOM channel number
Parameters (out)	-	-
Parameters (in - out)	-	-
Return	void	-
Description	Mcu_17_Gtm_AtomChannelShadowTransfer is used to initiate a copy of values in shadow registers (compare, period and clock source) of the specified ATOM channel of a specified ATOM module to its main timer registers.	
Source	IFX	
Error handling	-	
Configuration dependencies	-	
User hints	-	
SFR accessed	GTM_ATOM_AGC_ENDIS_CTRL(rw), GTM_ATOM_AGC_FUPD_CTRL(rw), GTM_ATOM_AGC_GLB_CTRL(w), GTM_ATOM_AGC_OUTEN_CTRL(rw), SCU_CCUCON0(r), SCU_OSCCON(r), SCU_SYSPLLCON0(r), SCU_SYSPLLCON1(r), STM_TIM0(r) *Note : The list includes all the SFRs accessed in the context of the API. It lists the SFRs accessed by the driver and called interfaces from other drivers. During runtime, the SFRs accessed from this list may vary based on configuration and execution context.*	
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.	

1.3.3.32 Mcu_17_Gtm_AtomChUpdateEnDis

Table 401 Specification for `Mcu_17_Gtm_AtomChUpdateEnDis` API

Syntax	`void Mcu_17_Gtm_AtomChUpdateEnDis ( const uint8 Module, const uint8 Channel, const Mcu_17_Gtm_TimerUpdateEnableType UpEnVal )`	
Service ID	0x7C	
Sync/Async	Synchronous	
Safety Level	Refer to the release notes for the safety related info	
Re-entrancy	Reentrant for other channels	
Parameters (in)	Module Channel UpEnVal	Specifies the module used Specifies the GTM channel used Specifies if GTM timer update is enabled or disabled
Parameters (out)	-	-
Parameters (in - out)	-	-
Return	void	-
Description	Mcu_17_Gtm_AtomChUpdateEnDis is used to update the value of the ATOM Channel Update Enable/ Disable Control register.	
Source	IFX	
Error handling	-	
Configuration dependencies	-	
User hints	-	
SFR accessed	GTM_ATOM_AGC_GLB_CTRL(w), SCU_CCUCON0(r), SCU_OSCCON(r), SCU_SYSPLLCON0(r), SCU_SYSPLLCON1(r), STM_TIM0(r) *Note : The list includes all the SFRs accessed in the context of the API. It lists the SFRs accessed by the driver and called interfaces from other drivers. During runtime, the SFRs accessed from this list may vary based on configuration and execution context.*	
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.	

1.3.3.33 Mcu_17_Gtm_AtomChEndisStatUpdate

Table 402 Specification for `Mcu_17_Gtm_AtomChEndisStatUpdate` API

Syntax	`void Mcu_17_Gtm_AtomChEndisStatUpdate ( const uint8 Module, const uint8 Channel, const Mcu_17_Gtm_TimerEnableType TimerEnDis )`	
Service ID	0x80	
Sync/Async	Synchronous	
Safety Level	Refer to the release notes for the safety related info	
Re-entrancy	Reentrant for other channels	
Parameters (in)	Module Channel TimerEnDis	Specifies the module used Specifies the GTM channel used Specifies whether timer is enabled or disabled
Parameters (out)	-	-
Parameters (in - out)	-	-
Return	void	-
Description	Mcu_17_Gtm_AtomChEndisStatUpdate is used by applications to enable or disable the ATOM channel directly.	
Source	IFX	
Error handling	-	
Configuration dependencies	-	
User hints	-	
SFR accessed	GTM_ATOM_AGC_ENDIS_STAT(w), SCU_CCUCON0(r), SCU_OSCCON(r), SCU_SYSPLLCON0(r), SCU_SYSPLLCON1(r), STM_TIM0(r) *Note : The list includes all the SFRs accessed in the context of the API. It lists the SFRs accessed by the driver and called interfaces from other drivers. During runtime, the SFRs accessed from this list may vary based on configuration and execution context.*	
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.	

1.3.3.34 Mcu_17_Gtm_AtomChEndisCtrlUpdate

Table 403 Specification for `Mcu_17_Gtm_AtomChEndisCtrlUpdate` API

Syntax	`void Mcu_17_Gtm_AtomChEndisCtrlUpdate ( const uint8 Module, const uint8 Channel, const Mcu_17_Gtm_TimerEnTriggerType TimerEnDis )`	
Service ID	0x7F	
Sync/Async	Synchronous	
Safety Level	Refer to the release notes for the safety related info	
Re-entrancy	Reentrant for other channels	
Parameters (in)	Module Channel TimerEnDis	Specifies the module being used Specifies the GTM channel being used Enable/disable the ATOM channel on a trigger
Parameters (out)	-	-
Parameters (in - out)	-	-
Return	void	-
Description	Mcu_17_Gtm_AtomChEndisCtrlUpdate is used by applications to enable or disable the ATOM channel on a trigger.	
Source	IFX	
Error handling	-	
Configuration dependencies	-	
User hints	-	
SFR accessed	GTM_ATOM_AGC_ENDIS_CTRL(w), SCU_CCUCON0(r), SCU_OSCCON(r), SCU_SYSPLLCON0(r), SCU_SYSPLLCON1(r), STM_TIM0(r) *Note : The list includes all the SFRs accessed in the context of the API. It lists the SFRs accessed by the driver and called interfaces from other drivers. During runtime, the SFRs accessed from this list may vary based on configuration and execution context.*	
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.	

1.3.3.35 Mcu_17_Gtm_AtomChOutEnStatUpdate

Table 404 Specification for `Mcu_17_Gtm_AtomChOutEnStatUpdate` API

Syntax	`void Mcu_17_Gtm_AtomChOutEnStatUpdate ( const uint8 Module, const uint8 Channel, const Mcu_17_Gtm_TimerOutputEnableType TimerOutputEnDis )`	
Service ID	0x7E	
Sync/Async	Synchronous	
Safety Level	Refer to the release notes for the safety related info	
Re-entrancy	Reentrant for other channels	
Parameters (in)	Module Channel TimerOutputEnDis	Specifies the module used Specifies the GTM channel used Specifies whether GTM timer output is enabled or disabled
Parameters (out)	-	-
Parameters (in - out)	-	-
Return	void	-
Description	Mcu_17_Gtm_AtomChOutEnStatUpdate is used by applications to enable or disable the output of an ATOM channel directly.	
Source	IFX	
Error handling	-	
Configuration dependencies	-	
User hints	-	
SFR accessed	GTM_ATOM_AGC_OUTEN_STAT(w), SCU_CCUCON0(r), SCU_OSCCON(r), SCU_SYSPLLCON0(r), SCU_SYSPLLCON1(r), STM_TIM0(r) *Note : The list includes all the SFRs accessed in the context of the API. It lists the SFRs accessed by the driver and called interfaces from other drivers. During runtime, the SFRs accessed from this list may vary based on configuration and execution context.*	
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.	

1.3.3.36 Mcu_17_Gtm_AtomChOutEnCtrlUpdate

Table 405 Specification for `Mcu_17_Gtm_AtomChOutEnCtrlUpdate` API

Syntax	`void Mcu_17_Gtm_AtomChOutEnCtrlUpdate ( const uint8 Module, const uint8 Channel, const Mcu_17_Gtm_TimerOutputEnTriggerType TimerOutputEnDis )`	
Service ID	0x7D	
Sync/Async	Synchronous	
Safety Level	Refer to the release notes for the safety related info	
Re-entrancy	Reentrant for other channels	
Parameters (in)	Module Channel TimerOutputEnDis	Specifies the module being used Specifies the GTM channel being used Enable/disable the ATOM channel output on a trigger
Parameters (out)	-	-
Parameters (in - out)	-	-
Return	void	-
Description	Mcu_17_Gtm_AtomChOutEnCtrlUpdate is used by applications to enable or disable the output of an ATOM channel on a trigger.	
Source	IFX	
Error handling	-	
Configuration dependencies	-	
User hints	-	
SFR accessed	GTM_ATOM_AGC_OUTEN_CTRL(w), SCU_CCUCON0(r), SCU_OSCCON(r), SCU_SYSPLLCON0(r), SCU_SYSPLLCON1(r), STM_TIM0(r) *Note : The list includes all the SFRs accessed in the context of the API. It lists the SFRs accessed by the driver and called interfaces from other drivers. During runtime, the SFRs accessed from this list may vary based on configuration and execution context.*	
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.	

1.3.3.37 Mcu_17_Gtm_AtomTriggerRequest

Table 406 Specification for `Mcu_17_Gtm_AtomTriggerRequest` API

Syntax	`void Mcu_17_Gtm_AtomTriggerRequest ( const uint8 Module, const uint16 TriggerChannels )`	
Service ID	0x7A	
Sync/Async	Synchronous	
Safety Level	Refer to the release notes for the safety related info	
Re-entrancy	Reentrant for other AGC	
Parameters (in)	Module TriggerChannels	ATOM Module ID Mask for the channels to be triggered
Parameters (out)	-	-
Parameters (in - out)	-	-
Return	void	-
Description	Interface is used by applications to enable or disable the ATOM channel on a trigger.	
Source	IFX	
Error handling	-	
Configuration dependencies	-	
User hints	No force update will be performed by Mcu_17_Gtm_AtomTriggerRequest() API.	
SFR accessed	GTM_ATOM_AGC_ENDIS_CTRL(w), GTM_ATOM_AGC_GLB_CTRL(w), SCU_CCUCON0(r), SCU_OSCCON(r), SCU_SYSPLLCON0(r), SCU_SYSPLLCON1(r), STM_TIM0(r) *Note : The list includes all the SFRs accessed in the context of the API. It lists the SFRs accessed by the driver and called interfaces from other drivers. During runtime, the SFRs accessed from this list may vary based on configuration and execution context.*	
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.	

1.3.3.38 Mcu_17_Gtm_TomChannelInit

Table 407 Specification for `Mcu_17_Gtm_TomChannelInit` API

Syntax	`void Mcu_17_Gtm_TomChannelInit ( const Mcu_17_Gtm_TomAtomChConfigType * const ConfigPtr )`
Service ID	0x60

(table continues...)

Table 407 (continued) Specification for `Mcu_17_Gtm_TomChannelInit` API

Sync/Async	Synchronous	
Safety Level	Refer to the release notes for the safety related info	
Re-entrancy	Reentrant for other channels	
Parameters (in)	ConfigPtr	Pointer to the configuration data of a TOM channel
Parameters (out)	-	-
Parameters (in - out)	-	-
Return	void	-
Description	Mcu_17_Gtm_TomChannelInit configures an instance of the TOM channel. User of a TOM channel invokes this interface at the time of initialization.	
Source	IFX	
Error handling	-	
Configuration dependencies	-	
User hints	-	
SFR accessed	GTM_TOM_CH_CM0(w), GTM_TOM_CH_CM1(w), GTM_TOM_CH_CN0(w), GTM_TOM_CH_CTRL(w), GTM_TOM_CH_IRQ_EN(w), GTM_TOM_CH_IRQ_MODE(w), GTM_TOM_CH_IRQ_NOTIFY(w), GTM_TOM_CH_SR0(w), GTM_TOM_CH_SR1(w) *Note : The list includes all the SFRs accessed in the context of the API. It lists the SFRs accessed by the driver and called interfaces from other drivers. During runtime, the SFRs accessed from this list may vary based on configuration and execution context.*	
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.	

