

# 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
<b>Bold</b>	Emphasizes heading levels, column headings, table and figure captions, screen names, windows, dialog boxes, menus, sub-menus
<i>Italics</i>	Denotes variable(s) and reference(s)
Courier	Denotes APIs, functions, interrupt handlers, events, data types, error handlers, file/folder names, directories, command line inputs, code snippets
New	
>	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 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

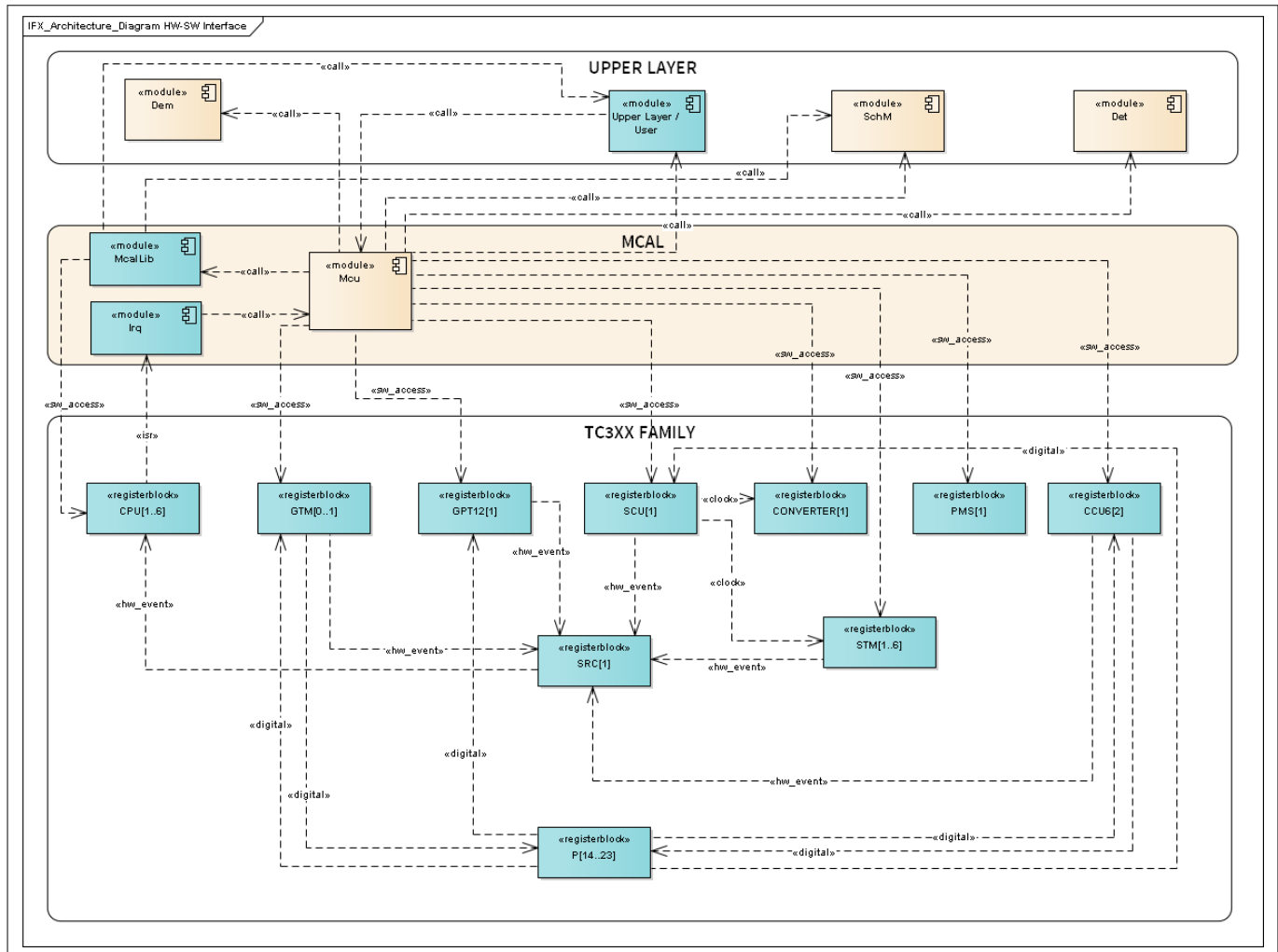
Additionally, the MCU driver provides a centralized hardware resource reservation mechanism to the configurator for conflict-free allocation to the MCAL drivers. The resources capable of being reserved are CCU6 modules, GTM timer slices, ASCLIN slices, ERU slices and STM comparators. The MCU driver is 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.



### 1 Mcu driver



**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

---

## 1 Mcu driver

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

---

## 1 Mcu driver

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

---

## 1 Mcu driver

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.

### 1 Mcu driver

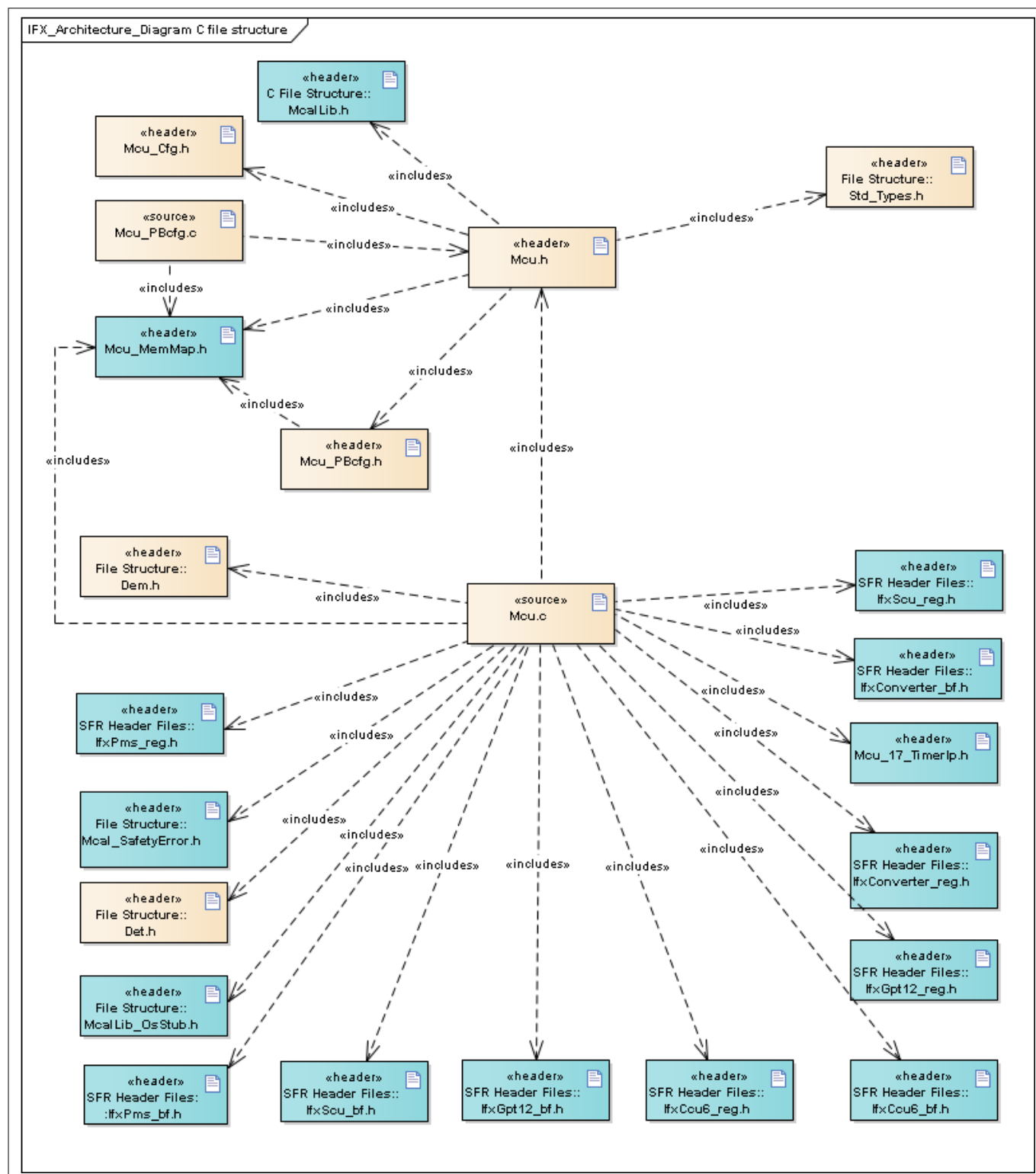
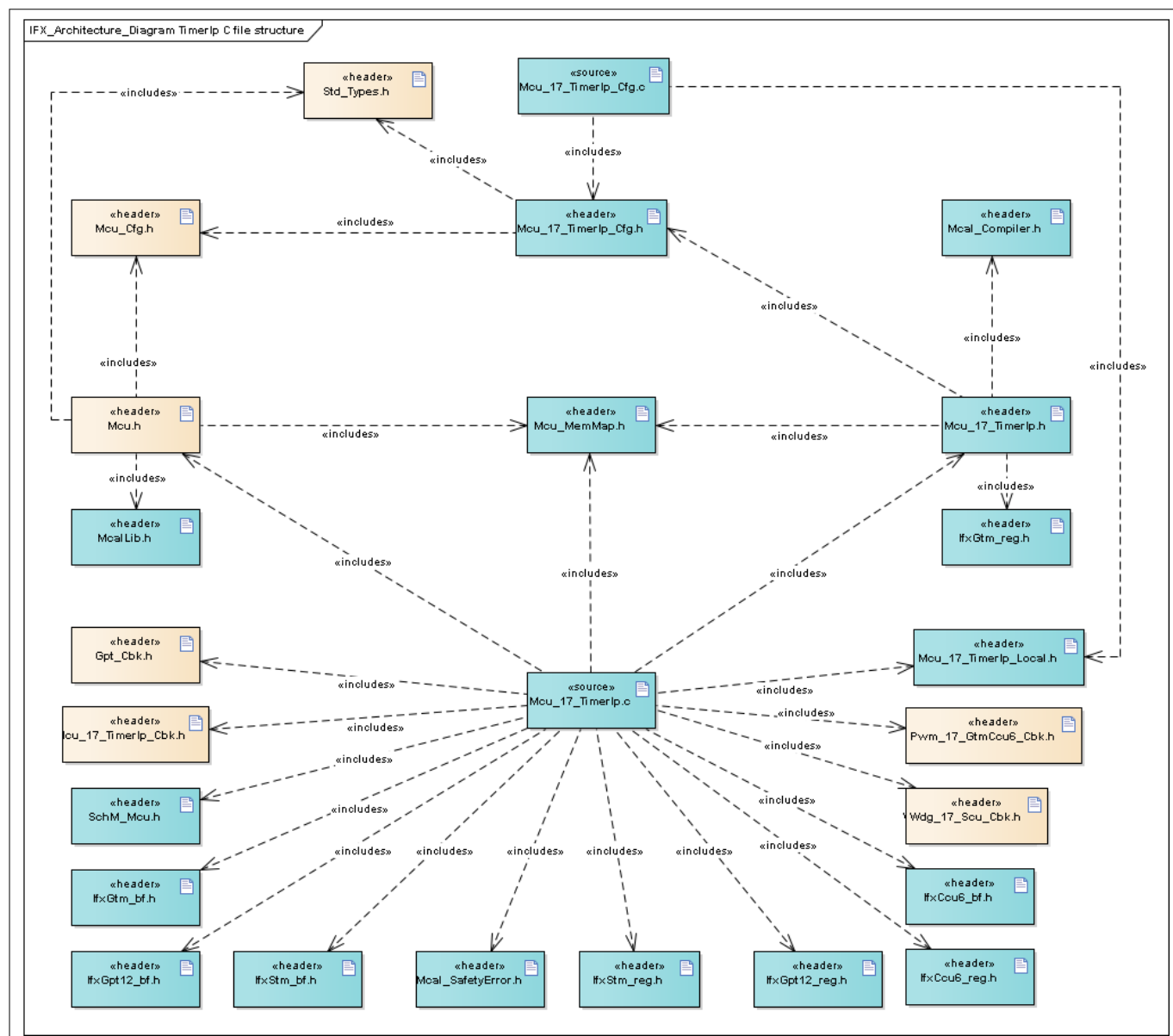


Figure 2 Mcu\_C\_file\_structure-1.png

## 1 Mcu driver



**Figure 3** **Mcu\_TimerIp\_C\_file\_structure-2.png**

**Table 2** **C file structure**

File name	Description
Dem.h	Provides the exported interfaces of Diagnostic Event Manager
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

## 1 Mcu driver

**Table 2 C file structure (continued)**

File name	Description
IfxPms_bf.h	SFR header file for Pms
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
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.
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

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**Table 2 C file structure (continued)**

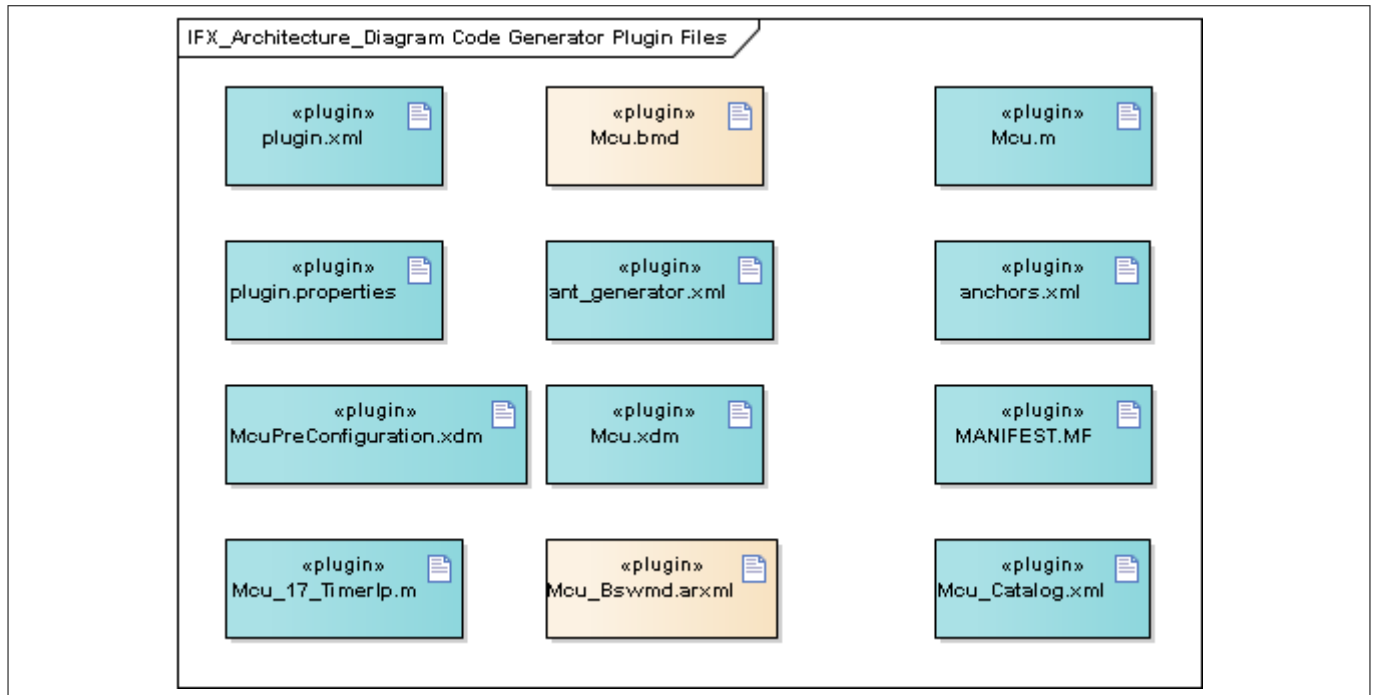
File name	Description
Mcu.h	Header file providing prototypes of APIs and data types. This file exports only necessary interfaces for upper layer
Mcu_17_TimerIp.c	File (Static) containing implementation of APIs of Timer IPs - GTM, CCU6 and GPT12, initialization, enable, interrupt and other services
Mcu_17_TimerIp.h	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.



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**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.

---

**1 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.

---

**1 Mcu driver**

```
/* 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
```

## 1 Mcu driver

```
#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.

- **DEM**

The DEM module is a part of the AUTOSAR stack that handles all the production errors reported by the BSW modules. The MCU driver reports all the production errors to the DEM modules through the `Dem_ReportErrorStatus()` API for Autosar release version 4.2.2 and through the `Dem_SetEventStatus()` API for Autosar release version 4.4.0. The user of the MCU driver must process all the production errors (fail / pass) reported to the DEM module through the `Dem_ReportErrorStatus()` API for Autosar release version 4.2.2 and through the `Dem_SetEventStatus()` API for Autosar release version 4.4.0.

The `Dem.h` and `Dem.c` files are provided in the MCAL package as a stub code and needs to be replaced with a complete DEM 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

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- 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 be 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 Mca1\_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 Mca1\_ReportSafetyError() API is provided in the Mca1\_SafetyError.c and Mca1\_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:

---

## 1 Mcu 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 Mcu driver

### 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 MculdleModeCpuCore and McuSystemModeCpuCore configuration parameters.

## 1 Mcu driver

**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={B4FAB0B9-7333-4da0-8A40-59575AE6FF6E}]

#### 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 DEMs 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.



---

**1 Mcu driver**

[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 Mcu driver****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 Mcu driver

### 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.

### 1 Mcu driver

[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 MculfxTrapApi 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.

---

**1 Mcu driver**

[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}]

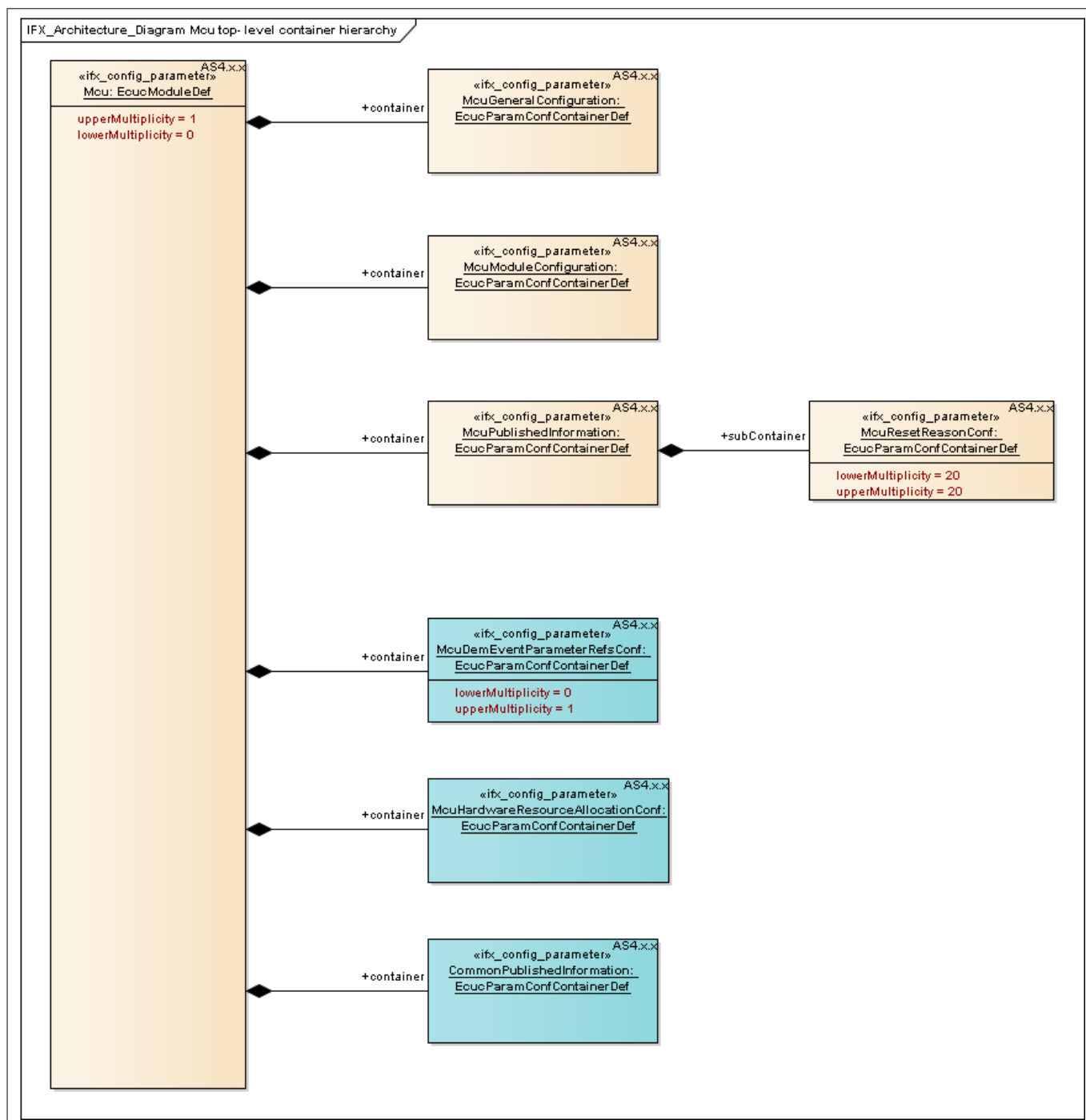
---

**1 Mcu driver**

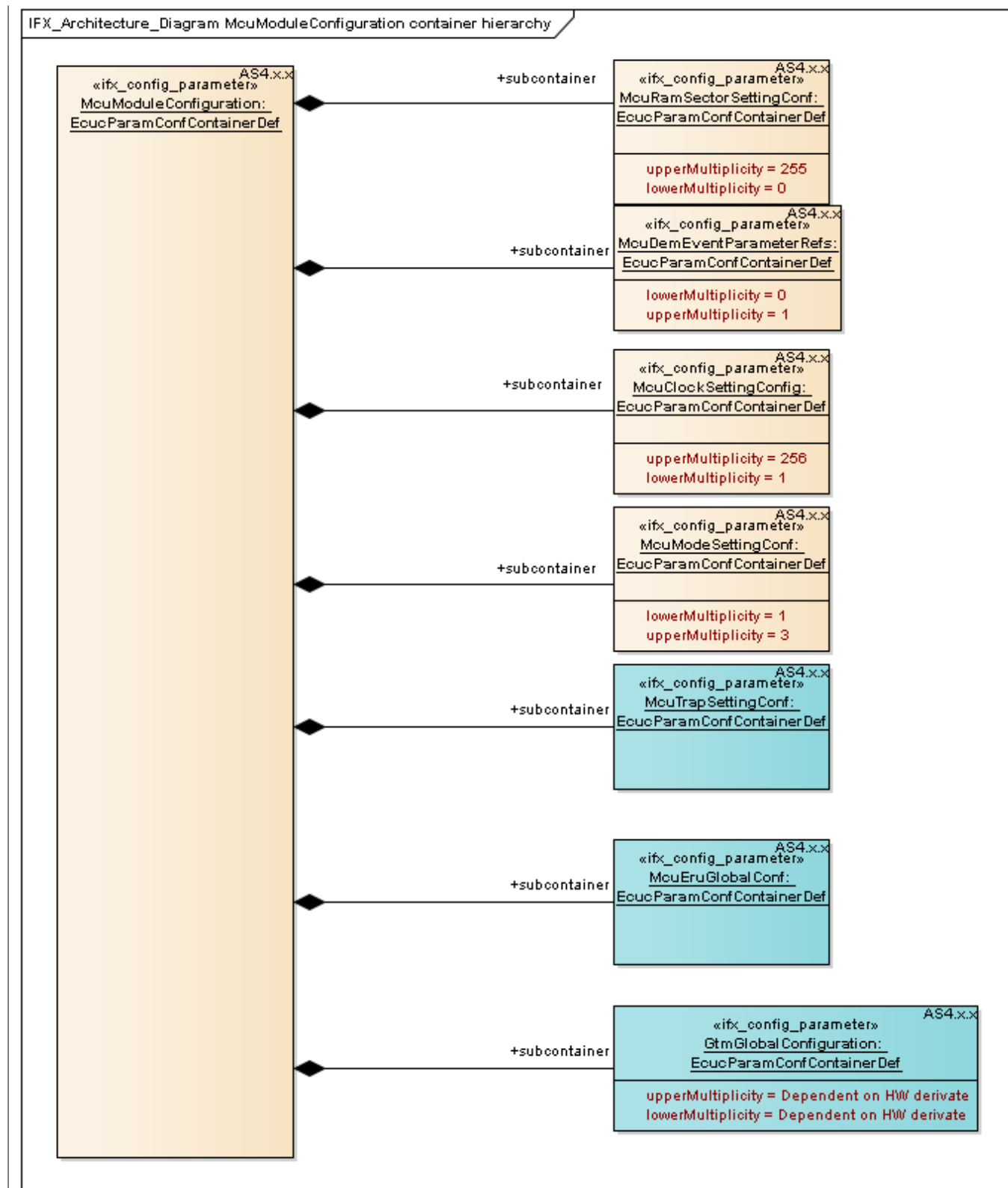
**1.3 Reference information**

**1.3.1 Configuration interfaces**

### 1 Mcu driver

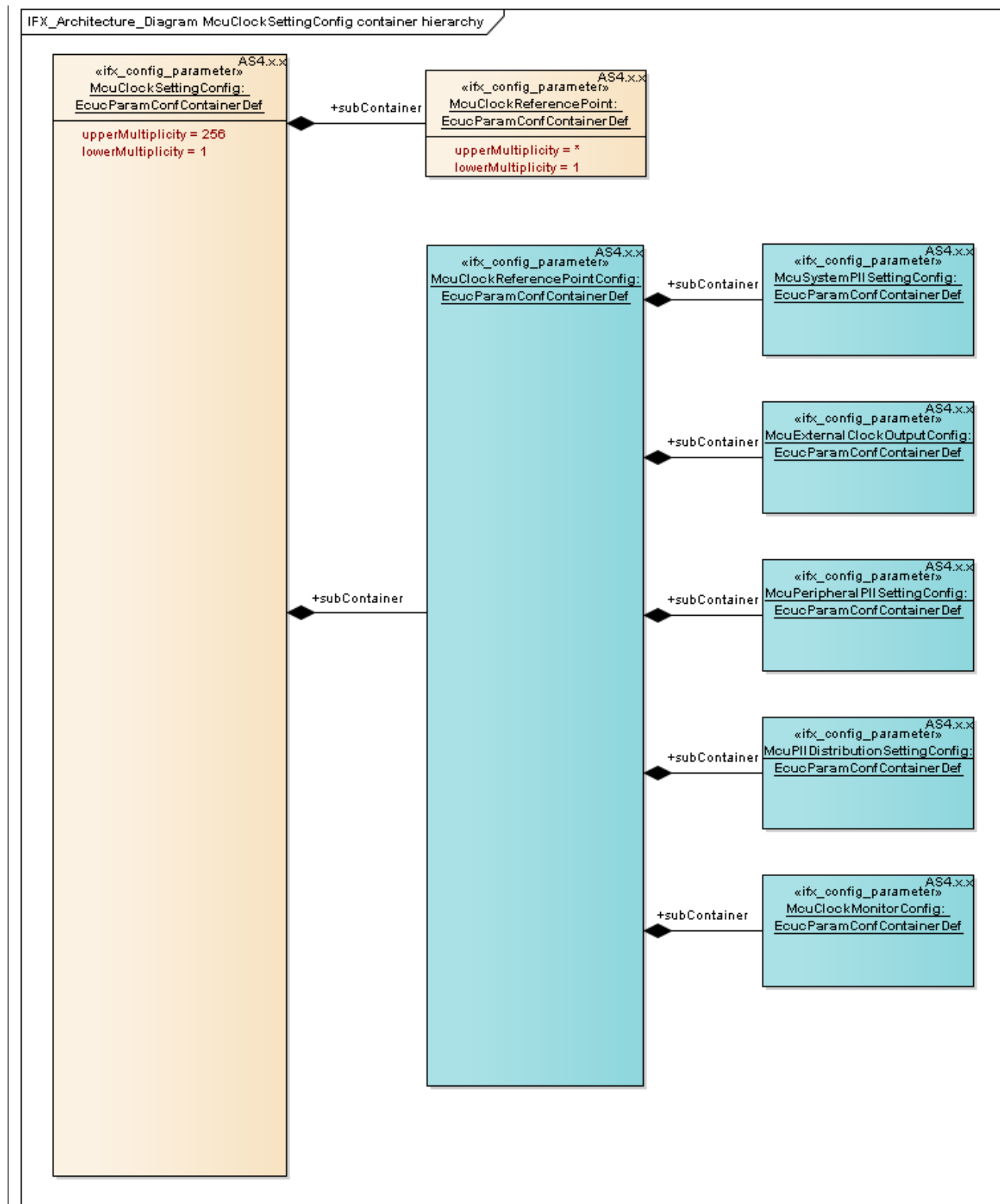


### 1 Mcu driver

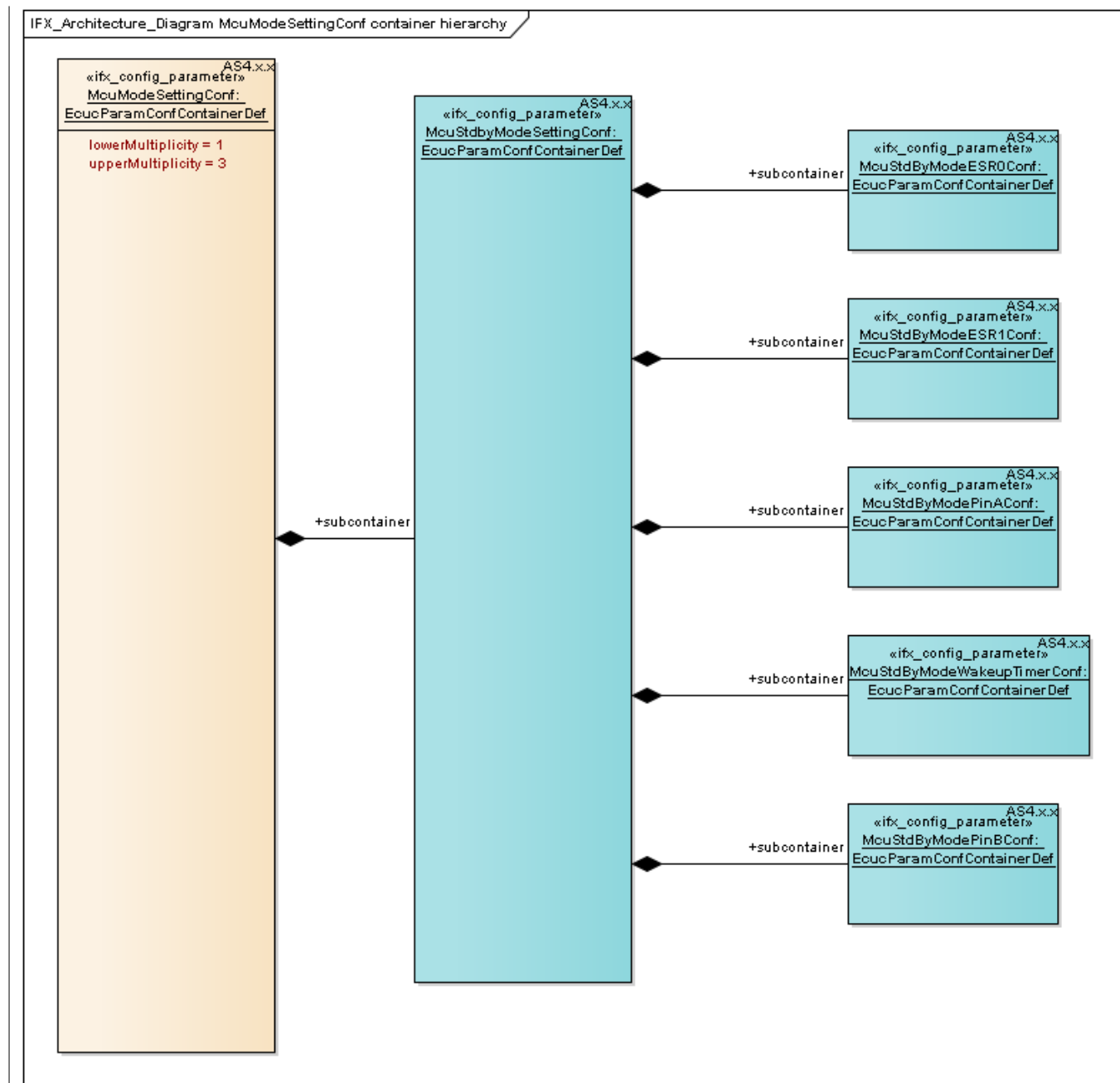




### 1 Mcu driver

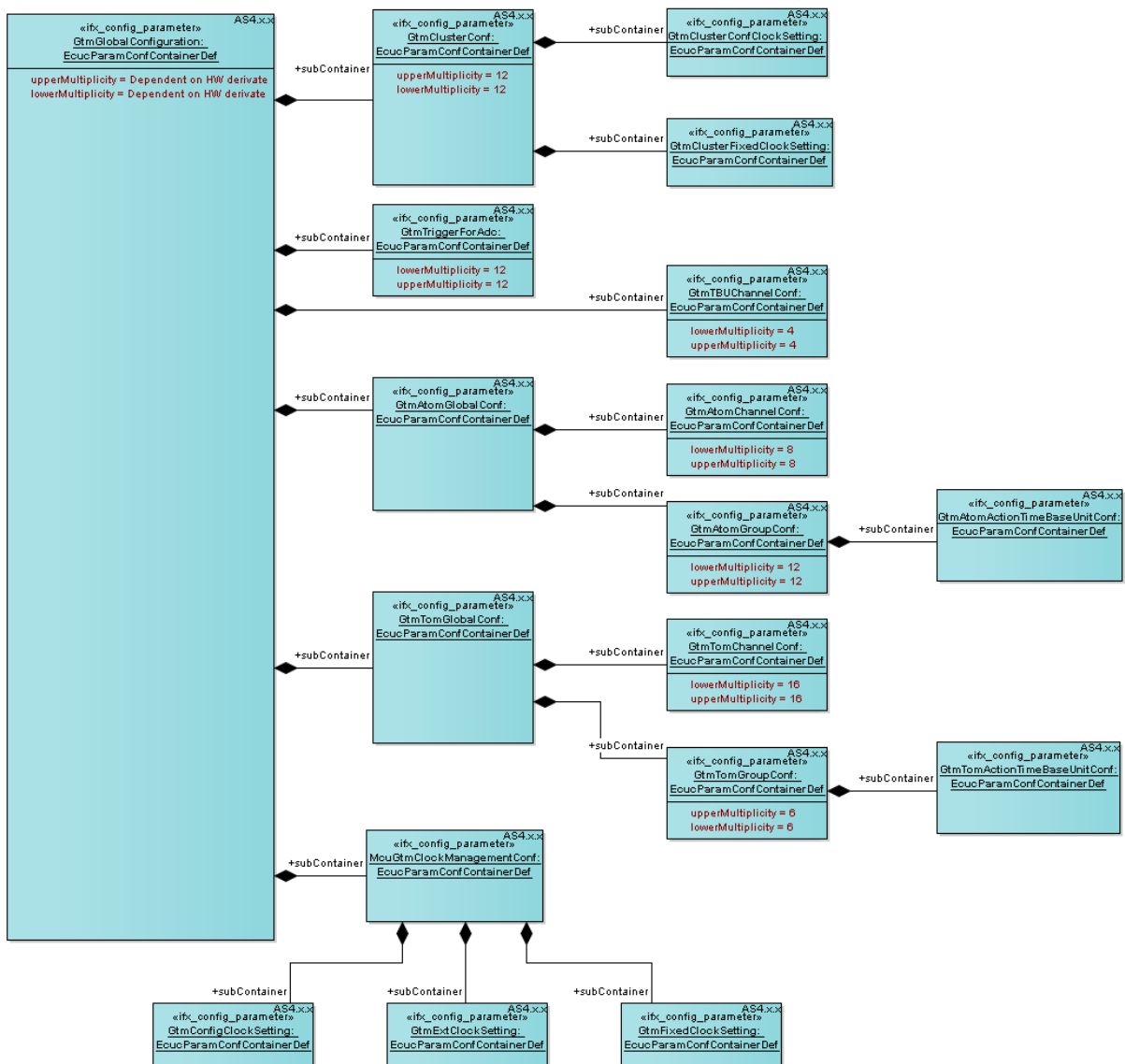


### 1 Mcu driver

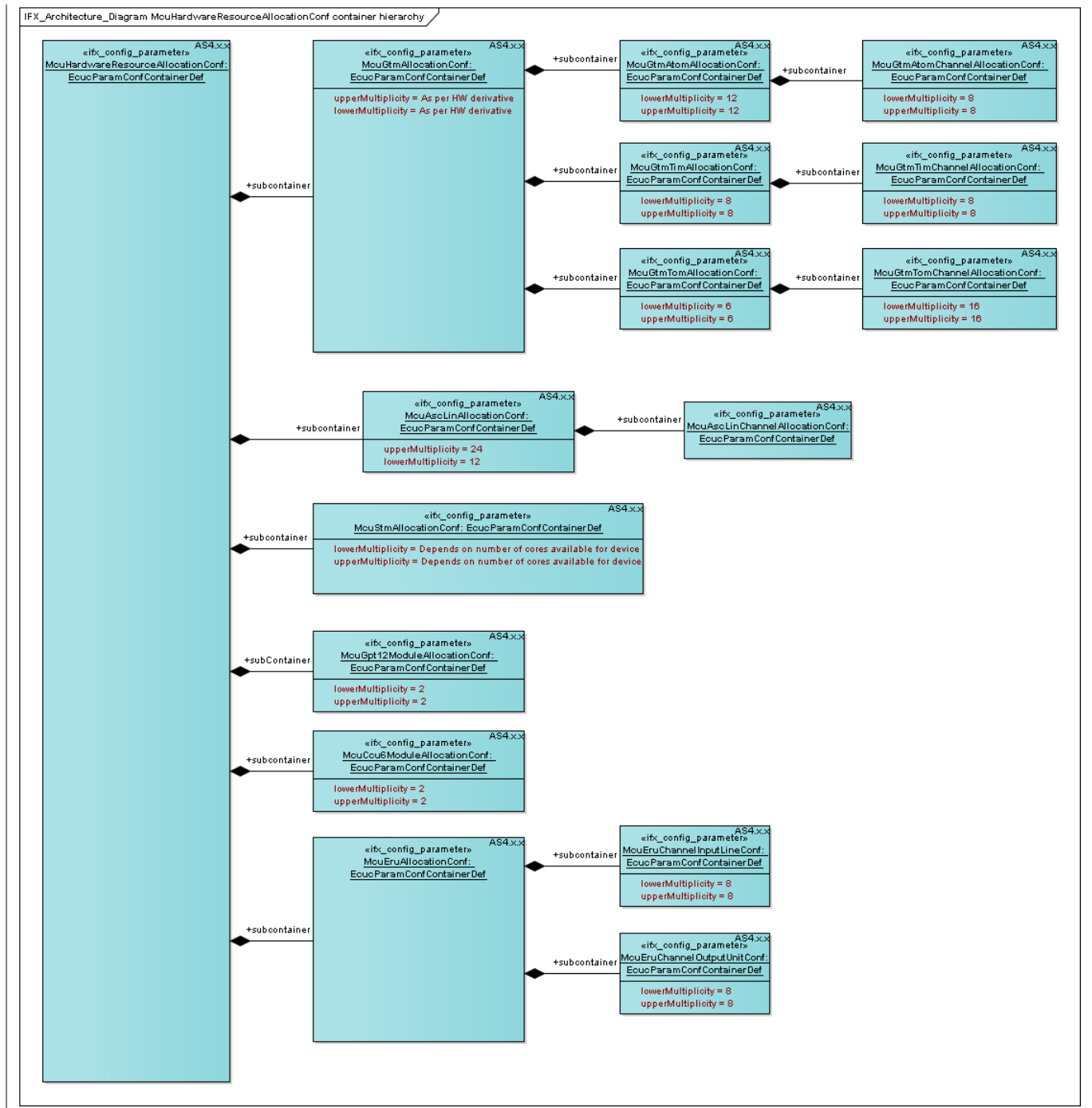


### 1 Mcu driver

IFX\_Architecture\_Diagram GtmGlobal Configuration container hierarchy



### 1 Mcu driver



**Figure 5** Container hierarchy along with their configuration parameters

#### 1.3.1.1 Container: McuClockMonitorConfig

Post-Build Variant Multiplicity: -

Multiplicity Configuration Class: -

## 1 Mcu driver

### 1.3.1.1.1 McuBackupClockMonEnable

**Table 4 Specification for McuBackupClockMonEnable**

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

### 1.3.1.1.2 McuBackupClockRangeMonEnable

**Table 5 Specification for McuBackupClockRangeMonEnable**

<b>Name</b>	McuBackupClockRangeMonEnable		
<b>Description</b>	Specifies if the Backup clock range monitoring is enabled/disabled. TRUE: Backup clock range monitoring is enabled FALSE: Backup clock range monitoring is disabled		
<b>Multiplicity</b>	1..1	<b>Type</b>	EcucBooleanParamDef
<b>Range</b>	TRUE FALSE		
<b>Default value</b>	FALSE		
<b>Post-build variant value</b>	FALSE	<b>Post-build variant multiplicity</b>	-
<b>Value configuration class</b>	Pre-Compile	<b>Multiplicity configuration class</b>	-
<b>Origin</b>	IFX	<b>Scope</b>	LOCAL
<b>Dependency</b>	-		

## 1 Mcu driver

**Table 5 Specification for McuBackupClockRangeMonEnable (continued)**

<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.
------------------------	--

### 1.3.1.1.3 McuPll0ClockMonEnable

**Table 6 Specification for McuPll0ClockMonEnable**

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

### 1.3.1.1.4 McuPll1ClockMonEnable

**Table 7 Specification for McuPll1ClockMonEnable**

<b>Name</b>	McuPll1ClockMonEnable		
<b>Description</b>	Specifies if the PLL1 monitoring is enabled/disabled. TRUE : PLL1 monitoring is enabled FALSE: PLL1 monitoring is disabled		
<b>Multiplicity</b>	1..1	<b>Type</b>	EcucBooleanParamDef
<b>Range</b>	TRUE FALSE		
<b>Default value</b>	FALSE		
<b>Post-build variant value</b>	TRUE	<b>Post-build variant multiplicity</b>	-

## 1 Mcu driver

**Table 7 Specification for McuPll1ClockMonEnable (continued)**

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

### 1.3.1.1.5 McuPll2ClockMonEnable

**Table 8 Specification for McuPll2ClockMonEnable**

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

### 1.3.1.1.6 McuSpbClockMonEnable

**Table 9 Specification for McuSpbClockMonEnable**

<b>Name</b>	McuSpbClockMonEnable		
<b>Description</b>	Specifies if the SPB clock monitoring is enabled/disabled. TRUE : SPB clock monitoring is enabled FALSE: SPB clock monitoring is disabled		
<b>Multiplicity</b>	1..1	<b>Type</b>	EcucBooleanParamDef
<b>Range</b>	TRUE		

## 1 Mcu driver

**Table 9 Specification for McuSpbClockMonEnable (continued)**

	FALSE		
<b>Default value</b>	FALSE		
<b>Post-build variant value</b>	FALSE	<b>Post-build variant multiplicity</b>	-
<b>Value configuration class</b>	Pre-Compile	<b>Multiplicity configuration class</b>	-
<b>Origin</b>	IFX	<b>Scope</b>	LOCAL
<b>Dependency</b>	-		
<b>Autosar Version</b>	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 prescaler

Post-Build Variant Multiplicity: -

Multiplicity Configuration Class: -

#### 1.3.1.2.1 Gpt1BlockPrescalerSel

**Table 10 Specification for Gpt1BlockPrescalerSel**

<b>Name</b>	Gpt1BlockPrescalerSel		
<b>Description</b>	Specifies the selection for GPT1 block prescaler		
<b>Multiplicity</b>	1..1	<b>Type</b>	EcucEnumerationParamDef
<b>Range</b>	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		
<b>Default value</b>	GPT1_BLOCK_NOT_USED		
<b>Post-build variant value</b>	TRUE	<b>Post-build variant multiplicity</b>	-
<b>Value configuration class</b>	Post-Build	<b>Multiplicity configuration class</b>	-
<b>Origin</b>	IFX	<b>Scope</b>	LOCAL
<b>Dependency</b>	McuGpt12ModuleAllocationConf		
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.		



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### 1.3.1.2.2 Gpt2BlockPrescalerSel

**Table 11 Specification for Gpt2BlockPrescalerSel**

<b>Name</b>	Gpt2BlockPrescalerSel		
<b>Description</b>	Specifies the selection for GPT2 block prescaler		
<b>Multiplicity</b>	1..1	<b>Type</b>	EcucEnumerationParamDef
<b>Range</b>	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		
<b>Default value</b>	GPT2_BLOCK_NOT_USED		
<b>Post-build variant value</b>	TRUE	<b>Post-build variant multiplicity</b>	-
<b>Value configuration class</b>	Post-Build	<b>Multiplicity configuration class</b>	-
<b>Origin</b>	IFX	<b>Scope</b>	LOCAL
<b>Dependency</b>	McuGpt12ModuleAllocationConf		
<b>Autosar Version</b>	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**

<b>Name</b>	McuStmCmp0RegAllocationConf		
<b>Description</b>	The STM timer compare register 0 usage. <i>Note: Availability of module is based on the Release Notes.</i>		
<b>Multiplicity</b>	1..1	<b>Type</b>	EcucEnumerationParamDef
<b>Range</b>	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.		
<b>Default value</b>	STM_CMP0_NOT_USED		

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**Table 12 Specification for McuStmCmp0RegAllocationConf (continued)**

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

### 1.3.1.3.2 McuStmCmp1RegAllocationConf

**Table 13 Specification for McuStmCmp1RegAllocationConf**

<b>Name</b>	McuStmCmp1RegAllocationConf		
<b>Description</b>	The STM timer compare register 1 usage. <i>Note: Availability of module is based on the Release Notes.</i>		
<b>Multiplicity</b>	1..1	<b>Type</b>	EcucEnumerationParamDef
<b>Range</b>	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		
<b>Default value</b>	STM_CMP1_NOT_USED		
<b>Post-build variant value</b>	FALSE	<b>Post-build variant multiplicity</b>	-
<b>Value configuration class</b>	Pre-Compile	<b>Multiplicity configuration class</b>	-
<b>Origin</b>	IFX	<b>Scope</b>	LOCAL
<b>Dependency</b>	-		
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.		

### 1.3.1.4 Container: CommonPublishedInformation

Container for common published information

Post-Build Variant Multiplicity: -

Multiplicity Configuration Class: -

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### 1.3.1.4.1 ArMajorVersion

**Table 14 Specification for ArMajorVersion**

<b>Name</b>	ArMajorVersion		
<b>Description</b>	ArMajorVersion parameter provides the major version of the AUTOSAR specification.		
<b>Multiplicity</b>	1..1	<b>Type</b>	EcucIntegerParamDef
<b>Range</b>	0 - 255		
<b>Default value</b>	4		
<b>Post-build variant value</b>	FALSE	<b>Post-build variant multiplicity</b>	-
<b>Value configuration class</b>	Published-Information	<b>Multiplicity configuration class</b>	-
<b>Origin</b>	IFX	<b>Scope</b>	LOCAL
<b>Dependency</b>	-		
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.		

### 1.3.1.4.2 ArMinorVersion

**Table 15 Specification for ArMinorVersion**

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

### 1.3.1.4.3 ArPatchVersion

**Table 16 Specification for ArPatchVersion**

<b>Name</b>	ArPatchVersion		
<b>Description</b>	ArPatchVersion parameter provides the patch version of the AUTOSAR Specification.		

## 1 Mcu driver

**Table 16 Specification for ArPatchVersion (continued)**

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

### 1.3.1.4.4 ModuleId

**Table 17 Specification for ModuleId**

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

### 1.3.1.4.5 Release

**Table 18 Specification for Release**

<b>Name</b>	Release		
<b>Description</b>	Release parameter provides the TC3xx derivative used for the implementation.		
<b>Multiplicity</b>	1..1	<b>Type</b>	EcucStringParamDef
<b>Range</b>	String		
<b>Default value</b>	As per HW derivative		

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**Table 18 Specification for Release (continued)**

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

### 1.3.1.4.6 SwMajorVersion

**Table 19 Specification for SwMajorVersion**

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

### 1.3.1.4.7 SwMinorVersion

**Table 20 Specification for SwMinorVersion**

<b>Name</b>	SwMinorVersion		
<b>Description</b>	SwMinorVersion provides the minor version of the Software.		
<b>Multiplicity</b>	1..1	<b>Type</b>	EcucIntegerParamDef
<b>Range</b>	0 - 255		
<b>Default value</b>	As per driver version		
<b>Post-build variant value</b>	FALSE	<b>Post-build variant multiplicity</b>	-

## 1 Mcu driver

**Table 20 Specification for SwMinorVersion (continued)**

<b>Value configuration class</b>	Published-Information	<b>Multiplicity configuration class</b>	-
<b>Origin</b>	IFX	<b>Scope</b>	LOCAL
<b>Dependency</b>	-		
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.		

### 1.3.1.4.8 SwPatchVersion

**Table 21 Specification for SwPatchVersion**

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

### 1.3.1.4.9 VendorId

**Table 22 Specification for VendorId**

<b>Name</b>	VendorId		
<b>Description</b>	VendorId provides the Vendor Id.		
<b>Multiplicity</b>	1..1	<b>Type</b>	EcucIntegerParamDef
<b>Range</b>	0 - 65535		
<b>Default value</b>	17		
<b>Post-build variant value</b>	FALSE	<b>Post-build variant multiplicity</b>	-
<b>Value configuration class</b>	Published-Information	<b>Multiplicity configuration class</b>	-
<b>Origin</b>	IFX	<b>Scope</b>	LOCAL

## 1 Mcu driver

**Table 22 Specification for VendorId (continued)**

<b>Dependency</b>	-
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.

### 1.3.1.5 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: -

#### 1.3.1.5.1 GtmAtomActionTimeBaseSelection

**Table 23 Specification for GtmAtomActionTimeBaseSelection**

<b>Name</b>	GtmAtomActionTimeBaseSelection		
<b>Description</b>	Specifies time base selected to compare with the value configured in GtmAtomActionTimeBaseValue.		
<b>Multiplicity</b>	1..1	<b>Type</b>	EcucEnumerationParamDef
<b>Range</b>	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		
<b>Default value</b>	ATOM_ACT_TB_TBU_TS0		
<b>Post-build variant value</b>	TRUE	<b>Post-build variant multiplicity</b>	-
<b>Value configuration class</b>	Post-Build	<b>Multiplicity configuration class</b>	-
<b>Origin</b>	IFX	<b>Scope</b>	ECU
<b>Dependency</b>	-		
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.		

#### 1.3.1.5.2 GtmAtomActionTimeBaseValue

**Table 24 Specification for GtmAtomActionTimeBaseValue**

<b>Name</b>	GtmAtomActionTimeBaseValue
<b>Description</b>	Specifies the time base value for the ATOM group channel level trigger.

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**Table 24 Specification for GtmAtomActionTimeBaseValue (continued)**

	<p>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.</p> <p>The trigger request has to be explicitly enabled by the user by setting the ATOM_AGC_ACT_TB.TB_TRIG bitfield.</p>		
<b>Multiplicity</b>	1..1	<b>Type</b>	EcucIntegerParamDef
<b>Range</b>	1 - 16777215		
<b>Default value</b>	1		
<b>Post-build variant value</b>	TRUE	<b>Post-build variant multiplicity</b>	-
<b>Value configuration class</b>	Post-Build	<b>Multiplicity configuration class</b>	-
<b>Origin</b>	IFX	<b>Scope</b>	ECU
<b>Dependency</b>	-		
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.		

**1.3.1.6 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: -

**1.3.1.6.1 GtmAtomChInternalTriggerEnable**
**Table 25 Specification for GtmAtomChInternalTriggerEnable**

<b>Name</b>	GtmAtomChInternalTriggerEnable		
<b>Description</b>	<p>Enables/disables internal trigger from channel 0 of the corresponding group channel number.</p> <p>If a channel belongs to AGC0 (channel number 0 - 7), setting this configuration parameter for the corresponding channel enables the trigger from channel0.</p> <p>Values:</p> <p>TRUE: enable internal trigger from channel 0 tor 7 (based on the AGC a channel belong to)</p> <p>FALSE: disable internal trigger from channel 0 to 7 (based on the AGC a channel belong to)</p>		
<b>Multiplicity</b>	1..1	<b>Type</b>	EcucBooleanParamDef



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**Table 25 Specification for GtmAtomChInternalTriggerEnable (continued)**

<b>Range</b>	TRUE FALSE		
<b>Default value</b>	FALSE		
<b>Post-build variant value</b>	TRUE	<b>Post-build variant multiplicity</b>	-
<b>Value configuration class</b>	Post-Build	<b>Multiplicity configuration class</b>	-
<b>Origin</b>	IFX	<b>Scope</b>	ECU
<b>Dependency</b>	-		
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.		

### 1.3.1.6.2 GtmAtomChResetCn0OnTriggerEnable

**Table 26 Specification for GtmAtomChResetCn0OnTriggerEnable**

<b>Name</b>	GtmAtomChResetCn0OnTriggerEnable		
<b>Description</b>	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		
<b>Multiplicity</b>	1..1	<b>Type</b>	EcucBooleanParamDef
<b>Range</b>	TRUE FALSE		
<b>Default value</b>	FALSE		
<b>Post-build variant value</b>	TRUE	<b>Post-build variant multiplicity</b>	-
<b>Value configuration class</b>	Post-Build	<b>Multiplicity configuration class</b>	-
<b>Origin</b>	IFX	<b>Scope</b>	ECU
<b>Dependency</b>	-		
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.		

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### 1.3.1.6.3 GtmTimerPortPinSelect

**Table 27 Specification for GtmTimerPortPinSelect**

<b>Name</b>	GtmTimerPortPinSelect		
<b>Description</b>	Specifies the port pin to which the timer is connected.		
<b>Multiplicity</b>	1..1	<b>Type</b>	EcucEnumerationParamDef
<b>Range</b>	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		
<b>Default value</b>	NONE		
<b>Post-build variant value</b>	TRUE	<b>Post-build variant multiplicity</b>	-
<b>Value configuration class</b>	Post-Build	<b>Multiplicity configuration class</b>	-
<b>Origin</b>	IFX	<b>Scope</b>	LOCAL
<b>Dependency</b>	-		
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.		

### 1.3.1.7 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: -

#### 1.3.1.7.1 GtmTimInpPortPinSel

**Table 28 Specification for GtmTimInpPortPinSel**

<b>Name</b>	GtmTimInpPortPinSel		
<b>Description</b>	Parameter to configure the input port pin connection for TIM channels.		
<b>Multiplicity</b>	1..1	<b>Type</b>	EcucEnumerationParamDef

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**Table 28 Specification for GtmTimInpPortPinSel (continued)**

<b>Range</b>	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		
<b>Default value</b>	SEL0_NONE		
<b>Post-build variant value</b>	TRUE	<b>Post-build variant multiplicity</b>	-
<b>Value configuration class</b>	Post-Build	<b>Multiplicity configuration class</b>	-
<b>Origin</b>	IFX	<b>Scope</b>	LOCAL
<b>Dependency</b>	-		
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.		

### 1.3.1.8 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: -

### 1.3.1.9 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: -

### 1.3.1.10 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: -

## 1 Mcu driver

Multiplicity Configuration Class: -

### 1.3.1.10.1 GtmCmuClusterInputClockDividerEnable

**Table 29 Specification for GtmCmuClusterInputClockDividerEnable**

<b>Name</b>	GtmCmuClusterInputClockDividerEnable		
<b>Description</b>	<p>Enables/disables the dividing of fGTM to CMU.</p> <p>The configuration value CLS0_CLK_DIV defines the primary input clock period for CMU.</p> <p>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.</p> <p><i>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).</i></p>		
<b>Multiplicity</b>	1..1	<b>Type</b>	EcucEnumerationParamDef
<b>Range</b>	<p>CLS_CLK_CFG_DISABLED_SEL0: cluster x is disabled</p> <p>CLS_CLK_CFG_ENABLED_WITHOUT_DIV_SEL1: cluster x is enabled without clock divider</p> <p>CLS_CLK_CFG_ENABLED_WITH_DIV_SEL2: cluster x is enabled with clock divider</p>		
<b>Default value</b>	CLS_CLK_CFG_ENABLED_WITH_DIV_SEL2		
<b>Post-build variant value</b>	TRUE	<b>Post-build variant multiplicity</b>	-
<b>Value configuration class</b>	Post-Build	<b>Multiplicity configuration class</b>	-
<b>Origin</b>	IFX	<b>Scope</b>	ECU
<b>Dependency</b>	-		
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.		

### 1.3.1.11 Container: GtmClusterConfClockSetting

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

Post-Build Variant Multiplicity: -

Multiplicity Configuration Class: -

#### 1.3.1.11.1 GtmClusterConfClock0Src

**Table 30 Specification for GtmClusterConfClock0Src**

<b>Name</b>	GtmClusterConfClock0Src
<b>Description</b>	<p>Specifies the input clock source for the current GTM cluster sub- peripheral using configurable clock 0.</p> <p>User is not allowed to change the name of the configuration parameter.</p>

**1 Mcu driver**
**Table 30 Specification for GtmClusterConfClock0Src (continued)**

<b>Multiplicity</b>	1..1	<b>Type</b>	EcucEnumerationParamDef
<b>Range</b>	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		
<b>Default value</b>	CMU_CONF_CLOCK0_SEL0		
<b>Post-build variant value</b>	TRUE	<b>Post-build variant multiplicity</b>	-
<b>Value configuration class</b>	Post-Build	<b>Multiplicity configuration class</b>	-
<b>Origin</b>	IFX	<b>Scope</b>	ECU
<b>Dependency</b>	-		
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.		

**1.3.1.11.2 GtmClusterConfClock1Src**
**Table 31 Specification for GtmClusterConfClock1Src**

<b>Name</b>	GtmClusterConfClock1Src		
<b>Description</b>	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.		
<b>Multiplicity</b>	1..1	<b>Type</b>	EcucEnumerationParamDef
<b>Range</b>	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		
<b>Default value</b>	CMU_CONF_CLOCK1_SEL0		
<b>Post-build variant value</b>	TRUE	<b>Post-build variant multiplicity</b>	-
<b>Value configuration class</b>	Post-Build	<b>Multiplicity configuration class</b>	-
<b>Origin</b>	IFX	<b>Scope</b>	ECU
<b>Dependency</b>	-		
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.		

## 1 Mcu driver

### 1.3.1.11.3 GtmClusterConfClock2Src

**Table 32 Specification for GtmClusterConfClock2Src**

<b>Name</b>	GtmClusterConfClock2Src		
<b>Description</b>	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.		
<b>Multiplicity</b>	1..1	<b>Type</b>	EcucEnumerationParamDef
<b>Range</b>	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		
<b>Default value</b>	CMU_CONF_CLOCK2_SEL0		
<b>Post-build variant value</b>	TRUE	<b>Post-build variant multiplicity</b>	-
<b>Value configuration class</b>	Post-Build	<b>Multiplicity configuration class</b>	-
<b>Origin</b>	IFX	<b>Scope</b>	ECU
<b>Dependency</b>	-		
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.		

### 1.3.1.11.4 GtmClusterConfClock3Src

**Table 33 Specification for GtmClusterConfClock3Src**

<b>Name</b>	GtmClusterConfClock3Src		
<b>Description</b>	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.		
<b>Multiplicity</b>	1..1	<b>Type</b>	EcucEnumerationParamDef
<b>Range</b>	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		
<b>Default value</b>	CMU_CONF_CLOCK3_SEL0		
<b>Post-build variant value</b>	TRUE	<b>Post-build variant multiplicity</b>	-
<b>Value configuration class</b>	Post-Build	<b>Multiplicity configuration class</b>	-
<b>Origin</b>	IFX	<b>Scope</b>	ECU

## 1 Mcu driver

**Table 33 Specification for GtmClusterConfClock3Src (continued)**

<b>Dependency</b>	-
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.

### 1.3.1.11.5 GtmClusterConfClock4Src

**Table 34 Specification for GtmClusterConfClock4Src**

<b>Name</b>	GtmClusterConfClock4Src		
<b>Description</b>	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.		
<b>Multiplicity</b>	1..1	<b>Type</b>	EcucEnumerationParamDef
<b>Range</b>	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		
<b>Default value</b>	CMU_CONF_CLOCK4_SEL0		
<b>Post-build variant value</b>	TRUE	<b>Post-build variant multiplicity</b>	-
<b>Value configuration class</b>	Post-Build	<b>Multiplicity configuration class</b>	-
<b>Origin</b>	IFX	<b>Scope</b>	ECU
<b>Dependency</b>	-		
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.		

### 1.3.1.11.6 GtmClusterConfClock5Src

**Table 35 Specification for GtmClusterConfClock5Src**

<b>Name</b>	GtmClusterConfClock5Src		
<b>Description</b>	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.		
<b>Multiplicity</b>	1..1	<b>Type</b>	EcucEnumerationParamDef
<b>Range</b>	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		
<b>Default value</b>	CMU_CONF_CLOCK5_SEL0		

## 1 Mcu driver

**Table 35 Specification for GtmClusterConfClock5Src (continued)**

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

### 1.3.1.11.7 GtmClusterConfClock6Src

**Table 36 Specification for GtmClusterConfClock6Src**

<b>Name</b>	GtmClusterConfClock6Src		
<b>Description</b>	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.		
<b>Multiplicity</b>	1..1	<b>Type</b>	EcucEnumerationParamDef
<b>Range</b>	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		
<b>Default value</b>	CMU_CONF_CLOCK6_SEL0		
<b>Post-build variant value</b>	TRUE	<b>Post-build variant multiplicity</b>	-
<b>Value configuration class</b>	Post-Build	<b>Multiplicity configuration class</b>	-
<b>Origin</b>	IFX	<b>Scope</b>	ECU
<b>Dependency</b>	-		
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.		

### 1.3.1.11.8 GtmClusterConfClock7Src

**Table 37 Specification for GtmClusterConfClock7Src**

<b>Name</b>	GtmClusterConfClock7Src		
<b>Description</b>	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.		



**1 Mcu driver**
**Table 37 Specification for GtmClusterConfClock7Src (continued)**

<b>Multiplicity</b>	1..1	<b>Type</b>	EcucEnumerationParamDef
<b>Range</b>	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		
<b>Default value</b>	CMU_CONF_CLOCK7_SEL0		
<b>Post-build variant value</b>	TRUE	<b>Post-build variant multiplicity</b>	-
<b>Value configuration class</b>	Post-Build	<b>Multiplicity configuration class</b>	-
<b>Origin</b>	IFX	<b>Scope</b>	ECU
<b>Dependency</b>	-		
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.		

**1.3.1.12 Container: GtmClusterFixedClockSetting**

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

Post-Build Variant Multiplicity: -

Multiplicity Configuration Class: -

**1.3.1.12.1 GtmClusterFixedClockSrc**
**Table 38 Specification for GtmClusterFixedClockSrc**

<b>Name</b>	GtmClusterFixedClockSrc		
<b>Description</b>	GtmClusterFixedClockSrc parameter specifies the input clock source for GTM cluster-x sub peripherals.		
<b>Multiplicity</b>	1..1	<b>Type</b>	EcucEnumerationParamDef
<b>Range</b>	CMU_CONF_CLOCK8_SEL1: Configurable clock8 will be used for clock CMU_FIXED_CLOCK0_SEL0: Fixed clock0 will be used for clock		
<b>Default value</b>	CMU_FIXED_CLOCK0_SEL0		
<b>Post-build variant value</b>	TRUE	<b>Post-build variant multiplicity</b>	-
<b>Value configuration class</b>	Post-Build	<b>Multiplicity configuration class</b>	-
<b>Origin</b>	IFX	<b>Scope</b>	ECU
<b>Dependency</b>	-		

## 1 Mcu driver

**Table 38 Specification for GtmClusterFixedClockSrc (continued)**

<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.
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### 1.3.1.13 Container: GtmConfigClockSetting

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

Post-Build Variant Multiplicity: -

Multiplicity Configuration Class: -

#### 1.3.1.13.1 GtmCmuConfigClock0Div

**Table 39 Specification for GtmCmuConfigClock0Div**

<b>Name</b>	GtmCmuConfigClock0Div		
<b>Description</b>	<p>Specifies the configurable clock0 divider count value.</p> <p>Defines the count value for the clock divider of clock source CMU_CLK0.</p> <p>Value can only be modified when clock enable EN_CLK0 and EN_ECLK1 are disabled.</p> <p>This configuration parameter is applicable only if the CmuConfigClock0Enable is set to TRUE.</p>		
<b>Multiplicity</b>	1..1	<b>Type</b>	EcucIntegerParamDef
<b>Range</b>	0 - 16777215		
<b>Default value</b>	0		
<b>Post-build variant value</b>	TRUE	<b>Post-build variant multiplicity</b>	-
<b>Value configuration class</b>	Post-Build	<b>Multiplicity configuration class</b>	-
<b>Origin</b>	IFX	<b>Scope</b>	ECU
<b>Dependency</b>	GtmCmuConfigClock0Enable		
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.		

#### 1.3.1.13.2 GtmCmuConfigClock0Enable

**Table 40 Specification for GtmCmuConfigClock0Enable**

<b>Name</b>	GtmCmuConfigClock0Enable
<b>Description</b>	<p>Enables the configurable clock0.</p> <p>Divider for configurable clock0 is defined by GtmCmuConfigClock0Div.</p> <p>Values:</p> <p>TRUE: CMU configurable clock0 is enabled</p> <p>FALSE: CMU configurable clock0 is disabled</p>

## 1 Mcu driver

**Table 40 Specification for GtmCmuConfigClock0Enable (continued)**

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

### 1.3.1.13.3 GtmCmuConfigClock1Div

**Table 41 Specification for GtmCmuConfigClock1Div**

<b>Name</b>	GtmCmuConfigClock1Div		
<b>Description</b>	<p>Specifies the configurable clock1 divider count value.</p> <p>Defines the count value for the clock divider of clock source CMU_CLK1.</p> <p>Value can only be modified when clock enable EN_CLK1 and EN_ECLK1 are disabled.</p> <p>This configuration parameter is applicable only if CmuConfigClock1Enable is set to TRUE.</p>		
<b>Multiplicity</b>	1..1	<b>Type</b>	EcucIntegerParamDef
<b>Range</b>	0 - 16777215		
<b>Default value</b>	0		
<b>Post-build variant value</b>	TRUE	<b>Post-build variant multiplicity</b>	-
<b>Value configuration class</b>	Post-Build	<b>Multiplicity configuration class</b>	-
<b>Origin</b>	IFX	<b>Scope</b>	ECU
<b>Dependency</b>	GtmCmuConfigClock1Enable		
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.		

## 1 Mcu driver

### 1.3.1.13.4 GtmCmuConfigClock1Enable

**Table 42 Specification for GtmCmuConfigClock1Enable**

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

### 1.3.1.13.5 GtmCmuConfigClock2Div

**Table 43 Specification for GtmCmuConfigClock2Div**

<b>Name</b>	GtmCmuConfigClock2Div		
<b>Description</b>	<p>Specifies the configurable clock2 divider count value.</p> <p>Defines the count value for the clock divider of clock source CMU_CLK2.</p> <p>Value can only be modified when clock enable EN_CLK2 and EN_ECLK1 are disabled.</p> <p>This configuration parameter is applicable only if CmuConfigClock2Enable is set to TRUE.</p>		
<b>Multiplicity</b>	1..1	<b>Type</b>	EcucIntegerParamDef
<b>Range</b>	0 - 16777215		
<b>Default value</b>	0		
<b>Post-build variant value</b>	TRUE	<b>Post-build variant multiplicity</b>	-
<b>Value configuration class</b>	Post-Build	<b>Multiplicity configuration class</b>	-

## 1 Mcu driver

**Table 43 Specification for GtmCmuConfigClock2Div (continued)**

<b>Origin</b>	IFX	<b>Scope</b>	ECU
<b>Dependency</b>	GtmCmuConfigClock2Enable		
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.		

### 1.3.1.13.6 GtmCmuConfigClock2Enable

**Table 44 Specification for GtmCmuConfigClock2Enable**

<b>Name</b>	GtmCmuConfigClock2Enable		
<b>Description</b>	<p>Enables the configurable clock2.</p> <p>Divider for configurable clock2 is defined by GtmCmuConfigClock2Div.</p> <p>Values:</p> <p>TRUE: CMU configurable clock2 is enabled</p> <p>FALSE: CMU configurable clock2 is disabled</p>		
<b>Multiplicity</b>	1..1	<b>Type</b>	EcucBooleanParamDef
<b>Range</b>	<p>TRUE</p> <p>FALSE</p>		
<b>Default value</b>	TRUE		
<b>Post-build variant value</b>	TRUE	<b>Post-build variant multiplicity</b>	-
<b>Value configuration class</b>	Post-Build	<b>Multiplicity configuration class</b>	-
<b>Origin</b>	IFX	<b>Scope</b>	ECU
<b>Dependency</b>	-		
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.		

### 1.3.1.13.7 GtmCmuConfigClock3Div

**Table 45 Specification for GtmCmuConfigClock3Div**

<b>Name</b>	GtmCmuConfigClock3Div		