1.3.3.39 Mcu_17_Gtm_TomChInitCheck

Table 408 Specification for `Mcu_17_Gtm_TomChInitCheck` API

Syntax	`Std_ReturnType  Mcu_17_Gtm_TomChInitCheck`
	`(`
	`  const Mcu_17_Gtm_TomAtomChConfigType * const ConfigPtr`
	`)`	

Service ID	0x74	
Sync/Async	Synchronous	
Safety Level	Refer to the release notes for the safety related info	
Re-entrancy	Reentrant for other channels	
Parameters (in)	ConfigPtr	Configuration of the TOM channel that is to be verified

(table continues...)

Table 408 (continued) Specification for `Mcu_17_Gtm_TomChInitCheck` API

Parameters (out)	-	-
Parameters (in - out)	-	-
Return	Std_ReturnType	E_OK: TOM initcheck is successful E_NOT_OK: TOM initcheck failed
Description	Mcu_17_Gtm_TomChInitCheck verifies the initialization done by the MCU driver in the Mcu_17_Gtm_TomChannelInit() API for the input TOM channel.	
Source	IFX	
Error handling	-	
Configuration dependencies	-	
User hints	None	
SFR accessed	GTM_TOM_CH_CM0(r), GTM_TOM_CH_CM1(r), GTM_TOM_CH_CN0(r), GTM_TOM_CH_CTRL(r), GTM_TOM_CH_IRQ_EN(r), GTM_TOM_CH_IRQ_MODE(r), GTM_TOM_CH_SR0(r), GTM_TOM_CH_SR1(r), GTM_TOM_TGC0_ENDIS_STAT(r), GTM_TOM_TGC1_ENDIS_STAT(r) *Note : The list includes all the SFRs accessed in the context of the API. It lists the SFRs accessed by the driver and called interfaces from other drivers. During runtime, the SFRs accessed from this list may vary based on configuration and execution context.*	
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.	

1.3.3.40 Mcu_17_Gtm_TomChannelDeInit

Table 409 Specification for `Mcu_17_Gtm_TomChannelDeInit` API

Syntax	`void Mcu_17_Gtm_TomChannelDeInit ( const uint8 Module, const uint8 Channel )`	
Service ID	0x63	
Sync/Async	Synchronous	
Safety Level	Refer to the release notes for the safety related info	
Re-entrancy	Reentrant for other channels	
Parameters (in)	Module Channel	TOM module number TOM channel number
Parameters (out)	-	-
Parameters (in - out)	-	-

(table continues...)

Table 409 (continued) Specification for `Mcu_17_Gtm_TomChannelDeInit` API

Return	void	-
Description	Mcu_17_Gtm_TomChannelDeInit resets a TOM channel to reset values.	
Source	IFX	
Error handling	-	
Configuration dependencies	-	
User hints	-	
SFR accessed	GTM_TOM_CH_IRQ_NOTIFY(w), GTM_TOM_TGC0_GLB_CTRL(w), GTM_TOM_TGC1_GLB_CTRL(w), SCU_CCUCON0(r), SCU_OSCCON(r), SCU_SYSPLLCON0(r), SCU_SYSPLLCON1(r), STM_TIM0(r) *Note : The list includes all the SFRs accessed in the context of the API. It lists the SFRs accessed by the driver and called interfaces from other drivers. During runtime, the SFRs accessed from this list may vary based on configuration and execution context.*	
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.	

1.3.3.41 Mcu_17_Gtm_TomChannelEnable

Table 410 Specification for `Mcu_17_Gtm_TomChannelEnable` API

Syntax	`void Mcu_17_Gtm_TomChannelEnable ( const uint8 Module, const uint8 Channel, const Mcu_17_Gtm_TimerOutputEnableType TimerOutputEn )`	
Service ID	0x68	
Sync/Async	Synchronous	
Safety Level	Refer to the release notes for the safety related info	
Re-entrancy	Reentrant for other channels	
Parameters (in)	Module Channel TimerOutputEn	TOM module number TOM channel number TOM output enable configuration
Parameters (out)	-	-
Parameters (in - out)	-	-
Return	void	-
Description	Mcu_17_Gtm_TomChannelEnable starts the specified timer. Applications which use the timer slice for the PWM functionality must enable the output (TimerOutPutEn = 1). Applications which use the timer for counting (timebase) purpose can disable the output.	

(table continues...)

Table 410 (continued) Specification for `Mcu_17_Gtm_TomChannelEnable` API

Source	IFX
Error handling	-
Configuration dependencies	-
User hints	-
SFR accessed	GTM_TOM_TGC0_ENDIS_CTRL(w), GTM_TOM_TGC0_ENDIS_STAT(w), GTM_TOM_TGC0_OUTEN_CTRL(w), GTM_TOM_TGC0_OUTEN_STAT(w), GTM_TOM_TGC1_ENDIS_CTRL(w), GTM_TOM_TGC1_ENDIS_STAT(w), GTM_TOM_TGC1_OUTEN_CTRL(w), GTM_TOM_TGC1_OUTEN_STAT(w), SCU_CCUCON0(r), SCU_OSCCON(r), SCU_SYSPLLCON0(r), SCU_SYSPLLCON1(r), STM_TIM0(r) *Note : The list includes all the SFRs accessed in the context of the API. It lists the SFRs accessed by the driver and called interfaces from other drivers. During runtime, the SFRs accessed from this list may vary based on configuration and execution context.*
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.

1.3.3.42 Mcu_17_Gtm_TomChannelDisable

Table 411 Specification for `Mcu_17_Gtm_TomChannelDisable` API

Syntax	`void Mcu_17_Gtm_TomChannelDisable ( const uint8 Module, const uint8 Channel )`	
Service ID	0x69	
Sync/Async	Synchronous	
Safety Level	Refer to the release notes for the safety related info	
Re-entrancy	Reentrant for other channels	
Parameters (in)	Module Channel	TOM module number TOM channel number
Parameters (out)	-	-
Parameters (in - out)	-	-
Return	void	-
Description	Mcu_17_Gtm_TomChannelDisable stops the specified timer. The timer output is unconditionally disabled.	
Source	IFX	
Error handling	-	

(table continues...)

Table 411 (continued) Specification for `Mcu_17_Gtm_TomChannelDisable` API

Configuration dependencies	-
User hints	-
SFR accessed	GTM_TOM_TGC0_ENDIS_CTRL(w), GTM_TOM_TGC0_ENDIS_STAT(w), GTM_TOM_TGC0_OUTEN_CTRL(w), GTM_TOM_TGC0_OUTEN_STAT(w), GTM_TOM_TGC1_ENDIS_CTRL(w), GTM_TOM_TGC1_ENDIS_STAT(w), GTM_TOM_TGC1_OUTEN_CTRL(w), GTM_TOM_TGC1_OUTEN_STAT(w), SCU_CCUCON0(r), SCU_OSCCON(r), SCU_SYSPLLCON0(r), SCU_SYSPLLCON1(r), STM_TIM0(r) *Note : The list includes all the SFRs accessed in the context of the API. It lists the SFRs accessed by the driver and called interfaces from other drivers. During runtime, the SFRs accessed from this list may vary based on configuration and execution context.*
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.

1.3.3.43 Mcu_17_Gtm_IsTomChannelEnabled

Table 412 Specification for `Mcu_17_Gtm_IsTomChannelEnabled` API

Syntax	`Mcu_17_Gtm_TimerStatusType Mcu_17_Gtm_IsTomChannelEnabled ( const uint8 Module, const uint8 Channel )`	
Service ID	0x6E	
Sync/Async	Synchronous	
Safety Level	Refer to the release notes for the safety related info	
Re-entrancy	Reentrant	
Parameters (in)	Module Channel	TOM module number TOM channel number
Parameters (out)	-	-
Parameters (in - out)	-	-
Return	Mcu_17_Gtm_TimerStatusType	MCU_GTM_TIMER_RUNNING : Timer is running. MCU_GTM_TIMER_STOPPED : Timer is stopped
Description	Mcu_17_Gtm_IsTomChannelEnabled confirms whether or not the specified timer slice is running.	
Source	IFX	
Error handling	-	
Configuration dependencies	-	

(table continues...)

Table 412 (continued) Specification for `Mcu_17_Gtm_IsTomChannelEnabled` API

User hints	-
SFR accessed	GTM_TOM_TGC0_ENDIS_STAT(r), GTM_TOM_TGC1_ENDIS_STAT(r) *Note : The list includes all the SFRs accessed in the context of the API. It lists the SFRs accessed by the driver and called interfaces from other drivers. During runtime, the SFRs accessed from this list may vary based on configuration and execution context.*
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.

1.3.3.44 Mcu_17_Gtm_TomChannelShadowTransfer

Table 413 Specification for `Mcu_17_Gtm_TomChannelShadowTransfer` API

Syntax	`void Mcu_17_Gtm_TomChannelShadowTransfer`
	`(`
	`  const uint8 Module,`
	`  const uint8 Channel`
	`)`	

Service ID	0x61	
Sync/Async	Synchronous	
Safety Level	Refer to the release notes for the safety related info	
Re-entrancy	Reentrant	
Parameters (in)	Module Channel	TOM module number TOM channel number
Parameters (out)	-	-
Parameters (in - out)	-	-
Return	void	-
Description	Mcu_17_Gtm_TomChannelShadowTransfer is used to initiate a copy of values in the shadow registers (compare, period and clock Source) of the specified TOM channel of a specified TOM module to the main timer registers.	
Source	IFX	
Error handling	-	
Configuration dependencies	-	
User hints	-	

(table continues...)

Table 413 (continued) Specification for `Mcu_17_Gtm_TomChannelShadowTransfer` API

SFR accessed	GTM_TOM_TGC0_ENDIS_CTRL(rw), GTM_TOM_TGC0_FUPD_CTRL(rw), GTM_TOM_TGC0_GLB_CTRL(w), GTM_TOM_TGC0_OUTEN_CTRL(rw), GTM_TOM_TGC1_ENDIS_CTRL(rw), GTM_TOM_TGC1_FUPD_CTRL(rw), GTM_TOM_TGC1_GLB_CTRL(w), GTM_TOM_TGC1_OUTEN_CTRL(rw), SCU_CCUCON0(r), SCU_OSCCON(r), SCU_SYSPLLCON0(r), SCU_SYSPLLCON1(r), STM_TIM0(r) *Note : The list includes all the SFRs accessed in the context of the API. It lists the SFRs accessed by the driver and called interfaces from other drivers. During runtime, the SFRs accessed from this list may vary based on configuration and execution context.*
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.

1.3.3.45 Mcu_17_Gtm_TomChUpdateEnDis

Table 414 Specification for `Mcu_17_Gtm_TomChUpdateEnDis` API

Syntax	`void Mcu_17_Gtm_TomChUpdateEnDis ( const uint8 Module, const uint8 Channel, const Mcu_17_Gtm_TimerUpdateEnableType UpEnVal )`	
Service ID	0x75	
Sync/Async	Synchronous	
Safety Level	Refer to the release notes for the safety related info	
Re-entrancy	Reentrant for other channels	
Parameters (in)	Module Channel UpEnVal	Specifies the module being used Specifies the GTM channel being used Specifies if the GTM timer update is enabled or disabled
Parameters (out)	-	-
Parameters (in - out)	-	-
Return	void	-
Description	Mcu_17_Gtm_TomChUpdateEnDis is used to update the value of the TOM Channel update enable/disable control register.	
Source	IFX	
Error handling	-	
Configuration dependencies	-	
User hints	-	

(table continues...)

Table 414 (continued) Specification for `Mcu_17_Gtm_TomChUpdateEnDis` API

SFR accessed	GTM_TOM_TGC0_GLB_CTRL(w), GTM_TOM_TGC1_GLB_CTRL(w), SCU_CCUCON0(r), SCU_OSCCON(r), SCU_SYSPLLCON0(r), SCU_SYSPLLCON1(r), STM_TIM0(r) *Note : The list includes all the SFRs accessed in the context of the API. It lists the SFRs accessed by the driver and called interfaces from other drivers. During runtime, the SFRs accessed from this list may vary based on configuration and execution context.*
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.