<b>Description</b>	<p>Specifies the configurable clock3 divider count value.</p> <p>Defines the count value for the clock divider of clock source CMU_CLK3.</p> <p>Value can only be modified when clock enable EN_CLK3 and EN_ECLK1 are disabled.</p> <p>This configuration parameter is applicable only if CmuConfigClock3Enable is set to TRUE.</p>		
<b>Multiplicity</b>	1..1	<b>Type</b>	EcucIntegerParamDef
<b>Range</b>	0 - 16777215		

## 1 Mcu driver

**Table 45 Specification for GtmCmuConfigClock3Div (continued)**

<b>Default value</b>	0		
<b>Post-build variant value</b>	TRUE	<b>Post-build variant multiplicity</b>	-
<b>Value configuration class</b>	Post-Build	<b>Multiplicity configuration class</b>	-
<b>Origin</b>	IFX	<b>Scope</b>	ECU
<b>Dependency</b>	GtmCmuConfigClock3Enable		
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.		

### 1.3.1.13.8 GtmCmuConfigClock3Enable

**Table 46 Specification for GtmCmuConfigClock3Enable**

<b>Name</b>	GtmCmuConfigClock3Enable		
<b>Description</b>	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		
<b>Multiplicity</b>	1..1	<b>Type</b>	EcucBooleanParamDef
<b>Range</b>	TRUE FALSE		
<b>Default value</b>	TRUE		
<b>Post-build variant value</b>	TRUE	<b>Post-build variant multiplicity</b>	-
<b>Value configuration class</b>	Post-Build	<b>Multiplicity configuration class</b>	-
<b>Origin</b>	IFX	<b>Scope</b>	ECU
<b>Dependency</b>	-		
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.		

### 1.3.1.13.9 GtmCmuConfigClock4Div

**Table 47 Specification for GtmCmuConfigClock4Div**

<b>Name</b>	GtmCmuConfigClock4Div		
<b>Description</b>	Specifies the configurable clock4 divider count value.		

**1 Mcu driver**
**Table 47 Specification for GtmCmuConfigClock4Div (continued)**

	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.		
<b>Multiplicity</b>	1..1	<b>Type</b>	EcucIntegerParamDef
<b>Range</b>	0 - 16777215		
<b>Default value</b>	0		
<b>Post-build variant value</b>	TRUE	<b>Post-build variant multiplicity</b>	-
<b>Value configuration class</b>	Post-Build	<b>Multiplicity configuration class</b>	-
<b>Origin</b>	IFX	<b>Scope</b>	ECU
<b>Dependency</b>	GtmCmuConfigClock4Enable		
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.		

**1.3.1.13.10 GtmCmuConfigClock4Enable**
**Table 48 Specification for GtmCmuConfigClock4Enable**

<b>Name</b>	GtmCmuConfigClock4Enable		
<b>Description</b>	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		
<b>Multiplicity</b>	1..1	<b>Type</b>	EcucBooleanParamDef
<b>Range</b>	TRUE FALSE		
<b>Default value</b>	TRUE		
<b>Post-build variant value</b>	TRUE	<b>Post-build variant multiplicity</b>	-
<b>Value configuration class</b>	Post-Build	<b>Multiplicity configuration class</b>	-
<b>Origin</b>	IFX	<b>Scope</b>	ECU
<b>Dependency</b>	-		
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.		

**1 Mcu driver**
**1.3.1.13.11 GtmCmuConfigClock5Div**
**Table 49 Specification for GtmCmuConfigClock5Div**

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

**1.3.1.13.12 GtmCmuConfigClock5Enable**
**Table 50 Specification for GtmCmuConfigClock5Enable**

<b>Name</b>	GtmCmuConfigClock5Enable		
<b>Description</b>	<p>Enables the configurable clock5 Divider for configurable clock5 is defined by GtmCmuConfigClock5Div.</p> <p>Values:</p> <p>TRUE: CMU configurable clock5 is enabled</p> <p>FALSE: CMU configurable clock5 is disabled</p>		
<b>Multiplicity</b>	1..1	<b>Type</b>	EcucBooleanParamDef
<b>Range</b>	TRUE FALSE		
<b>Default value</b>	TRUE		
<b>Post-build variant value</b>	TRUE	<b>Post-build variant multiplicity</b>	-
<b>Value configuration class</b>	Post-Build	<b>Multiplicity configuration class</b>	-



## 1 Mcu driver

**Table 50 Specification for GtmCmuConfigClock5Enable (continued)**

<b>Origin</b>	IFX	<b>Scope</b>	ECU
<b>Dependency</b>	-		
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.		

### 1.3.1.13.13 GtmCmuConfigClock6Div

**Table 51 Specification for GtmCmuConfigClock6Div**

<b>Name</b>	GtmCmuConfigClock6Div		
<b>Description</b>	<p>Specifies the configurable clock6 divider count value.</p> <p>Defines the count value for the clock divider of clock source CMU_CLK6.</p> <p>Value can only be modified when clock enable EN_CLK6 and EN_ECLK1 are disabled.</p> <p>This configuration parameter is applicable only if CmuConfigClock6Enable is set to TRUE.</p>		
<b>Multiplicity</b>	1..1	<b>Type</b>	EcucIntegerParamDef
<b>Range</b>	0 - 16777215		
<b>Default value</b>	0		
<b>Post-build variant value</b>	TRUE	<b>Post-build variant multiplicity</b>	-
<b>Value configuration class</b>	Post-Build	<b>Multiplicity configuration class</b>	-
<b>Origin</b>	IFX	<b>Scope</b>	ECU
<b>Dependency</b>	GtmCmuConfigClock6Enable		
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.		

### 1.3.1.13.14 GtmCmuConfigClock6Enable

**Table 52 Specification for GtmCmuConfigClock6Enable**

<b>Name</b>	GtmCmuConfigClock6Enable		
<b>Description</b>	<p>Enables the configurable clock6</p> <p>Divider for configurable clock6 is defined by GtmCmuConfigClock6Div.</p> <p>Values:</p> <p>TRUE: CMU configurable clock6 is enabled</p> <p>FALSE: CMU configurable clock6 is disabled</p>		
<b>Multiplicity</b>	1..1	<b>Type</b>	EcucBooleanParamDef
<b>Range</b>	TRUE FALSE		

## 1 Mcu driver

**Table 52 Specification for GtmCmuConfigClock6Enable (continued)**

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

### 1.3.1.13.15 GtmCmuConfigClock7Div

**Table 53 Specification for GtmCmuConfigClock7Div**

<b>Name</b>	GtmCmuConfigClock7Div		
<b>Description</b>	<p>Specifies the configurable clock7 divider count value.</p> <p>Defines the count value for the clock divider of clock source CMU_CLK7.</p> <p>Value can only be modified when clock enable EN_CLK7 and EN_ECLK1 are disabled.</p> <p>This configuration parameter is applicable only if CmuConfigClock7Enable is set to TRUE.</p>		
<b>Multiplicity</b>	1..1	<b>Type</b>	EcucIntegerParamDef
<b>Range</b>	0 - 16777215		
<b>Default value</b>	0		
<b>Post-build variant value</b>	TRUE	<b>Post-build variant multiplicity</b>	-
<b>Value configuration class</b>	Post-Build	<b>Multiplicity configuration class</b>	-
<b>Origin</b>	IFX	<b>Scope</b>	ECU
<b>Dependency</b>	GtmCmuConfigClock7Enable		
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.		

### 1.3.1.13.16 GtmCmuConfigClock7Enable

**Table 54 Specification for GtmCmuConfigClock7Enable**

<b>Name</b>	GtmCmuConfigClock7Enable
<b>Description</b>	<p>Enables the configurable clock7</p> <p>Divider for configurable clock7 is defined by GtmCmuConfigClock7Div.</p> <p>Values:</p>

**1 Mcu driver**
**Table 54 Specification for GtmCmuConfigClock7Enable (continued)**

	TRUE: CMU configurable clock7 is enabled FALSE: CMU configurable clock7 is disabled		
<b>Multiplicity</b>	1..1	<b>Type</b>	EcucBooleanParamDef
<b>Range</b>	TRUE FALSE		
<b>Default value</b>	TRUE		
<b>Post-build variant value</b>	TRUE	<b>Post-build variant multiplicity</b>	-
<b>Value configuration class</b>	Post-Build	<b>Multiplicity configuration class</b>	-
<b>Origin</b>	IFX	<b>Scope</b>	ECU
<b>Dependency</b>	-		
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.		

**1.3.1.14 Container: GtmExtClockSetting**

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

Post-Build Variant Multiplicity: -

Multiplicity Configuration Class: -

**1.3.1.14.1 GtmCmuExtClock0Denominator**
**Table 55 Specification for GtmCmuExtClock0Denominator**

<b>Name</b>	GtmCmuExtClock0Denominator		
<b>Description</b>	Specifies the denominator value for external clock 0. The GtmCmuExtClock0Numerator value should not be less than GtmCmuExtClock0Denominator.		
<b>Multiplicity</b>	1..1	<b>Type</b>	EcucIntegerParamDef
<b>Range</b>	1 - 16777215		
<b>Default value</b>	1		
<b>Post-build variant value</b>	TRUE	<b>Post-build variant multiplicity</b>	-
<b>Value configuration class</b>	Post-Build	<b>Multiplicity configuration class</b>	-
<b>Origin</b>	IFX	<b>Scope</b>	ECU
<b>Dependency</b>	GtmCmuExtClock0Numerator, GtmCmuExtClock0Enable		

**1 Mcu driver**
**Table 55 Specification for GtmCmuExtClock0Denominator (continued)**

<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.
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**1.3.1.14.2 GtmCmuExtClock0Enable**
**Table 56 Specification for GtmCmuExtClock0Enable**

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

**1.3.1.14.3 GtmCmuExtClock0Numerator**
**Table 57 Specification for GtmCmuExtClock0Numerator**

<b>Name</b>	GtmCmuExtClock0Numerator		
<b>Description</b>	<p>Specifies the numerator value for external clock 0.</p> <p>The GtmCmuExtClock0Numerator value should not be less than GtmCmuExtClock0Denominator.</p>		
<b>Multiplicity</b>	1..1	<b>Type</b>	EcucIntegerParamDef
<b>Range</b>	1 - 16777215		
<b>Default value</b>	1		
<b>Post-build variant value</b>	TRUE	<b>Post-build variant multiplicity</b>	-

## 1 Mcu driver

**Table 57 Specification for GtmCmuExtClock0Numerator (continued)**

<b>Value configuration class</b>	Post-Build	<b>Multiplicity configuration class</b>	-
<b>Origin</b>	IFX	<b>Scope</b>	ECU
<b>Dependency</b>	GtmCmuExtClock0Denominator, GtmCmuExtClock0Enable		
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.		

### 1.3.1.14.4 GtmCmuExtClock1Denominator

**Table 58 Specification for GtmCmuExtClock1Denominator**

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

### 1.3.1.14.5 GtmCmuExtClock1Enable

**Table 59 Specification for GtmCmuExtClock1Enable**

<b>Name</b>	GtmCmuExtClock1Enable		
<b>Description</b>	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		
<b>Multiplicity</b>	1..1	<b>Type</b>	EcucBooleanParamDef

## 1 Mcu driver

**Table 59 Specification for GtmCmuExtClock1Enable (continued)**

<b>Range</b>	TRUE FALSE		
<b>Default value</b>	FALSE		
<b>Post-build variant value</b>	TRUE	<b>Post-build variant multiplicity</b>	-
<b>Value configuration class</b>	Post-Build	<b>Multiplicity configuration class</b>	-
<b>Origin</b>	IFX	<b>Scope</b>	ECU
<b>Dependency</b>	-		
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.		

### 1.3.1.14.6 GtmCmuExtClock1Numerator

**Table 60 Specification for GtmCmuExtClock1Numerator**

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

### 1.3.1.14.7 GtmCmuExtClock2Denominator

**Table 61 Specification for GtmCmuExtClock2Denominator**

<b>Name</b>	GtmCmuExtClock2Denominator		
<b>Description</b>	Specifies the denominator value for the external clock 2. The GtmCmuExtClock2Numerator value should not be less than GtmCmuExtClock2Denominator.		

## 1 Mcu driver

**Table 61 Specification for GtmCmuExtClock2Denominator (continued)**

<b>Multiplicity</b>	1..1	<b>Type</b>	EcucIntegerParamDef
<b>Range</b>	1 - 16777215		
<b>Default value</b>	1		
<b>Post-build variant value</b>	TRUE	<b>Post-build variant multiplicity</b>	-
<b>Value configuration class</b>	Post-Build	<b>Multiplicity configuration class</b>	-
<b>Origin</b>	IFX	<b>Scope</b>	ECU
<b>Dependency</b>	GtmCmuExtClock2Numerator, GtmCmuExtClock2Enable		
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.		

### 1.3.1.14.8 GtmCmuExtClock2Enable

**Table 62 Specification for GtmCmuExtClock2Enable**

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

**1 Mcu driver**
**1.3.1.14.9 GtmCmuExtClock2Numerator**
**Table 63 Specification for GtmCmuExtClock2Numerator**

<b>Name</b>	GtmCmuExtClock2Numerator		
<b>Description</b>	Specifies the numerator value for the external clock 2. GtmCmuExtClock2Numerator value should not be less than GtmCmuExtClock2Denominator.		
<b>Multiplicity</b>	1..1	<b>Type</b>	EcucIntegerParamDef
<b>Range</b>	1 - 16777215		
<b>Default value</b>	1		
<b>Post-build variant value</b>	TRUE	<b>Post-build variant multiplicity</b>	-
<b>Value configuration class</b>	Post-Build	<b>Multiplicity configuration class</b>	-
<b>Origin</b>	IFX	<b>Scope</b>	ECU
<b>Dependency</b>	GtmCmuExtClock2Denominator, GtmCmuExtClock2Enable		
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.		

**1.3.1.15 Container: GtmFixedClockSetting**

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

Post-Build Variant Multiplicity: -

Multiplicity Configuration Class: -

**1.3.1.15.1 GtmCmuFixedClockEnable**
**Table 64 Specification for GtmCmuFixedClockEnable**

<b>Name</b>	GtmCmuFixedClockEnable		
<b>Description</b>	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		
<b>Multiplicity</b>	1..1	<b>Type</b>	EcucBooleanParamDef
<b>Range</b>	TRUE FALSE		
<b>Default value</b>	FALSE		
<b>Post-build variant value</b>	TRUE	<b>Post-build variant multiplicity</b>	-



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**Table 64 Specification for GtmCmuFixedClockEnable (continued)**

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

### 1.3.1.15.2 GtmCmuFixedClockSel

**Table 65 Specification for GtmCmuFixedClockSel**

<b>Name</b>	GtmCmuFixedClockSel		
<b>Description</b>	Specifies the source for the fixed clock.		
<b>Multiplicity</b>	1..1	<b>Type</b>	EcucEnumerationParamDef
<b>Range</b>	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		
<b>Default value</b>	CMU_GLOBAL_CLOCK_SEL0		
<b>Post-build variant value</b>	TRUE	<b>Post-build variant multiplicity</b>	-
<b>Value configuration class</b>	Post-Build	<b>Multiplicity configuration class</b>	-
<b>Origin</b>	IFX	<b>Scope</b>	ECU
<b>Dependency</b>	-		
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.		

### 1.3.1.16 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: -

## 1 Mcu driver

Multiplicity Configuration Class: -

### 1.3.1.17 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: -

#### 1.3.1.17.1 GtmTbuChClockSourceSelection

**Table 66** Specification for GtmTbuChClockSourceSelection

<b>Name</b>	GtmTbuChClockSourceSelection		
<b>Description</b>	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.		
<b>Multiplicity</b>	1..1	<b>Type</b>	EcucEnumerationParamDef
<b>Range</b>	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		
<b>Default value</b>	CMU_CLOCK0_SEL0		
<b>Post-build variant value</b>	TRUE	<b>Post-build variant multiplicity</b>	-
<b>Value configuration class</b>	Post-Build	<b>Multiplicity configuration class</b>	-
<b>Origin</b>	IFX	<b>Scope</b>	ECU
<b>Dependency</b>	GtmTbuChannelEnable		
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.		

#### 1.3.1.17.2 GtmTbuChMode

**Table 67** Specification for GtmTbuChMode

<b>Name</b>	GtmTbuChMode		
<b>Description</b>	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.		

**1 Mcu driver**
**Table 67 Specification for GtmTbuChMode (continued)**

<b>Multiplicity</b>	1..1	<b>Type</b>	EcucEnumerationParamDef
<b>Range</b>	FORWARD_BACKWARD_SEL1: Forward/backward counter mode FREE_RUNNING_COUNTER_SEL0: Free- running counter mode		
<b>Default value</b>	FREE_RUNNING_COUNTER_SEL0		
<b>Post-build variant value</b>	TRUE	<b>Post-build variant multiplicity</b>	-
<b>Value configuration class</b>	Post-Build	<b>Multiplicity configuration class</b>	-
<b>Origin</b>	IFX	<b>Scope</b>	ECU
<b>Dependency</b>	GtmTbuChannelEnable		
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.		

**1.3.1.17.3 GtmTbuChModuloCntrSel**
**Table 68 Specification for GtmTbuChModuloCntrSel**

<b>Name</b>	GtmTbuChModuloCntrSel		
<b>Description</b>	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.		
<b>Multiplicity</b>	1..1	<b>Type</b>	EcucEnumerationParamDef
<b>Range</b>	TBU_CH1_SEL0: TBU_CH1 values used TBU_CH2_SEL1: TBU_CH2 values used		
<b>Default value</b>	TBU_CH1_SEL0		
<b>Post-build variant value</b>	TRUE	<b>Post-build variant multiplicity</b>	-
<b>Value configuration class</b>	Post-Build	<b>Multiplicity configuration class</b>	-
<b>Origin</b>	IFX	<b>Scope</b>	ECU
<b>Dependency</b>	GtmTbuChannelEnable		
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.		

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### 1.3.1.17.4 GtmTbuChResolutionSel

**Table 69 Specification for GtmTbuChResolutionSel**

<b>Name</b>	GtmTbuChResolutionSel		
<b>Description</b>	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.		
<b>Multiplicity</b>	1..1	<b>Type</b>	EcucEnumerationParamDef
<b>Range</b>	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		
<b>Default value</b>	TBU_CH_LOWER_COUNT_BITS_SEL0		
<b>Post-build variant value</b>	TRUE	<b>Post-build variant multiplicity</b>	-
<b>Value configuration class</b>	Post-Build	<b>Multiplicity configuration class</b>	-
<b>Origin</b>	IFX	<b>Scope</b>	ECU
<b>Dependency</b>	GtmTbuChannelEnable		
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.		

### 1.3.1.17.5 GtmTbuChannelEnable

**Table 70 Specification for GtmTbuChannelEnable**

<b>Name</b>	GtmTbuChannelEnable		
<b>Description</b>	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		
<b>Multiplicity</b>	1..1	<b>Type</b>	EcucBooleanParamDef
<b>Range</b>	TRUE FALSE		
<b>Default value</b>	FALSE		
<b>Post-build variant value</b>	TRUE	<b>Post-build variant multiplicity</b>	-
<b>Value configuration class</b>	Post-Build	<b>Multiplicity configuration class</b>	-

## 1 Mcu driver

**Table 70 Specification for GtmTbuChannelEnable (continued)**

<b>Origin</b>	IFX	<b>Scope</b>	ECU
<b>Dependency</b>	-		
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.		

### 1.3.1.18 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: -

#### 1.3.1.18.1 GtmTomActionTimeBaseSelection

**Table 71 Specification for GtmTomActionTimeBaseSelection**

<b>Name</b>	GtmTomActionTimeBaseSelection		
<b>Description</b>	Specifies the time base selected to compare with the value configured in GtmTomActionTimeBaseValue.		
<b>Multiplicity</b>	1..1	<b>Type</b>	EcucEnumerationParamDef
<b>Range</b>	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		
<b>Default value</b>	TOM_ACT_TB_TBU_TS0		
<b>Post-build variant value</b>	TRUE	<b>Post-build variant multiplicity</b>	-
<b>Value configuration class</b>	Post-Build	<b>Multiplicity configuration class</b>	-
<b>Origin</b>	IFX	<b>Scope</b>	ECU
<b>Dependency</b>	-		
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.		

#### 1.3.1.18.2 GtmTomActionTimeBaseValue

**Table 72 Specification for GtmTomActionTimeBaseValue**

<b>Name</b>	GtmTomActionTimeBaseValue
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## 1 Mcu driver

**Table 72 Specification for GtmTomActionTimeBaseValue (continued)**

<b>Description</b>	<p>Specifies the time base value for the TOM group channel level trigger.</p> <p>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.</p> <p>The trigger request has to be explicitly enabled by the user by setting the TOM_TGC_ACT_TB.TB_TRIG bitfield.</p>		
<b>Multiplicity</b>	1..1	<b>Type</b>	EcucIntegerParamDef
<b>Range</b>	1 - 16777215		
<b>Default value</b>	1		
<b>Post-build variant value</b>	TRUE	<b>Post-build variant multiplicity</b>	-
<b>Value configuration class</b>	Post-Build	<b>Multiplicity configuration class</b>	-
<b>Origin</b>	IFX	<b>Scope</b>	ECU
<b>Dependency</b>	-		
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.		

### 1.3.1.19 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: -

#### 1.3.1.19.1 GtmTimerPortPinSelect

**Table 73 Specification for GtmTimerPortPinSelect**

<b>Name</b>	GtmTimerPortPinSelect		
<b>Description</b>	Specifies the port pin to which the timer is connected.		
<b>Multiplicity</b>	1..1	<b>Type</b>	EcucEnumerationParamDef
<b>Range</b>	<p>NONE: Timer is not connected to any port pin.</p> <p>TOUT[x]_SEL[y]_[i]_PORT[z]_PIN[q]: Specifies the TOUT connection for the timer.</p> <p>[x]: TOUT number (0-270)</p> <p>[y]: Selection (A-L)</p> <p>[i]: value corresponding to selection (0 - 11)</p>		

**1 Mcu driver**
**Table 73 Specification for GtmTimerPortPinSelect (continued)**

	[z]: Port number [q]: Pin number		
<b>Default value</b>	NONE		
<b>Post-build variant value</b>	TRUE	<b>Post-build variant multiplicity</b>	-
<b>Value configuration class</b>	Post-Build	<b>Multiplicity configuration class</b>	-
<b>Origin</b>	IFX	<b>Scope</b>	LOCAL
<b>Dependency</b>	-		
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.		

**1.3.1.19.2 GtmTomChInternalTriggerEnable**
**Table 74 Specification for GtmTomChInternalTriggerEnable**

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

## 1 Mcu driver

### 1.3.1.19.3 GtmTomChResetCn0OnTriggerEnable

**Table 75 Specification for GtmTomChResetCn0OnTriggerEnable**

<b>Name</b>	GtmTomChResetCn0OnTriggerEnable		
<b>Description</b>	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		
<b>Multiplicity</b>	1..1	<b>Type</b>	EcucBooleanParamDef
<b>Range</b>	TRUE FALSE		
<b>Default value</b>	FALSE		
<b>Post-build variant value</b>	TRUE	<b>Post-build variant multiplicity</b>	-
<b>Value configuration class</b>	Post-Build	<b>Multiplicity configuration class</b>	-
<b>Origin</b>	IFX	<b>Scope</b>	ECU
<b>Dependency</b>	-		
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.		

### 1.3.1.20 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: -

### 1.3.1.21 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 Mcu driver

### 1.3.1.22 Container: GtmTomGroupConf

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

Post-Build Variant Multiplicity: -

Multiplicity Configuration Class: -

### 1.3.1.23 Container: GtmTriggerForAdc

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

Post-Build Variant Multiplicity: -

Multiplicity Configuration Class: -

#### 1.3.1.23.1 GtmAdcTrigger0Select

**Table 76 Specification for GtmAdcTrigger0Select**

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

## 1 Mcu driver

**Table 76 Specification for GtmAdcTrigger0Select (continued)**

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

### 1.3.1.23.2 GtmAdcTrigger1Select

**Table 77 Specification for GtmAdcTrigger1Select**

<b>Name</b>	GtmAdcTrigger1Select		
<b>Description</b>	<p>Defines the GTM timer slice output connected to the adc_trig1 signal.</p> <p>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.</p> <p>TRIG_'VAL': 'VAL' is the value programmed into the register. TOMx or ATOMx is the module containing channel which generates the trigger.</p>		
<b>Multiplicity</b>	1..1	<b>Type</b>	EcucEnumerationParamDef
<b>Range</b>	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		
<b>Default value</b>	TRIG_0_NO_TRIGGER		
<b>Post-build variant value</b>	TRUE	<b>Post-build variant multiplicity</b>	-

## 1 Mcu driver

**Table 77 Specification for GtmAdcTrigger1Select (continued)**

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

### 1.3.1.23.3 GtmAdcTrigger2Select

**Table 78 Specification for GtmAdcTrigger2Select**

<b>Name</b>	GtmAdcTrigger2Select		
<b>Description</b>	<p>Defines the GTM timer slice output connected to the adc_trig2 signal.</p> <p>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.</p> <p>TRIG_'VAL': 'VAL' is the value programmed into the register. TOMx or ATOMx is the module containing channel which generates the trigger.</p>		
<b>Multiplicity</b>	1..1	<b>Type</b>	EcucEnumerationParamDef
<b>Range</b>	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		
<b>Default value</b>	TRIG_0_NO_TRIGGER		
<b>Post-build variant value</b>	TRUE	<b>Post-build variant multiplicity</b>	-

## 1 Mcu driver

**Table 78 Specification for GtmAdcTrigger2Select (continued)**

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

### 1.3.1.23.4 GtmAdcTrigger3Select

**Table 79 Specification for GtmAdcTrigger3Select**

<b>Name</b>	GtmAdcTrigger3Select		
<b>Description</b>	<p>Defines the GTM timer slice output connected to the adc_trig3 signal.</p> <p>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.</p> <p>TRIG_'VAL': 'VAL' is the value programmed into the register. TOMx or ATOMx is the module containing channel which generates the trigger.</p>		
<b>Multiplicity</b>	1..1	<b>Type</b>	EcucEnumerationParamDef
<b>Range</b>	<p>TRIG_0_NO_TRIGGER: No trigger is selected</p> <p>TRIG_10: Trigger 10 is selected</p> <p>TRIG_11: Trigger 11 is selected</p> <p>TRIG_12: Trigger 12 is selected</p> <p>TRIG_13: Trigger 13 is selected</p> <p>TRIG_14: Trigger 14 is selected</p> <p>TRIG_15: Trigger 15 is selected</p> <p>TRIG_1: Trigger 1 is selected</p> <p>TRIG_2: Trigger 2 is selected</p> <p>TRIG_3: Trigger 3 is selected</p> <p>TRIG_4: Trigger 4 is selected</p> <p>TRIG_5: Trigger 5 is selected</p> <p>TRIG_6: Trigger 6 is selected</p> <p>TRIG_7: Trigger 7 is selected</p> <p>TRIG_8: Trigger 8 is selected</p> <p>TRIG_9: Trigger 9 is selected</p>		
<b>Default value</b>	TRIG_0_NO_TRIGGER		
<b>Post-build variant value</b>	TRUE	<b>Post-build variant multiplicity</b>	-

## 1 Mcu driver

**Table 79 Specification for GtmAdcTrigger3Select (continued)**

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

### 1.3.1.23.5 GtmAdcTrigger4Select

**Table 80 Specification for GtmAdcTrigger4Select**

<b>Name</b>	GtmAdcTrigger4Select		
<b>Description</b>	<p>Defines the GTM timer slice output connected to the adc_trig4 signal.</p> <p>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.</p> <p>TRIG_'VAL': 'VAL' is the value programmed into the register. TOMx or ATOMx is the module containing channel which generates the trigger.</p>		
<b>Multiplicity</b>	1..1	<b>Type</b>	EcucEnumerationParamDef
<b>Range</b>	<p>TRIG_0_NO_TRIGGER: No trigger is selected</p> <p>TRIG_10: Trigger 10 is selected</p> <p>TRIG_11: Trigger 11 is selected</p> <p>TRIG_12: Trigger 12 is selected</p> <p>TRIG_13: Trigger 13 is selected</p> <p>TRIG_14: Trigger 14 is selected</p> <p>TRIG_15: Trigger 15 is selected</p> <p>TRIG_1: Trigger 1 is selected</p> <p>TRIG_2: Trigger 2 is selected</p> <p>TRIG_3: Trigger 3 is selected</p> <p>TRIG_4: Trigger 4 is selected</p> <p>TRIG_5: Trigger 5 is selected</p> <p>TRIG_6: Trigger 6 is selected</p> <p>TRIG_7: Trigger 7 is selected</p> <p>TRIG_8: Trigger 8 is selected</p> <p>TRIG_9: Trigger 9 is selected</p>		
<b>Default value</b>	TRIG_0_NO_TRIGGER		
<b>Post-build variant value</b>	TRUE	<b>Post-build variant multiplicity</b>	-

## 1 Mcu driver

**Table 80 Specification for GtmAdcTrigger4Select (continued)**

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

### 1.3.1.24 Container: GtmTriggerForDsadc

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

Post-Build Variant Multiplicity: -

Multiplicity Configuration Class: -

#### 1.3.1.24.1 GtmDsadcTrigger0Select

**Table 81 Specification for GtmDsadcTrigger0Select**

<b>Name</b>	GtmDsadcTrigger0Select		
<b>Description</b>	<p>Defines the GTM timer slice output connected to the Dsadc_trig0 signal.</p> <p>The user is provided with a drop down list of 16 values conforming to the following format.</p> <p>TRIG_[VAL]_NO_TRIGGER indicating that this trigger line is electrically disconnected from possible trigger sources.</p> <p>TRIG_[VAL]: [VAL] is the value programmed into the register. TOMx or ATOMx is the module containing channel which generates the trigger.</p> <p>The value of this parameter should be unique across all containers only when DSADC module is configured.</p>		
<b>Multiplicity</b>	1..1	<b>Type</b>	EcucEnumerationParamDef
<b>Range</b>	<p>TRIG_0_NO_TRIGGER: Trigger 0 indicates no trigger is selected</p> <p>TRIG_10: Trigger 10 is selected</p> <p>TRIG_11: Trigger 11 is selected</p> <p>TRIG_12: Trigger 12 is selected</p> <p>TRIG_13: Trigger 13 is selected</p> <p>TRIG_14: Trigger 14 is selected</p> <p>TRIG_15: Trigger 15 is selected</p> <p>TRIG_1: Trigger 1 is selected</p> <p>TRIG_2: Trigger 2 is selected</p> <p>TRIG_3: Trigger 3 is selected</p> <p>TRIG_4: Trigger 4 is selected</p> <p>TRIG_5: Trigger 5 is selected</p> <p>TRIG_6: Trigger 6 is selected</p> <p>TRIG_7: Trigger 7 is selected</p>		

**1 Mcu driver**
**Table 81 Specification for GtmDsadcTrigger0Select (continued)**

	TRIG_8: Trigger 8 is selected TRIG_9: Trigger 9 is selected		
<b>Default value</b>	TRIG_0_NO_TRIGGER		
<b>Post-build variant value</b>	TRUE	<b>Post-build variant multiplicity</b>	-
<b>Value configuration class</b>	Post-Build	<b>Multiplicity configuration class</b>	-
<b>Origin</b>	IFX	<b>Scope</b>	LOCAL
<b>Dependency</b>	-		
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.		

**1.3.1.24.2 GtmDsadcTrigger1Select**
**Table 82 Specification for GtmDsadcTrigger1Select**

<b>Name</b>	GtmDsadcTrigger1Select		
<b>Description</b>	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.		
<b>Multiplicity</b>	1..1	<b>Type</b>	EcucEnumerationParamDef
<b>Range</b>	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		

**1 Mcu driver**
**Table 82 Specification for GtmDsadcTrigger1Select (continued)**

	TRIG_8: Trigger 8 is selected TRIG_9: Trigger 9 is selected		
<b>Default value</b>	TRIG_0_NO_TRIGGER		
<b>Post-build variant value</b>	TRUE	<b>Post-build variant multiplicity</b>	-
<b>Value configuration class</b>	Post-Build	<b>Multiplicity configuration class</b>	-
<b>Origin</b>	IFX	<b>Scope</b>	LOCAL
<b>Dependency</b>	-		
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.		

**1.3.1.24.3 GtmDsadcTrigger2Select**
**Table 83 Specification for GtmDsadcTrigger2Select**

<b>Name</b>	GtmDsadcTrigger2Select		
<b>Description</b>	<p>Defines the GTM timer slice output connected to the Dsadc_trig2 signal.</p> <p>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.</p> <p>TRIG_[VAL]: [VAL] is the value programmed into the register. TOMx or ATOMx is the module containing channel which generates the trigger.</p> <p>The value of this parameter should be unique across all containers only when DSADC module is configured.</p>		
<b>Multiplicity</b>	1..1	<b>Type</b>	EcucEnumerationParamDef
<b>Range</b>	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		



**1 Mcu driver**
**Table 83 Specification for GtmDsadcTrigger2Select (continued)**

	TRIG_8: Trigger 8 is selected TRIG_9: Trigger 9 is selected		
<b>Default value</b>	TRIG_0_NO_TRIGGER		
<b>Post-build variant value</b>	TRUE	<b>Post-build variant multiplicity</b>	-
<b>Value configuration class</b>	Post-Build	<b>Multiplicity configuration class</b>	-
<b>Origin</b>	IFX	<b>Scope</b>	LOCAL
<b>Dependency</b>	-		
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.		

**1.3.1.24.4 GtmDsadcTrigger3Select**
**Table 84 Specification for GtmDsadcTrigger3Select**

<b>Name</b>	GtmDsadcTrigger3Select		
<b>Description</b>	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.		
<b>Multiplicity</b>	1..1	<b>Type</b>	EcucEnumerationParamDef
<b>Range</b>	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		
<b>Default value</b>	TRIG_0_NO_TRIGGER		
<b>Post-build variant value</b>	TRUE	<b>Post-build variant multiplicity</b>	-
<b>Value configuration class</b>	Post-Build	<b>Multiplicity configuration class</b>	-
<b>Origin</b>	IFX	<b>Scope</b>	LOCAL
<b>Dependency</b>	-		

## 1 Mcu driver

**Table 84 Specification for GtmDsadcTrigger3Select (continued)**

<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.
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### 1.3.1.25 Container: Mcu

Configuration of the Mcu (Microcontroller Unit) module.

Post-Build Variant Multiplicity: -

Multiplicity Configuration Class: -

#### 1.3.1.25.1 Config Variant

**Table 85 Specification for Config Variant**

<b>Name</b>	Config Variant		
<b>Description</b>	Selects the config-variant for the MCU module. The default value of this parameter is set to VariantPostBuild as per AUTOSAR.		
<b>Multiplicity</b>	1..1	<b>Type</b>	EcucEnumerationParamDef
<b>Range</b>	VariantPostBuild:		
<b>Default value</b>	VariantPostBuild		
<b>Post-build variant value</b>	FALSE	<b>Post-build variant multiplicity</b>	-
<b>Value configuration class</b>	Pre-Compile	<b>Multiplicity configuration class</b>	-
<b>Origin</b>	IFX	<b>Scope</b>	LOCAL
<b>Dependency</b>	-		
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.		

### 1.3.1.26 Container: McuAscLinChannelAllocationConf

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

Post-Build Variant Multiplicity: -

Multiplicity Configuration Class: -

#### 1.3.1.26.1 McuAscLinChannelAllocationConf

**Table 86 Specification for McuAscLinChannelAllocationConf**

<b>Name</b>	McuAscLinChannelAllocationConf
<b>Description</b>	Specifies which driver(s) have used or not used this particular AscLin channel. <i>Note: Availability of the module is based on the Release Notes.</i>

## 1 Mcu driver

**Table 86 Specification for McuAsclnChannelAllocationConf (continued)**

<b>Multiplicity</b>	1..1	<b>Type</b>	EcucEnumerationParamDef
<b>Range</b>	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		
<b>Default value</b>	ASCLIN_CH_NOT_USED		
<b>Post-build variant value</b>	FALSE	<b>Post-build variant multiplicity</b>	-
<b>Value configuration class</b>	Pre-Compile	<b>Multiplicity configuration class</b>	-
<b>Origin</b>	IFX	<b>Scope</b>	LOCAL
<b>Dependency</b>	-		
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.		

### 1.3.1.26.2 McuAsclnKernelId

**Table 87 Specification for McuAsclnKernelId**

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

### 1.3.1.27 Container: McuAsclnAllocationConf

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

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

## 1 Mcu driver

Post-Build Variant Multiplicity: FALSE

Multiplicity Configuration Class: Pre-Compile

### 1.3.1.28 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: -

#### 1.3.1.28.1 McuCcu6ModuleAllocationConf

**Table 88** Specification for McuCcu6ModuleAllocationConf

<b>Name</b>	McuCcu6ModuleAllocationConf		
<b>Description</b>	Specifies which driver have used this particular CCU6 module or this module is not used by any driver (unused).		
<b>Multiplicity</b>	1..1	<b>Type</b>	EcucEnumerationParamDef
<b>Range</b>	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		
<b>Default value</b>	CCU6_MODULE_NOT_USED		
<b>Post-build variant value</b>	FALSE	<b>Post-build variant multiplicity</b>	-
<b>Value configuration class</b>	Pre-Compile	<b>Multiplicity configuration class</b>	-
<b>Origin</b>	IFX	<b>Scope</b>	ECU
<b>Dependency</b>	-		
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.		

### 1.3.1.29 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 Mcu driver

### 1.3.1.29.1 McuClockRefSelection

**Table 89**      **Specification for McuClockRefSelection**

<b>Name</b>	McuClockRefSelection		
<b>Description</b>	Selects the source of clock reference, based on which McuClockReferencePointFrequency is populated with frequency.		
<b>Multiplicity</b>	1..1	<b>Type</b>	EcucEnumerationParamDef
<b>Range</b>	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		

## 1 Mcu driver

**Table 89 Specification for McuClockRefSelection (continued)**

<b>Default value</b>	MCU_USER_DEFINED_FREQUENCY		
<b>Post-build variant value</b>	TRUE	<b>Post-build variant multiplicity</b>	-
<b>Value configuration class</b>	Post-Build	<b>Multiplicity configuration class</b>	-
<b>Origin</b>	IFX	<b>Scope</b>	LOCAL
<b>Dependency</b>	-		
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.		

### 1.3.1.29.2 McuClockReferencePointFrequency

**Table 90 Specification for McuClockReferencePointFrequency**

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

### 1.3.1.30 Container: McuClockReferencePointConfig

This container holds sub-container for the configuration of the MCU clock tree.

Post-Build Variant Multiplicity: -

Multiplicity Configuration Class: -

### 1.3.1.31 Container: McuClockSettingConfig

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

Post-Build Variant Multiplicity: FALSE

## 1 Mcu driver

Multiplicity Configuration Class: Pre-Compile

### 1.3.1.31.1 McuClockSettingId

**Table 91** Specification for McuClockSettingId

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

### 1.3.1.32 Container: McuDemEventParameterRefs

This is a container for the references to the DemEventParameter elements which are invoked using the Dem\_ReportErrorStatus() API 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

#### 1.3.1.32.1 MCU\_E\_CLOCK\_FAILURE

**Table 92** Specification for MCU\_E\_CLOCK\_FAILURE

<b>Name</b>	MCU_E_CLOCK_FAILURE		
<b>Description</b>	Provides the provision to enable or disable the production error event on clock failure reported through DEM. This configuration container is kept disabled, just to conform to AUTOSAR schema model.		
<b>Multiplicity</b>	0..1	<b>Type</b>	EcucSymbolicNameReferenceDef
<b>Range</b>	Reference to Node: DemEventParameter		
<b>Default value</b>	NULL		
<b>Post-build variant value</b>	FALSE	<b>Post-build variant multiplicity</b>	FALSE

## 1 Mcu driver

**Table 92 Specification for MCU\_E\_CLOCK\_FAILURE (continued)**

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

### 1.3.1.33 Container: McuDemEventParameterRefsConf

This is a container for the references to the DemEventParameter elements which are invoked using the Dem\_ReportErrorStatus() API 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

#### 1.3.1.33.1 MCU\_E\_CCUC6\_CLC\_DISABLE\_ERR

**Table 93 Specification for MCU\_E\_CCUC6\_CLC\_DISABLE\_ERR**

<b>Name</b>	MCU_E_CCUC6_CLC_DISABLE_ERR		
<b>Description</b>	This error is reported when the CCUC6 kernel CLC bit cannot be turned OFF within the specified time.		
<b>Multiplicity</b>	0..1	<b>Type</b>	EcucSymbolicNameReferenceDef
<b>Range</b>	Reference to Node: DemEventParameter		
<b>Default value</b>	NULL		
<b>Post-build variant value</b>	FALSE	<b>Post-build variant multiplicity</b>	FALSE
<b>Value configuration class</b>	Pre-Compile	<b>Multiplicity configuration class</b>	Pre-Compile
<b>Origin</b>	IFX	<b>Scope</b>	LOCAL
<b>Dependency</b>	-		
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.		

#### 1.3.1.33.2 MCU\_E\_CCUC6\_CLC\_ENABLE\_ERR

**Table 94 Specification for MCU\_E\_CCUC6\_CLC\_ENABLE\_ERR**

<b>Name</b>	MCU_E_CCUC6_CLC_ENABLE_ERR
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**1 Mcu driver**
**Table 94 Specification for MCU\_E\_CCUC6\_CLC\_ENABLE\_ERR (continued)**

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

**1.3.1.33.3 MCU\_E\_CCUCON\_UPDATE\_ERR**
**Table 95 Specification for MCU\_E\_CCUCON\_UPDATE\_ERR**

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

**1.3.1.33.4 MCU\_E\_CONVCTRL\_CLC\_DISABLE\_ERR**
**Table 96 Specification for MCU\_E\_CONVCTRL\_CLC\_DISABLE\_ERR**

<b>Name</b>	MCU_E_CONVCTRL_CLC_DISABLE_ERR		
<b>Description</b>	This error is reported when the CONVCTRL CLC bit cannot be turned OFF within the specified time.		

## 1 Mcu driver

**Table 96 Specification for MCU\_E\_CONVCTRL\_CLC\_DISABLE\_ERR (continued)**

<b>Multiplicity</b>	0..1	<b>Type</b>	EcucSymbolicNameReferenceDef
<b>Range</b>	Reference to Node: DemEventParameter		
<b>Default value</b>	NULL		
<b>Post-build variant value</b>	FALSE	<b>Post-build variant multiplicity</b>	FALSE
<b>Value configuration class</b>	Pre-Compile	<b>Multiplicity configuration class</b>	Pre-Compile
<b>Origin</b>	IFX	<b>Scope</b>	LOCAL
<b>Dependency</b>	-		
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.		

### 1.3.1.33.5 MCU\_E\_CONVCTRL\_CLC\_ENABLE\_ERR

**Table 97 Specification for MCU\_E\_CONVCTRL\_CLC\_ENABLE\_ERR**

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

### 1.3.1.33.6 MCU\_E\_GPT12\_CLC\_DISABLE\_ERR

**Table 98 Specification for MCU\_E\_GPT12\_CLC\_DISABLE\_ERR**

<b>Name</b>	MCU_E_GPT12_CLC_DISABLE_ERR		
<b>Description</b>	This error is reported if the GPT12 CLC bit cannot be turned OFF within the specified time.		
<b>Multiplicity</b>	0..1	<b>Type</b>	EcucSymbolicNameReferenceDef

**1 Mcu driver**
**Table 98 Specification for MCU\_E\_GPT12\_CLC\_DISABLE\_ERR (continued)**

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

**1.3.1.33.7 MCU\_E\_GPT12\_CLC\_ENABLE\_ERR**
**Table 99 Specification for MCU\_E\_GPT12\_CLC\_ENABLE\_ERR**

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

**1.3.1.33.8 MCU\_E\_GTM\_CLC\_DISABLE\_ERR**
**Table 100 Specification for MCU\_E\_GTM\_CLC\_DISABLE\_ERR**

<b>Name</b>	MCU_E_GTM_CLC_DISABLE_ERR		
<b>Description</b>	This error is reported if the GTM CLC bit cannot be turned OFF within the specified time.		
<b>Multiplicity</b>	0..1	<b>Type</b>	EcucSymbolicNameReferenceDef
<b>Range</b>	Reference to Node: DemEventParameter		
<b>Default value</b>	NULL		

## 1 Mcu driver

**Table 100 Specification for MCU\_E\_GTM\_CLC\_DISABLE\_ERR (continued)**

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

### 1.3.1.33.9 MCU\_E\_GTM\_CLC\_ENABLE\_ERR

**Table 101 Specification for MCU\_E\_GTM\_CLC\_ENABLE\_ERR**

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

### 1.3.1.33.10 MCU\_E\_OSC\_FAILURE

**Table 102 Specification for MCU\_E\_OSC\_FAILURE**

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

## 1 Mcu driver

**Table 102 Specification for MCU\_E\_OSC\_FAILURE (continued)**

<b>Post-build variant value</b>	FALSE	<b>Post-build variant multiplicity</b>	FALSE
<b>Value configuration class</b>	Pre-Compile	<b>Multiplicity configuration class</b>	Pre-Compile
<b>Origin</b>	IFX	<b>Scope</b>	LOCAL
<b>Dependency</b>	McuInitClock, McuClockSourceFailureNotification		
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.		

### 1.3.1.33.11 MCU\_E\_PERIPHERAL\_PLL\_LOCK\_LOSS

**Table 103 Specification for MCU\_E\_PERIPHERAL\_PLL\_LOCK\_LOSS**

<b>Name</b>	MCU_E_PERIPHERAL_PLL_LOCK_LOSS		
<b>Description</b>	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.		
<b>Multiplicity</b>	0..1	<b>Type</b>	EcucSymbolicNameReferenceDef
<b>Range</b>	Reference to Node: DemEventParameter		
<b>Default value</b>	NULL		
<b>Post-build variant value</b>	FALSE	<b>Post-build variant multiplicity</b>	FALSE
<b>Value configuration class</b>	Pre-Compile	<b>Multiplicity configuration class</b>	Pre-Compile
<b>Origin</b>	IFX	<b>Scope</b>	LOCAL
<b>Dependency</b>	McuClockSourceFailureNotification		
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.		

### 1.3.1.33.12 MCU\_E\_PERIPHERAL\_PLL\_TIMEOUT\_ERR

**Table 104 Specification for MCU\_E\_PERIPHERAL\_PLL\_TIMEOUT\_ERR**

<b>Name</b>	MCU_E_PERIPHERAL_PLL_TIMEOUT_ERR		
<b>Description</b>	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.		
<b>Multiplicity</b>	0..1	<b>Type</b>	EcucSymbolicNameReferenceDef
<b>Range</b>	Reference to Node: DemEventParameter		
<b>Default value</b>	NULL		

## 1 Mcu driver

**Table 104 Specification for MCU\_E\_PERIPHERAL\_PLL\_TIMEOUT\_ERR (continued)**

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

### 1.3.1.33.13 MCU\_E\_PMSWCR\_UPDATE\_ERR

**Table 105 Specification for MCU\_E\_PMSWCR\_UPDATE\_ERR**

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

### 1.3.1.33.14 MCU\_E\_SYSTEM\_PLL\_LOCK\_LOSS

**Table 106 Specification for MCU\_E\_SYSTEM\_PLL\_LOCK\_LOSS**

<b>Name</b>	MCU_E_SYSTEM_PLL_LOCK_LOSS		
<b>Description</b>	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.		
<b>Multiplicity</b>	0..1	<b>Type</b>	EcucSymbolicNameReferenceDef
<b>Range</b>	Reference to Node: DemEventParameter		
<b>Default value</b>	NULL		

## 1 Mcu driver

**Table 106 Specification for MCU\_E\_SYSTEM\_PLL\_LOCK\_LOSS (continued)**

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

### 1.3.1.33.15 MCU\_E\_SYSTEM\_PLL\_TIMEOUT\_ERR

**Table 107 Specification for MCU\_E\_SYSTEM\_PLL\_TIMEOUT\_ERR**

<b>Name</b>	MCU_E_SYSTEM_PLL_TIMEOUT_ERR		
<b>Description</b>	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.		
<b>Multiplicity</b>	0..1	<b>Type</b>	EcucSymbolicNameReferenceDef
<b>Range</b>	Reference to Node: DemEventParameter		
<b>Default value</b>	NULL		
<b>Post-build variant value</b>	FALSE	<b>Post-build variant multiplicity</b>	FALSE
<b>Value configuration class</b>	Pre-Compile	<b>Multiplicity configuration class</b>	Pre-Compile
<b>Origin</b>	IFX	<b>Scope</b>	LOCAL
<b>Dependency</b>	McuClockSourceFailureNotification		
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.		

### 1.3.1.34 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 Mcu driver

### 1.3.1.35 Container: McuEruChannelInputLineConf

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

Post-Build Variant Multiplicity: -

Multiplicity Configuration Class: -

#### 1.3.1.35.1 McuEruChannelInputLineConf

**Table 108** Specification for McuEruChannelInputLineConf

<b>Name</b>	McuEruChannelInputLineConf		
<b>Description</b>	Specifies the user of this particular ERU input line.		
<b>Multiplicity</b>	1..1	<b>Type</b>	EcucEnumerationParamDef
<b>Range</b>	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		
<b>Default value</b>	ERU_CHANNEL_INP_NOT_USED		
<b>Post-build variant value</b>	FALSE	<b>Post-build variant multiplicity</b>	-
<b>Value configuration class</b>	Pre-Compile	<b>Multiplicity configuration class</b>	-
<b>Origin</b>	IFX	<b>Scope</b>	ECU
<b>Dependency</b>	-		
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.		

### 1.3.1.36 Container: McuEruChannelOutputUnitConf

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

Post-Build Variant Multiplicity: -

Multiplicity Configuration Class: -

#### 1.3.1.36.1 McuEruChannelOutputUnitConf

**Table 109** Specification for McuEruChannelOutputUnitConf

<b>Name</b>	McuEruChannelOutputUnitConf		
<b>Description</b>	Specifies the user of this particular ERU output line.		
<b>Multiplicity</b>	1..1	<b>Type</b>	EcucEnumerationParamDef



**1 Mcu driver**
**Table 109 Specification for McuEruChannelOutputUnitConf (continued)**

<b>Range</b>	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		
<b>Default value</b>	ERU_CHANNEL_OUT_NOT_USED		
<b>Post-build variant value</b>	FALSE	<b>Post-build variant multiplicity</b>	-
<b>Value configuration class</b>	Pre-Compile	<b>Multiplicity configuration class</b>	-
<b>Origin</b>	IFX	<b>Scope</b>	ECU
<b>Dependency</b>	-		
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.		

**1.3.1.37 Container: McuEruGlobalConf**

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

Post-Build Variant Multiplicity: -

Multiplicity Configuration Class: -

**1.3.1.37.1 McuEruInputFilterRegVal**
**Table 110 Specification for McuEruInputFilterRegVal**

<b>Name</b>	McuEruInputFilterRegVal		
<b>Description</b>	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.		
<b>Multiplicity</b>	1..1	<b>Type</b>	EcucIntegerParamDef
<b>Range</b>	0 - 4278321151		
<b>Default value</b>	0		
<b>Post-build variant value</b>	TRUE	<b>Post-build variant multiplicity</b>	-
<b>Value configuration class</b>	Post-Build	<b>Multiplicity configuration class</b>	-
<b>Origin</b>	IFX	<b>Scope</b>	LOCAL

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**Table 110 Specification for McuErulInputFilterRegVal (continued)**

<b>Dependency</b>	-
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.

### 1.3.1.38 Container: McuExternalClockOutputConfig

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

Post-Build Variant Multiplicity: -

Multiplicity Configuration Class: -

#### 1.3.1.38.1 McuExtClock0Enable

**Table 111 Specification for McuExtClock0Enable**

<b>Name</b>	McuExtClock0Enable		
<b>Description</b>	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		
<b>Multiplicity</b>	1..1	<b>Type</b>	EcucBooleanParamDef
<b>Range</b>	TRUE FALSE		
<b>Default value</b>	FALSE		
<b>Post-build variant value</b>	TRUE	<b>Post-build variant multiplicity</b>	-
<b>Value configuration class</b>	Post-Build	<b>Multiplicity configuration class</b>	-
<b>Origin</b>	IFX	<b>Scope</b>	LOCAL
<b>Dependency</b>	-		
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.		

#### 1.3.1.38.2 McuExtClock1Enable

**Table 112 Specification for McuExtClock1Enable**

<b>Name</b>	McuExtClock1Enable		
<b>Description</b>	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		

**1 Mcu driver**
**Table 112 Specification for McuExtClock1Enable (continued)**

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

**1.3.1.38.3 McuExtClock1Inverted**
**Table 113 Specification for McuExtClock1Inverted**

<b>Name</b>	McuExtClock1Inverted		
<b>Description</b>	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		
<b>Multiplicity</b>	1..1	<b>Type</b>	EcucBooleanParamDef
<b>Range</b>	TRUE FALSE		
<b>Default value</b>	FALSE		
<b>Post-build variant value</b>	TRUE	<b>Post-build variant multiplicity</b>	-
<b>Value configuration class</b>	Post-Build	<b>Multiplicity configuration class</b>	-
<b>Origin</b>	IFX	<b>Scope</b>	LOCAL
<b>Dependency</b>	McuExtClock1Enable		
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.		

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### 1.3.1.38.4 McuExtClockOutSel0

**Table 114 Specification for McuExtClockOutSel0**

<b>Name</b>	McuExtClockOutSel0		
<b>Description</b>	Specifies the clock source that is selected as the output for EXTCLK0.  <i>Note: ALT mode for corresponding port pin must be configured in the PORT driver to observe the output at a port pin.</i>		
<b>Multiplicity</b>	1..1	<b>Type</b>	EcucEnumerationParamDef
<b>Range</b>	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 TCK_EXT_CLOCK0_SEL13: fTCK is selected for EXTCLK0		
<b>Default value</b>	FOUT_EXT_CLOCK0_SEL0		
<b>Post-build variant value</b>	TRUE	<b>Post-build variant multiplicity</b>	-
<b>Value configuration class</b>	Post-Build	<b>Multiplicity configuration class</b>	-
<b>Origin</b>	IFX	<b>Scope</b>	LOCAL
<b>Dependency</b>	McuExtClock0Enable		
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.		

### 1.3.1.38.5 McuExtClockOutSel1

**Table 115 Specification for McuExtClockOutSel1**

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

**1 Mcu driver**
**Table 115 Specification for McuExtClockOutSel1 (continued)**

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 OSCFL_EXT_CLOCK1_SEL15: fOSCFL 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.		

**1.3.1.38.6 McuFoutClockDiv**
**Table 116 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: $fOUT = fSPB / McuFoutClockDiv.$ <p><i>Note: McuFoutClockDiv value is editable and considered for calculation when McuExtClockOutSel1 is set to FOUT_EXT_CLOCK1_SEL0 and McuExtClock1Enable is set to True.</i></p>		
Multiplicity	1..1	Type	EcucIntegerParamDef
Range	1 - 256		

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**Table 116**      **Specification for McuFoutClockDiv (continued)**

<b>Default value</b>	1		
<b>Post-build variant value</b>	TRUE	<b>Post-build variant multiplicity</b>	-
<b>Value configuration class</b>	Post-Build	<b>Multiplicity configuration class</b>	-
<b>Origin</b>	IFX	<b>Scope</b>	LOCAL
<b>Dependency</b>	McuExtClockOutSel1, McuExtClock1Enable		
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.		

### 1.3.1.39      **Container: McuGeneralConfiguration**

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

Post-Build Variant Multiplicity: -

Multiplicity Configuration Class: -

#### 1.3.1.39.1      **McuCCU61SleepModeEnabled**

**Table 117**      **Specification for McuCCU61SleepModeEnabled**

<b>Name</b>	McuCCU61SleepModeEnabled		
<b>Description</b>	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		
<b>Multiplicity</b>	1..1	<b>Type</b>	EcucBooleanParamDef
<b>Range</b>	TRUE FALSE		
<b>Default value</b>	FALSE		
<b>Post-build variant value</b>	TRUE	<b>Post-build variant multiplicity</b>	-
<b>Value configuration class</b>	Pre-Compile	<b>Multiplicity configuration class</b>	-
<b>Origin</b>	IFX	<b>Scope</b>	LOCAL
<b>Dependency</b>	-		
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.		

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### 1.3.1.39.2 McuCcu60SleepModeEnabled

**Table 118 Specification for McuCcu60SleepModeEnabled**

<b>Name</b>	McuCcu60SleepModeEnabled		
<b>Description</b>	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		
<b>Multiplicity</b>	1..1	<b>Type</b>	EcucBooleanParamDef
<b>Range</b>	TRUE FALSE		
<b>Default value</b>	FALSE		
<b>Post-build variant value</b>	FALSE	<b>Post-build variant multiplicity</b>	-
<b>Value configuration class</b>	Pre-Compile	<b>Multiplicity configuration class</b>	-
<b>Origin</b>	IFX	<b>Scope</b>	LOCAL
<b>Dependency</b>	-		
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.		

### 1.3.1.39.3 McuClearColdResetStatusApi

**Table 119 Specification for McuClearColdResetStatusApi**

<b>Name</b>	McuClearColdResetStatusApi		
<b>Description</b>	Pre-processor switch to enable/disable the Mcu_ClearColdResetStatus() API. Values: TRUE: enables Mcu_ClearColdResetStatus FALSE: disables Mcu_ClearColdResetStatus		
<b>Multiplicity</b>	1..1	<b>Type</b>	EcucBooleanParamDef
<b>Range</b>	TRUE FALSE		
<b>Default value</b>	FALSE		
<b>Post-build variant value</b>	FALSE	<b>Post-build variant multiplicity</b>	-
<b>Value configuration class</b>	Pre-Compile	<b>Multiplicity configuration class</b>	-
<b>Origin</b>	IFX	<b>Scope</b>	LOCAL

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**Table 119 Specification for McuClearColdResetStatusApi (continued)**

<b>Dependency</b>	-
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.

### 1.3.1.39.4 McuClockSourceFailureNotification

**Table 120 Specification for McuClockSourceFailureNotification**

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

### 1.3.1.39.5 McuDevErrorDetect

**Table 121 Specification for McuDevErrorDetect**

<b>Name</b>	McuDevErrorDetect		
<b>Description</b>	Pre-processor switch for enabling the development error detection and reporting. Values: TRUE: Development error detection is enabled FALSE: Development error detection is disabled		
<b>Multiplicity</b>	1..1	<b>Type</b>	EcucBooleanParamDef
<b>Range</b>	TRUE FALSE		



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**Table 121 Specification for McuDevErrorDetect (continued)**

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

### 1.3.1.39.6 McuEcucPartitionRef

**Table 122 Specification for McuEcucPartitionRef**

<b>Name</b>	McuEcucPartitionRef		
<b>Description</b>	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.		
<b>Multiplicity</b>	0..*	<b>Type</b>	EcucReferenceDef
<b>Range</b>	Reference to Node: EcucPartition		
<b>Default value</b>	NULL		
<b>Post-build variant value</b>	TRUE	<b>Post-build variant multiplicity</b>	TRUE
<b>Value configuration class</b>	Pre-Compile	<b>Multiplicity configuration class</b>	Pre-Compile
<b>Origin</b>	AUTOSAR_ECUC	<b>Scope</b>	ECU
<b>Dependency</b>	-		
<b>Autosar Version</b>	Applicable for Autosar version 4.4.0.		

### 1.3.1.39.7 McuGetRamStateApi

**Table 123 Specification for McuGetRamStateApi**

<b>Name</b>	McuGetRamStateApi		
<b>Description</b>	Pre-processor switch to enable/disable the Mcu_GetRamState API.  Values: TRUE: Mcu_GetRamState() is enabled FALSE: Mcu_GetRamState() is disabled		
<b>Multiplicity</b>	1..1	<b>Type</b>	EcucBooleanParamDef

## 1 Mcu driver

**Table 123 Specification for McuGetRamStateApi (continued)**

<b>Range</b>	TRUE FALSE		
<b>Default value</b>	FALSE		
<b>Post-build variant value</b>	FALSE	<b>Post-build variant multiplicity</b>	-
<b>Value configuration class</b>	Pre-Compile	<b>Multiplicity configuration class</b>	-
<b>Origin</b>	AUTOSAR_ECUC	<b>Scope</b>	LOCAL
<b>Dependency</b>	-		
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.		

### 1.3.1.39.8 McuGpt12SleepModeEnabled

**Table 124 Specification for McuGpt12SleepModeEnabled**

<b>Name</b>	McuGpt12SleepModeEnabled		
<b>Description</b>	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		
<b>Multiplicity</b>	1..1	<b>Type</b>	EcucBooleanParamDef
<b>Range</b>	TRUE FALSE		
<b>Default value</b>	FALSE		
<b>Post-build variant value</b>	FALSE	<b>Post-build variant multiplicity</b>	-
<b>Value configuration class</b>	Pre-Compile	<b>Multiplicity configuration class</b>	-
<b>Origin</b>	IFX	<b>Scope</b>	LOCAL
<b>Dependency</b>	-		
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.		

### 1.3.1.39.9 McuGtmSleepModeEnabled

**Table 125 Specification for McuGtmSleepModeEnabled**

<b>Name</b>	McuGtmSleepModeEnabled
-------------	------------------------

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**Table 125 Specification for McuGtmSleepModeEnabled (continued)**

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

### 1.3.1.39.10 McuIdleModeCpuCore

**Table 126 Specification for McuIdleModeCpuCore**

<b>Name</b>	McuIdleModeCpuCore		
<b>Description</b>	Defines which core can trigger the Idle mode.		
<b>Multiplicity</b>	1..1	<b>Type</b>	EcucEnumerationParamDef
<b>Range</b>	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		
<b>Default value</b>	INDIVIDUAL_IDLE_CORES_SEL0		
<b>Post-build variant value</b>	FALSE	<b>Post-build variant multiplicity</b>	-
<b>Value configuration class</b>	Pre-Compile	<b>Multiplicity configuration class</b>	-

## 1 Mcu driver

**Table 126 Specification for McuIdleModeCpuCore (continued)**

<b>Origin</b>	IFX	<b>Scope</b>	LOCAL
<b>Dependency</b>	-		
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.		

### 1.3.1.39.11 MculfxCpuCcuconApi

**Table 127 Specification for MculfxCpuCcuconApi**

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

### 1.3.1.39.12 MculfxDeInitApi

**Table 128 Specification for MculfxDeInitApi**

<b>Name</b>	McuIfxDeInitApi		
<b>Description</b>	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		
<b>Multiplicity</b>	1..1	<b>Type</b>	EcucBooleanParamDef
<b>Range</b>	TRUE		

**1 Mcu driver**
**Table 128 Specification for MculfxDelInitApi (continued)**

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

**1.3.1.39.13 MculfxLpmApi**
**Table 129 Specification for MculfxLpmApi**

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

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### 1.3.1.39.14 MculfxTrapApi

**Table 130**      **Specification for MculfxTrapApi**

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

### 1.3.1.39.15 McuInitCheckApi

**Table 131**      **Specification for McuInitCheckApi**

<b>Name</b>	McuInitCheckApi		
<b>Description</b>	Enables/disables the availability of the Mcu_InitCheck() API.  Values: TRUE: Mcu_InitCheck() API is available FALSE: Mcu_InitCheck() API is not available		
<b>Multiplicity</b>	1..1	<b>Type</b>	EcucBooleanParamDef
<b>Range</b>	TRUE FALSE		
<b>Default value</b>	FALSE		
<b>Post-build variant value</b>	FALSE	<b>Post-build variant multiplicity</b>	-

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**Table 131 Specification for McuInitCheckApi (continued)**

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

### 1.3.1.39.16 McuInitClock

**Table 132 Specification for McuInitClock**

<b>Name</b>	McuInitClock		
<b>Description</b>	<p>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.</p> <p>Values:</p> <p>TRUE: Mcu_InitClock() API is available</p> <p>FALSE: Mcu_InitClock() API is not available</p>		
<b>Multiplicity</b>	1..1	<b>Type</b>	EcucBooleanParamDef
<b>Range</b>	TRUE FALSE		
<b>Default value</b>	TRUE		
<b>Post-build variant value</b>	FALSE	<b>Post-build variant multiplicity</b>	-
<b>Value configuration class</b>	Pre-Compile	<b>Multiplicity configuration class</b>	-
<b>Origin</b>	AUTOSAR_ECUC	<b>Scope</b>	LOCAL
<b>Dependency</b>	-		
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.		

### 1.3.1.39.17 McuInitDeInitApiMode

**Table 133 Specification for McuInitDeInitApiMode**

<b>Name</b>	McuInitDeInitApiMode		
<b>Description</b>	Operating modes for MCU initialization/de-initialization APIs.		
<b>Multiplicity</b>	1..1	<b>Type</b>	EcucEnumerationParamDef

**1 Mcu driver**
**Table 133 Specification for McuInitDelnitApiMode (continued)**

<b>Range</b>	MCU_MCAL_SUPERVISOR: Initialization APIs are run in the Supervisor mode MCU_MCAL_USER1: Initialization APIs are run in the User 1 mode		
<b>Default value</b>	MCU_MCAL_SUPERVISOR		
<b>Post-build variant value</b>	FALSE	<b>Post-build variant multiplicity</b>	-
<b>Value configuration class</b>	Pre-Compile	<b>Multiplicity configuration class</b>	-
<b>Origin</b>	IFX	<b>Scope</b>	LOCAL
<b>Dependency</b>	-		
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.		

**1.3.1.39.18 McuMainOscillatorFrequency**
**Table 134 Specification for McuMainOscillatorFrequency**

<b>Name</b>	McuMainOscillatorFrequency		
<b>Description</b>	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		
<b>Multiplicity</b>	1..1	<b>Type</b>	EcucIntegerParamDef
<b>Range</b>	4MHz - 40MHz		
<b>Default value</b>	20MHz		
<b>Post-build variant value</b>	FALSE	<b>Post-build variant multiplicity</b>	-
<b>Value configuration class</b>	Pre-Compile	<b>Multiplicity configuration class</b>	-
<b>Origin</b>	IFX	<b>Scope</b>	ECU
<b>Dependency</b>	-		
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.		