1.3.3.46 Mcu_17_Gtm_TomChOutEnStatUpdate

Table 415 Specification for `Mcu_17_Gtm_TomChOutEnStatUpdate` API

Syntax	`void Mcu_17_Gtm_TomChOutEnStatUpdate ( const uint8 Module, const uint8 Channel, const Mcu_17_Gtm_TimerOutputEnableType TimerOutputEnDis )`	
Service ID	0x77	
Sync/Async	Synchronous	
Safety Level	Refer to the release notes for the safety related info	
Re-entrancy	Reentrant for other Channels	
Parameters (in)	Module Channel TimerOutputEnDis	Specifies the module being used Specifies the GTM channel being used Specifies if the timer output is enabled or disabled
Parameters (out)	-	-
Parameters (in - out)	-	-
Return	void	-
Description	Mcu_17_Gtm_TomChOutEnStatUpdate is used to update the value of the TOM Channel Output Enable/ Disable Status register.	
Source	IFX	
Error handling	-	
Configuration dependencies	-	
User hints	-	

(table continues...)

Table 415 (continued) Specification for `Mcu_17_Gtm_TomChOutEnStatUpdate` API	
SFR accessed	GTM_TOM_TGC0_OUTEN_STAT(w), GTM_TOM_TGC1_OUTEN_STAT(w), SCU_CCUCON0(r), SCU_OSCCON(r), SCU_SYSPLLCON0(r), SCU_SYSPLLCON1(r), STM_TIM0(r) *Note : The list includes all the SFRs accessed in the context of the API. It lists the SFRs accessed by the driver and called interfaces from other drivers. During runtime, the SFRs accessed from this list may vary based on configuration and execution context.*
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.

1.3.3.47 Mcu_17_Gtm_TomChOutEnCtrlUpdate

Table 416 Specification for `Mcu_17_Gtm_TomChOutEnCtrlUpdate` API		
Syntax	`void Mcu_17_Gtm_TomChOutEnCtrlUpdate ( const uint8 Module, const uint8 Channel, const Mcu_17_Gtm_TimerOutputEnTriggerType TimerOutputEnDis )`	
Service ID	0x76	
Sync/Async	Synchronous	
Safety Level	Refer to the release notes for the safety related info	
Re-entrancy	Reentrant for other channels	
Parameters (in)	Module Channel TimerOutputEnDis	Specifies the module being used Specifies the GTM channel being used Enable/disable the TOM channel output on a trigger
Parameters (out)	-	-
Parameters (in - out)	-	-
Return	void	-
Description	Mcu_17_Gtm_TomChOutEnCtrlUpdate is used to update the value of the TOM Channel Output Enable/ Disable Control register.	
Source	IFX	
Error handling	-	
Configuration dependencies	-	
User hints	-	

(table continues...)

Table 416 (continued) Specification for `Mcu_17_Gtm_TomChOutEnCtrlUpdate` API

SFR accessed	GTM_TOM_TGC0_OUTEN_CTRL(w), GTM_TOM_TGC1_OUTEN_CTRL(w), SCU_CCUCON0(r), SCU_OSCCON(r), SCU_SYSPLLCON0(r), SCU_SYSPLLCON1(r), STM_TIM0(r) *Note : The list includes all the SFRs accessed in the context of the API. It lists the SFRs accessed by the driver and called interfaces from other drivers. During runtime, the SFRs accessed from this list may vary based on configuration and execution context.*
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.

1.3.3.48 Mcu_17_Gtm_TomChEndisStatUpdate

Table 417 Specification for `Mcu_17_Gtm_TomChEndisStatUpdate` API

Syntax	`void Mcu_17_Gtm_TomChEndisStatUpdate ( const uint8 Module, const uint8 Channel, const Mcu_17_Gtm_TimerEnableType TimerEnDis )`	
Service ID	0x79	
Sync/Async	Synchronous	
Safety Level	Refer to the release notes for the safety related info	
Re-entrancy	Reentrant for other channels	
Parameters (in)	Module Channel TimerEnDis	Specifies the module being used Specifies the GTM channel being used Specifies if the timer is enabled or disabled
Parameters (out)	-	-
Parameters (in - out)	-	-
Return	void	-
Description	Mcu_17_Gtm_TomChEndisStatUpdate is used to update the value of the TOM channel enable/disable status register.	
Source	IFX	
Error handling	-	
Configuration dependencies	-	
User hints	-	

(table continues...)

Table 417 (continued) Specification for `Mcu_17_Gtm_TomChEndisStatUpdate` API

SFR accessed	GTM_TOM_TGC0_ENDIS_STAT(w), GTM_TOM_TGC1_ENDIS_STAT(w), SCU_CCUCON0(r), SCU_OSCCON(r), SCU_SYSPLLCON0(r), SCU_SYSPLLCON1(r), STM_TIM0(r) *Note : The list includes all the SFRs accessed in the context of the API. It lists the SFRs accessed by the driver and called interfaces from other drivers. During runtime, the SFRs accessed from this list may vary based on configuration and execution context.*
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.

1.3.3.49 Mcu_17_Gtm_TomChEndisCtrlUpdate

Table 418 Specification for `Mcu_17_Gtm_TomChEndisCtrlUpdate` API

Syntax	`void Mcu_17_Gtm_TomChEndisCtrlUpdate ( const uint8 Module, const uint8 Channel, const Mcu_17_Gtm_TimerEnTriggerType TimerEnDis )`	
Service ID	0x78	
Sync/Async	Synchronous	
Safety Level	Refer to the release notes for the safety related info	
Re-entrancy	Reentrant for other channels	
Parameters (in)	Module Channel TimerEnDis	Specifies the module being used TOM channel used Enable/disable the TOM channel on a trigger
Parameters (out)	-	-
Parameters (in - out)	-	-
Return	void	-
Description	Mcu_17_Gtm_TomChEndisCtrlUpdate is used to update the value of the ATOM Channel Enable/ Disable Control register.	
Source	IFX	
Error handling	-	
Configuration dependencies	-	
User hints	-	

(table continues...)

Table 418 (continued) Specification for `Mcu_17_Gtm_TomChEndisCtrlUpdate` API	
SFR accessed	GTM_TOM_TGC0_ENDIS_CTRL(w), GTM_TOM_TGC1_ENDIS_CTRL(w), SCU_CCUCON0(r), SCU_OSCCON(r), SCU_SYSPLLCON0(r), SCU_SYSPLLCON1(r), STM_TIM0(r) *Note : The list includes all the SFRs accessed in the context of the API. It lists the SFRs accessed by the driver and called interfaces from other drivers. During runtime, the SFRs accessed from this list may vary based on configuration and execution context.*
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.

1.3.3.50 Mcu_17_Gtm_TomTriggerRequest

Table 419 Specification for `Mcu_17_Gtm_TomTriggerRequest` API		
Syntax	`void Mcu_17_Gtm_TomTriggerRequest ( const uint8 Module, const uint8 TomTgcIndex, const uint16 TriggerChannels )`	
Service ID	0x73	
Sync/Async	Synchronous	
Safety Level	Refer to the release notes for the safety related info	
Re-entrancy	Reentrant for other TGC	
Parameters (in)	Module TomTgcIndex TriggerChannels	TOM Module ID TOM TGC ID Channels to be triggered
Parameters (out)	-	-
Parameters (in - out)	-	-
Return	void	-
Description	Mcu_17_Gtm_TomTriggerRequest is used by applications to enable or disable multiple TOM channels.	
Source	IFX	
Error handling	-	
Configuration dependencies	-	
User hints	-	

(table continues...)

Table 419 (continued) Specification for `Mcu_17_Gtm_TomTriggerRequest` API

SFR accessed	GTM_TOM_TGC0_ENDIS_CTRL(w), GTM_TOM_TGC0_GLB_CTRL(w), GTM_TOM_TGC1_ENDIS_CTRL(w), GTM_TOM_TGC1_GLB_CTRL(w), SCU_CCUCON0(r), SCU_OSCCON(r), SCU_SYSPLLCON0(r), SCU_SYSPLLCON1(r), STM_TIM0(r) *Note : The list includes all the SFRs accessed in the context of the API. It lists the SFRs accessed by the driver and called interfaces from other drivers. During runtime, the SFRs accessed from this list may vary based on configuration and execution context.*
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.

1.3.3.51 Mcu_17_Gtm_TimChannelInit

Table 420 Specification for `Mcu_17_Gtm_TimChannelInit` API

Syntax	`void Mcu_17_Gtm_TimChannelInit ( const Mcu_17_Gtm_TimChConfigType * const ConfigPtr )`	
Service ID	0x62	
Sync/Async	Synchronous	
Safety Level	Refer to the release notes for the safety related info	
Re-entrancy	Reentrant for other channels	
Parameters (in)	ConfigPtr	Pointer to the configuration data of a TIM channel
Parameters (out)	-	-
Parameters (in - out)	-	-
Return	void	-
Description	Mcu_17_Gtm_TimChannelInit configures an instance of a TIM channel. Consumer of a TIM channel invokes this interface at the time of initialization.	
Source	IFX	
Error handling	-	
Configuration dependencies	-	
User hints	-	
SFR accessed	GTM_TIM_CH_CTRL(rw), GTM_TIM_CH_ECTRL(w), GTM_TIM_CH_FLT_FE(w), GTM_TIM_CH_FLT_RE(w), GTM_TIM_CH_IRQ_EN(w), GTM_TIM_CH_IRQ_MODE(w), GTM_TIM_CH_IRQ_NOTIFY(w), GTM_TIM_CH_TDUV(w) *Note : The list includes all the SFRs accessed in the context of the API. It lists the SFRs accessed by the driver and called interfaces from other drivers. During runtime, the SFRs accessed from this list may vary based on configuration and execution context.*	

(table continues...)

Table 420 (continued) Specification for `Mcu_17_Gtm_TimChannelInit` API

Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.

1.3.3.52 Mcu_17_Gtm_TimChInitCheck

Table 421 Specification for `Mcu_17_Gtm_TimChInitCheck` API

Syntax	`Std_ReturnType Mcu_17_Gtm_TimChInitCheck ( const Mcu_17_Gtm_TimChConfigType * const ConfigPtr )`	
Service ID	0x81	
Sync/Async	Synchronous	
Safety Level	Refer to the release notes for the safety related info	
Re-entrancy	Reentrant for other channels	
Parameters (in)	ConfigPtr	Configuration of the TIM channel that is to be verified
Parameters (out)	-	-
Parameters (in - out)	-	-
Return	Std_ReturnType	E_OK: TIM initcheck is successful E_NOT_OK: TIM initcheck failed
Description	Mcu_17_Gtm_TimChInitCheck verifies the initialization done by the MCU driver in the Mcu_17_Gtm_TimChannelInit API for the input TIM channel.	
Source	IFX	
Error handling	-	
Configuration dependencies	-	
User hints	None	
SFR accessed	GTM_TIM_CH_CTRL(r), GTM_TIM_CH_ECTRL(r), GTM_TIM_CH_FLT_FE(r), GTM_TIM_CH_FLT_RE(r), GTM_TIM_CH_IRQ_EN(r), GTM_TIM_CH_IRQ_MODE(r), GTM_TIM_CH_IRQ_NOTIFY(r), GTM_TIM_CH_TDUV(r) *Note : The list includes all the SFRs accessed in the context of the API. It lists the SFRs accessed by the driver and called interfaces from other drivers. During runtime, the SFRs accessed from this list may vary based on configuration and execution context.*	
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.	