**1.3.1.39.19 McuMultiCoreErrorDetect**
**Table 135 Specification for McuMultiCoreErrorDetect**

<b>Name</b>	McuMultiCoreErrorDetect
<b>Description</b>	Pre-processor switch for enabling the multicore error detection and reporting. Values:



**1 Mcu driver**
**Table 135 Specification for McuMultiCoreErrorDetect (continued)**

	TRUE: Multicore error detection is enabled FALSE: Multicore error detection is disabled McuMultiCoreErrorDetect shall be set to false for devices with only one CPU		
<b>Multiplicity</b>	1..1	<b>Type</b>	EcucBooleanParamDef
<b>Range</b>	TRUE FALSE		
<b>Default value</b>	FALSE		
<b>Post-build variant value</b>	FALSE	<b>Post-build variant multiplicity</b>	-
<b>Value configuration class</b>	Pre-Compile	<b>Multiplicity configuration class</b>	-
<b>Origin</b>	IFX	<b>Scope</b>	LOCAL
<b>Dependency</b>	-		
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.		

**1.3.1.39.20 McuNoPll**
**Table 136 Specification for McuNoPll**

<b>Name</b>	McuNoPll		
<b>Description</b>	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.		
<b>Multiplicity</b>	1..1	<b>Type</b>	EcucBooleanParamDef
<b>Range</b>	TRUE FALSE		
<b>Default value</b>	FALSE		
<b>Post-build variant value</b>	FALSE	<b>Post-build variant multiplicity</b>	-
<b>Value configuration class</b>	Pre-Compile	<b>Multiplicity configuration class</b>	-

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**Table 136 Specification for McuNoPll (continued)**

<b>Origin</b>	AUTOSAR_ECUC	<b>Scope</b>	LOCAL
<b>Dependency</b>	-		
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.		

### 1.3.1.39.21 McuOscAmpRegulationEnable

**Table 137 Specification for McuOscAmpRegulationEnable**

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

### 1.3.1.39.22 McuOscCapacitance0Enable

**Table 138 Specification for McuOscCapacitance0Enable**

<b>Name</b>	McuOscCapacitance0Enable		
<b>Description</b>	Selects that load capacitance CL0 is enabled or disabled. TRUE: Capacitance CL0 is enabled FALSE: Capacitance CL0 is disabled		
<b>Multiplicity</b>	1..1	<b>Type</b>	EcucBooleanParamDef
<b>Range</b>	TRUE FALSE		
<b>Default value</b>	FALSE		

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**Table 138 Specification for McuOscCapacitance0Enable (continued)**

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

### 1.3.1.39.23 McuOscCapacitance1Enable

**Table 139 Specification for McuOscCapacitance1Enable**

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

### 1.3.1.39.24 McuOscCapacitance2Enable

**Table 140 Specification for McuOscCapacitance2Enable**

<b>Name</b>	McuOscCapacitance2Enable		
<b>Description</b>	Selects that load capacitance CL2 is enabled or disabled. TRUE: Capacitance CL2 is enabled FALSE: Capacitance CL2 is disabled		

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**Table 140 Specification for McuOscCapacitance2Enable (continued)**

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

### 1.3.1.39.25 McuOscCapacitance3Enable

**Table 141 Specification for McuOscCapacitance3Enable**

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

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### 1.3.1.39.26 McuOscillatorMode

**Table 142 Specification for McuOscillatorMode**

<b>Name</b>	McuOscillatorMode		
<b>Description</b>	Pre-processor switch to select the oscillator mode.		
<b>Multiplicity</b>	1..1	<b>Type</b>	EcucEnumerationParamDef
<b>Range</b>	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		
<b>Default value</b>	EXT_CRYSTAL_CERAMIC_RES_MODE_SEL0		
<b>Post-build variant value</b>	FALSE	<b>Post-build variant multiplicity</b>	-
<b>Value configuration class</b>	Pre-Compile	<b>Multiplicity configuration class</b>	-
<b>Origin</b>	IFX	<b>Scope</b>	LOCAL
<b>Dependency</b>	-		
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.		

### 1.3.1.39.27 McuPerformResetApi

**Table 143 Specification for McuPerformResetApi**

<b>Name</b>	McuPerformResetApi		
<b>Description</b>	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		
<b>Multiplicity</b>	1..1	<b>Type</b>	EcucBooleanParamDef
<b>Range</b>	TRUE FALSE		
<b>Default value</b>	FALSE		
<b>Post-build variant value</b>	FALSE	<b>Post-build variant multiplicity</b>	-
<b>Value configuration class</b>	Pre-Compile	<b>Multiplicity configuration class</b>	-
<b>Origin</b>	AUTOSAR_ECUC	<b>Scope</b>	LOCAL

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**Table 143 Specification for McuPerformResetApi (continued)**

<b>Dependency</b>	-
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.

### 1.3.1.39.28 McuRuntimeApiMode

**Table 144 Specification for McuRuntimeApiMode**

<b>Name</b>	McuRuntimeApiMode		
<b>Description</b>	Operating modes for MCU runtime APIs.		
<b>Multiplicity</b>	1..1	<b>Type</b>	EcucEnumerationParamDef
<b>Range</b>	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		
<b>Default value</b>	MCU_MCAL_SUPERVISOR		
<b>Post-build variant value</b>	FALSE	<b>Post-build variant multiplicity</b>	-
<b>Value configuration class</b>	Pre-Compile	<b>Multiplicity configuration class</b>	-
<b>Origin</b>	IFX	<b>Scope</b>	LOCAL
<b>Dependency</b>	-		
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.		

### 1.3.1.39.29 McuSafetyEnable

**Table 145 Specification for McuSafetyEnable**

<b>Name</b>	McuSafetyEnable		
<b>Description</b>	Enables/disables safety checks and features of the MCU driver.  Values: TRUE: Safety features are available FALSE: Safety features are disabled		
<b>Multiplicity</b>	1..1	<b>Type</b>	EcucBooleanParamDef
<b>Range</b>	TRUE FALSE		
<b>Default value</b>	TRUE		
<b>Post-build variant value</b>	FALSE	<b>Post-build variant multiplicity</b>	-

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**Table 145 Specification for McuSafetyEnable (continued)**

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

### 1.3.1.39.30 McuStandbyEntryMode

**Table 146 Specification for McuStandbyEntryMode**

<b>Name</b>	McuStandbyEntryMode		
<b>Description</b>	Pre-processor parameter to select the standby mode entry criteria.		
<b>Multiplicity</b>	1..1	<b>Type</b>	EcucEnumerationParamDef
<b>Range</b>	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).		
<b>Default value</b>	STANDBY_ENTRY_REQ_SLEEP_SEL0		
<b>Post-build variant value</b>	FALSE	<b>Post-build variant multiplicity</b>	-
<b>Value configuration class</b>	Pre-Compile	<b>Multiplicity configuration class</b>	-
<b>Origin</b>	IFX	<b>Scope</b>	LOCAL
<b>Dependency</b>	-		
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.		

### 1.3.1.39.31 McuSysClkFrequency

**Table 147 Specification for McuSysClkFrequency**

<b>Name</b>	McuSysClkFrequency		
<b>Description</b>	Specifies the input signal frequency value in MHz applied at the SYSCLK port pad.		
<b>Multiplicity</b>	1..1	<b>Type</b>	EcucIntegerParamDef
<b>Range</b>	16 MHz - 40 MHz		
<b>Default value</b>	20 MHz		
<b>Post-build variant value</b>	FALSE	<b>Post-build variant multiplicity</b>	-

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**Table 147 Specification for McuSysClkFrequency (continued)**

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

**1.3.1.39.32 McuSystemModeCpuCore**
**Table 148 Specification for McuSystemModeCpuCore**

<b>Name</b>	McuSystemModeCpuCore		
<b>Description</b>	Defines which core can trigger system modes (sleep/standby).		
<b>Multiplicity</b>	1..1	<b>Type</b>	EcucEnumerationParamDef
<b>Range</b>	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		
<b>Default value</b>	CPU_SYSTEM_CORE0_SEL0		
<b>Post-build variant value</b>	FALSE	<b>Post-build variant multiplicity</b>	-
<b>Value configuration class</b>	Pre-Compile	<b>Multiplicity configuration class</b>	-
<b>Origin</b>	IFX	<b>Scope</b>	LOCAL
<b>Dependency</b>	-		
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.		

**1.3.1.39.33 McuVersionInfoApi**
**Table 149 Specification for McuVersionInfoApi**

<b>Name</b>	McuVersionInfoApi
<b>Description</b>	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)



**1 Mcu driver**
**Table 149 Specification for McuVersionInfoApi (continued)**

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

**1.3.1.40 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: -

**1.3.1.40.1 McuGpt12ModuleAllocationConf**
**Table 150 Specification for McuGpt12ModuleAllocationConf**

<b>Name</b>	McuGpt12ModuleAllocationConf		
<b>Description</b>	Specifies which driver(s) have used this particular GPT timer or this module is not used by any driver (unused).		
<b>Multiplicity</b>	1..1	<b>Type</b>	EcucEnumerationParamDef
<b>Range</b>	GPT_TIMER_NOT_USED: GPT timer is not used GPT_TIMER_USED_BY_GPT_DRIVER: GPT timer is reserved for the GPT driver		

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**Table 150 Specification for McuGpt12ModuleAllocationConf (continued)**

	GPT_TIMER_USED_BY_ICU_DRIVER: GPT timer is reserved for the ICU driver		
<b>Default value</b>	GPT_TIMER_NOT_USED		
<b>Post-build variant value</b>	FALSE	<b>Post-build variant multiplicity</b>	-
<b>Value configuration class</b>	Pre-Compile	<b>Multiplicity configuration class</b>	-
<b>Origin</b>	IFX	<b>Scope</b>	LOCAL
<b>Dependency</b>	Gpt2BlockPrescalerSel, Gpt1BlockPrescalerSel		
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.		

### 1.3.1.40.2 McuGpt12TimerAllocation

**Table 151 Specification for McuGpt12TimerAllocation**

<b>Name</b>	McuGpt12TimerAllocation		
<b>Description</b>	Specifies the timer to be reserved.		
<b>Multiplicity</b>	1..1	<b>Type</b>	EcucEnumerationParamDef
<b>Range</b>	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		
<b>Default value</b>	GPT_TIMER_2		
<b>Post-build variant value</b>	FALSE	<b>Post-build variant multiplicity</b>	-
<b>Value configuration class</b>	Pre-Compile	<b>Multiplicity configuration class</b>	-
<b>Origin</b>	IFX	<b>Scope</b>	LOCAL
<b>Dependency</b>	-		
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.		

#### 1.3.1.41 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.

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*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: 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: -

### 1.3.1.43 Container: McuGtmAtomChannelAllocationConf

This container holds the GTM ATOM channel allocation.

Post-Build Variant Multiplicity: -

Multiplicity Configuration Class: -

#### 1.3.1.43.1 McuAtomChannelEventHandledByDsadc

**Table 152**      **Specification for McuAtomChannelEventHandledByDsadc**

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

## 1 Mcu driver

### 1.3.1.43.2 McuGtmAtomChannelAllocationConf

**Table 153 Specification for McuGtmAtomChannelAllocationConf**

<b>Name</b>	McuGtmAtomChannelAllocationConf		
<b>Description</b>	Specifies which driver(s) have used or not used this particular ATOM channel		
<b>Multiplicity</b>	1..1	<b>Type</b>	EcucEnumerationParamDef
<b>Range</b>	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		
<b>Default value</b>	GTM_ATOM_CHANNEL_NOT_USED		
<b>Post-build variant value</b>	FALSE	<b>Post-build variant multiplicity</b>	-
<b>Value configuration class</b>	Pre-Compile	<b>Multiplicity configuration class</b>	-
<b>Origin</b>	IFX	<b>Scope</b>	ECU
<b>Dependency</b>	-		
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.		

### 1.3.1.44 Container: McuGtmClockManagementConf

This container deals with configuration of the CMU parameters

Post-Build Variant Multiplicity: -

Multiplicity Configuration Class: -

#### 1.3.1.44.1 GtmCmuGlobalClockDenominator

**Table 154 Specification for GtmCmuGlobalClockDenominator**

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

## 1 Mcu driver

**Table 154 Specification for GtmCmuGlobalClockDenominator (continued)**

<b>Value configuration class</b>	Post-Build	<b>Multiplicity configuration class</b>	-
<b>Origin</b>	IFX	<b>Scope</b>	ECU
<b>Dependency</b>	GtmCmuGlobalClockNumerator		
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.		

### 1.3.1.44.2 GtmCmuGlobalClockNumerator

**Table 155 Specification for GtmCmuGlobalClockNumerator**

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

### 1.3.1.45 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: -

### 1.3.1.46 Container: McuGtmTimChannelAllocationConf

This container holds the GTM TIM channel allocation.

Post-Build Variant Multiplicity: -

Multiplicity Configuration Class: -

## 1 Mcu driver

### 1.3.1.46.1 McuGtmTimChannelAllocationConf

**Table 156 Specification for McuGtmTimChannelAllocationConf**

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

### 1.3.1.47 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: -

### 1.3.1.48 Container: McuGtmTomChannelAllocationConf

This container holds the GTM TOM channel allocation.

Post-Build Variant Multiplicity: -

Multiplicity Configuration Class: -

### 1.3.1.48.1 McuGtmTomChannelAllocationConf

**Table 157 Specification for McuGtmTomChannelAllocationConf**

<b>Name</b>	McuGtmTomChannelAllocationConf		
<b>Description</b>	Specifies which driver(s) have used or not used this particular TOM channel.		
<b>Multiplicity</b>	1..1	<b>Type</b>	EcucEnumerationParamDef
<b>Range</b>	GTM_TOM_CHANNEL_NOT_USED: TOM channel is not used GTM_TOM_CHANNEL_USED_BY_ADC: TOM channel is reserved for the ADC driver		

**1 Mcu driver**
**Table 157 Specification for McuGtmTomChannelAllocationConf (continued)**

	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		
<b>Default value</b>	GTM_TOM_CHANNEL_NOT_USED		
<b>Post-build variant value</b>	FALSE	<b>Post-build variant multiplicity</b>	-
<b>Value configuration class</b>	Pre-Compile	<b>Multiplicity configuration class</b>	-
<b>Origin</b>	IFX	<b>Scope</b>	ECU
<b>Dependency</b>	-		
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.		

**1.3.1.48.2 McuTomChannelEventHandledByDsadc**
**Table 158 Specification for McuTomChannelEventHandledByDsadc**

<b>Name</b>	McuTomChannelEventHandledByDsadc		
<b>Description</b>	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 <i>Note: This parameter can only be selected in case the user of TOM channel is PWM.</i>		
<b>Multiplicity</b>	1..1	<b>Type</b>	EcucBooleanParamDef
<b>Range</b>	TRUE FALSE		
<b>Default value</b>	FALSE		
<b>Post-build variant value</b>	FALSE	<b>Post-build variant multiplicity</b>	-
<b>Value configuration class</b>	Pre-Compile	<b>Multiplicity configuration class</b>	-
<b>Origin</b>	IFX	<b>Scope</b>	LOCAL
<b>Dependency</b>	-		
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.		

## 1 Mcu driver

### 1.3.1.49 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: -

### 1.3.1.50 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

#### 1.3.1.50.1 McuEvrclPMOnSleepReqEnable

**Table 159** Specification for McuEvrclPMOnSleepReqEnable

<b>Name</b>	McuEvrclPMOnSleepReqEnable		
<b>Description</b>	<p>Enables EVRC low power mode when the sleep mode is enabled.</p> <p>McuEvrclPMOnSleepReqEnable is enabled only if McuMode is selected as MCU_SLEEP.</p> <p>TRUE: entering into the low power mode for EVRC on sleep mode request is enabled</p> <p>FALSE: Entering into the low power mode for EVRC on sleep mode request is disabled</p> <p><b>Caution:</b> 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.</p>		
<b>Multiplicity</b>	1..1	<b>Type</b>	EcucBooleanParamDef
<b>Range</b>	<p>TRUE</p> <p>FALSE</p>		
<b>Default value</b>	FALSE		
<b>Post-build variant value</b>	TRUE	<b>Post-build variant multiplicity</b>	-
<b>Value configuration class</b>	Post-Build	<b>Multiplicity configuration class</b>	-
<b>Origin</b>	IFX	<b>Scope</b>	LOCAL
<b>Dependency</b>	McuMode		
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.		

#### 1.3.1.50.2 McuMode

**Table 160** Specification for McuMode

<b>Name</b>	McuMode
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## 1 Mcu driver

**Table 160 Specification for McuMode (continued)**

<b>Description</b>	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		
<b>Multiplicity</b>	1..1	<b>Type</b>	EcucIntegerParamDef
<b>Range</b>	0 - 2		
<b>Default value</b>	0		
<b>Post-build variant value</b>	FALSE	<b>Post-build variant multiplicity</b>	-
<b>Value configuration class</b>	Pre-Compile	<b>Multiplicity configuration class</b>	-
<b>Origin</b>	AUTOSAR_ECUC	<b>Scope</b>	LOCAL
<b>Dependency</b>	-		
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.		

### 1.3.1.51 Container: McuModuleConfiguration

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

Post-Build Variant Multiplicity: -

Multiplicity Configuration Class: -

#### 1.3.1.51.1 McuClockSrcFailureNotification

**Table 161 Specification for McuClockSrcFailureNotification**

<b>Name</b>	McuClockSrcFailureNotification		
<b>Description</b>	Enables/disables the clock source failure notification. This parameter is disabled and is included here for completeness.		
<b>Multiplicity</b>	1..1	<b>Type</b>	EcucEnumerationParamDef
<b>Range</b>	DISABLED: clock source failure notification is disabled ENABLED: clock source failure notification is enabled		
<b>Default value</b>	DISABLED		
<b>Post-build variant value</b>	FALSE	<b>Post-build variant multiplicity</b>	-

## 1 Mcu driver

**Table 161 Specification for McuClockSrcFailureNotification (continued)**

<b>Value configuration class</b>	Post-Build	<b>Multiplicity configuration class</b>	-
<b>Origin</b>	AUTOSAR_ECUC	<b>Scope</b>	LOCAL
<b>Dependency</b>	-		
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.		

### 1.3.1.51.2 McuNumberOfMcuModes

**Table 162 Specification for McuNumberOfMcuModes**

<b>Name</b>	McuNumberOfMcuModes		
<b>Description</b>	Represents the number of modes available for the MCU. McuNumberOfMcuModes is disabled and is included here for completeness.		
<b>Multiplicity</b>	1..1	<b>Type</b>	EcucIntegerParamDef
<b>Range</b>	1 - 255		
<b>Default value</b>	1		
<b>Post-build variant value</b>	TRUE	<b>Post-build variant multiplicity</b>	-
<b>Value configuration class</b>	Post-Build	<b>Multiplicity configuration class</b>	-
<b>Origin</b>	AUTOSAR_ECUC	<b>Scope</b>	LOCAL
<b>Dependency</b>	-		
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.		

### 1.3.1.51.3 McuRamSectors

**Table 163 Specification for McuRamSectors**

<b>Name</b>	McuRamSectors		
<b>Description</b>	Represents the number of RAM sectors available for the MCU. This parameter is disabled and is included here for completeness.		
<b>Multiplicity</b>	1..1	<b>Type</b>	EcucIntegerParamDef
<b>Range</b>	0 - 4294967295		
<b>Default value</b>	0		
<b>Post-build variant value</b>	TRUE	<b>Post-build variant multiplicity</b>	-

## 1 Mcu driver

**Table 163 Specification for McuRamSectors (continued)**

<b>Value configuration class</b>	Post-Build	<b>Multiplicity configuration class</b>	-
<b>Origin</b>	AUTOSAR_ECUC	<b>Scope</b>	LOCAL
<b>Dependency</b>	-		
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.		

### 1.3.1.51.4 McuResetSetting

**Table 164 Specification for McuResetSetting**

<b>Name</b>	McuResetSetting		
<b>Description</b>	Relates to the MCU specific reset configuration. McuResetSetting is disabled and is included here for completeness.  <i>Note: The postbuild variant value for the McuResetSetting is deviated from AUTOSAR.</i>		
<b>Multiplicity</b>	0..1	<b>Type</b>	EcucIntegerParamDef
<b>Range</b>	1 - 255		
<b>Default value</b>	1		
<b>Post-build variant value</b>	FALSE	<b>Post-build variant multiplicity</b>	FALSE
<b>Value configuration class</b>	Pre-Compile	<b>Multiplicity configuration class</b>	Pre-Compile
<b>Origin</b>	AUTOSAR_ECUC	<b>Scope</b>	LOCAL
<b>Dependency</b>	-		
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.		

### 1.3.1.52 Container: McuPeripheralPllSettingConfig

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

Post-Build Variant Multiplicity: -

Multiplicity Configuration Class: -

#### 1.3.1.52.1 McuClockReferencePointFrequency1

**Table 165 Specification for McuClockReferencePointFrequency1**

<b>Name</b>	McuClockReferencePointFrequency1
<b>Description</b>	Users have to configure the resulting target frequency after configuring the N, P and K2 dividers for the peripheral PLL.

**1 Mcu driver**
**Table 165 Specification for McuClockReferencePointFrequency1 (continued)**

	<p>The configured value should be divided by 2 if McuFreqSource1ClockDivSelect is configured with DIV_FACTOR_2_NOT_BYPASSED_SEL1.</p> <p>A calculation button is provided for updating this values (in Hz).</p> <p>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.</p> <p>fSOURCE1 is McuClockReferencePointFrequency1</p>		
<b>Multiplicity</b>	1..1	<b>Type</b>	EcucFloatParamDef
<b>Range</b>	20000000.0 - 320000000.0		
<b>Default value</b>	160000000.0		
<b>Post-build variant value</b>	TRUE	<b>Post-build variant multiplicity</b>	-
<b>Value configuration class</b>	Post-Build	<b>Multiplicity configuration class</b>	-
<b>Origin</b>	IFX	<b>Scope</b>	LOCAL
<b>Dependency</b>	McuClockDistributionInpClockSel, McuPeripheralPlIk2Divider, McuFreqSource1ClockDivSelect, McuPeripheralPlInder, McuPeripheralPlIPDivider, McuPlIInputSrcSelection		
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.		

**1.3.1.52.2 McuClockReferencePointFrequency2**
**Table 166 Specification for McuClockReferencePointFrequency2**

<b>Name</b>	McuClockReferencePointFrequency2		
<b>Description</b>	<p>Users have to configure the resulting target frequency after configuring the N, P and K3 dividers for the peripheral PLL.</p> <p>A configuration button is provided for updating this value (in Hz).</p> <p>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.</p> <p>fSOURCE2 is McuClockReferencePointFrequency2</p>		
<b>Multiplicity</b>	1..1	<b>Type</b>	EcucFloatParamDef
<b>Range</b>	20000000.0 - 200000000.0		
<b>Default value</b>	200000000.0		
<b>Post-build variant value</b>	TRUE	<b>Post-build variant multiplicity</b>	-

## 1 Mcu driver

**Table 166 Specification for McuClockReferencePointFrequency2 (continued)**

<b>Value configuration class</b>	Post-Build	<b>Multiplicity configuration class</b>	-
<b>Origin</b>	IFX	<b>Scope</b>	LOCAL
<b>Dependency</b>	McuPll2DivSelect, McuClockDistributionInpClockSel, McuPeripheralPllK3Divider, McuPeripheralPllNDivider, McuPeripheralPllPDivider, McuPllInputSrcSelection		
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.		

### 1.3.1.52.3 McuFreqSource1ClockDivSelect

**Table 167 Specification for McuFreqSource1ClockDivSelect**

<b>Name</b>	McuFreqSource1ClockDivSelect		
<b>Description</b>	Specifies whether Fpll1 is divided by a factor of two or divider is bypassed.		
<b>Multiplicity</b>	1..1	<b>Type</b>	EcucEnumerationParamDef
<b>Range</b>	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)		
<b>Default value</b>	DIV_FACTOR_2_NOT_BYPASSED_SEL0		
<b>Post-build variant value</b>	TRUE	<b>Post-build variant multiplicity</b>	-
<b>Value configuration class</b>	Post-Build	<b>Multiplicity configuration class</b>	-
<b>Origin</b>	IFX	<b>Scope</b>	LOCAL
<b>Dependency</b>	McuClockDistributionInpClockSel		
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.		

### 1.3.1.52.4 McuPerPllK2DivStepDownChangeDelay

**Table 168 Specification for McuPerPllK2DivStepDownChangeDelay**

<b>Name</b>	McuPerPllK2DivStepDownChangeDelay		
<b>Description</b>	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.  <i>Note : The value is expressed in microseconds (us).</i>		
<b>Multiplicity</b>	1..1	<b>Type</b>	EcucIntegerParamDef
<b>Range</b>	5 - 100		

**1 Mcu driver**
**Table 168 Specification for McuPerPllK2DivStepDownChangeDelay (continued)**

<b>Default value</b>	10		
<b>Post-build variant value</b>	TRUE	<b>Post-build variant multiplicity</b>	-
<b>Value configuration class</b>	Post-Build	<b>Multiplicity configuration class</b>	-
<b>Origin</b>	IFX	<b>Scope</b>	LOCAL
<b>Dependency</b>	McuClockDistributionInpClockSel		
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.		

**1.3.1.52.5 McuPerPllK2DivStepUpChangeDelay**
**Table 169 Specification for McuPerPllK2DivStepUpChangeDelay**

<b>Name</b>	McuPerPllK2DivStepUpChangeDelay		
<b>Description</b>	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.  <i>Note : The value is expressed in microseconds (us).</i>		
<b>Multiplicity</b>	1..1	<b>Type</b>	EcucIntegerParamDef
<b>Range</b>	5 - 100		
<b>Default value</b>	10		
<b>Post-build variant value</b>	TRUE	<b>Post-build variant multiplicity</b>	-
<b>Value configuration class</b>	Post-Build	<b>Multiplicity configuration class</b>	-
<b>Origin</b>	IFX	<b>Scope</b>	LOCAL
<b>Dependency</b>	McuClockDistributionInpClockSel		
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.		

**1.3.1.52.6 McuPerPllK3DivStepDownChangeDelay**
**Table 170 Specification for McuPerPllK3DivStepDownChangeDelay**

<b>Name</b>	McuPerPllK3DivStepDownChangeDelay		
<b>Description</b>	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.  <i>Note : The value is expressed in microseconds (us).</i>		

## 1 Mcu driver

**Table 170 Specification for McuPerPlLK3DivStepDownChangeDelay (continued)**

<b>Multiplicity</b>	1..1	<b>Type</b>	EcucIntegerParamDef
<b>Range</b>	5 - 100		
<b>Default value</b>	10		
<b>Post-build variant value</b>	TRUE	<b>Post-build variant multiplicity</b>	-
<b>Value configuration class</b>	Post-Build	<b>Multiplicity configuration class</b>	-
<b>Origin</b>	IFX	<b>Scope</b>	LOCAL
<b>Dependency</b>	McuClockDistributionInpClockSel		
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.		

### 1.3.1.52.7 McuPerPlLK3DivStepUpChangeDelay

**Table 171 Specification for McuPerPlLK3DivStepUpChangeDelay**

<b>Name</b>	McuPerPlLK3DivStepUpChangeDelay		
<b>Description</b>	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. <i>Note : The value is expressed in microseconds (us).</i>		
<b>Multiplicity</b>	1..1	<b>Type</b>	EcucIntegerParamDef
<b>Range</b>	5 - 100		
<b>Default value</b>	10		
<b>Post-build variant value</b>	TRUE	<b>Post-build variant multiplicity</b>	-
<b>Value configuration class</b>	Post-Build	<b>Multiplicity configuration class</b>	-
<b>Origin</b>	IFX	<b>Scope</b>	LOCAL
<b>Dependency</b>	McuClockDistributionInpClockSel		
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.		

### 1.3.1.52.8 McuPeripheralPlLK2Divider

**Table 172 Specification for McuPeripheralPlLK2Divider**

<b>Name</b>	McuPeripheralPlLK2Divider		
<b>Description</b>	3-bit output divider. Even values are preferred to get 50% duty cycle. Clock equations are incremented by 1 to this parameter.		

**1 Mcu driver**
**Table 172 Specification for McuPeripheralPlLK2Divider (continued)**

	<i>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.</i>		
<b>Multiplicity</b>	1..1	<b>Type</b>	EcucIntegerParamDef
<b>Range</b>	0 - 7		
<b>Default value</b>	1		
<b>Post-build variant value</b>	TRUE	<b>Post-build variant multiplicity</b>	-
<b>Value configuration class</b>	Post-Build	<b>Multiplicity configuration class</b>	-
<b>Origin</b>	IFX	<b>Scope</b>	LOCAL
<b>Dependency</b>	McuClockDistributionInpClockSel		
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.		

**1.3.1.52.9 McuPeripheralPlLK3Divider**
**Table 173 Specification for McuPeripheralPlLK3Divider**

<b>Name</b>	McuPeripheralPlLK3Divider		
<b>Description</b>	3-bit output divider. Even values are preferred to get 50% duty cycle. Clock equations are incremented by 1 to this parameter.  <i>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.</i>		
<b>Multiplicity</b>	1..1	<b>Type</b>	EcucIntegerParamDef
<b>Range</b>	0 - 7		
<b>Default value</b>	1		
<b>Post-build variant value</b>	TRUE	<b>Post-build variant multiplicity</b>	-
<b>Value configuration class</b>	Post-Build	<b>Multiplicity configuration class</b>	-
<b>Origin</b>	IFX	<b>Scope</b>	LOCAL
<b>Dependency</b>	McuClockDistributionInpClockSel		
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.		

**1.3.1.52.10 McuPeripheralPlINDivider**
**Table 174 Specification for McuPeripheralPlINDivider**

<b>Name</b>	McuPeripheralPlINDivider
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## 1 Mcu driver

**Table 174 Specification for McuPeripheralPlINDivider (continued)**

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

### 1.3.1.52.11 McuPeripheralPlIPDivder

**Table 175 Specification for McuPeripheralPlIPDivder**

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

### 1.3.1.52.12 McuPlI2DivSelect

**Table 176 Specification for McuPlI2DivSelect**

<b>Name</b>	McuPlI2DivSelect
<b>Description</b>	Specifies whether divider factor in before the K3 divider is bypassed or not.

## 1 Mcu driver

**Table 176 Specification for McuPll2DivSelect (continued)**

<b>Multiplicity</b>	1..1	<b>Type</b>	EcucEnumerationParamDef
<b>Range</b>	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		
<b>Default value</b>	MCU_K3_DIV_FACTOR_NOT_BYPASSED_SEL0		
<b>Post-build variant value</b>	TRUE	<b>Post-build variant multiplicity</b>	-
<b>Value configuration class</b>	Post-Build	<b>Multiplicity configuration class</b>	-
<b>Origin</b>	IFX	<b>Scope</b>	LOCAL
<b>Dependency</b>	McuClockDistributionInpClockSel		
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.		

### 1.3.1.53 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: -

#### 1.3.1.53.1 McuAdasFrequency

**Table 177 Specification for McuAdasFrequency**

<b>Name</b>	McuAdasFrequency		
<b>Description</b>	<p>Specifies the ADAS peripheral frequency in Hz.</p> <p>The ratio between ADAS frequency and McuClockReferencePointFrequency0 should be within the range as specified in the target specification.</p> <p>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.</p> <p>The default value is according to the clocking system example with 20 MHz crystal as provided in hardware user manual.</p>		
<b>Multiplicity</b>	1..1	<b>Type</b>	EcucFloatParamDef
<b>Range</b>	0.0 - 300000000.0		
<b>Default value</b>	300000000.0		
<b>Post-build variant value</b>	TRUE	<b>Post-build variant multiplicity</b>	-
<b>Value configuration class</b>	Post-Build	<b>Multiplicity configuration class</b>	-

## 1 Mcu driver

**Table 177 Specification for McuAdasFrequency (continued)**

<b>Origin</b>	IFX	<b>Scope</b>	LOCAL
<b>Dependency</b>	McuClockReferencePointFrequency0, McuLowPowerDivValue		
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.		