1.3.3.53 Mcu_17_Gtm_TimChannelDeInit

Table 422 Specification for `Mcu_17_Gtm_TimChannelDeInit` API

Syntax	`void Mcu_17_Gtm_TimChannelDeInit ( const uint8 Module, const uint8 Channel )`	
Service ID	0x67	
Sync/Async	Synchronous	
Safety Level	Refer to the release notes for the safety related info	
Re-entrancy	Reentrant for other channels	
Parameters (in)	Module Channel	TIM module number TIM channel number
Parameters (out)	-	-
Parameters (in - out)	-	-
Return	void	-
Description	Mcu_17_Gtm_TimChannelDeInit resets a TIM channel to default values.	
Source	IFX	
Error handling	-	
Configuration dependencies	-	
User hints	-	
SFR accessed	GTM_TIM_CH_IRQ_NOTIFY(w), GTM_TIM_RST(rw) *Note : The list includes all the SFRs accessed in the context of the API. It lists the SFRs accessed by the driver and called interfaces from other drivers. During runtime, the SFRs accessed from this list may vary based on configuration and execution context.*	
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.	

1.3.3.54 Mcu_17_Gtm_TimChannelEnable

Table 423 Specification for `Mcu_17_Gtm_TimChannelEnable` API

Syntax	`void Mcu_17_Gtm_TimChannelEnable ( const uint8 Module, const uint8 Channel )`
Service ID	0x6C

(table continues...)

Table 423 (continued) Specification for `Mcu_17_Gtm_TimChannelEnable` API

Sync/Async	Synchronous	
Safety Level	Refer to the release notes for the safety related info	
Re-entrancy	Reentrant for other channels	
Parameters (in)	Module Channel	TIM module number TIM channel number
Parameters (out)	-	-
Parameters (in - out)	-	-
Return	void	-
Description	Mcu_17_Gtm_TimChannelEnable starts the specified timer.	
Source	IFX	
Error handling	-	
Configuration dependencies	-	
User hints	-	
SFR accessed	GTM_TIM_CH_CTRL(rw) *Note : The list includes all the SFRs accessed in the context of the API. It lists the SFRs accessed by the driver and called interfaces from other drivers. During runtime, the SFRs accessed from this list may vary based on configuration and execution context.*	
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.	

1.3.3.55 Mcu_17_Gtm_TimChannelDisable

Table 424 Specification for `Mcu_17_Gtm_TimChannelDisable` API

Syntax	`void Mcu_17_Gtm_TimChannelDisable`
	`(`
	`  const uint8 Module,`
	`  const uint8 Channel`
	`)`	

Service ID	0x6D	
Sync/Async	Synchronous	
Safety Level	Refer to the release notes for the safety related info	
Re-entrancy	Reentrant for other channels	
Parameters (in)	Module Channel	TIM module number TIM channel number
Parameters (out)	-	-

(table continues...)

Table 424 (continued) Specification for `Mcu_17_Gtm_TimChannelDisable` API

Parameters (in - out)	-	-
Return	void	-
Description	Mcu_17_Gtm_TimChannelDisable stops the specified timer.	
Source	IFX	
Error handling	-	
Configuration dependencies	-	
User hints	-	
SFR accessed	GTM_TIM_CH_CTRL(rw) *Note : The list includes all the SFRs accessed in the context of the API. It lists the SFRs accessed by the driver and called interfaces from other drivers. During runtime, the SFRs accessed from this list may vary based on configuration and execution context.*	
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.	

1.3.3.56 Mcu_17_Gtm_IsTimChannelEnabled

Table 425 Specification for `Mcu_17_Gtm_IsTimChannelEnabled` API

Syntax	`Mcu_17_Gtm_TimerStatusType Mcu_17_Gtm_IsTimChannelEnabled ( const uint8 Module, const uint8 Channel )`	
Service ID	0x70	
Sync/Async	Synchronous	
Safety Level	Refer to the release notes for the safety related info	
Re-entrancy	Reentrant	
Parameters (in)	Module Channel	TIM module number TIM channel number
Parameters (out)	-	-
Parameters (in - out)	-	-
Return	Mcu_17_Gtm_TimerStatusType	MCU_GTM_TIMER_RUNNING: Timer is running MCU_GTM_TIMER_STOPPED: Timer is stopped
Description	Mcu_17_Gtm_IsTimChannelEnabled confirms whether or not the specified timer slice is running.	
Source	IFX	

(table continues...)

Table 425 (continued) Specification for `Mcu_17_Gtm_IsTimChannelEnabled` API	
Error handling	-
Configuration dependencies	-
User hints	-
SFR accessed	GTM_TIM_CH_CTRL(r) *Note : The list includes all the SFRs accessed in the context of the API. It lists the SFRs accessed by the driver and called interfaces from other drivers. During runtime, the SFRs accessed from this list may vary based on configuration and execution context.*
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.

1.3.3.57 Mcu_17_Gtm_ConnectPortPinToTim

Table 426 Specification for `Mcu_17_Gtm_ConnectPortPinToTim` API

Syntax	`void Mcu_17_Gtm_ConnectPortPinToTim ( const uint8 Module, const uint8 Channel, const uint8 TimerChselValue )`	
Service ID	0x72	
Sync/Async	Synchronous	
Safety Level	Refer to the release notes for the safety related info	
Re-entrancy	Reentrant for other TIM modules	
Parameters (in)	Module Channel TimerChselValue	TIM module number TIM channel number Timer input select register CHxSEL bit-field value
Parameters (out)	-	-
Parameters (in - out)	-	-
Return	void	-
Description	Mcu_17_Gtm_ConnectPortPinToTim is used to connect a port pin to an input GTM channel (TIM).	
Source	IFX	
Error handling	-	
Configuration dependencies	-	

(table continues...)

Table 426 (continued) Specification for `Mcu_17_Gtm_ConnectPortPinToTim` API	
User hints	User shall be aware of configuring TIMINSELx register at runtime and ensure it does not conflict with configured TIMINSELx done by Mcu_Init as this may lead to a undesired behaviour on TIM channels.
SFR accessed	GTM_TIMINSEL(rw) *Note : The list includes all the SFRs accessed in the context of the API. It lists the SFRs accessed by the driver and called interfaces from other drivers. During runtime, the SFRs accessed from this list may vary based on configuration and execution context.*
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.

1.3.3.58 Mcu_17_Ccu6_TimerInit

Table 427 Specification for `Mcu_17_Ccu6_TimerInit` API		
Syntax	`void Mcu_17_Ccu6_TimerInit ( const Mcu_17_Ccu6_TimerConfigType * const ConfigPtr )`	
Service ID	0x82	
Sync/Async	Synchronous	
Safety Level	Refer to the release notes for the safety related info	
Re-entrancy	Reentrant for other channels	
Parameters (in)	ConfigPtr	Ccu6 timer channel initialization contents
Parameters (out)	-	-
Parameters (in - out)	-	-
Return	void	-
Description	Mcu_17_Ccu6_TimerInit configures an instance of a CCU6 timer channel. User of the CCU6 channel invokes this interface at the time of channel's initialization.	
Source	IFX	
Error handling	-	
Configuration dependencies	-	
User hints	-	

(table continues...)

Table 427 (continued) Specification for `Mcu_17_Ccu6_TimerInit` API

SFR accessed	CCU6_CC63SR(w), CCU6_CC6SR(w), CCU6_CMPMODIF(rw), CCU6_CMPSTAT(rw), CCU6_IEN(rw), CCU6_INP(rw), CCU6_ISR(rw), CCU6_MODCTR(rw), CCU6_PISEL0(rw), CCU6_PISEL2(rw), CCU6_PSLR(rw), CCU6_T12(w), CCU6_T12MSEL(rw), CCU6_T12PR(w), CCU6_T13(w), CCU6_T13PR(w), CCU6_TCTR0(rw), CCU6_TCTR2(rw) *Note : The list includes all the SFRs accessed in the context of the API. It lists the SFRs accessed by the driver and called interfaces from other drivers. During runtime, the SFRs accessed from this list may vary based on configuration and execution context.*
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.

1.3.3.59 Mcu_17_Ccu6_TimerInitCheck

Table 428 Specification for `Mcu_17_Ccu6_TimerInitCheck` API

Syntax	`Std_ReturnType  Mcu_17_Ccu6_TimerInitCheck`
	`(`
	`  const Mcu_17_Ccu6_TimerConfigType * const ConfigPtr`
	`)`	

Service ID	0x89	
Sync/Async	Synchronous	
Safety Level	Refer to the release notes for the safety related info	
Re-entrancy	Reentrant for other channels	
Parameters (in)	ConfigPtr	Configuration of the CCU6 comparator channel that is to be verified
Parameters (out)	-	-
Parameters (in - out)	-	-
Return	Std_ReturnType	E_OK: CCU6 initcheck is successful E_NOT_OK: CCU6 initcheck failed
Description	Mcu_17_Ccu6_TimerInitCheck verifies the initialization done by the MCU driver in the Mcu_17_Ccu6_TimerInit() API for the input CCU6 comparator.	
Source	IFX	
Error handling	-	
Configuration dependencies	-	
User hints	None	

(table continues...)

Table 428 (continued) Specification for `Mcu_17_Ccu6_TimerInitCheck` API

SFR accessed	CCU6_CC63SR(r), CCU6_CC6SR(r), CCU6_CLC(r), CCU6_CMPSTAT(r), CCU6_IEN(r), CCU6_INP(r), CCU6_MODCTR(r), CCU6_PISEL0(r), CCU6_PISEL2(r), CCU6_PSLR(r), CCU6_T12MSEL(r), CCU6_T12PR(r), CCU6_T13PR(r), CCU6_TCTR0(r), CCU6_TCTR2(r) *Note : The list includes all the SFRs accessed in the context of the API. It lists the SFRs accessed by the driver and called interfaces from other drivers. During runtime, the SFRs accessed from this list may vary based on configuration and execution context.*
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.

1.3.3.60 Mcu_17_Ccu6_TimerDeInit

Table 429 Specification for `Mcu_17_Ccu6_TimerDeInit` API

Syntax	`void Mcu_17_Ccu6_TimerDeInit ( const Mcu_17_Ccu6_TimerChIdentifierType TimerId )`	
Service ID	0x83	
Sync/Async	Synchronous	
Safety Level	Refer to the release notes for the safety related info	
Re-entrancy	Reentrant for other channels	
Parameters (in)	TimerId	CCU6 timer to be de-initialized
Parameters (out)	-	-
Parameters (in - out)	-	-
Return	void	-
Description	Mcu_17_Ccu6_TimerDeInit de-initializes the CCU6 timer channel to default values.	
Source	IFX	
Error handling	-	
Configuration dependencies	-	
User hints	-	
SFR accessed	CCU6_CC63SR(w), CCU6_CC6SR(w), CCU6_CMPMODIF(rw), CCU6_CMPSTAT(rw), CCU6_IEN(rw), CCU6_INP(rw), CCU6_MODCTR(rw), CCU6_PISEL0(rw), CCU6_PISEL2(rw), CCU6_PSLR(rw), CCU6_T12(w), CCU6_T12MSEL(rw), CCU6_T12PR(w), CCU6_T13(w), CCU6_T13PR(w), CCU6_TCTR0(rw), CCU6_TCTR2(rw) *Note : The list includes all the SFRs accessed in the context of the API. It lists the SFRs accessed by the driver and called interfaces from other drivers. During runtime, the SFRs accessed from this list may vary based on configuration and execution context.*	

(table continues...)

Table 429 (continued) Specification for `Mcu_17_Ccu6_TimerDeInit` API	
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.