### 1.3.1.53.2 McuAdcFrequency

**Table 178 Specification for McuAdcFrequency**

<b>Name</b>	McuAdcFrequency		
<b>Description</b>	<p>Specifies the clock frequency for the ADC peripheral. The ADC clock frequency is always the same as McuClockReferencePointFrequency1. Unit is expressed in Hz.</p> <p>The default value is according to the clocking system example with 20 MHz crystal as provided in hardware user manual.</p>		
<b>Multiplicity</b>	1..1	<b>Type</b>	EcucFloatParamDef
<b>Range</b>	20000000.0 - 160000000.0		
<b>Default value</b>	160000000.0		
<b>Post-build variant value</b>	TRUE	<b>Post-build variant multiplicity</b>	-
<b>Value configuration class</b>	Post-Build	<b>Multiplicity configuration class</b>	-
<b>Origin</b>	IFX	<b>Scope</b>	ECU
<b>Dependency</b>	McuClockReferencePointFrequency1		
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.		

### 1.3.1.53.3 McuAscLinFastFrequency

**Table 179 Specification for McuAscLinFastFrequency**

<b>Name</b>	McuAscLinFastFrequency		
<b>Description</b>	<p>Specifies the clock frequency for the ASCLIN peripheral for the fast mode.</p> <p>To disable the ASCLIN peripheral frequency for fast mode, a value of 0 should be configured to this configuration parameter.</p> <p>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.</p> <p>The default value is according to the clocking system example with 20 MHz crystal as provided in hardware user manual.</p>		
<b>Multiplicity</b>	1..1	<b>Type</b>	EcucFloatParamDef
<b>Range</b>	0.0 - 200000000.0		

**1 Mcu driver**
**Table 179 Specification for McuAscLinFastFrequency (continued)**

<b>Default value</b>	200000000.0		
<b>Post-build variant value</b>	TRUE	<b>Post-build variant multiplicity</b>	-
<b>Value configuration class</b>	Post-Build	<b>Multiplicity configuration class</b>	-
<b>Origin</b>	IFX	<b>Scope</b>	ECU
<b>Dependency</b>	McuClockReferencePointFrequency2		
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.		

**1.3.1.53.4 McuAscLinSlowClockSourceSelection**
**Table 180 Specification for McuAscLinSlowClockSourceSelection**

<b>Name</b>	McuAscLinSlowClockSourceSelection		
<b>Description</b>	<p>Specifies the input clock source for the ASCLIN peripheral slow frequency.</p> <p>Frequency calculation of the ASCLIN is done in the McuAscLinSlowFrequency configuration parameter.</p> <p>By default, the ASCLIN slow clock is switched OFF.</p>		
<b>Multiplicity</b>	1..1	<b>Type</b>	EcucEnumerationParamDef
<b>Range</b>	<p>ASCLINS_CLOCK_SOURCE_ASCLINSI_SEL1: McuAscLinSlowFrequency is used as the input clock source for the ASCLIN dividers</p> <p>ASCLINS_CLOCK_SOURCE_DISABLED_SEL0: ASCLIN peripheral frequency is disabled</p> <p>ASCLINS_CLOCK_SOURCE_OSC0_SEL2: McuMainOscillatorFrequency is used as the input clock source for the ASCLIN dividers</p>		
<b>Default value</b>	ASCLINS_CLOCK_SOURCE_DISABLED_SEL0		
<b>Post-build variant value</b>	TRUE	<b>Post-build variant multiplicity</b>	-
<b>Value configuration class</b>	Post-Build	<b>Multiplicity configuration class</b>	-
<b>Origin</b>	IFX	<b>Scope</b>	LOCAL
<b>Dependency</b>	-		
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.		

**1.3.1.53.5 McuAscLinSlowFrequency**
**Table 181 Specification for McuAscLinSlowFrequency**

<b>Name</b>	McuAscLinSlowFrequency
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**1 Mcu driver**
**Table 181 Specification for McuAscLinSlowFrequency (continued)**

<b>Description</b>	<p>Specifies the clock frequency for the ASCLIN peripheral for slow mode.</p> <p>To disable the ASCLIN peripheral frequency for slow mode, a value of 0 should be configured to this configuration parameter.</p> <p>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.</p> <p>The default value is according to the clocking system example with 20 MHz crystal as provided in hardware user manual.</p>		
<b>Multiplicity</b>	1..1	<b>Type</b>	EcucFloatParamDef
<b>Range</b>	0.0 - 200000000.0		
<b>Default value</b>	80000000.0		
<b>Post-build variant value</b>	TRUE	<b>Post-build variant multiplicity</b>	-
<b>Value configuration class</b>	Post-Build	<b>Multiplicity configuration class</b>	-
<b>Origin</b>	IFX	<b>Scope</b>	ECU
<b>Dependency</b>	McuClockReferencePointFrequency1, McuAscLinSlowClockSourceSelection		
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.		

**1.3.1.53.6 McuBBBFrequency**
**Table 182 Specification for McuBBBFrequency**

<b>Name</b>	McuBBBFrequency		
<b>Description</b>	<p>Specifies the Back Bone Bus (BBB) frequency. The BBB frequency output can be stopped by configuring 0 to this configuration parameter.</p> <p>If enabled, the possible divider values are provided in the Target Specification</p> <p>If enabled, the Fbbb must be faster than or equal to Fspb.</p> <p>Unit is expressed in Hz.</p> <p>The default value is according to the clocking system example with 20 MHz crystal as provided in hardware user manual.</p>		
<b>Multiplicity</b>	1..1	<b>Type</b>	EcucFloatParamDef
<b>Range</b>	0.0 - 150000000.0		
<b>Default value</b>	150000000.0		
<b>Post-build variant value</b>	TRUE	<b>Post-build variant multiplicity</b>	-
<b>Value configuration class</b>	Post-Build	<b>Multiplicity configuration class</b>	-

## 1 Mcu driver

**Table 182 Specification for McuBBBFrequency (continued)**

<b>Origin</b>	IFX	<b>Scope</b>	LOCAL
<b>Dependency</b>	McuLowPowerDivValue		
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.		

### 1.3.1.53.7 McuCPU0Frequency

**Table 183 Specification for McuCPU0Frequency**

<b>Name</b>	McuCPU0Frequency		
<b>Description</b>	<p>Specifies the intended target CPU0 frequency. The user should enter the intended target frequency expected for CPU0 operation.</p> <p>McuCPU0Frequency configuration requires adherence to the following formula:  <math display="block">\text{McuCPU0Frequency} = \text{McuSRIFrequency} * (64 - \text{CPU0DIV}) / 64</math> <i>Note: Possible range for CPU0DIV is from 0 to 63. Unit is expressed in Hz.</i></p>		
<b>Multiplicity</b>	1..1	<b>Type</b>	EcucFloatParamDef
<b>Range</b>	1.0 - 3000000000.0		
<b>Default value</b>	3000000000.0		
<b>Post-build variant value</b>	TRUE	<b>Post-build variant multiplicity</b>	-
<b>Value configuration class</b>	Post-Build	<b>Multiplicity configuration class</b>	-
<b>Origin</b>	IFX	<b>Scope</b>	LOCAL
<b>Dependency</b>	McuLowPowerDivValue, McuSRIFrequency		
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.		

### 1.3.1.53.8 McuCPU1Frequency

**Table 184 Specification for McuCPU1Frequency**

<b>Name</b>	McuCPU1Frequency		
<b>Description</b>	<p>Specifies the intended target CPU1 frequency. The user should enter the intended target frequency expected for CPU1 operation.</p> <p>McuCPU1Frequency configuration requires adherence to the following formula:  <math display="block">\text{McuCPU1Frequency} = \text{McuSRIFrequency} * (64 - \text{CPU1DIV}) / 64</math> <i>Note: Possible range for CPU1DIV is from 0 to 63. Unit is expressed in Hz.</i></p>		
<b>Multiplicity</b>	1..1	<b>Type</b>	EcucFloatParamDef
<b>Range</b>	1.0 - 3000000000.0		
<b>Default value</b>	3000000000.0		

## 1 Mcu driver

**Table 184 Specification for McuCPU1Frequency (continued)**

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

### 1.3.1.53.9 McuCPU2Frequency

**Table 185 Specification for McuCPU2Frequency**

<b>Name</b>	McuCPU2Frequency		
<b>Description</b>	<p>Specifies the intended target CPU2 frequency. The user should enter the intended target frequency expected for CPU2 operation.</p> <p>McuCPU2Frequency configuration requires adherence to the following formula:  <math display="block">\text{McuCPU2Frequency} = \text{McuSRIFrequency} * (64 - \text{CPU2DIV}) / 64</math> <i>Note: Possible range for CPU2DIV is from 0 to 63. Unit is expressed in Hz.</i></p>		
<b>Multiplicity</b>	1..1	<b>Type</b>	EcucFloatParamDef
<b>Range</b>	1.0 - 3000000000.0		
<b>Default value</b>	3000000000.0		
<b>Post-build variant value</b>	TRUE	<b>Post-build variant multiplicity</b>	-
<b>Value configuration class</b>	Post-Build	<b>Multiplicity configuration class</b>	-
<b>Origin</b>	IFX	<b>Scope</b>	LOCAL
<b>Dependency</b>	McuLowPowerDivValue, McuSRIFrequency		
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.		

### 1.3.1.53.10 McuCPU3Frequency

**Table 186 Specification for McuCPU3Frequency**

<b>Name</b>	McuCPU3Frequency		
<b>Description</b>	<p>Specifies the intended target CPU3 frequency. The user should enter the intended target frequency expected for CPU3 operation.</p> <p>McuCPU3Frequency configuration requires adherence to the following formula:  <math display="block">\text{McuCPU3Frequency} = \text{McuSRIFrequency} * (64 - \text{CPU3DIV}) / 64</math></p>		

## 1 Mcu driver

**Table 186 Specification for McuCPU3Frequency (continued)**

	<i>Note: Possible range for CPU3DIV is from 0 to 63. Unit is expressed in Hz.</i>		
<b>Multiplicity</b>	1..1	<b>Type</b>	EcucFloatParamDef
<b>Range</b>	1.0 - 300000000.0		
<b>Default value</b>	300000000.0		
<b>Post-build variant value</b>	TRUE	<b>Post-build variant multiplicity</b>	-
<b>Value configuration class</b>	Post-Build	<b>Multiplicity configuration class</b>	-
<b>Origin</b>	IFX	<b>Scope</b>	LOCAL
<b>Dependency</b>	McuLowPowerDivValue, McuSRIFrequency		
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.		

### 1.3.1.53.11 McuCPU4Frequency

**Table 187 Specification for McuCPU4Frequency**

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

### 1.3.1.53.12 McuCPU5Frequency

**Table 188 Specification for McuCPU5Frequency**

<b>Name</b>	McuCPU5Frequency
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**1 Mcu driver**
**Table 188 Specification for McuCPU5Frequency (continued)**

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

**1.3.1.53.13 McuClockDistributionInpClockSel**
**Table 189 Specification for McuClockDistributionInpClockSel**

<b>Name</b>	McuClockDistributionInpClockSel		
<b>Description</b>	<p>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.</p>		
<b>Multiplicity</b>	1..1	<b>Type</b>	EcucEnumerationParamDef
<b>Range</b>	<p>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</p> <p>PLL_INPUT_CLOCK_SRC_SELECT_SEL1: If PLL is selected as an input clock source then,</p> <ul style="list-style-type: none"> <li>- 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</li> <li>- fSRC1 is selected as the clock source for reference clock frequency2, ERAY, MSC, MCAN, ASCLINS, QSPI, ADC, EBU, HSPDM_320 and HSPDM_160</li> <li>- fSOURCE2 is selected as the clock source for MSC, ASCLINF, QSPI and I2C</li> </ul>		
<b>Default value</b>	PLL_INPUT_CLOCK_SRC_SELECT_SEL1		
<b>Post-build variant value</b>	TRUE	<b>Post-build variant multiplicity</b>	-

**1 Mcu driver**
**Table 189 Specification for McuClockDistributionInpClockSel (continued)**

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

**1.3.1.53.14 McuConvCtrlPhaseSynchConf**
**Table 190 Specification for McuConvCtrlPhaseSynchConf**

<b>Name</b>	McuConvCtrlPhaseSynchConf		
<b>Description</b>	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.		
<b>Multiplicity</b>	1..1	<b>Type</b>	EcucEnumerationParamDef
<b>Range</b>	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		
<b>Default value</b>	PHASE_SYNCH_CONST_ACTIVE_SEL0		
<b>Post-build variant value</b>	TRUE	<b>Post-build variant multiplicity</b>	-
<b>Value configuration class</b>	Post-Build	<b>Multiplicity configuration class</b>	-
<b>Origin</b>	IFX	<b>Scope</b>	LOCAL
<b>Dependency</b>	-		

## 1 Mcu driver

**Table 190**      **Specification for McuConvCtrlPhaseSynchConf (continued)**

<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.
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### 1.3.1.53.15      **McuEbuClkEnable**

**Table 191**      **Specification for McuEbuClkEnable**

<b>Name</b>	McuEbuClkEnable		
<b>Description</b>	<p>Specifies if the frequency provided for the EBU module, McuEbuFrequency is enabled or not.</p> <p>TRUE: McuEbuFrequency is enabled</p> <p>FALSE: McuEbuFrequency is disabled</p> <p>This parameter is enabled if the EBU is available in the hardware</p> <p>By default, the EBU clock is kept disabled. The user can enable the clock when required.</p>		
<b>Multiplicity</b>	1..1	<b>Type</b>	EcucBooleanParamDef
<b>Range</b>	<p>TRUE</p> <p>FALSE</p>		
<b>Default value</b>	FALSE		
<b>Post-build variant value</b>	TRUE	<b>Post-build variant multiplicity</b>	-
<b>Value configuration class</b>	Post-Build	<b>Multiplicity configuration class</b>	-
<b>Origin</b>	IFX	<b>Scope</b>	LOCAL
<b>Dependency</b>	-		
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.		

### 1.3.1.53.16      **McuEbuFrequency**

**Table 192**      **Specification for McuEbuFrequency**

<b>Name</b>	McuEbuFrequency		
<b>Description</b>	<p>Specifies the EBU peripheral frequency.</p> <p>This clock frequency is always the same as McuClockReferencePointFrequency1. Unit is expressed in Hz.</p> <p>The default value is according to the clocking system example with 20 MHz crystal as provided in hardware user manual.</p>		
<b>Multiplicity</b>	1..1	<b>Type</b>	EcucFloatParamDef
<b>Range</b>	0.0 - 160000000.0		
<b>Default value</b>	160000000.0		

**1 Mcu driver**
**Table 192 Specification for McuEbuFrequency (continued)**

<b>Post-build variant value</b>	TRUE	<b>Post-build variant multiplicity</b>	-
<b>Value configuration class</b>	Post-Build	<b>Multiplicity configuration class</b>	-
<b>Origin</b>	IFX	<b>Scope</b>	LOCAL
<b>Dependency</b>	McuClockReferencePointFrequency1, McuEbuClkEnable		
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.		

**1.3.1.53.17 McuErayClkEnable**
**Table 193 Specification for McuErayClkEnable**

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

**1.3.1.53.18 McuErayFrequency**
**Table 194 Specification for McuErayFrequency**

<b>Name</b>	McuErayFrequency
<b>Description</b>	Specifies the ERAY frequency.

**1 Mcu driver**
**Table 194 Specification for McuErayFrequency (continued)**

	<p>The resultant ERAY frequency is always equal to peripheral PLL frequency (McuClockReferencePointFrequency1) divided by fixed divider 2.</p> <p>The ERAY would not be functional when the BACKUP clock is selected as distribution source. Unit is expressed in Hz.</p> <p>The default value is according to the clocking system example with 20 MHz crystal as provided in hardware user manual.</p>		
<b>Multiplicity</b>	1..1	<b>Type</b>	EcucFloatParamDef
<b>Range</b>	0.0 - 800000000.0		
<b>Default value</b>	800000000.0		
<b>Post-build variant value</b>	TRUE	<b>Post-build variant multiplicity</b>	-
<b>Value configuration class</b>	Post-Build	<b>Multiplicity configuration class</b>	-
<b>Origin</b>	IFX	<b>Scope</b>	ECU
<b>Dependency</b>	McuClockReferencePointFrequency1, McuErayClkEnable		
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.		

**1.3.1.53.19 McuFSI2Frequency**
**Table 195 Specification for McuFSI2Frequency**

<b>Name</b>	McuFSI2Frequency		
<b>Description</b>	<p>Specifies the intended target FSI2 frequency. The user should enter the intended target frequency expected for the FSI2.</p> <p>The FSI2 cannot be disabled.</p> <p>FSI2 and SRI should follow:</p> <ul style="list-style-type: none"> <li>- FSI2 can be same as SRI</li> <li>- If FSI2 is intended to be half of SRI then SRIDIV must be either 1 or 2</li> <li>- If FSI2 is intended to be one third of SRI then SRIDIV must be either 1 or 2</li> </ul> <p>The user must ensure that points 2 and 3 are taken care of.</p> <p>The possible divider values are available in the Target Specification. Unit is expressed in Hz.</p> <p>The default value is according to the clocking system example with 20 MHz crystal as provided in hardware user manual.</p>		
<b>Multiplicity</b>	1..1	<b>Type</b>	EcucFloatParamDef
<b>Range</b>	1.0 - 3000000000.0		
<b>Default value</b>	3000000000.0		
<b>Post-build variant value</b>	TRUE	<b>Post-build variant multiplicity</b>	-

## 1 Mcu driver

**Table 195 Specification for McuFSI2Frequency (continued)**

<b>Value configuration class</b>	Post-Build	<b>Multiplicity configuration class</b>	-
<b>Origin</b>	IFX	<b>Scope</b>	LOCAL
<b>Dependency</b>	McuLowPowerDivValue		
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.		

### 1.3.1.53.20 McuFSIFrequency

**Table 196 Specification for McuFSIFrequency**

<b>Name</b>	McuFSIFrequency		
<b>Description</b>	<p>Specifies the intended target FSI frequency. The user should enter the intended target frequency expected for the FSI.</p> <p>FSI cannot be disabled</p> <p>FSI and SRI should follow:</p> <ul style="list-style-type: none"> <li>- FSI can be same as SRI</li> <li>- If FSI is intended to be half of SRI then SRIDIV must be either 1 or 2</li> <li>- If FSI is intended to be one third of SRI then SRIDIV must be either 1 or 2</li> </ul> <p>The user must ensure that points 2 and 3 are taken care of.</p> <p>The possible divider values are available in the Target Specification. Unit is expressed in Hz.</p> <p>The default value is according to the clocking system example with 20 MHz crystal as provided in hardware user manual.</p>		
<b>Multiplicity</b>	1..1	<b>Type</b>	EcucFloatParamDef
<b>Range</b>	20000000.0 - 100000000.0		
<b>Default value</b>	100000000.0		
<b>Post-build variant value</b>	TRUE	<b>Post-build variant multiplicity</b>	-
<b>Value configuration class</b>	Post-Build	<b>Multiplicity configuration class</b>	-
<b>Origin</b>	IFX	<b>Scope</b>	LOCAL
<b>Dependency</b>	McuLowPowerDivValue		
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.		

### 1.3.1.53.21 McuGEthFrequency

**Table 197 Specification for McuGEthFrequency**

<b>Name</b>	McuGEthFrequency		
<b>Description</b>	Specifies the Gigabit Ethernet peripheral frequency.		

**1 Mcu driver**
**Table 197 Specification for McuGEthFrequency (continued)**

	<p>The Gigabit Ethernet frequency should be divisible by McuClockReferencePointFrequency0 with the divider values specified in Target Specification. Unit is expressed in Hz.</p> <p>The module frequency to Gigabit Ethernet can be disabled by setting McuGEthFrequency to 0.</p> <p>The default value is according to the clocking system example with 20 MHz crystal as provided in hardware user manual.</p>		
<b>Multiplicity</b>	1..1	<b>Type</b>	EcucFloatParamDef
<b>Range</b>	100000000.0 - 150000000.0		
<b>Default value</b>	150000000.0		
<b>Post-build variant value</b>	TRUE	<b>Post-build variant multiplicity</b>	-
<b>Value configuration class</b>	Post-Build	<b>Multiplicity configuration class</b>	-
<b>Origin</b>	IFX	<b>Scope</b>	ECU
<b>Dependency</b>	McuLowPowerDivValue		
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.		

**1.3.1.53.22 McuGTMFrequency**
**Table 198 Specification for McuGTMFrequency**

<b>Name</b>	McuGTMFrequency		
<b>Description</b>	<p>Specifies the GTM peripheral frequency. To disable the GTM peripheral frequency, a value of 0 has to be configured to this configuration parameter.</p> <p>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.</p> <p>fSOURCEGTM is derived using following formula:  if GTMDIV = 1, fSOURCEGTM = McuSPBFrequency * 2,  otherwise fSOURCEGTM = McuClockReferencePointFrequency0</p> <p>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.</p> <p>The default value is according to the clocking system example with 20 MHz crystal as provided in hardware user manual.</p>		
<b>Multiplicity</b>	1..1	<b>Type</b>	EcucFloatParamDef
<b>Range</b>	0.0 - 200000000.0		
<b>Default value</b>	200000000.0		
<b>Post-build variant value</b>	TRUE	<b>Post-build variant multiplicity</b>	-

**1 Mcu driver**
**Table 198 Specification for McuGTMFrequency (continued)**

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

**1.3.1.53.23 McuHsctFrequency**
**Table 199 Specification for McuHsctFrequency**

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

**1.3.1.53.24 McuHspdm160Frequency**
**Table 200 Specification for McuHspdm160Frequency**

<b>Name</b>	McuHspdm160Frequency		
<b>Description</b>	<p>Specifies the HSPDM160 peripheral frequency. The HSPDM160 clock frequency is always equal to McuClockReferencePointFrequency1.</p> <p>Unit is expressed in Hz.</p> <p>The default value is according to the clocking system example with 20 MHz crystal as provided in hardware user manual.</p>		



## 1 Mcu driver

**Table 200 Specification for McuHspdm160Frequency (continued)**

<b>Multiplicity</b>	1..1	<b>Type</b>	EcucFloatParamDef
<b>Range</b>	20000000.0 - 160000000.0		
<b>Default value</b>	160000000.0		
<b>Post-build variant value</b>	TRUE	<b>Post-build variant multiplicity</b>	-
<b>Value configuration class</b>	Post-Build	<b>Multiplicity configuration class</b>	-
<b>Origin</b>	IFX	<b>Scope</b>	LOCAL
<b>Dependency</b>	McuHspdmClkEnable		
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.		

### 1.3.1.53.25 McuHspdm320Frequency

**Table 201 Specification for McuHspdm320Frequency**

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

### 1.3.1.53.26 McuHspdmClkEnable

**Table 202 Specification for McuHspdmClkEnable**

<b>Name</b>	McuHspdmClkEnable
-------------	-------------------

**1 Mcu driver**
**Table 202 Specification for McuHspdmClkEnable (continued)**

<b>Description</b>	<p>Specifies if frequencies provided for the HSPDM modules, fHSPDM160 and fHSPDM320 are enabled or not.</p> <p>TRUE : fHSPDM160 and fHSPDM320 are enabled</p> <p>FALSE: fHSPDM160 and fHSPDM320 are disabled</p> <p>McuHspdmClkEnable is enabled if the HSPDM is available in the hardware.</p> <p>By default, the HSPDM clock is kept disabled.</p>		
<b>Multiplicity</b>	1..1	<b>Type</b>	EcucBooleanParamDef
<b>Range</b>	<p>TRUE</p> <p>FALSE</p>		
<b>Default value</b>	FALSE		
<b>Post-build variant value</b>	TRUE	<b>Post-build variant multiplicity</b>	-
<b>Value configuration class</b>	Post-Build	<b>Multiplicity configuration class</b>	-
<b>Origin</b>	IFX	<b>Scope</b>	LOCAL
<b>Dependency</b>	-		
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.		

**1.3.1.53.27 McuI2CFrequency**
**Table 203 Specification for McuI2CFrequency**

<b>Name</b>	McuI2CFrequency		
<b>Description</b>	<p>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.</p> <p>The default value is according to the clocking system example with 20 MHz crystal as provided in hardware user manual.</p>		
<b>Multiplicity</b>	1..1	<b>Type</b>	EcucFloatParamDef
<b>Range</b>	0.0 - 100000000.0		
<b>Default value</b>	66666667.0		
<b>Post-build variant value</b>	TRUE	<b>Post-build variant multiplicity</b>	-
<b>Value configuration class</b>	Post-Build	<b>Multiplicity configuration class</b>	-
<b>Origin</b>	IFX	<b>Scope</b>	LOCAL

## 1 Mcu driver

**Table 203 Specification for Mcu2CFrequency (continued)**

<b>Dependency</b>	McuClockReferencePointFrequency2
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.

### 1.3.1.53.28 McuLowPowerDivValue

**Table 204 Specification for McuLowPowerDivValue**

<b>Name</b>	McuLowPowerDivValue		
<b>Description</b>	<p>Specifies whether low power divider feature is enabled or disabled.</p> <p>The McuLowPowerDivValue divider is also applicable to the frequencies derived from SRI and SPB.</p> <p>If this parameter is enabled, the configuration of dividers done in the CCUCON register is no longer valid.</p>		
<b>Multiplicity</b>	1..1	<b>Type</b>	EcucEnumerationParamDef
<b>Range</b>	<p>LOW_POWER_DIVIDER_DISABLE_SEL0: low power mode is disabled</p> <p>LOW_POWER_DIVIDE_BY_120_SEL3: low power mode clock divider is set to 120</p> <p>LOW_POWER_DIVIDE_BY_240_SEL4: low power mode clock divider is set to 240</p> <p>LOW_POWER_DIVIDE_BY_30_SEL1: low power mode clock divider is set to 30</p> <p>LOW_POWER_DIVIDE_BY_60_SEL2: low power mode clock divider is set to 60</p>		
<b>Default value</b>	LOW_POWER_DIVIDER_DISABLE_SEL0		
<b>Post-build variant value</b>	TRUE	<b>Post-build variant multiplicity</b>	-
<b>Value configuration class</b>	Post-Build	<b>Multiplicity configuration class</b>	-
<b>Origin</b>	IFX	<b>Scope</b>	LOCAL
<b>Dependency</b>	-		
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.		

### 1.3.1.53.29 McuMCanClockSourceSelection

**Table 205 Specification for McuMCanClockSourceSelection**

<b>Name</b>	McuMCanClockSourceSelection		
<b>Description</b>	<p>Specifies the input clock source for the MCAN peripheral.</p> <p>The frequency calculation for the MCAN peripheral is done in McuMCanFrequency configuration parameter.</p> <p>By, default, the MCAN clock source is disabled.</p>		
<b>Multiplicity</b>	1..1	<b>Type</b>	EcucEnumerationParamDef

**1 Mcu driver**
**Table 205 Specification for McuMCanClockSourceSelection (continued)**

<b>Range</b>	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		
<b>Default value</b>	MCAN_CLOCK_SOURCE_DISABLED_SEL0		
<b>Post-build variant value</b>	TRUE	<b>Post-build variant multiplicity</b>	-
<b>Value configuration class</b>	Post-Build	<b>Multiplicity configuration class</b>	-
<b>Origin</b>	IFX	<b>Scope</b>	ECU
<b>Dependency</b>	-		
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.		

**1.3.1.53.30 McuMCanFrequency**
**Table 206 Specification for McuMCanFrequency**

<b>Name</b>	McuMCanFrequency		
<b>Description</b>	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.		
<b>Multiplicity</b>	1..1	<b>Type</b>	EcucFloatParamDef
<b>Range</b>	0.0 - 80000000.0		
<b>Default value</b>	80000000.0		
<b>Post-build variant value</b>	TRUE	<b>Post-build variant multiplicity</b>	-
<b>Value configuration class</b>	Post-Build	<b>Multiplicity configuration class</b>	-
<b>Origin</b>	IFX	<b>Scope</b>	ECU
<b>Dependency</b>	McuMCanClockSourceSelection		
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.		

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### 1.3.1.53.31 McuMcanHFrequency

**Table 207** Specification for McuMcanHFrequency

<b>Name</b>	McuMcanHFrequency		
<b>Description</b>	<p>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.</p> <p>The default value is according to the clocking system example with 20 MHz crystal as provided in hardware user manual.</p>		
<b>Multiplicity</b>	1..1	<b>Type</b>	EcucFloatParamDef
<b>Range</b>	0.0 - 100000000.0		
<b>Default value</b>	100000000.0		
<b>Post-build variant value</b>	TRUE	<b>Post-build variant multiplicity</b>	-
<b>Value configuration class</b>	Post-Build	<b>Multiplicity configuration class</b>	-
<b>Origin</b>	IFX	<b>Scope</b>	ECU
<b>Dependency</b>	McuClockReferencePointFrequency0		
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.		

### 1.3.1.53.32 McuMscClockSourceSelection

**Table 208** Specification for McuMscClockSourceSelection

<b>Name</b>	McuMscClockSourceSelection		
<b>Description</b>	<p>Specifies the input clock source for the MSC peripheral.</p> <p>The frequency calculation for the MSC peripheral is done in McuMscFrequency configuration parameter.</p> <p>By default, the MSC clock source is disabled.</p>		
<b>Multiplicity</b>	1..1	<b>Type</b>	EcucEnumerationParamDef
<b>Range</b>	<p>MSC_CLOCK_SOURCE_DISABLED_SEL0: MSC frequency is disabled</p> <p>MSC_CLOCK_SOURCE_SOURCE1_SEL1: McuClockReferencePointFrequency1 is used as input clock source for the MSC dividers</p> <p>MSC_CLOCK_SOURCE_SOURCE2_SEL2: McuClockReferencePointFrequency2 is used as input clock source for the MSC dividers</p>		
<b>Default value</b>	MSC_CLOCK_SOURCE_DISABLED_SEL0		
<b>Post-build variant value</b>	TRUE	<b>Post-build variant multiplicity</b>	-

## 1 Mcu driver

**Table 208 Specification for McuMscClockSourceSelection (continued)**

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

### 1.3.1.53.33 McuMscFrequency

**Table 209 Specification for McuMscFrequency**

<b>Name</b>	McuMscFrequency		
<b>Description</b>	<p>Specifies the clock frequency for the MSC peripheral. The McuMscFrequency is applicable only if McuMscClockSourceSelection is not set to MSC_CLOCK_SOURCE_DISABLED.</p> <p>The target frequency to be configured should be perfectly divisible by the divider values specified in the Target Specification. Unit is expressed in Hz.</p> <p>The default value is according to the clocking system example with 20 MHz crystal as provided in hardware user manual.</p>		
<b>Multiplicity</b>	1..1	<b>Type</b>	EcucFloatParamDef
<b>Range</b>	0.0 - 200000000.0		
<b>Default value</b>	200000000.0		
<b>Post-build variant value</b>	TRUE	<b>Post-build variant multiplicity</b>	-
<b>Value configuration class</b>	Post-Build	<b>Multiplicity configuration class</b>	-
<b>Origin</b>	IFX	<b>Scope</b>	LOCAL
<b>Dependency</b>	McuMscClockSourceSelection		
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.		

### 1.3.1.53.34 McuQspiClockSourceSelection

**Table 210 Specification for McuQspiClockSourceSelection**

<b>Name</b>	McuQspiClockSourceSelection		
<b>Description</b>	<p>Specifies the input clock source for the QSPI peripheral.</p> <p>The frequency calculation for the QSPI peripheral is done in the McuQspiFrequency configuration parameter.</p> <p>By default, the QSPI clock is switched OFF.</p>		

**1 Mcu driver**
**Table 210 Specification for McuQspiClockSourceSelection (continued)**

<b>Multiplicity</b>	1..1	<b>Type</b>	EcucEnumerationParamDef
<b>Range</b>	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		
<b>Default value</b>	QSPI_CLOCK_SOURCE_DISABLED_SEL0		
<b>Post-build variant value</b>	TRUE	<b>Post-build variant multiplicity</b>	-
<b>Value configuration class</b>	Post-Build	<b>Multiplicity configuration class</b>	-
<b>Origin</b>	IFX	<b>Scope</b>	LOCAL
<b>Dependency</b>	-		
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.		

**1.3.1.53.35 McuQspiFrequency**
**Table 211 Specification for McuQspiFrequency**

<b>Name</b>	McuQspiFrequency		
<b>Description</b>	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.		
<b>Multiplicity</b>	1..1	<b>Type</b>	EcucFloatParamDef
<b>Range</b>	0.0 - 2000000000.0		
<b>Default value</b>	2000000000.0		
<b>Post-build variant value</b>	TRUE	<b>Post-build variant multiplicity</b>	-
<b>Value configuration class</b>	Post-Build	<b>Multiplicity configuration class</b>	-
<b>Origin</b>	IFX	<b>Scope</b>	ECU
<b>Dependency</b>	McuQspiClockSourceSelection		
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.		