1.3.3.61 Mcu_17_Ccu6_TimerStart

Table 430 Specification for `Mcu_17_Ccu6_TimerStart` API		
Syntax	`void Mcu_17_Ccu6_TimerStart ( const Mcu_17_Ccu6_TimerChIdentifierType TimerId )`	
Service ID	0x84	
Sync/Async	Synchronous	
Safety Level	Refer to the release notes for the safety related info	
Re-entrancy	Reentrant for other channels	
Parameters (in)	TimerId	CCU6 timer channel to be enabled
Parameters (out)	-	-
Parameters (in - out)	-	-
Return	void	-
Description	Mcu_17_Ccu6_TimerStart starts the specified CCU6 timer.	
Source	IFX	
Error handling	-	
Configuration dependencies	-	
User hints	-	
SFR accessed	CCU6_ISR(rw), CCU6_TCTR4(rw) *Note : The list includes all the SFRs accessed in the context of the API. It lists the SFRs accessed by the driver and called interfaces from other drivers. During runtime, the SFRs accessed from this list may vary based on configuration and execution context.*	
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.	

1.3.3.62 Mcu_17_Ccu6_TimerStop

Table 431 Specification for `Mcu_17_Ccu6_TimerStop` API

Syntax	`void Mcu_17_Ccu6_TimerStop ( const Mcu_17_Ccu6_TimerChIdentifierType TimerId )`	
Service ID	0x85	
Sync/Async	Synchronous	
Safety Level	Refer to the release notes for the safety related info	
Re-entrancy	Reentrant for other channels	
Parameters (in)	TimerId	CCU6 timer channel to be disabled
Parameters (out)	-	-
Parameters (in - out)	-	-
Return	void	-
Description	Mcu_17_Ccu6_TimerStop stops the specified CCU6 timer.	
Source	IFX	
Error handling	-	
Configuration dependencies	-	
User hints	-	
SFR accessed	CCU6_TCTR4(rw) *Note : The list includes all the SFRs accessed in the context of the API. It lists the SFRs accessed by the driver and called interfaces from other drivers. During runtime, the SFRs accessed from this list may vary based on configuration and execution context.*	
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.	

1.3.3.63 Mcu_17_Ccu6_TimerIntEnDis

Table 432 Specification for `Mcu_17_Ccu6_TimerIntEnDis` API

Syntax	`void Mcu_17_Ccu6_TimerIntEnDis ( const Mcu_17_Ccu6_TimerChIntType Ccu6IntConfig )`
Service ID	0x87
Sync/Async	Synchronous
Safety Level	Refer to the release notes for the safety related info

(table continues...)

Table 432 (continued) Specification for `Mcu_17_Ccu6_TimerIntEnDis` API

Re-entrancy	Reentrant for other channels	
Parameters (in)	Ccu6IntConfig	CCU6 timer channel interrupt configuration
Parameters (out)	-	-
Parameters (in - out)	-	-
Return	void	-
Description	Mcu_17_Ccu6_TimerIntEnDis enables/disables the specified interrupt of the CCU6 timer.	
Source	IFX	
Error handling	-	
Configuration dependencies	-	
User hints	-	
SFR accessed	CCU6_IEN(rw) *Note : The list includes all the SFRs accessed in the context of the API. It lists the SFRs accessed by the driver and called interfaces from other drivers. During runtime, the SFRs accessed from this list may vary based on configuration and execution context.*	
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.	

1.3.3.64 Mcu_17_Ccu6_TimerShadowTransfer

Table 433 Specification for `Mcu_17_Ccu6_TimerShadowTransfer` API

Syntax	`void Mcu_17_Ccu6_TimerShadowTransfer`
	`(`
	`  const Mcu_17_Ccu6_TimerChIdentifierType TimerId`
	`)`	

Service ID	0x86	
Sync/Async	Synchronous	
Safety Level	Refer to the release notes for the safety related info	
Re-entrancy	Reentrant for other CCU6 timers	
Parameters (in)	TimerId	CCU6 timer channel
Parameters (out)	-	-
Parameters (in - out)	-	-
Return	void	-

(table continues...)

Table 433 (continued) Specification for `Mcu_17_Ccu6_TimerShadowTransfer` API

Description	Mcu_17_Ccu6_TimerShadowTransfer enables the shadow transfer for the specified CCU6 timer channel, that is, to copy contents from the shadow register to the main register.
Source	IFX
Error handling	-
Configuration dependencies	-
User hints	-
SFR accessed	CCU6_TCTR4(rw) *Note : The list includes all the SFRs accessed in the context of the API. It lists the SFRs accessed by the driver and called interfaces from other drivers. During runtime, the SFRs accessed from this list may vary based on configuration and execution context.*
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.

1.3.3.65 Mcu_17_Gpt12_TimerInit

Table 434 Specification for `Mcu_17_Gpt12_TimerInit` API

Syntax	`void Mcu_17_Gpt12_TimerInit`
	`(`
	`  const Mcu_17_Gpt12_TimerConfigType * const ConfigPtr`
	`)`	

Service ID	0x8A	
Sync/Async	Synchronous	
Safety Level	Refer to the release notes for the safety related info	
Re-entrancy	Reentrant for other channels	
Parameters (in)	ConfigPtr	GPT12 timer channel initialization contents
Parameters (out)	-	-
Parameters (in - out)	-	-
Return	void	-
Description	Mcu_17_Gpt12_TimerInit configures an instance of a GPT12 timer channel. User of a GPT12 channel invokes this interface at the time of former's initialization.	
Source	IFX	
Error handling	-	
Configuration dependencies	-	
User hints	-	

(table continues...)

Table 434 (continued) Specification for `Mcu_17_Gpt12_TimerInit` API

SFR accessed	GPT12_PISEL(rw), GPT12_T2(w), GPT12_T2CON(w), GPT12_T3(w), GPT12_T3CON(w), GPT12_T4(w), GPT12_T4CON(w), GPT12_T5(w), GPT12_T5CON(w), GPT12_T6(w), GPT12_T6CON(w) *Note : The list includes all the SFRs accessed in the context of the API. It lists the SFRs accessed by the driver and called interfaces from other drivers. During runtime, the SFRs accessed from this list may vary based on configuration and execution context.*
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.

1.3.3.66 Mcu_17_Gpt12_TimerInitCheck

Table 435 Specification for `Mcu_17_Gpt12_TimerInitCheck` API

Syntax	`Std_ReturnType  Mcu_17_Gpt12_TimerInitCheck`
	`(`
	`  const Mcu_17_Gpt12_TimerConfigType * const ConfigPtr`
	`)`	

Service ID	0x8B	
Sync/Async	Synchronous	
Safety Level	Refer to the release notes for the safety related info	
Re-entrancy	Reentrant for other channels	
Parameters (in)	ConfigPtr	Configuration of the GPT12 timer channel that is to be verified
Parameters (out)	-	-
Parameters (in - out)	-	-
Return	Std_ReturnType	E_OK: GPT12 initcheck is successful E_NOT_OK: GPT12 initcheck failed
Description	Mcu_17_Gpt12_TimerInitCheck verifies the initialization done by the MCU driver in the Mcu_17_Gpt12_TimerInit() API for the input GPT timer channel.	
Source	IFX	
Error handling	-	
Configuration dependencies	-	
User hints	None	
SFR accessed	GPT12_CLC(r), GPT12_PISEL(r), GPT12_T2CON(r), GPT12_T3CON(r), GPT12_T4CON(r), GPT12_T5CON(r), GPT12_T6CON(r) *Note : The list includes all the SFRs accessed in the context of the API. It lists the SFRs accessed by the driver and called interfaces from other drivers. During runtime, the SFRs accessed from this list may vary based on configuration and execution context.*	

(table continues...)

Table 435 (continued) Specification for `Mcu_17_Gpt12_TimerInitCheck` API	
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.

1.3.3.67 Mcu_17_Gpt12_TimerDeInit

Table 436 Specification for `Mcu_17_Gpt12_TimerDeInit` API		
Syntax	`void Mcu_17_Gpt12_TimerDeInit ( const Mcu_17_Gpt12_TimerChIdentifierType TimerId )`	
Service ID	0x8C	
Sync/Async	Synchronous	
Safety Level	Refer to the release notes for the safety related info	
Re-entrancy	Reentrant for other channels	
Parameters (in)	TimerId	GPT12 timer to be de-initialized
Parameters (out)	-	-
Parameters (in - out)	-	-
Return	void	-
Description	Mcu_17_Gpt12_TimerDeInit de-initializes the input GPT12 timer channel to default values.	
Source	IFX	
Error handling	-	
Configuration dependencies	-	
User hints	-	
SFR accessed	GPT12_PISEL(rw), GPT12_T2(w), GPT12_T2CON(w), GPT12_T3(w), GPT12_T3CON(w), GPT12_T4(w), GPT12_T4CON(w), GPT12_T5(w), GPT12_T5CON(w), GPT12_T6(w), GPT12_T6CON(w) *Note : The list includes all the SFRs accessed in the context of the API. It lists the SFRs accessed by the driver and called interfaces from other drivers. During runtime, the SFRs accessed from this list may vary based on configuration and execution context.*	
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.	

1.3.3.68 Mcu_17_Gpt12_TimerStart

Table 437 Specification for `Mcu_17_Gpt12_TimerStart` API

Syntax	`void Mcu_17_Gpt12_TimerStart ( const Mcu_17_Gpt12_TimerChIdentifierType TimerId )`	
Service ID	0x8D	
Sync/Async	Synchronous	
Safety Level	Refer to the release notes for the safety related info	
Re-entrancy	Reentrant for other channels	
Parameters (in)	TimerId	GPT12 timer channel to be enabled
Parameters (out)	-	-
Parameters (in - out)	-	-
Return	void	-
Description	Mcu_17_Gpt12_TimerStart starts the specified GPT12 timer.	
Source	IFX	
Error handling	-	
Configuration dependencies	-	
User hints	-	
SFR accessed	GPT12_T2CON(rw), GPT12_T3CON(rw), GPT12_T4CON(rw), GPT12_T5CON(rw), GPT12_T6CON(rw) *Note : The list includes all the SFRs accessed in the context of the API. It lists the SFRs accessed by the driver and called interfaces from other drivers. During runtime, the SFRs accessed from this list may vary based on configuration and execution context.*	
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.	

1.3.3.69 Mcu_17_Gpt12_TimerStop

Table 438 Specification for `Mcu_17_Gpt12_TimerStop` API

Syntax	`void Mcu_17_Gpt12_TimerStop ( const Mcu_17_Gpt12_TimerChIdentifierType TimerId )`
Service ID	0x8E
Sync/Async	Synchronous

(table continues...)

Table 438 (continued) Specification for `Mcu_17_Gpt12_TimerStop` API

Safety Level	Refer to the release notes for the safety related info	
Re-entrancy	Reentrant for other channels	
Parameters (in)	TimerId	GPT12 timer channel to be disabled
Parameters (out)	-	-
Parameters (in - out)	-	-
Return	void	-
Description	Mcu_17_Gpt12_TimerStop stops the specified GPT12 timer.	
Source	IFX	
Error handling	-	
Configuration dependencies	-	
User hints	-	
SFR accessed	GPT12_T2CON(rw), GPT12_T3CON(rw), GPT12_T4CON(rw), GPT12_T5CON(rw), GPT12_T6CON(rw) *Note : The list includes all the SFRs accessed in the context of the API. It lists the SFRs accessed by the driver and called interfaces from other drivers. During runtime, the SFRs accessed from this list may vary based on configuration and execution context.*	
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.	

1.3.3.70 Mcu_17_Stm_SetupComparator

Table 439 Specification for `Mcu_17_Stm_SetupComparator` API

Syntax	`void Mcu_17_Stm_SetupComparator`
	`(`
	`  const Mcu_17_Stm_TimerConfigType * const ConfigPtr`
	`)`	

Service ID	0x90	
Sync/Async	Synchronous	
Safety Level	Refer to the release notes for the safety related info	
Re-entrancy	Reentrant for other STM comparators	
Parameters (in)	ConfigPtr	STM Timer Compare operation contents
Parameters (out)	-	-

(table continues...)

Table 439 (continued) Specification for `Mcu_17_Stm_SetupComparator` API

Parameters (in - out)	-	-
Return	void	-
Description	Mcu_17_Stm_SetupCompareOperation configures the compare register of the STM timer.	
Source	IFX	
Error handling	-	
Configuration dependencies	-	
User hints	-	
SFR accessed	STM_CMCON(rw), STM_CMP(w), STM_ICR(rw), STM_ISCR(rw) *Note : The list includes all the SFRs accessed in the context of the API. It lists the SFRs accessed by the driver and called interfaces from other drivers. During runtime, the SFRs accessed from this list may vary based on configuration and execution context.*	
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.	

1.3.3.71 Mcu_17_Stm_CheckComparator

Table 440 Specification for `Mcu_17_Stm_CheckComparator` API

Syntax	`void Mcu_17_Stm_CheckComparator ( const Mcu_17_Stm_TimerConfigType * const ConfigPtr )`	
Service ID	0x91	
Sync/Async	Synchronous	
Safety Level	Refer to the release notes for the safety related info	
Re-entrancy	Non-reentrant	
Parameters (in)	ConfigPtr	STM Timer channel initialization contents
Parameters (out)	-	-
Parameters (in - out)	-	-
Return	void	-
Description	Mcu_17_Stm_CheckCompareRegContent checks the configuration of the compare register against the passed configuration.	
Source	IFX	
Error handling	-	

(table continues...)

Table 440 (continued) Specification for `Mcu_17_Stm_CheckComparator` API	
Configuration dependencies	-
User hints	User should verify the value of the Compare register as its value can change at the run-time
SFR accessed	STM_CMCON(r), STM_ICR(r) *Note : The list includes all the SFRs accessed in the context of the API. It lists the SFRs accessed by the driver and called interfaces from other drivers. During runtime, the SFRs accessed from this list may vary based on configuration and execution context.*
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.

1.3.3.72 Mcu_17_Stm_ComparatorIntDisable

Table 441 Specification for `Mcu_17_Stm_ComparatorIntDisable` API		
Syntax	`void Mcu_17_Stm_ComparatorIntDisable ( const uint8 StmTimerId, const uint8 StmComparatorId )`	
Service ID	0x88	
Sync/Async	Synchronous	
Safety Level	Refer to the release notes for the safety related info	
Re-entrancy	Reentrant for other STM Timers	
Parameters (in)	StmTimerId StmComparatorId	STM Timer Id STM Comparator Id
Parameters (out)	-	-
Parameters (in - out)	-	-
Return	void	-
Description	Mcu_17_Stm_ComparatorIntDisable disables the comparator interrupt.	
Source	IFX	
Error handling	-	
Configuration dependencies	-	
User hints	-	
SFR accessed	STM_ICR(w) *Note : The list includes all the SFRs accessed in the context of the API. It lists the SFRs accessed by the driver and called interfaces from other drivers. During runtime, the SFRs accessed from this list may vary based on configuration and execution context.*	

(table continues...)

Table 441 (continued) Specification for `Mcu_17_Stm_ComparatorIntDisable` API	
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.

1.3.4 Notifications and Callbacks

This section lists all the notification and callbacks of MCU driver.

1.3.4.1 Mcu_ClockFailureNotification

Table 442 Specification for `Mcu_ClockFailureNotification` API

Syntax	`void Mcu_ClockFailureNotification ( void )`	
Service ID	0xFF	
Sync/Async	Synchronous	
Safety Level	Refer to the release notes for the safety related info	
Re-entrancy	Non Reentrant	
Parameters (in)	-	-
Parameters (out)	-	-
Parameters (in - out)	-	-
Return	void	-
Description	Mcu_ClockFailureNotification can be invoked to know the source of the clock failure, after such an occurrence. Mcu_ClockFailureNotification reports any one of MCU_E_SYSTEM_PLL_LOCK_LOSS, MCU_E_PERIPHERAL_LOCK_LOSS and MCU_E_OSC_FAILURE Production errors. If the root cause of a PLL loss of lock is an oscillator failure, then MCU_E_OSC_FAILURE Production error is reported. Availability of this function is controlled by the McuClockSourceFailureNotification parameter.	
Source	IFX	
Error handling	MCU_E_SYSTEM_PLL_LOCK_LOSS, MCU_E_PERIPHERAL_PLL_LOCK_LOSS, MCU_E_OSC_FAILURE	
Configuration dependencies	McuClockSourceFailureNotification	
User hints	-	

(table continues...)

Table 442 (continued) Specification for `Mcu_ClockFailureNotification` API

SFR accessed	SCU_OSCCON(r), SCU_PERPLLSTAT(r), SCU_SYSPLLSTAT(r) *Note : The list includes all the SFRs accessed in the context of the API. It lists the SFRs accessed by the driver and called interfaces from other drivers. During runtime, the SFRs accessed from this list may vary based on configuration and execution context.*
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.

1.3.5 Scheduled functions

The MCU driver does not provide any scheduled functions.

1.3.6 Interrupt service routines

This section lists all the interrupt handlers of the MCU driver.

1.3.6.1 Mcu_17_Ccu6_ChannelIsr

Table 443 Specification for `Mcu_17_Ccu6_ChannelIsr` API

Syntax	`void Mcu_17_Ccu6_ChannelIsr ( const Mcu_17_Ccu6_KernelIdentifierType Kernel, const Mcu_17_Ccu6_ComparatorType Comparator )`	
Service ID	0x95	
Sync/Async	Synchronous	
Safety Level	Refer to the release notes for the safety related info	
Re-entrancy	Reentrant for different channels	
Parameters (in)	Kernel Comparator	CCU6 Kernel CCU6 Comparator type
Parameters (out)	-	-
Parameters (in - out)	-	-
Return	void	-
Description	Mcu_17_Ccu6_ChannelIsr is the interrupt service routine of a CCU6 timer channel and is invoked by the interrupt frame installed in the interrupt vector table. Mcu_17_Ccu6_ChannelIsr identifies the user of the specified channel and invokes a known call back function associated with the user.	
Source	IFX	
Error handling	MCU_E_INVALID_ISR	
Configuration dependencies	-	

(table continues...)

Table 443 (continued) Specification for `Mcu_17_Ccu6_ChannelIsr` API

User hints	-
SFR accessed	CCU6_IEN(r), CCU6_IS(r), CCU6_ISR(w) *Note : The list includes all the SFRs accessed in the context of the API. It lists the SFRs accessed by the driver and called interfaces from other drivers. During runtime, the SFRs accessed from this list may vary based on configuration and execution context.*
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.

1.3.6.2 Mcu_17_Eru_GatingIsr

Table 444 Specification for `Mcu_17_Eru_GatingIsr` API

Syntax	`void Mcu_17_Eru_GatingIsr ( const Mcu_17_Eru_SrcIdentifierType EruSrcId )`	
Service ID	0x98	
Sync/Async	Synchronous	
Safety Level	Refer to the release notes for the safety related info	
Re-entrancy	Reentrant for different channels	
Parameters (in)	EruSrcId	Input Channel
Parameters (out)	-	-
Parameters (in - out)	-	-
Return	void	-
Description	Mcu_17_Eru_GatingIsr is the interrupt service routine of the ERU and is invoked by the interrupt frame installed in the interrupt vector table. It identifies the user of the specified ERU channel and invokes a known call back function associated with the user.	
Source	IFX	
Error handling	MCU_E_INVALID_ISR	
Configuration dependencies	-	
User hints	The value of parameter IrqFlag is always zero as it is checked and passed. This parameter is just to maintain the consistency	
SFR accessed	SCU_EIFR(r), SCU_FMR(w), SCU_IGCR(r), SCU_PDRR(r) *Note : The list includes all the SFRs accessed in the context of the API. It lists the SFRs accessed by the driver and called interfaces from other drivers. During runtime, the SFRs accessed from this list may vary based on configuration and execution context.*	
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.	

1.3.6.3 Mcu_17_Gpt12_ChannelIsr

Table 445 Specification for `Mcu_17_Gpt12_ChannelIsr` API

Syntax	`void Mcu_17_Gpt12_ChannelIsr ( const Mcu_17_Gpt12_TimerChIdentifierType Timer )`	
Service ID	0x96	
Sync/Async	Synchronous	
Safety Level	Refer to the release notes for the safety related info	
Re-entrancy	Reentrant for different channels	
Parameters (in)	Timer	GPT12 timer
Parameters (out)	-	-
Parameters (in - out)	-	-
Return	void	-
Description	Mcu_17_Gpt12_ChannelIsr is the interrupt service routine of a GPT12 timer channel and is invoked by the interrupt frame installed in the interrupt vector table. Mcu_17_Gpt12_ChannelIsr identifies the user of the specified channel and invokes a known call back function associated with the user.	
Source	IFX	
Error handling	-	
Configuration dependencies	-	
User hints	-	
SFR accessed	-	
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.	

1.3.6.4 Mcu_17_Gtm_AtomChannelIsr

Table 446 Specification for `Mcu_17_Gtm_AtomChannelIsr` API

Syntax	`void Mcu_17_Gtm_AtomChannelIsr ( const uint8 Module, const uint8 Channel )`
Service ID	0x93
Sync/Async	Synchronous

(table continues...)

Table 446 (continued) Specification for `Mcu_17_Gtm_AtomChannelIsr` API

Safety Level	Refer to the release notes for the safety related info	
Re-entrancy	Reentrant for different channels	
Parameters (in)	Module Channel	ATOM module number ATOM channel number (it should always be an even number since two channels are mapped to the same interrupt node)
Parameters (out)	-	-
Parameters (in - out)	-	-
Return	void	-
Description	Mcu_17_Gtm_AtomChannelIsr is the interrupt service routine of an ATOM channel and is invoked by the interrupt frame installed in the interrupt vector table.	
Source	IFX	
Error handling	MCU_E_INVALID_ISR	
Configuration dependencies	-	
User hints	-	
SFR accessed	GTM_ATOM_CH_IRQ_EN(r), GTM_ATOM_CH_IRQ_NOTIFY(rw) *Note : The list includes all the SFRs accessed in the context of the API. It lists the SFRs accessed by the driver and called interfaces from other drivers. During runtime, the SFRs accessed from this list may vary based on configuration and execution context.*	
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.	

1.3.6.5 Mcu_17_Gtm_TimChannelIsr

Table 447 Specification for `Mcu_17_Gtm_TimChannelIsr` API

Syntax	`void Mcu_17_Gtm_TimChannelIsr`
	`(`
	`  const uint8 Module,`
	`  const uint8 Channel`
	`)`	

Service ID	0x94	
Sync/Async	Synchronous	
Safety Level	Refer to the release notes for the safety related info	
Re-entrancy	Reentrant for different channels	
Parameters (in)	Module Channel	TIM module number TIM channel number

(table continues...)

Table 447 (continued) Specification for `Mcu_17_Gtm_TimChannelIsr` API

Parameters (out)	-	-
Parameters (in - out)	-	-
Return	void	-
Description	Mcu_17_Gtm_TimChannelIsr is the interrupt service routine of a TIM channel and is invoked by the interrupt frame installed in the interrupt vector table.	
Source	IFX	
Error handling	MCU_E_INVALID_ISR	
Configuration dependencies	-	
User hints	-	
SFR accessed	GTM_TIM_CH_IRQ_EN(r), GTM_TIM_CH_IRQ_NOTIFY(rw) *Note : The list includes all the SFRs accessed in the context of the API. It lists the SFRs accessed by the driver and called interfaces from other drivers. During runtime, the SFRs accessed from this list may vary based on configuration and execution context.*	
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.	