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### 1.3.1.53.36 McuReferenceFrequency1

**Table 212 Specification for McuReferenceFrequency1**

<b>Name</b>	McuReferenceFrequency1		
<b>Description</b>	<p>Specifies the reference frequency 1 for the MCDS.</p> <p>McuReferenceFrequency1 is calculated as follows:</p> $\text{McuReferenceFrequency1} = \text{McuClockReferencePointFrequency0} / 24$ <p>Unit is expressed in Hz.</p> <p>The default value is according to the clocking system example with 20 MHz crystal as provided in hardware user manual.</p>		
<b>Multiplicity</b>	1..1	<b>Type</b>	EcucFloatParamDef
<b>Range</b>	0.0 - 100000000.0		
<b>Default value</b>	12500000.0		
<b>Post-build variant value</b>	TRUE	<b>Post-build variant multiplicity</b>	-
<b>Value configuration class</b>	Post-Build	<b>Multiplicity configuration class</b>	-
<b>Origin</b>	IFX	<b>Scope</b>	LOCAL
<b>Dependency</b>	McuClockReferencePointFrequency0		
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.		

### 1.3.1.53.37 McuReferenceFrequency2

**Table 213 Specification for McuReferenceFrequency2**

<b>Name</b>	McuReferenceFrequency2		
<b>Description</b>	<p>Specifies the reference frequency 2 for the MCDS.</p> <p>McuReferenceFrequency2 is calculated as follows:</p> $\text{McuReferenceFrequency2} = \text{McuClockReferencePointFrequency1} / 24.$ <p>Unit is expressed in Hz.</p> <p>The default value is according to the clocking system example with 20 MHz crystal as provided in hardware user manual.</p>		
<b>Multiplicity</b>	1..1	<b>Type</b>	EcucFloatParamDef
<b>Range</b>	0.0 - 100000000.0		
<b>Default value</b>	6666667.0		
<b>Post-build variant value</b>	TRUE	<b>Post-build variant multiplicity</b>	-
<b>Value configuration class</b>	Post-Build	<b>Multiplicity configuration class</b>	-



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**Table 213 Specification for McuReferenceFrequency2 (continued)**

<b>Origin</b>	IFX	<b>Scope</b>	LOCAL
<b>Dependency</b>	McuClockReferencePointFrequency1		
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.		

### 1.3.1.53.38 McuSPBFrequency

**Table 214 Specification for McuSPBFrequency**

<b>Name</b>	McuSPBFrequency		
<b>Description</b>	<p>Specifies the intended target SPB frequency. The user should enter the intended target frequency expected for the SPB.</p> <p>The SPB should always be proportionate to McuClockReferencePointFrequency0. The possible divider values are available in the Target Specification. Unit is expressed in Hz.</p> <p>The default value is according to the clocking system example with 20 MHz crystal as provided in hardware user manual.</p>		
<b>Multiplicity</b>	1..1	<b>Type</b>	EcucFloatParamDef
<b>Range</b>	1.0 - 100000000.0		
<b>Default value</b>	100000000.0		
<b>Post-build variant value</b>	TRUE	<b>Post-build variant multiplicity</b>	-
<b>Value configuration class</b>	Post-Build	<b>Multiplicity configuration class</b>	-
<b>Origin</b>	IFX	<b>Scope</b>	ECU
<b>Dependency</b>	McuLowPowerDivValue		
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.		

### 1.3.1.53.39 McuSRIFrequency

**Table 215 Specification for McuSRIFrequency**

<b>Name</b>	McuSRIFrequency		
<b>Description</b>	<p>Specifies the intended target SRI frequency. The user should enter the intended target frequency expected for the SRI.</p> <p>The SRI should always be proportionate to McuClockReferencePointFrequency0. The possible divider values are available in the Target Specification. Unit is expressed in Hz.</p> <p>The default value is according to the clocking system example with 20 MHz crystal as provided in hardware user manual.</p>		
<b>Multiplicity</b>	1..1	<b>Type</b>	EcucFloatParamDef
<b>Range</b>	1.0 - 300000000.0		

## 1 Mcu driver

**Table 215 Specification for McuSRIFrequency (continued)**

<b>Default value</b>	300000000.0		
<b>Post-build variant value</b>	TRUE	<b>Post-build variant multiplicity</b>	-
<b>Value configuration class</b>	Post-Build	<b>Multiplicity configuration class</b>	-
<b>Origin</b>	IFX	<b>Scope</b>	LOCAL
<b>Dependency</b>	McuLowPowerDivValue		
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.		

### 1.3.1.53.40 McuSTMFrequency

**Table 216 Specification for McuSTMFrequency**

<b>Name</b>	McuSTMFrequency		
<b>Description</b>	<p>Specifies the STM peripheral frequency. To disable the STM peripheral frequency, a value of 0 has to be configured to this configuration parameter.</p> <p>The STM frequency, if enabled, should be divisible by McuClockReferencePointFrequency0 with the divider values specified in the Target Specification.</p> <p>The STM frequency can be slower or faster or equal to the SPB frequency. Unit is expressed in Hz.</p> <p>The default value is according to the clocking system example with 20 MHz crystal as provided in hardware user manual.</p>		
<b>Multiplicity</b>	1..1	<b>Type</b>	EcucFloatParamDef
<b>Range</b>	0.0 - 1000000000.0		
<b>Default value</b>	100000000.0		
<b>Post-build variant value</b>	TRUE	<b>Post-build variant multiplicity</b>	-
<b>Value configuration class</b>	Post-Build	<b>Multiplicity configuration class</b>	-
<b>Origin</b>	IFX	<b>Scope</b>	LOCAL
<b>Dependency</b>	McuClockReferencePointFrequency0		
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.		

### 1.3.1.54 Container: McuPublishedInformation

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

Post-Build Variant Multiplicity: -

Multiplicity Configuration Class: -

## 1 Mcu driver

### 1.3.1.55 Container: McuRamSectorSettingConf

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

Post-Build Variant Multiplicity: FALSE

Multiplicity Configuration Class: Pre-Compile

#### 1.3.1.55.1 McuRamDefaultValue

**Table 217** Specification for McuRamDefaultValue

<b>Name</b>	McuRamDefaultValue		
<b>Description</b>	Preset value used to fill the configured RAM section.		
<b>Multiplicity</b>	1..1	<b>Type</b>	EcucIntegerParamDef
<b>Range</b>	0 - 255		
<b>Default value</b>	0		
<b>Post-build variant value</b>	TRUE	<b>Post-build variant multiplicity</b>	-
<b>Value configuration class</b>	Post-Build	<b>Multiplicity configuration class</b>	-
<b>Origin</b>	AUTOSAR_ECUC	<b>Scope</b>	LOCAL
<b>Dependency</b>	-		
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.		

#### 1.3.1.55.2 McuRamSectionBaseAddress

**Table 218** Specification for McuRamSectionBaseAddress

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

## 1 Mcu driver

### 1.3.1.55.3 McuRamSectionSize

**Table 219 Specification for McuRamSectionSize**

<b>Name</b>	McuRamSectionSize		
<b>Description</b>	Represents the MCU RAM section size in bytes. McuRamSectionBaseAddress+ McuRamSectionSize should not exceed boundary for the RAM section.		
<b>Multiplicity</b>	1..1	<b>Type</b>	EcucIntegerParamDef
<b>Range</b>	0 - 4294967295		
<b>Default value</b>	8		
<b>Post-build variant value</b>	TRUE	<b>Post-build variant multiplicity</b>	-
<b>Value configuration class</b>	Post-Build	<b>Multiplicity configuration class</b>	-
<b>Origin</b>	AUTOSAR_ECUC	<b>Scope</b>	LOCAL
<b>Dependency</b>	-		
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.		

### 1.3.1.55.4 McuRamSectionWriteSize

**Table 220 Specification for McuRamSectionWriteSize**

<b>Name</b>	McuRamSectionWriteSize		
<b>Description</b>	Defines the size in bytes of data which can be written into RAM at once. <i>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.</i>		
<b>Multiplicity</b>	1..1	<b>Type</b>	EcucIntegerParamDef
<b>Range</b>	1 - 8		
<b>Default value</b>	8		
<b>Post-build variant value</b>	TRUE	<b>Post-build variant multiplicity</b>	-
<b>Value configuration class</b>	Post-Build	<b>Multiplicity configuration class</b>	-
<b>Origin</b>	AUTOSAR_ECUC	<b>Scope</b>	LOCAL
<b>Dependency</b>	-		
<b>Autosar Version</b>	Applicable for Autosar version 4.4.0.		

## 1 Mcu driver

### 1.3.1.55.5 McuRamSectorSettingId

**Table 221** Specification for McuRamSectorSettingId

<b>Name</b>	McuRamSectorSettingId		
<b>Description</b>	Used as an argument for the Mcu_InitRamSection() API call.		
<b>Multiplicity</b>	1..1	<b>Type</b>	EcucIntegerParamDef
<b>Range</b>	0 - 255		
<b>Default value</b>	0		
<b>Post-build variant value</b>	FALSE	<b>Post-build variant multiplicity</b>	-
<b>Value configuration class</b>	Pre-Compile	<b>Multiplicity configuration class</b>	-
<b>Origin</b>	IFX	<b>Scope</b>	LOCAL
<b>Dependency</b>	-		
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.		

### 1.3.1.56 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: -

#### 1.3.1.56.1 McuResetReason

**Table 222** Specification for McuResetReason

<b>Name</b>	McuResetReason		
<b>Description</b>	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.		
<b>Multiplicity</b>	1..1	<b>Type</b>	EcucIntegerParamDef
<b>Range</b>	0 - 255		
<b>Default value</b>	0		
<b>Post-build variant value</b>	FALSE	<b>Post-build variant multiplicity</b>	-
<b>Value configuration class</b>	Published-Information	<b>Multiplicity configuration class</b>	-
<b>Origin</b>	AUTOSAR_ECUC	<b>Scope</b>	ECU
<b>Dependency</b>	-		

## 1 Mcu driver

**Table 222 Specification for McuResetReason (continued)**

<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.
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### 1.3.1.57 Container: McuStdByModeESR0Conf

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

Post-Build Variant Multiplicity: -

Multiplicity Configuration Class: -

#### 1.3.1.57.1 McuStdbyModeESR0EdgeDetection

**Table 223 Specification for McuStdbyModeESR0EdgeDetection**

<b>Name</b>	McuStdbyModeESR0EdgeDetection		
<b>Description</b>	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.		
<b>Multiplicity</b>	1..1	<b>Type</b>	EcucEnumerationParamDef
<b>Range</b>	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		
<b>Default value</b>	ESR0_TRIG_RISING_EDGE_SEL1		
<b>Post-build variant value</b>	TRUE	<b>Post-build variant multiplicity</b>	-
<b>Value configuration class</b>	Post-Build	<b>Multiplicity configuration class</b>	-
<b>Origin</b>	IFX	<b>Scope</b>	LOCAL
<b>Dependency</b>	McuStdbyModeESR0WakeupEnable, McuMode		
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.		

#### 1.3.1.57.2 McuStdbyModeESR0FltEnable

**Table 224 Specification for McuStdbyModeESR0FltEnable**

<b>Name</b>	McuStdbyModeESR0FltEnable		
<b>Description</b>	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:		

**1 Mcu driver**
**Table 224 Specification for McuStdbymodeESR0FltEnable (continued)**

	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		
<b>Multiplicity</b>	1..1	<b>Type</b>	EcucBooleanParamDef
<b>Range</b>	TRUE FALSE		
<b>Default value</b>	FALSE		
<b>Post-build variant value</b>	TRUE	<b>Post-build variant multiplicity</b>	-
<b>Value configuration class</b>	Post-Build	<b>Multiplicity configuration class</b>	-
<b>Origin</b>	IFX	<b>Scope</b>	LOCAL
<b>Dependency</b>	McuStdbymodeESR0WakeupEnable, McuMode		
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.		

**1.3.1.57.3 McuStdbymodeESR0WakeupEnable**
**Table 225 Specification for McuStdbymodeESR0WakeupEnable**

<b>Name</b>	McuStdbymodeESR0WakeupEnable		
<b>Description</b>	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		
<b>Multiplicity</b>	1..1	<b>Type</b>	EcucBooleanParamDef
<b>Range</b>	TRUE FALSE		
<b>Default value</b>	FALSE		
<b>Post-build variant value</b>	TRUE	<b>Post-build variant multiplicity</b>	-
<b>Value configuration class</b>	Post-Build	<b>Multiplicity configuration class</b>	-
<b>Origin</b>	IFX	<b>Scope</b>	LOCAL
<b>Dependency</b>	McuMode		
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.		

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### 1.3.1.58 Container: McuStdbyModeESR1Conf

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

Post-Build Variant Multiplicity: -

Multiplicity Configuration Class: -

#### 1.3.1.58.1 McuStdbyModeESR1EdgeDetection

**Table 226** Specification for McuStdbyModeESR1EdgeDetection

<b>Name</b>	McuStdbyModeESR1EdgeDetection		
<b>Description</b>	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.		
<b>Multiplicity</b>	1..1	<b>Type</b>	EcucEnumerationParamDef
<b>Range</b>	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		
<b>Default value</b>	ESR1_TRIG_RISING_EDGE_SEL1		
<b>Post-build variant value</b>	TRUE	<b>Post-build variant multiplicity</b>	-
<b>Value configuration class</b>	Post-Build	<b>Multiplicity configuration class</b>	-
<b>Origin</b>	IFX	<b>Scope</b>	LOCAL
<b>Dependency</b>	McuStdbyModeESR1WakeupEnable, McuMode		
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.		

#### 1.3.1.58.2 McuStdbyModeESR1FltEnable

**Table 227** Specification for McuStdbyModeESR1FltEnable

<b>Name</b>	McuStdbyModeESR1FltEnable		
<b>Description</b>	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		
<b>Multiplicity</b>	1..1	<b>Type</b>	EcucBooleanParamDef



**1 Mcu driver**
**Table 227 Specification for McuStdbyModeESR1FltEnable (continued)**

<b>Range</b>	TRUE FALSE		
<b>Default value</b>	FALSE		
<b>Post-build variant value</b>	TRUE	<b>Post-build variant multiplicity</b>	-
<b>Value configuration class</b>	Post-Build	<b>Multiplicity configuration class</b>	-
<b>Origin</b>	IFX	<b>Scope</b>	LOCAL
<b>Dependency</b>	McuStdbyModeESR1WakeupEnable, McuMode		
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.		

**1.3.1.58.3 McuStdbyModeESR1WakeupEnable**
**Table 228 Specification for McuStdbyModeESR1WakeupEnable**

<b>Name</b>	McuStdbyModeESR1WakeupEnable		
<b>Description</b>	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		
<b>Multiplicity</b>	1..1	<b>Type</b>	EcucBooleanParamDef
<b>Range</b>	TRUE FALSE		
<b>Default value</b>	FALSE		
<b>Post-build variant value</b>	TRUE	<b>Post-build variant multiplicity</b>	-
<b>Value configuration class</b>	Post-Build	<b>Multiplicity configuration class</b>	-
<b>Origin</b>	IFX	<b>Scope</b>	LOCAL
<b>Dependency</b>	McuMode		
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.		

**1.3.1.59 Container: McuStdByModePinAConf**

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

Post-Build Variant Multiplicity: -

## 1 Mcu driver

Multiplicity Configuration Class: -

### 1.3.1.59.1 McuStdbymodePinAEdgeDetection

**Table 229 Specification for McuStdbymodePinAEdgeDetection**

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

### 1.3.1.59.2 McuStdbymodePinAFltEnable

**Table 230 Specification for McuStdbymodePinAFltEnable**

<b>Name</b>	McuStdbymodePinAFltEnable		
<b>Description</b>	<p>Specifies if the digital filter is enabled for PinA to wake up from the standby mode.</p> <p>McuStdbymodePinAFltEnable is applicable only if McuMode is 2 (STANDBY) and McuStdbymodePinAWakeupEnable is set to TRUE.</p> <p>Values:</p> <p>TRUE: digital filter is enabled for PinA wakeup from the standby mode</p> <p>FALSE: digital filter is disabled for PinA wakeup from the standby mode</p>		
<b>Multiplicity</b>	1..1	<b>Type</b>	EcucBooleanParamDef
<b>Range</b>	<p>TRUE</p> <p>FALSE</p>		

## 1 Mcu driver

**Table 230 Specification for McuStdbyModePinAFltEnable (continued)**

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

### 1.3.1.59.3 McuStdbyModePinAWakeupEnable

**Table 231 Specification for McuStdbyModePinAWakeupEnable**

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

### 1.3.1.60 Container: McuStdByModePinBConf

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

Post-Build Variant Multiplicity: -

Multiplicity Configuration Class: -

## 1 Mcu driver

### 1.3.1.60.1 McuStdbbyModePinBEdgeDetection

**Table 232 Specification for McuStdbbyModePinBEdgeDetection**

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

### 1.3.1.60.2 McuStdbbyModePinBFltEnable

**Table 233 Specification for McuStdbbyModePinBFltEnable**

<b>Name</b>	McuStdbbyModePinBFltEnable		
<b>Description</b>	<p>Specifies if the digital filter is enabled for Pin B to wake up from the standby mode.</p> <p>McuStdbbyModePinBFltEnable is applicable only if McuMode is 2 (STANDBY) and McuStdbbyModePinBWakeupEnable is set to TRUE.</p> <p>Values:</p> <p>TRUE: digital filter is enabled for PinB wakeup from the standby mode</p> <p>FALSE: digital filter is disabled for PinB wakeup from the standby mode</p>		
<b>Multiplicity</b>	1..1	<b>Type</b>	EcucBooleanParamDef
<b>Range</b>	<p>TRUE</p> <p>FALSE</p>		
<b>Default value</b>	FALSE		

**1 Mcu driver**
**Table 233 Specification for McuStdbyModePinBFltEnable (continued)**

<b>Post-build variant value</b>	TRUE	<b>Post-build variant multiplicity</b>	-
<b>Value configuration class</b>	Post-Build	<b>Multiplicity configuration class</b>	-
<b>Origin</b>	IFX	<b>Scope</b>	LOCAL
<b>Dependency</b>	McuStdbyModePinBWakeUpEnable, McuMode		
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.		

**1.3.1.60.3 McuStdbyModePinBWakeUpEnable**
**Table 234 Specification for McuStdbyModePinBWakeUpEnable**

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

**1.3.1.61 Container: McuStdByModeWakeUpTimerConf**

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

Post-Build Variant Multiplicity: -

Multiplicity Configuration Class: -

## 1 Mcu driver

### 1.3.1.61.1 McuStdbbyModeWakeupTimerClkDiv

**Table 235** Specification for McuStdbbyModeWakeupTimerClkDiv

<b>Name</b>	McuStdbbyModeWakeupTimerClkDiv		
<b>Description</b>	Specifies the wakeup timer clock source selection. McuStdbbyModeWakeupTimerClkDiv is applicable only if McuStdbbyModeWakeupTimerEnable is set to TRUE.		
<b>Multiplicity</b>	1..1	<b>Type</b>	EcucEnumerationParamDef
<b>Range</b>	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		
<b>Default value</b>	WUT_70KHZ_NO_DIV_CLK_SEL0		
<b>Post-build variant value</b>	TRUE	<b>Post-build variant multiplicity</b>	-
<b>Value configuration class</b>	Post-Build	<b>Multiplicity configuration class</b>	-
<b>Origin</b>	IFX	<b>Scope</b>	LOCAL
<b>Dependency</b>	McuStdbbyModeWakeupTimerEnable, McuMode		
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.		

### 1.3.1.61.2 McuStdbbyModeWakeupTimerEnable

**Table 236** Specification for McuStdbbyModeWakeupTimerEnable

<b>Name</b>	McuStdbbyModeWakeupTimerEnable		
<b>Description</b>	Specifies if the wake up from the standby mode is supported through the wake up timer. If McuStdbbyModeWakeupTimerEnable 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		
<b>Multiplicity</b>	1..1	<b>Type</b>	EcucBooleanParamDef
<b>Range</b>	TRUE FALSE		
<b>Default value</b>	FALSE		
<b>Post-build variant value</b>	TRUE	<b>Post-build variant multiplicity</b>	-

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**Table 236 Specification for McuStdbymodeWakeupTimerEnable (continued)**

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

### 1.3.1.61.3 McuStdbymodeWakeupTimerMode

**Table 237 Specification for McuStdbymodeWakeupTimerMode**

<b>Name</b>	McuStdbymodeWakeupTimerMode		
<b>Description</b>	Specifies the wakeup timer mode. McuStdbymodeWakeupTimerMode is applicable only if McuStdbymodeWakeupTimerEnable is set to TRUE.		
<b>Multiplicity</b>	1..1	<b>Type</b>	EcucEnumerationParamDef
<b>Range</b>	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		
<b>Default value</b>	WUT_AUTO_RELOAD_MODE_SEL0		
<b>Post-build variant value</b>	TRUE	<b>Post-build variant multiplicity</b>	-
<b>Value configuration class</b>	Post-Build	<b>Multiplicity configuration class</b>	-
<b>Origin</b>	IFX	<b>Scope</b>	LOCAL
<b>Dependency</b>	McuMode, McuStdbymodeWakeupTimerEnable		
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.		

### 1.3.1.61.4 McuStdbymodeWakeupTimerValue

**Table 238 Specification for McuStdbymodeWakeupTimerValue**

<b>Name</b>	McuStdbymodeWakeupTimerValue		
<b>Description</b>	Specifies the wakeup timer reload value. McuStdbymodeWakeupTimerValue is applicable only if McuStdbymodeWakeupTimerEnable is set to TRUE.		
<b>Multiplicity</b>	1..1	<b>Type</b>	EcucIntegerParamDef

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**Table 238**      **Specification for McuStdbyModeWakeupTimerValue (continued)**

<b>Range</b>	0 - 16777215		
<b>Default value</b>	16777215		
<b>Post-build variant value</b>	TRUE	<b>Post-build variant multiplicity</b>	-
<b>Value configuration class</b>	Post-Build	<b>Multiplicity configuration class</b>	-
<b>Origin</b>	IFX	<b>Scope</b>	LOCAL
<b>Dependency</b>	McuStdbyModeWakeupTimerEnable, McuMode		
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.		

### 1.3.1.62      **Container: McuStdbyModeSettingConf**

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

Post-Build Variant Multiplicity: -

Multiplicity Configuration Class: -

#### 1.3.1.62.1      **McuStdbyModeBlankingFilterDelay**

**Table 239**      **Specification for McuStdbyModeBlankingFilterDelay**

<b>Name</b>	McuStdbyModeBlankingFilterDelay		
<b>Description</b>	<p>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.</p> <p>This parameter is applicable only if McuMode is 2 (STANDBY) and . McuStdbyModeWakeupFromEVR is TRUE.</p>		
<b>Multiplicity</b>	1..1	<b>Type</b>	EcucEnumerationParamDef
<b>Range</b>	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		



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**Table 239 Specification for McuStdbymodeBlankingFilterDelay (continued)**

	DELAY_80_MS_SEL6: 80 ms blanking filter delay		
<b>Default value</b>	DELAY_0_MS_SEL0		
<b>Post-build variant value</b>	TRUE	<b>Post-build variant multiplicity</b>	-
<b>Value configuration class</b>	Post-Build	<b>Multiplicity configuration class</b>	-
<b>Origin</b>	IFX	<b>Scope</b>	LOCAL
<b>Dependency</b>	McuStdbymodeWakeupFromEVR, McuMode		
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.		

### 1.3.1.62.2 McuStdbymodeClkSelection

**Table 240 Specification for McuStdbymodeClkSelection**

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

**1 Mcu driver**
**1.3.1.62.3 McuStdbymodeESR0TriStateEnable**
**Table 241 Specification for McuStdbymodeESR0TriStateEnable**

<b>Name</b>	McuStdbymodeESR0TriStateEnable		
<b>Description</b>	<p>Specifies if the ESR0 is in tristate while in the standby mode.</p> <p>McuStdbymodeESR0TriStateEnable is applicable only if McuMode is 2 (STANDBY).</p> <p>Values:</p> <p>TRUE: tristate is enabled for ESR0 while in the standby mode</p> <p>FALSE: tristate will be disabled for ESR0 while in the standby mode</p>		
<b>Multiplicity</b>	1..1	<b>Type</b>	EcucBooleanParamDef
<b>Range</b>	<p>TRUE</p> <p>FALSE</p>		
<b>Default value</b>	FALSE		
<b>Post-build variant value</b>	TRUE	<b>Post-build variant multiplicity</b>	-
<b>Value configuration class</b>	Post-Build	<b>Multiplicity configuration class</b>	-
<b>Origin</b>	IFX	<b>Scope</b>	LOCAL
<b>Dependency</b>	McuMode		
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.		

**1.3.1.62.4 McuStdbymodePORSTFilterEnable**
**Table 242 Specification for McuStdbymodePORSTFilterEnable**

<b>Name</b>	McuStdbymodePORSTFilterEnable		
<b>Description</b>	<p>Specifies if the PORST digital filter is enabled or disabled.</p> <p>If McuStdbymodePORSTFilterEnable is set to FALSE, the PORST configuration delay = Analog PORST pad filter delay.</p> <p>If McuStdbymodePORSTFilterEnable is set to TRUE, the PORST configuration delay = Analog PORST pad filter delay + Digital filter delay.</p> <p>McuStdbymodePORSTFilterEnable is applicable only if McuMode is 2 (STANDBY).</p> <p>Values:</p> <p>TRUE: PORST digital filter is enabled</p> <p>FALSE: PORST digital filter is disabled</p>		
<b>Multiplicity</b>	1..1	<b>Type</b>	EcucBooleanParamDef
<b>Range</b>	<p>TRUE</p> <p>FALSE</p>		

## 1 Mcu driver

**Table 242 Specification for McuStdbymodePORSTFilterEnable (continued)**

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

### 1.3.1.62.5 McuStdbymodePortTriStateEnable

**Table 243 Specification for McuStdbymodePortTriStateEnable**

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

### 1.3.1.62.6 McuStdbymodeRamEnable

**Table 244 Specification for McuStdbymodeRamEnable**

<b>Name</b>	McuStdbymodeRamEnable		
<b>Description</b>	Selects the LMU blocks which stay powered up during the standby mode of operation.		

**1 Mcu driver**
**Table 244 Specification for McuStdbyModeRamEnable (continued)**

	McuStdbyModeRamEnable is applicable only if McuMode is 2 (STANDBY).		
<b>Multiplicity</b>	1..1	<b>Type</b>	EcucEnumerationParamDef
<b>Range</b>	MCU_STANDBYRAM_CPU0_BLK0_BLK1_SEL2: CPU0 dLMU Block0 Block1 is used as StandByRam MCU_STANDBYRAM_CPU0_BLK0_SEL1: CPU0 dLMU Block0 is used as StandByRam MCU_STANDBYRAM_CPU0_CPU1_BLK0_BLK1_SEL7: CPU0, CPU1s dLMU Block0 and Block 1 is used as StandByRam MCU_STANDBYRAM_CPU1_BLK0_BLK1_SEL4: CPU1 dLMU Block0 Block 1 is used as StandByRam MCU_STANDBYRAM_DISABLED_SEL0: StandByRam is disabled		
<b>Default value</b>	MCU_STANDBYRAM_DISABLED_SEL0		
<b>Post-build variant value</b>	FALSE	<b>Post-build variant multiplicity</b>	-
<b>Value configuration class</b>	Pre-Compile	<b>Multiplicity configuration class</b>	-
<b>Origin</b>	IFX	<b>Scope</b>	LOCAL
<b>Dependency</b>	McuMode		
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.		

**1.3.1.62.7 McuStdbyModeWakeupFromEVR**
**Table 245 Specification for McuStdbyModeWakeupFromEVR**

<b>Name</b>	McuStdbyModeWakeupFromEVR		
<b>Description</b>	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		
<b>Multiplicity</b>	1..1	<b>Type</b>	EcucBooleanParamDef
<b>Range</b>	TRUE FALSE		
<b>Default value</b>	FALSE		
<b>Post-build variant value</b>	TRUE	<b>Post-build variant multiplicity</b>	-

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**Table 245 Specification for McuStdbyModeWakeupFromEVR (continued)**

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

### 1.3.1.62.8 McuStdbyModeWakeupFromPORST

**Table 246 Specification for McuStdbyModeWakeupFromPORST**

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

### 1.3.1.62.9 McuStdbyModeWakeupFromSCR

**Table 247 Specification for McuStdbyModeWakeupFromSCR**

<b>Name</b>	McuStdbyModeWakeupFromSCR		
<b>Description</b>	<p>Specifies if the wakeup from the standby mode through controller is enabled.</p> <p>McuStdbyModeWakeupFromSCR is applicable only if McuMode is 2 (STANDBY).</p> <p>Values:</p> <p>TRUE: wakeup from the standby mode through the standby mode controller is enabled</p>		

**1 Mcu driver**
**Table 247 Specification for McuStdbyModeWakeupFromSCR (continued)**

	FALSE: wakeup from the standby mode through the standby mode controller is disabled		
<b>Multiplicity</b>	1..1	<b>Type</b>	EcucBooleanParamDef
<b>Range</b>	TRUE FALSE		
<b>Default value</b>	FALSE		
<b>Post-build variant value</b>	TRUE	<b>Post-build variant multiplicity</b>	-
<b>Value configuration class</b>	Post-Build	<b>Multiplicity configuration class</b>	-
<b>Origin</b>	IFX	<b>Scope</b>	LOCAL
<b>Dependency</b>	McuMode		
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.		

**1.3.1.63 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: -

**1.3.1.63.1 McuStdbyModeEntryOnVDDRampDown**
**Table 248 Specification for McuStdbyModeEntryOnVDDRampDown**

<b>Name</b>	McuStdbyModeEntryOnVDDRampDown		
<b>Description</b>	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		
<b>Multiplicity</b>	1..1	<b>Type</b>	EcucBooleanParamDef
<b>Range</b>	TRUE FALSE		
<b>Default value</b>	FALSE		
<b>Post-build variant value</b>	TRUE	<b>Post-build variant multiplicity</b>	-

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**Table 248 Specification for McuStdbymodeEntryOnVDDRampDown (continued)**

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

### 1.3.1.63.2 McuStdbymodeEntryOnVEXTRampDown

**Table 249 Specification for McuStdbymodeEntryOnVEXTRampDown**

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

### 1.3.1.63.3 McuStdbymodeVddUMMonMode

**Table 250 Specification for McuStdbymodeVddUMMonMode**

<b>Name</b>	McuStdbymodeVddUMMonMode		
<b>Description</b>	<p>Specifies the VDD under voltage monitoring mode.</p> <p>The default value is selected according to the reset value of SFR bit-field as specified in the hardware UM.</p>		

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**Table 250 Specification for McuStdbbyModeVddUMMonMode (continued)**

<b>Multiplicity</b>	1..1	<b>Type</b>	EcucEnumerationParamDef
<b>Range</b>	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.		
<b>Default value</b>	VDD_UV_MON_MODE_SEL2		
<b>Post-build variant value</b>	TRUE	<b>Post-build variant multiplicity</b>	-
<b>Value configuration class</b>	Post-Build	<b>Multiplicity configuration class</b>	-
<b>Origin</b>	IFX	<b>Scope</b>	LOCAL
<b>Dependency</b>	-		
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.		

### 1.3.1.63.4 McuStdbbyModeVddUVThres

**Table 251 Specification for McuStdbbyModeVddUVThres**

<b>Name</b>	McuStdbbyModeVddUVThres		
<b>Description</b>	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.		
<b>Multiplicity</b>	1..1	<b>Type</b>	EcucIntegerParamDef
<b>Range</b>	0 - 255		
<b>Default value</b>	184		
<b>Post-build variant value</b>	TRUE	<b>Post-build variant multiplicity</b>	-
<b>Value configuration class</b>	Post-Build	<b>Multiplicity configuration class</b>	-
<b>Origin</b>	IFX	<b>Scope</b>	LOCAL
<b>Dependency</b>	-		
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.		



**1 Mcu driver**
**1.3.1.63.5 McuStdbbyModeVextUMMonMode**
**Table 252 Specification for McuStdbbyModeVextUMMonMode**

<b>Name</b>	McuStdbbyModeVextUMMonMode		
<b>Description</b>	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.		
<b>Multiplicity</b>	1..1	<b>Type</b>	EcucEnumerationParamDef
<b>Range</b>	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.		
<b>Default value</b>	VEXT_UV_MON_MODE_SEL2		
<b>Post-build variant value</b>	TRUE	<b>Post-build variant multiplicity</b>	-
<b>Value configuration class</b>	Post-Build	<b>Multiplicity configuration class</b>	-
<b>Origin</b>	IFX	<b>Scope</b>	LOCAL
<b>Dependency</b>	-		
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.		

**1.3.1.63.6 McuStdbbyModeVextUVThres**
**Table 253 Specification for McuStdbbyModeVextUVThres**

<b>Name</b>	McuStdbbyModeVextUVThres		
<b>Description</b>	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.		
<b>Multiplicity</b>	1..1	<b>Type</b>	EcucIntegerParamDef
<b>Range</b>	0 - 255		
<b>Default value</b>	117		