1.3.6.6 Mcu_17_Gtm_TomChannelIsr

Table 448 Specification for `Mcu_17_Gtm_TomChannelIsr` API

Syntax	`void Mcu_17_Gtm_TomChannelIsr ( const uint8 Module, const uint8 Channel )`	
Service ID	0x92	
Sync/Async	Synchronous	
Safety Level	Refer to the release notes for the safety related info	
Re-entrancy	Reentrant for different channels	
Parameters (in)	Module Channel	TOM module number TOM channel number (it should always be an even number since two channels are mapped to the same interrupt node)
Parameters (out)	-	-
Parameters (in - out)	-	-
Return	void	-

(table continues...)

Table 448 (continued) Specification for `Mcu_17_Gtm_TomChannelIsr` API

Description	Mcu_17_Gtm_TomChannelIsr is the interrupt service routine of a TOM channel and is invoked by the interrupt frame installed in the interrupt vector table.
Source	IFX
Error handling	MCU_E_INVALID_ISR
Configuration dependencies	-
User hints	-
SFR accessed	GTM_TOM_CH_IRQ_EN(r), GTM_TOM_CH_IRQ_NOTIFY(rw) *Note : The list includes all the SFRs accessed in the context of the API. It lists the SFRs accessed by the driver and called interfaces from other drivers. During runtime, the SFRs accessed from this list may vary based on configuration and execution context.*
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.

1.3.6.7 Mcu_17_Stm_CompareMatchIsr

Table 449 Specification for `Mcu_17_Stm_CompareMatchIsr` API

Syntax	`void Mcu_17_Stm_CompareMatchIsr ( const Mcu_17_Stm_StmIdentifierType StmTimerId, const Mcu_17_Stm_StmCmpIdentifierType StmCmpId )`	
Service ID	0x97	
Sync/Async	Synchronous	
Safety Level	Refer to the release notes for the safety related info	
Re-entrancy	Reentrant for other STM timers	
Parameters (in)	StmTimerId StmCmpId	STM timer ID STM comparator ID
Parameters (out)	-	-
Parameters (in - out)	-	-
Return	void	-
Description	Mcu_17_Stm_CompareMatchIsr is the interrupt service routine of a STM timer and is invoked by the interrupt frame installed in the interrupt vector table. It identifies the user of the specified STM timer and invokes a known call back function associated with the user.	
Source	IFX	
Error handling	MCU_E_INVALID_ISR	
Configuration dependencies	-	

(table continues...)

Table 449 (continued) Specification for `Mcu_17_Stm_CompareMatchIsr` API

User hints	-
SFR accessed	STM_ICR(r), STM_ISCR(w) *Note : The list includes all the SFRs accessed in the context of the API. It lists the SFRs accessed by the driver and called interfaces from other drivers. During runtime, the SFRs accessed from this list may vary based on configuration and execution context.*
Autosar Version	Applicable for Autosar versions 4.2.2 and 4.4.0.

1.3.7 Callout

The MCU driver does not provide any callout.

1.3.8 Errors Handling

This section describes the various error types reported by the MCU driver.

Error Name: Description	Source	Error ID (AS422)	Type (AS422)	Error ID (AS440)	Type (AS440)
MCU_E_CCU6_CLC_DISABLE_ERR: Inability to turn OFF the CCU6 kernel clock disable bit	IFX	Assigned by DEM	Production Error	Assigned by DEM	Production Error
MCU_E_CCU6_CLC_ENABLE_ERR: Inability to turn ON the CCU6 kernel Clock enable bit	IFX	Assigned by DEM	Production Error	Assigned by DEM	Production Error
MCU_E_CCUCON_UPDATE_ERR: Inability to update the CCUCON register	IFX	Assigned by DEM	Production Error	Assigned by DEM	Production Error
MCU_E_CONVCTRL_CLC_DISABLE_ERR: Inability to turn OFF the CONVCTRL Clock disable bit	IFX	Assigned by DEM	Production Error	Assigned by DEM	Production Error
MCU_E_CONVCTRL_CLC_ENABLE_ERR: Inability to turn ON the CONVCTRL Clock enable bit	IFX	Assigned by DEM	Production Error	Assigned by DEM	Production Error
MCU_E_CORE_MISMATCH: API is called from a core which is not the master core	IFX	0X68	DET_SAFETY	0X68	DET_SAFETY
MCU_E_GPT12_CLC_DISABLE_ERR: Inability to turn OFF the GPT12 clock disable bit	IFX	Assigned by DEM	Production Error	Assigned by DEM	Production Error
MCU_E_GPT12_CLC_ENABLE_ERR: Inability to turn ON the GPT12 Clock enable bit	IFX	Assigned by DEM	Production Error	Assigned by DEM	Production Error
MCU_E_GTM_CLC_DISABLE_ERR: Inability to turn OFF the GTM clock disable bit	IFX	Assigned by DEM	Production Error	Assigned by DEM	Production Error

Error Name: Description	Source	Error ID (AS422)	Type (AS422)	Error ID (AS440)	Type (AS440)
MCU_E_GTM_CLC_ENABLE_ERR: Inability to turn ON the GTM Clock enable bit	IFX	Assigned by DEM	Production Error	Assigned by DEM	Production Error
MCU_E_INIT_FAILED: Error is reported when Mcu_Init() API is called when it is already initialized	AUTOSAR	0X11	DET_SAFETY	0X11	DET_SAFETY
MCU_E_INVALID_ISR: Error is reported if an ISR is invoked on a spurious interrupt	IFX	0XCA	SAFETY	0XCA	SAFETY
MCU_E_OSC_FAILURE: Inability of the oscillator to deliver correct clock	IFX	Assigned by DEM	Production Error	Assigned by DEM	Production Error
MCU_E_PARAM_CLOCK : ClockSetting parameter does not match the corresponding data in the Mcu_ConfigType object	AUTOSAR	0X0B	DET_SAFETY	0X0B	DET_SAFETY
MCU_E_PARAM_CONFIG: ConfigPtr passed to Mcu_Init is NULL	AUTOSAR	0X0A	DET_SAFETY	0X0A	DET_SAFETY
MCU_E_PARAM_CPUID: Input argument for CPU Id passed with an invalid core index	IFX	0X13	DET_SAFETY	0X13	DET_SAFETY
MCU_E_PARAM_DIV_VAL: CpuCcucon divider update requested with value higher than maximum possible divider value	IFX	0X15	DET_SAFETY	0X15	DET_SAFETY
MCU_E_PARAM_MODE : McuMode parameter does not match the corresponding data in the Mcu_ConfigType object	AUTOSAR	0X0C	DET_SAFETY	0X0C	DET_SAFETY
MCU_E_PARAM_POINTER: Versioninfo pointer passed to Mcu_GetVersionInfo is NULL	AUTOSAR	0X10	DET_SAFETY	0X10	DET_SAFETY
MCU_E_PARAM_RAMSECTION : RamSection parameter does not match the corresponding data in the Mcu_ConfigType object	AUTOSAR	0X0D	DET_SAFETY	0X0D	DET_SAFETY
MCU_E_PARAM_STDBY: Mcu_VextStdbyCtrl API called with input parameters other than the specified valid inputs.	IFX	0x16	DET_SAFETY	0x16	DET_SAFETY

Error Name: Description	Source	Error ID (AS422)	Type (AS422)	Error ID (AS440)	Type (AS440)
MCU_E_PARAM_TRAPID: Trap-related read or write with an invalid trap source id	IFX	0X14	DET_SAFETY	0X14	DET_SAFETY
MCU_E_PERIPHERAL_PLL_LOCK_LOSS: This Production error is raised when Loss of Peripheral PLL lock occurs	IFX	Assigned by DEM	Production Error	Assigned by DEM	Production Error
MCU_E_PERIPHERAL_PLL_TIMEOUT_ERR: Production error is raised due to inability of the peripheral PLL K2/K3 dividers and power mode to be updated within the specified time	IFX	Assigned by DEM	Production Error	Assigned by DEM	Production Error
MCU_E_PHSCFG_UPDATE_ERR: Error is raised when phase configuration register of Converter Control update fails	IFX	0XCB	SAFETY	0XCB	SAFETY
MCU_E_PLL_NOT_LOCKED: Either the system or peripheral PLL is not locked	AUTOSAR	0X0E	DET_SAFETY	0X0E	DET_SAFETY
MCU_E_PMSWCR_UPDATE_ERR: Inability to update the PMSWCRx register	IFX	Assigned by DEM	Production Error	Assigned by DEM	Production Error
MCU_E_SW_RESET_FAILED: Error is reported when software reset fails after calling the Mcu_PerformReset API	IFX	0XC9	SAFETY	0XC9	SAFETY
MCU_E_SYSTEM_PLL_LOCK_LOSS: This Production error is raised when Loss of System PLL lock occurs	IFX	Assigned by DEM	Production Error	Assigned by DEM	Production Error
MCU_E_SYSTEM_PLL_TIMEOUT_ERR: Production error is raised due to inability of the system PLL K2 divider and power mode to be updated within the specified time	IFX	Assigned by DEM	Production Error	Assigned by DEM	Production Error
MCU_E_UNAUTHORIZED_REQUESTER: Power down mode entry is requested by an unauthorized CPU	IFX	0X12	DET_SAFETY	0X12	DET_SAFETY
MCU_E_UNINIT: Error is reported if the API is called before Mcu_Init is called	AUTOSAR	0X0F	DET_SAFETY	0X0F	DET_SAFETY

1.3.9 Deviations and limitations

The section describes the deviations and limitations of the MCU driver.

1.3.9.1 Deviations

The section describes the deviations of the MCU driver.

1.3.9.1.1 Software specification deviations

This section describes the deviations from software specification

Table 450 Known deviations

Reference	Deviation
Safety error for unintended service request	Refer to Reporting of unintended service requests.
Deviation from Autosar specific configuration parameters	The MCU driver deviates from Autosar specification on following configuration parameters - McuClockReferencePointFrequency - McuNumberOfMcuModes - McuRamSectors - McuClockSrcFailureNotification These parameters are not used and have no effect on code generation.
For all requirements related to Production errors	Reporting of Production error: Dem_ReportErrorStatus is done through Mcal_Wrapper_Dem_ReportErrorStatus interface for AUTOSAR 4.2.2 and Dem_SetEventStatus is done through Mcal_Wrapper_Dem_SetEventStatus interface for AUTOSAR 4.4.0. All production error related datatypes and modified interfaces inclusion shall be done via Mcal_Wrapper.h

1.3.9.1.2 AMDC Violations

The MCU driver does not have any AMDC violations.

1.3.9.1.3 VSMD Violations

This section describes the violations reported by the EB VSMD checker tool with respect to AUTOSAR.

Table 451 *Violations reported by VSMD checker tool for Constr_5520*

Rule ID:	Constr_5520
VSMD Node(s):	/AURIX2G/EcucDefs/Mcu/McuPublishedInformation/McuResetReasonConf/McuResetReason

(table continues...)

Table 451 (continued) *Violations reported by VSMD checker tool for Constr_5520*

Description:	The values of EcucParameterDefs with symbolicNameValue attribute set to true shall have their valueConfigClass.configClass set to PreCompile
Additional Information:	-

Table 452 *Violations reported by VSMD checker tool for EB03*

Rule ID:	EB03
VSMD Node(s):	/AURIX2G/EcucDefs/Mcu/McuModuleConfiguration/McuDemEventParameterRefs /AURIX2G/EcucDefs/Mcu/McuModuleConfiguration/McuDemEventParameterRefs/MCU_E_CLOCK_FAILURE /AURIX2G/EcucDefs/Mcu/McuModuleConfiguration/McuResetSetting
Description:	The StMD node has LOWER-MULTIPLICITY=0 and UPPER-MULTIPLICITY=1. The VSMD-node shall get the OPTIONAL-attribute instead of creating a list!
Additional Information:	-

Table 453 *Violations reported by VSMD checker tool for EB09*

Rule ID:	EB09
VSMD Node(s):	/AURIX2G/EcucDefs/Mcu
Description:	EB specific rule to check consistency of parameter postBuildVariantUsed.
Additional Information:	-

Table 454 *Violations reported by VSMD checker tool for EcucSws_1014*

Rule ID:	EcucSws_1014
VSMD Node(s):	/AURIX2G/EcucDefs/Mcu/AURIX2G/EcucDefs/Mcu/McuGeneralConfiguration /AURIX2G/EcucDefs/Mcu/McuModuleConfiguration /AURIX2G/EcucDefs/Mcu/McuModuleConfiguration/McuClockSettingConfig /AURIX2G/EcucDefs/Mcu/McuModuleConfiguration/McuModeSettingConf /AURIX2G/EcucDefs/Mcu/McuModuleConfiguration/McuRamSectorSettingConf
Description:	Additional vendor specific parameter definitions (using ParameterTypes), container definitions and references shall be added to the VSMD according to the alphabetical order.
Additional Information:	-

Table 455 *Violations reported by VSMD checker tool for EcucSws_1035*

Rule ID:	EcucSws_1035
VSMD Node(s):	/AURIX2G/EcucDefs/Mcu/McuGeneralConfiguration/McuVersionInfoApi /AURIX2G/EcucDefs/Mcu/McuModuleConfiguration /AURIX2G/EcucDefs/Mcu/McuModuleConfiguration/McuClockSettingConfig /AURIX2G/EcucDefs/Mcu/McuModuleConfiguration/McuClockSettingConfig/McuClockReferencePoint /AURIX2G/EcucDefs/Mcu/McuModuleConfiguration/McuClockSettingConfig/McuClockReferencePoint/McuClockReferencePointFrequency /AURIX2G/EcucDefs/Mcu/McuModuleConfiguration/McuClockSettingConfig/McuClockSettingId /AURIX2G/EcucDefs/Mcu/McuModuleConfiguration/McuClockSrcFailureNotification /AURIX2G/EcucDefs/Mcu/McuModuleConfiguration/McuDemEventParameterRefs /AURIX2G/EcucDefs/Mcu/McuModuleConfiguration/McuDemEventParameterRefs/MCU_E_CLOCK_FAILURE /AURIX2G/EcucDefs/Mcu/McuModuleConfiguration/McuModeSettingConf/AURIX2G/EcucDefs/Mcu/McuModuleConfiguration/McuModeSettingConf/McuMode /AURIX2G/EcucDefs/Mcu/McuModuleConfiguration/McuNumberOfMcuModes /AURIX2G/EcucDefs/Mcu/McuModuleConfiguration/McuRamSectorSettingConf /AURIX2G/EcucDefs/Mcu/McuModuleConfiguration/McuRamSectorSettingConf/McuRamDefaultValue /AURIX2G/EcucDefs/Mcu/McuModuleConfiguration/McuRamSectorSettingConf/McuRamSectionBaseAddress /AURIX2G/EcucDefs/Mcu/McuModuleConfiguration/McuRamSectorSettingConf/McuRamSectionSize /AURIX2G/EcucDefs/Mcu/McuModuleConfiguration/McuRamSectorSettingConf/McuRamSectionWriteSize /AURIX2G/EcucDefs/Mcu/McuModuleConfiguration/McuRamSectors/AURIX2G/EcucDefs/Mcu/McuModuleConfiguration/McuResetSetting /AURIX2G/EcucDefs/Mcu/McuPublishedInformation/AURIX2G/EcucDefs/Mcu/McuPublishedInformation/McuResetReasonConf /AURIX2G/EcucDefs/Mcu/McuPublishedInformation/McuResetReasonConf/McuResetReason

(table continues...)

Table 455 (continued) *Violations reported by VSMD checker tool for EcucSws_1035*

Description:	For Containers, Parameters and References elements UUID must be unique (also between StMD and VSMD).
Additional Information:	-

Table 456 *Violations reported by VSMD checker tool for EcucSws_2101*

Rule ID:	EcucSws_2101
VSMD Node(s):	/AURIX2G/EcucDefs/Mcu/ POST_BUILD_VARIANT_USED
Description:	For each ConfigurationVariant supported by the ModuleDef, there must be one ImplementationConfigClass element. In VSMD, the ImplementationConfigClass is mandatory.
Additional Information:	-

Table 457 *Violations reported by VSMD checker tool for EcucSws_6003*

Rule ID:	EcucSws_6003
VSMD Node(s):	/AURIX2G/EcucDefs/Mcu
Description:	The SHORT-NAME of the AR-PACKAGEs of StMD and VSMD must be different to ensure a unique SHORT-NAME-path.
Additional Information:	-

Table 458 *Violations reported by VSMD checker tool for TpsEcuc_06051_ASR41*

Rule ID:	TpsEcuc_06051_ASR41
VSMD Node(s):	/AURIX2G/EcucDefs/Mcu/ POST_BUILD_VARIANT_USED
Description:	The implementationConfigClass of an EcucParameterDef or EcucAbstractReferenceDef in VSMD shall be the same or higher (where PreCompile configuration class is considered to be the lowest and PostBuild the highest) as in StMD with respect to the selected subset defined by the actually implemented supportedConfigVariant.
Additional Information:	-

1.3.9.2 Limitations

This section describes the limitations of the MCU driver.

Table 459 Known limitations

Reference	Limitation

(table continues...)

Table 459 (continued) Known limitations

Syntax to be followed for short name of configuration container and parameters	The short name for following containers and their respective sub-containers shall follow the syntax <Container_Name>_<x> where <x> is an integer: - McuEruAllocationConf - McuGtmAllocationConf - McuCcu6ModuleAllocationConf - McuGpt12ModuleAllocationConf - McuHardwareResourceAllocationConf - GtmTomGlobalConf - GtmTomChannelConf - GtmTimGlobalConf - GtmTimChannelConf - GtmAtomGlobalConf - GtmAtomChannelConf - GtmClusterConf *Note: The above naming convention is by default followed in Tresos, when new containers are added or when project is created.*
Order of inclusion of file Mcu_17_TimerIp.h	The order of inclusion must ensure that Mcu_17_TimerIp.h , if included by an application file, then Mcu_17_TimerIp.h should be included before Os.h (file that defines ACCESS). Only then ACCESS defined from OS will be available.

1.4 Revision History

Table 460 *Revision History*

Date	Version	Description
2024-08-14	10.0	Document is Released.
2024-08-08	9.1	• Configuration parameter GtmCmuConfigClock8SourceSelection added under Section 1.3.1.34 GtmConfigClockSetting • Configuration parameter McuVextStdbyCtrl added under Section 1.3.1.84 McuStdbyModeVddVextConf • Function Mcu_VextStdbyCtrl added under Section 1.3.3 Functions - API's • SFR accessed updated for the following functions Mcu_Init Mcu_Deinit Mcu_InitCheck • Configuration Parameter dependency updated for McuStdbyModeVextUMMonMode, McuStdbyModeVextUVThres, McuStdbyModeVddUVThres, McuStdbyModeVddUMMonMode Section 1.3.8 Error Handling, updated to include error MCU_E_PARAM_STDBY.

(table continues...)

Table 460 (continued) *Revision History*

2023-06-14	9.0	Document is Released
2023-06-06	8.1	- Dem.h removed and Mcal_Wrapper.h added in the "1.1.3.1 C file structure" section "Figure 2 Mcu_C_file_structure-1.png" and "Table 2 C file structure". - DEM module removed and Mcal_Wrapper module added in "1.1.4.1 Integration with AUTOSAR stack" section - All references to Dem changed to production error in sections 1.1.5.4, 1.3.1.60.4, 1.3.1.53.1, 1.3.4.1, 1.3.8 and Dem_ReportErrorStatus changed to Mcal_Wrapper_Dem_ReportErrorStatus, Dem_SetEventStatus changed to Mcal_Wrapper_Dem_SetEventStatus in the sections 1.3.1.53, 1.3.1.54 - ASIL level field changed to Safety level with value as "refer to release notes" for all APIs under "1.3.3 Functions - APIs" - In Section 1.3.3.23 Mcu_InitCheck() Api E_NOT_OK case description is updated to list all the conditions when E_NOT_OK is returned. - Updated Reentrancy information of following functions under section "1.3.3 Functions - APIs" · Mcu_17_Gtm_TomChInitCheck · Mcu_17_Gtm_AtomChInitCheck · Mcu_17_Gtm_TimChInitCheck · Mcu_17_Ccu6_TimerInitCheck · Mcu_17_Gpt12_TimerInitCheck - Service IDs of following APIs are corrected under section "1.3.3 Functions - APIs" · Mcu_17_Gtm_AtomChannelDisable · Mcu_17_Gtm_TomChannelEnable · Mcu_17_Gtm_IsTomChannelEnabled · Mcu_17_Gtm_ConnectTimerOutToPortPin - All Mcu reset reason containers are added under section "1.3.1 Configuration interfaces" - 'Software Specification Deviations' section is updated for 'AUTOSAR requirement' to change reference to "For all requirements related to Production/Runtime errors" and to add Mcal_Wrapper module information in the description
2022-08-10	8.0	Document is released
2022-08-01	7.1	- Limitations section updated to add naming convention of configuration parameters McuHardwareResourceAllocationConf and GtmClusterConf. - SFR access updated for functions Mcu_DeInit(), Mcu_17_Gtm_TimChannelInit(), Mcu_17_Ccu6_TimerInit(), Mcu_17_Ccu6_TimerInitCheck() and Mcu_17_Ccu6_TimerDeInit().
2021-11-08	7.0	Document is released
2021-11-04	6.1	‘Mapping of hardware-software interfaces’ figure is corrected
2021-10-27	6.0	Document is released

(table continues...)

Table 460 (continued) *Revision History*

2021-10-13	5.1	- Option "TCK_EXT_CLOCK0_SEL13" removed from configuration parameter "McuExtClockOutSel0" - Option "OSCFL_EXT_CLOCK1_SEL15" removed from configuration parameter "McuExtClockOutSel1" - Limitation removed on usage of options provided in McuExtClockOutSel0 and McuExtClockOutSel1 - Added 4 more entries for McuStdbyModeRamEnable to support non-cached memory - Config variant attribute table information is removed and added this information in 'Configuration interfaces' section.
2021-03-22	5.0	Document is released
2021-03-22	4.1	Limitation added on usage of options provided in McuExtClockOutSel0 and McuExtClockOutSel1
2021-03-02	4.0	Document is released
2021-03-02	3.1	- File structure updated for inclusion of IfxPms_bf.h - PMS unsupported features updated - Description updated for McuStdbyModeClkSelection - Note added in McuStdbyModeClkSelection
2020-11-25	3.0	Document is released
2020-11-24	2.1	SFR information updated for Mcu_ClockFailureNotification
2020-10-15	2.0	Document is released
2020-10-13	1.1	- Container and parameters for Port pin to GTM TIM connection added - Configuration parameters added for VDD and VEXT standby support - AoU "SMU alarms with clock initialization" updated with details of alarms
2020-08-14	1.0	Document is released
2020-07-28	0.1	-Initial Version -MCU driver chapter moved from MC-ISAR_TC3xx_UM_Basic to this document -VSMD violations added -Limitation on naming convention of configuration containers and parameters in Tresos added -Deviations from software specification added -Limitation related to "#undef ACCESS" added -Deviation related to use of Rte_Dem_Type.h for ASR 440 added

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