<b>Post-build variant value</b>	TRUE	<b>Post-build variant multiplicity</b>	-
<b>Value configuration class</b>	Post-Build	<b>Multiplicity configuration class</b>	-

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**Table 253 Specification for McuStdbyModeVextUVThres (continued)**

<b>Origin</b>	IFX	<b>Scope</b>	LOCAL
<b>Dependency</b>	-		
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.		

### 1.3.1.64 Container: McuSystemPllSettingConfig

This container holds the configuration (parameters) for the System PLL clock settings.

Post-Build Variant Multiplicity: -

Multiplicity Configuration Class: -

#### 1.3.1.64.1 McuClockReferencePointFrequency0

**Table 254 Specification for McuClockReferencePointFrequency0**

<b>Name</b>	McuClockReferencePointFrequency0		
<b>Description</b>	<p>User should configure the resulting target frequency after configuring the N, P and K2 divider for system PLL.</p> <p>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.</p> <p>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.</p> <p>fSOURCE0 is McuClockReferencePointFrequency0.</p>		
<b>Multiplicity</b>	1..1	<b>Type</b>	EcucFloatParamDef
<b>Range</b>	20000000.0 - 300000000.0		
<b>Default value</b>	300000000.0		
<b>Post-build variant value</b>	TRUE	<b>Post-build variant multiplicity</b>	-
<b>Value configuration class</b>	Post-Build	<b>Multiplicity configuration class</b>	-
<b>Origin</b>	IFX	<b>Scope</b>	LOCAL
<b>Dependency</b>	McuMainOscillatorFrequency, McuSystemPllK2Divider, McuSystemPllNDivider, McuSystemPllPDivider, McuPllInputSrcSelection		
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.		

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### 1.3.1.64.2 McuFMPlModAmp

**Table 255 Specification for McuFMPlModAmp**

<b>Name</b>	McuFMPlModAmp		
<b>Description</b>	McuFMPlModAmp is the percentage value for modulation amplitude for PLL frequency modulation. MODCFG[9:0] bits of SCU_SYSPLLCON2 is used and is equated as $= (64 * \text{McuFMPlModAmp}/100 * \text{McuMainOscillatorFrequency}/\text{McuPlIPDivider} * \text{McuPlINDivider}/3.6) ;$ where (McuFMPlModAmp is expressed in percentage and McuMainOscillatorFrequency in MHz).		
<b>Multiplicity</b>	1..1	<b>Type</b>	EcucFloatParamDef
<b>Range</b>	0.0 - 2.0		
<b>Default value</b>	1.25		
<b>Post-build variant value</b>	TRUE	<b>Post-build variant multiplicity</b>	-
<b>Value configuration class</b>	Post-Build	<b>Multiplicity configuration class</b>	-
<b>Origin</b>	IFX	<b>Scope</b>	LOCAL
<b>Dependency</b>	McuFmPlIEnable, McuClockDistributionInpClockSel		
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.		

### 1.3.1.64.3 McuFmPlIEnable

**Table 256 Specification for McuFmPlIEnable**

<b>Name</b>	McuFmPlIEnable		
<b>Description</b>	Configuration to enable/disable PLL frequency modulation. Values: TRUE: enables PLL frequency modulation FALSE: disables PLL frequency modulation		
<b>Multiplicity</b>	1..1	<b>Type</b>	EcucBooleanParamDef
<b>Range</b>	TRUE FALSE		
<b>Default value</b>	FALSE		
<b>Post-build variant value</b>	TRUE	<b>Post-build variant multiplicity</b>	-
<b>Value configuration class</b>	Post-Build	<b>Multiplicity configuration class</b>	-

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**Table 256 Specification for McuFmPllEnable (continued)**

<b>Origin</b>	IFX	<b>Scope</b>	LOCAL
<b>Dependency</b>	McuClockDistributionInpClockSel		
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.		

### 1.3.1.64.4 McuPllInputSrcSelection

**Table 257 Specification for McuPllInputSrcSelection**

<b>Name</b>	McuPllInputSrcSelection		
<b>Description</b>	Configuration to select the input clock source for both the PLLs.  <i>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.</i>		
<b>Multiplicity</b>	1..1	<b>Type</b>	EcucEnumerationParamDef
<b>Range</b>	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		
<b>Default value</b>	OSC_CLOCK_SRC_SELECT_SEL1		
<b>Post-build variant value</b>	TRUE	<b>Post-build variant multiplicity</b>	-
<b>Value configuration class</b>	Post-Build	<b>Multiplicity configuration class</b>	-
<b>Origin</b>	IFX	<b>Scope</b>	LOCAL
<b>Dependency</b>	McuClockDistributionInpClockSel		
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.		

### 1.3.1.64.5 McuSysPllK2DivStepDownChangeDelay

**Table 258 Specification for McuSysPllK2DivStepDownChangeDelay**

<b>Name</b>	McuSysPllK2DivStepDownChangeDelay		
<b>Description</b>	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.  <i>Note : The value is expressed in microseconds (us).</i>		

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**Table 258 Specification for McuSysPllK2DivStepDownChangeDelay (continued)**

<b>Multiplicity</b>	1..1	<b>Type</b>	EcucIntegerParamDef
<b>Range</b>	5 - 100		
<b>Default value</b>	10		
<b>Post-build variant value</b>	TRUE	<b>Post-build variant multiplicity</b>	-
<b>Value configuration class</b>	Post-Build	<b>Multiplicity configuration class</b>	-
<b>Origin</b>	IFX	<b>Scope</b>	LOCAL
<b>Dependency</b>	McuClockDistributionInpClockSel		
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.		

### 1.3.1.64.6 McuSysPllK2DivStepUpChangeDelay

**Table 259 Specification for McuSysPllK2DivStepUpChangeDelay**

<b>Name</b>	McuSysPllK2DivStepUpChangeDelay		
<b>Description</b>	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. <i>Note : The value is expressed in microseconds (us).</i>		
<b>Multiplicity</b>	1..1	<b>Type</b>	EcucIntegerParamDef
<b>Range</b>	5 - 100		
<b>Default value</b>	10		
<b>Post-build variant value</b>	TRUE	<b>Post-build variant multiplicity</b>	-
<b>Value configuration class</b>	Post-Build	<b>Multiplicity configuration class</b>	-
<b>Origin</b>	IFX	<b>Scope</b>	LOCAL
<b>Dependency</b>	McuClockDistributionInpClockSel		
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.		

### 1.3.1.64.7 McuSystemPllK2Divider

**Table 260 Specification for McuSystemPllK2Divider**

<b>Name</b>	McuSystemPllK2Divider
<b>Description</b>	Three bit output divider. Even values are preferred to get 50% duty cycle. Clock equations are incremented by 1 to this parameter.

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**Table 260 Specification for McuSystemPlLK2Divider (continued)**

	<i>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.</i>		
<b>Multiplicity</b>	1..1	<b>Type</b>	EcucIntegerParamDef
<b>Range</b>	0 - 7		
<b>Default value</b>	1		
<b>Post-build variant value</b>	TRUE	<b>Post-build variant multiplicity</b>	-
<b>Value configuration class</b>	Post-Build	<b>Multiplicity configuration class</b>	-
<b>Origin</b>	IFX	<b>Scope</b>	LOCAL
<b>Dependency</b>	McuClockDistributionInpClockSel		
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.		

### 1.3.1.64.8 McuSystemPlINDivider

**Table 261 Specification for McuSystemPlINDivider**

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

### 1.3.1.64.9 McuSystemPlLPDivider

**Table 262 Specification for McuSystemPlLPDivider**

<b>Name</b>	McuSystemPlLPDivider		
<b>Description</b>	Frequency divider of main oscillator (3 bits) Clock equations are incremented by 1 to this parameter.		

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**Table 262 Specification for McuSystemPlIPDivider (continued)**

<b>Multiplicity</b>	1..1	<b>Type</b>	EcucIntegerParamDef
<b>Range</b>	0 - 7		
<b>Default value</b>	0		
<b>Post-build variant value</b>	TRUE	<b>Post-build variant multiplicity</b>	-
<b>Value configuration class</b>	Post-Build	<b>Multiplicity configuration class</b>	-
<b>Origin</b>	IFX	<b>Scope</b>	LOCAL
<b>Dependency</b>	McuClockDistributionInpClockSel		
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.		

### 1.3.1.65 Container: McuResetSettingConf

This container defines the configuration parameters for the reset settings.

Post-Build Variant Multiplicity: -

Multiplicity Configuration Class: -

#### 1.3.1.65.1 McuESR0ResetConf

**Table 263 Specification for McuESR0ResetConf**

<b>Name</b>	McuESR0ResetConf		
<b>Description</b>	Refers to the response of the ESR0 reset request.		
<b>Multiplicity</b>	1..1	<b>Type</b>	EcucEnumerationParamDef
<b>Range</b>	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		
<b>Default value</b>	MCU_ESR0_NO_RESET_SEL0		
<b>Post-build variant value</b>	TRUE	<b>Post-build variant multiplicity</b>	-
<b>Value configuration class</b>	Post-Build	<b>Multiplicity configuration class</b>	-
<b>Origin</b>	IFX	<b>Scope</b>	LOCAL
<b>Dependency</b>	-		
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.		

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**1.3.1.65.2 McuESR1ResetConf**
**Table 264 Specification for McuESR1ResetConf**

<b>Name</b>	McuESR1ResetConf		
<b>Description</b>	Refers to the response of the ESR1 reset request.		
<b>Multiplicity</b>	1..1	<b>Type</b>	EcucEnumerationParamDef
<b>Range</b>	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		
<b>Default value</b>	MCU_ESR1_NO_RESET_SEL0		
<b>Post-build variant value</b>	TRUE	<b>Post-build variant multiplicity</b>	-
<b>Value configuration class</b>	Post-Build	<b>Multiplicity configuration class</b>	-
<b>Origin</b>	IFX	<b>Scope</b>	LOCAL
<b>Dependency</b>	-		
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.		

**1.3.1.65.3 McuSMUResetConf**
**Table 265 Specification for McuSMUResetConf**

<b>Name</b>	McuSMUResetConf		
<b>Description</b>	Refers to the response of the SMU reset request.		
<b>Multiplicity</b>	1..1	<b>Type</b>	EcucEnumerationParamDef
<b>Range</b>	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		
<b>Default value</b>	MCU_SMU_NO_RESET_SEL0		
<b>Post-build variant value</b>	TRUE	<b>Post-build variant multiplicity</b>	-
<b>Value configuration class</b>	Post-Build	<b>Multiplicity configuration class</b>	-
<b>Origin</b>	IFX	<b>Scope</b>	LOCAL
<b>Dependency</b>	-		
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.		



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### 1.3.1.65.4 McuSTM0ResetConf

**Table 266** Specification for McuSTM0ResetConf

<b>Name</b>	McuSTM0ResetConf		
<b>Description</b>	Refers to the response of the STM0 reset request.		
<b>Multiplicity</b>	1..1	<b>Type</b>	EcucEnumerationParamDef
<b>Range</b>	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		
<b>Default value</b>	MCU_STM0_NO_RESET_SEL0		
<b>Post-build variant value</b>	TRUE	<b>Post-build variant multiplicity</b>	-
<b>Value configuration class</b>	Post-Build	<b>Multiplicity configuration class</b>	-
<b>Origin</b>	IFX	<b>Scope</b>	LOCAL
<b>Dependency</b>	-		
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.		

### 1.3.1.65.5 McuSTM0ResetOnApplResetEnable

**Table 267** Specification for McuSTM0ResetOnApplResetEnable

<b>Name</b>	McuSTM0ResetOnApplResetEnable		
<b>Description</b>	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		
<b>Multiplicity</b>	1..1	<b>Type</b>	EcucBooleanParamDef
<b>Range</b>	TRUE FALSE		
<b>Default value</b>	TRUE		
<b>Post-build variant value</b>	TRUE	<b>Post-build variant multiplicity</b>	-
<b>Value configuration class</b>	Post-Build	<b>Multiplicity configuration class</b>	-
<b>Origin</b>	IFX	<b>Scope</b>	LOCAL
<b>Dependency</b>	-		
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.		

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### 1.3.1.65.6 McuSTM1ResetConf

**Table 268 Specification for McuSTM1ResetConf**

<b>Name</b>	McuSTM1ResetConf		
<b>Description</b>	Refers to the response of the STM1 reset request. If the STM1 does not exist on the hardware, the parameter is disabled.		
<b>Multiplicity</b>	1..1	<b>Type</b>	EcucEnumerationParamDef
<b>Range</b>	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		
<b>Default value</b>	MCU_STM1_NO_RESET_SEL0		
<b>Post-build variant value</b>	TRUE	<b>Post-build variant multiplicity</b>	-
<b>Value configuration class</b>	Post-Build	<b>Multiplicity configuration class</b>	-
<b>Origin</b>	IFX	<b>Scope</b>	LOCAL
<b>Dependency</b>	-		
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.		

### 1.3.1.65.7 McuSTM1ResetOnApplResetEnable

**Table 269 Specification for McuSTM1ResetOnApplResetEnable**

<b>Name</b>	McuSTM1ResetOnApplResetEnable		
<b>Description</b>	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.		
<b>Multiplicity</b>	1..1	<b>Type</b>	EcucBooleanParamDef
<b>Range</b>	TRUE FALSE		
<b>Default value</b>	TRUE		
<b>Post-build variant value</b>	TRUE	<b>Post-build variant multiplicity</b>	-
<b>Value configuration class</b>	Post-Build	<b>Multiplicity configuration class</b>	-
<b>Origin</b>	IFX	<b>Scope</b>	LOCAL

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**Table 269 Specification for McuSTM1ResetOnApplResetEnable (continued)**

<b>Dependency</b>	-
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.

### 1.3.1.65.8 McuSTM2ResetConf

**Table 270 Specification for McuSTM2ResetConf**

<b>Name</b>	McuSTM2ResetConf		
<b>Description</b>	Refers to the response of the STM2 reset request. If the STM2 does not exist on the hardware, the parameter is disabled.		
<b>Multiplicity</b>	1..1	<b>Type</b>	EcucEnumerationParamDef
<b>Range</b>	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		
<b>Default value</b>	MCU_STM2_NO_RESET_SEL0		
<b>Post-build variant value</b>	TRUE	<b>Post-build variant multiplicity</b>	-
<b>Value configuration class</b>	Post-Build	<b>Multiplicity configuration class</b>	-
<b>Origin</b>	IFX	<b>Scope</b>	LOCAL
<b>Dependency</b>	-		
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.		

### 1.3.1.65.9 McuSTM2ResetOnApplResetEnable

**Table 271 Specification for McuSTM2ResetOnApplResetEnable**

<b>Name</b>	McuSTM2ResetOnApplResetEnable		
<b>Description</b>	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.		
<b>Multiplicity</b>	1..1	<b>Type</b>	EcucBooleanParamDef
<b>Range</b>	TRUE FALSE		
<b>Default value</b>	TRUE		

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**Table 271 Specification for McuSTM2ResetOnApplResetEnable (continued)**

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

### 1.3.1.65.10 McuSTM3ResetConf

**Table 272 Specification for McuSTM3ResetConf**

<b>Name</b>	McuSTM3ResetConf		
<b>Description</b>	Refers to the response of the STM3 reset request. If the STM3 does not exist on the hardware, the parameter is disabled.		
<b>Multiplicity</b>	1..1	<b>Type</b>	EcucEnumerationParamDef
<b>Range</b>	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		
<b>Default value</b>	MCU_STM3_NO_RESET_SEL0		
<b>Post-build variant value</b>	TRUE	<b>Post-build variant multiplicity</b>	-
<b>Value configuration class</b>	Post-Build	<b>Multiplicity configuration class</b>	-
<b>Origin</b>	IFX	<b>Scope</b>	LOCAL
<b>Dependency</b>	-		
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.		

### 1.3.1.65.11 McuSTM3ResetOnApplResetEnable

**Table 273 Specification for McuSTM3ResetOnApplResetEnable**

<b>Name</b>	McuSTM3ResetOnApplResetEnable		
<b>Description</b>	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.		

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**Table 273 Specification for McuSTM3ResetOnApplResetEnable (continued)**

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

### 1.3.1.65.12 McuSTM4ResetConf

**Table 274 Specification for McuSTM4ResetConf**

<b>Name</b>	McuSTM4ResetConf		
<b>Description</b>	Refers to the response of the STM4 reset request. If the STM4 does not exist on the hardware, the parameter is disabled.		
<b>Multiplicity</b>	1..1	<b>Type</b>	EcucEnumerationParamDef
<b>Range</b>	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		
<b>Default value</b>	MCU_STM4_NO_RESET_SEL0		
<b>Post-build variant value</b>	TRUE	<b>Post-build variant multiplicity</b>	-
<b>Value configuration class</b>	Post-Build	<b>Multiplicity configuration class</b>	-
<b>Origin</b>	IFX	<b>Scope</b>	LOCAL
<b>Dependency</b>	-		
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.		

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### 1.3.1.65.13 McuSTM4ResetOnApplResetEnable

**Table 275 Specification for McuSTM4ResetOnApplResetEnable**

<b>Name</b>	McuSTM4ResetOnApplResetEnable		
<b>Description</b>	<p>Refers to the enabling of resetting the value of STM4 when an application reset is requested.</p> <p>TRUE: STM4 is reset when the application reset is triggered</p> <p>FALSE: STM4 is not reset when the application reset is triggered</p> <p>If the STM4 does not exist on the hardware, the parameter is disabled.</p>		
<b>Multiplicity</b>	1..1	<b>Type</b>	EcucBooleanParamDef
<b>Range</b>	<p>TRUE</p> <p>FALSE</p>		
<b>Default value</b>	TRUE		
<b>Post-build variant value</b>	TRUE	<b>Post-build variant multiplicity</b>	-
<b>Value configuration class</b>	Post-Build	<b>Multiplicity configuration class</b>	-
<b>Origin</b>	IFX	<b>Scope</b>	LOCAL
<b>Dependency</b>	-		
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.		

### 1.3.1.65.14 McuSTM5ResetConf

**Table 276 Specification for McuSTM5ResetConf**

<b>Name</b>	McuSTM5ResetConf		
<b>Description</b>	<p>Refers to the response of the STM5 reset request.</p> <p>If the STM5 does not exist on the hardware, the parameter is disabled.</p>		
<b>Multiplicity</b>	1..1	<b>Type</b>	EcucEnumerationParamDef
<b>Range</b>	<p>MCU_STM5_APPLICATION_RESET_SEL2: application reset request is triggered</p> <p>MCU_STM5_NO_RESET_SEL0: no reset request is triggered</p> <p>MCU_STM5_SYSTEM_RESET_SEL1: system reset request is triggered</p>		
<b>Default value</b>	MCU_STM5_NO_RESET_SEL0		
<b>Post-build variant value</b>	TRUE	<b>Post-build variant multiplicity</b>	-
<b>Value configuration class</b>	Post-Build	<b>Multiplicity configuration class</b>	-
<b>Origin</b>	IFX	<b>Scope</b>	LOCAL

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**Table 276 Specification for McuSTM5ResetConf (continued)**

<b>Dependency</b>	-
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.

**1.3.1.65.15 McuSTM5ResetOnApplResetEnable**
**Table 277 Specification for McuSTM5ResetOnApplResetEnable**

<b>Name</b>	McuSTM5ResetOnApplResetEnable		
<b>Description</b>	<p>Refers to enabling of resetting the value of STM5 when an application reset is requested.</p> <p>TRUE: STM5 is reset when the application reset is triggered</p> <p>FALSE: STM5 is not reset when the application reset is triggered</p> <p>If the STM5 does not exist on the hardware, the parameter is disabled.</p>		
<b>Multiplicity</b>	1..1	<b>Type</b>	EcucBooleanParamDef
<b>Range</b>	<p>TRUE</p> <p>FALSE</p>		
<b>Default value</b>	TRUE		
<b>Post-build variant value</b>	TRUE	<b>Post-build variant multiplicity</b>	-
<b>Value configuration class</b>	Post-Build	<b>Multiplicity configuration class</b>	-
<b>Origin</b>	IFX	<b>Scope</b>	LOCAL
<b>Dependency</b>	-		
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.		

**1.3.1.65.16 McuSWResetConf**
**Table 278 Specification for McuSWResetConf**

<b>Name</b>	McuSWResetConf		
<b>Description</b>	Refers to the response of the software reset request.		
<b>Multiplicity</b>	1..1	<b>Type</b>	EcucEnumerationParamDef
<b>Range</b>	<p>MCU_SW_APPLICATION_RESET_SEL2: application reset request is triggered</p> <p>MCU_SW_NO_RESET_SEL0: no reset request is triggered</p> <p>MCU_SW_SYSTEM_RESET_SEL1: system reset request is triggered</p>		
<b>Default value</b>	MCU_SW_NO_RESET_SEL0		
<b>Post-build variant value</b>	TRUE	<b>Post-build variant multiplicity</b>	-

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**Table 278 Specification for McuSWResetConf (continued)**

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

### 1.3.1.66 Container: McuTrapSettingConf

This container defines the configuration parameters for the trap settings.

Post-Build Variant Multiplicity: -

Multiplicity Configuration Class: -

#### 1.3.1.66.1 McuCPU0ESR0TrapEnable

**Table 279 Specification for McuCPU0ESR0TrapEnable**

<b>Name</b>	McuCPU0ESR0TrapEnable		
<b>Description</b>	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		
<b>Multiplicity</b>	1..1	<b>Type</b>	EcucBooleanParamDef
<b>Range</b>	TRUE FALSE		
<b>Default value</b>	FALSE		
<b>Post-build variant value</b>	TRUE	<b>Post-build variant multiplicity</b>	-
<b>Value configuration class</b>	Post-Build	<b>Multiplicity configuration class</b>	-
<b>Origin</b>	IFX	<b>Scope</b>	LOCAL
<b>Dependency</b>	-		
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.		

#### 1.3.1.66.2 McuCPU0ESR1TrapEnable

**Table 280 Specification for McuCPU0ESR1TrapEnable**

<b>Name</b>	McuCPU0ESR1TrapEnable		
<b>Description</b>	Enables the trap request for CPU0 from the ESR1 source.		



**1 Mcu driver**
**Table 280 Specification for McuCPU0ESR1TrapEnable (continued)**

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

**1.3.1.66.3 McuCPU0SMUTrapEnable**
**Table 281 Specification for McuCPU0SMUTrapEnable**

<b>Name</b>	McuCPU0SMUTrapEnable		
<b>Description</b>	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		
<b>Multiplicity</b>	1..1	<b>Type</b>	EcucBooleanParamDef
<b>Range</b>	TRUE FALSE		
<b>Default value</b>	FALSE		
<b>Post-build variant value</b>	TRUE	<b>Post-build variant multiplicity</b>	-
<b>Value configuration class</b>	Post-Build	<b>Multiplicity configuration class</b>	-
<b>Origin</b>	IFX	<b>Scope</b>	LOCAL
<b>Dependency</b>	-		
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.		

## 1 Mcu driver

### 1.3.1.66.4 McuCPU0Trap2Enable

**Table 282**      **Specification for McuCPU0Trap2Enable**

<b>Name</b>	McuCPU0Trap2Enable		
<b>Description</b>	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		
<b>Multiplicity</b>	1..1	<b>Type</b>	EcucBooleanParamDef
<b>Range</b>	TRUE FALSE		
<b>Default value</b>	FALSE		
<b>Post-build variant value</b>	TRUE	<b>Post-build variant multiplicity</b>	-
<b>Value configuration class</b>	Post-Build	<b>Multiplicity configuration class</b>	-
<b>Origin</b>	IFX	<b>Scope</b>	LOCAL
<b>Dependency</b>	-		
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.		

### 1.3.1.66.5 McuCPU1ESR0TrapEnable

**Table 283**      **Specification for McuCPU1ESR0TrapEnable**

<b>Name</b>	McuCPU1ESR0TrapEnable		
<b>Description</b>	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.		
<b>Multiplicity</b>	1..1	<b>Type</b>	EcucBooleanParamDef
<b>Range</b>	TRUE FALSE		
<b>Default value</b>	FALSE		
<b>Post-build variant value</b>	TRUE	<b>Post-build variant multiplicity</b>	-
<b>Value configuration class</b>	Post-Build	<b>Multiplicity configuration class</b>	-
<b>Origin</b>	IFX	<b>Scope</b>	LOCAL

**1 Mcu driver**
**Table 283 Specification for McuCPU1ESR0TrapEnable (continued)**

<b>Dependency</b>	-
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.

**1.3.1.66.6 McuCPU1ESR1TrapEnable**
**Table 284 Specification for McuCPU1ESR1TrapEnable**

<b>Name</b>	McuCPU1ESR1TrapEnable		
<b>Description</b>	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.		
<b>Multiplicity</b>	1..1	<b>Type</b>	EcucBooleanParamDef
<b>Range</b>	TRUE FALSE		
<b>Default value</b>	FALSE		
<b>Post-build variant value</b>	TRUE	<b>Post-build variant multiplicity</b>	-
<b>Value configuration class</b>	Post-Build	<b>Multiplicity configuration class</b>	-
<b>Origin</b>	IFX	<b>Scope</b>	LOCAL
<b>Dependency</b>	-		
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.		

**1.3.1.66.7 McuCPU1SMUTrapEnable**
**Table 285 Specification for McuCPU1SMUTrapEnable**

<b>Name</b>	McuCPU1SMUTrapEnable		
<b>Description</b>	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.		
<b>Multiplicity</b>	1..1	<b>Type</b>	EcucBooleanParamDef
<b>Range</b>	TRUE FALSE		
<b>Default value</b>	FALSE		

## 1 Mcu driver

**Table 285 Specification for McuCPU1SMUTrapEnable (continued)**

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

### 1.3.1.66.8 McuCPU1Trap2Enable

**Table 286 Specification for McuCPU1Trap2Enable**

<b>Name</b>	McuCPU1Trap2Enable		
<b>Description</b>	<p>Enables the trap request for CPU1 from the TRAP2 source.</p> <p>TRUE: MCU CPU1 trap can be generated from the TRAP2 source</p> <p>FALSE: MCU CPU1 trap cannot be generated from the TRAP2 source</p> <p>If CPU1 is not available on the hardware, this parameter is disabled.</p>		
<b>Multiplicity</b>	1..1	<b>Type</b>	EcucBooleanParamDef
<b>Range</b>	<p>TRUE</p> <p>FALSE</p>		
<b>Default value</b>	FALSE		
<b>Post-build variant value</b>	TRUE	<b>Post-build variant multiplicity</b>	-
<b>Value configuration class</b>	Post-Build	<b>Multiplicity configuration class</b>	-
<b>Origin</b>	IFX	<b>Scope</b>	LOCAL
<b>Dependency</b>	-		
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.		

### 1.3.1.66.9 McuCPU2ESR0TrapEnable

**Table 287 Specification for McuCPU2ESR0TrapEnable**

<b>Name</b>	McuCPU2ESR0TrapEnable		
<b>Description</b>	<p>Enables the trap request for CPU2 from the ESR0 source.</p> <p>TRUE: MCU CPU2 trap can be generated from the ESR0 source</p> <p>FALSE: MCU CPU2 trap cannot be generated from the ESR0 source</p>		

**1 Mcu driver**
**Table 287 Specification for McuCPU2ESR0TrapEnable (continued)**

	If CPU2 is not available on the hardware, this parameter is disabled.		
<b>Multiplicity</b>	1..1	<b>Type</b>	EcucBooleanParamDef
<b>Range</b>	TRUE FALSE		
<b>Default value</b>	FALSE		
<b>Post-build variant value</b>	TRUE	<b>Post-build variant multiplicity</b>	-
<b>Value configuration class</b>	Post-Build	<b>Multiplicity configuration class</b>	-
<b>Origin</b>	IFX	<b>Scope</b>	LOCAL
<b>Dependency</b>	-		
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.		

**1.3.1.66.10 McuCPU2ESR1TrapEnable**
**Table 288 Specification for McuCPU2ESR1TrapEnable**

<b>Name</b>	McuCPU2ESR1TrapEnable		
<b>Description</b>	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.		
<b>Multiplicity</b>	1..1	<b>Type</b>	EcucBooleanParamDef
<b>Range</b>	TRUE FALSE		
<b>Default value</b>	FALSE		
<b>Post-build variant value</b>	TRUE	<b>Post-build variant multiplicity</b>	-
<b>Value configuration class</b>	Post-Build	<b>Multiplicity configuration class</b>	-
<b>Origin</b>	IFX	<b>Scope</b>	LOCAL
<b>Dependency</b>	-		
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.		

**1 Mcu driver**
**1.3.1.66.11 McuCPU2SMUTrapEnable**
**Table 289 Specification for McuCPU2SMUTrapEnable**

<b>Name</b>	McuCPU2SMUTrapEnable		
<b>Description</b>	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.		
<b>Multiplicity</b>	1..1	<b>Type</b>	EcucBooleanParamDef
<b>Range</b>	TRUE FALSE		
<b>Default value</b>	FALSE		
<b>Post-build variant value</b>	TRUE	<b>Post-build variant multiplicity</b>	-
<b>Value configuration class</b>	Post-Build	<b>Multiplicity configuration class</b>	-
<b>Origin</b>	IFX	<b>Scope</b>	LOCAL
<b>Dependency</b>	-		
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.		

**1.3.1.66.12 McuCPU2Trap2Enable**
**Table 290 Specification for McuCPU2Trap2Enable**

<b>Name</b>	McuCPU2Trap2Enable		
<b>Description</b>	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.		
<b>Multiplicity</b>	1..1	<b>Type</b>	EcucBooleanParamDef
<b>Range</b>	TRUE FALSE		
<b>Default value</b>	FALSE		
<b>Post-build variant value</b>	TRUE	<b>Post-build variant multiplicity</b>	-
<b>Value configuration class</b>	Post-Build	<b>Multiplicity configuration class</b>	-

## 1 Mcu driver

**Table 290 Specification for McuCPU2Trap2Enable (continued)**

<b>Origin</b>	IFX	<b>Scope</b>	LOCAL
<b>Dependency</b>	-		
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.		

### 1.3.1.66.13 McuCPU3ESR0TrapEnable

**Table 291 Specification for McuCPU3ESR0TrapEnable**

<b>Name</b>	McuCPU3ESR0TrapEnable		
<b>Description</b>	<p>Enables the trap request for CPU3 from the ESR0 source.</p> <p>TRUE: MCU CPU3 trap can be generated from the ESR0 source</p> <p>FALSE: MCU CPU3 trap cannot be generated from the ESR0 source</p> <p>If CPU3 is not available on the hardware, this parameter is disabled.</p>		
<b>Multiplicity</b>	1..1	<b>Type</b>	EcucBooleanParamDef
<b>Range</b>	<p>TRUE</p> <p>FALSE</p>		
<b>Default value</b>	FALSE		
<b>Post-build variant value</b>	TRUE	<b>Post-build variant multiplicity</b>	-
<b>Value configuration class</b>	Post-Build	<b>Multiplicity configuration class</b>	-
<b>Origin</b>	IFX	<b>Scope</b>	LOCAL
<b>Dependency</b>	-		
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.		

### 1.3.1.66.14 McuCPU3ESR1TrapEnable

**Table 292 Specification for McuCPU3ESR1TrapEnable**

<b>Name</b>	McuCPU3ESR1TrapEnable		
<b>Description</b>	<p>Enables the trap request for CPU3 from the ESR1 source.</p> <p>TRUE: MCU CPU3 trap can be generated from the ESR1 source</p> <p>FALSE: MCU CPU3 trap cannot be generated from the ESR1 source</p> <p>If CPU3 is not available on the hardware, this parameter is disabled.</p>		
<b>Multiplicity</b>	1..1	<b>Type</b>	EcucBooleanParamDef
<b>Range</b>	<p>TRUE</p> <p>FALSE</p>		

**1 Mcu driver**
**Table 292 Specification for McuCPU3ESR1TrapEnable (continued)**

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

**1.3.1.66.15 McuCPU3SMUTrapEnable**
**Table 293 Specification for McuCPU3SMUTrapEnable**

<b>Name</b>	McuCPU3SMUTrapEnable		
<b>Description</b>	<p>Enables the trap request for CPU3 from the SMU source.</p> <p>TRUE: MCU CPU3 trap can be generated from the SMU source</p> <p>FALSE: MCU CPU3 trap cannot be generated from the SMU source</p> <p>If CPU3 is not available on the hardware, this parameter is disabled.</p>		
<b>Multiplicity</b>	1..1	<b>Type</b>	EcucBooleanParamDef
<b>Range</b>	<p>TRUE</p> <p>FALSE</p>		
<b>Default value</b>	FALSE		
<b>Post-build variant value</b>	TRUE	<b>Post-build variant multiplicity</b>	-
<b>Value configuration class</b>	Post-Build	<b>Multiplicity configuration class</b>	-
<b>Origin</b>	IFX	<b>Scope</b>	LOCAL
<b>Dependency</b>	-		
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.		

**1.3.1.66.16 McuCPU3Trap2Enable**
**Table 294 Specification for McuCPU3Trap2Enable**

<b>Name</b>	McuCPU3Trap2Enable		
<b>Description</b>	<p>Enables the trap request for CPU3 from the TRAP2 source</p> <p>TRUE: MCU CPU3 trap can be generated from the TRAP2 source</p>		



## 1 Mcu driver

**Table 294 Specification for McuCPU3Trap2Enable (continued)**

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

### 1.3.1.66.17 McuCPU4ESR0TrapEnable

**Table 295 Specification for McuCPU4ESR0TrapEnable**

<b>Name</b>	McuCPU4ESR0TrapEnable		
<b>Description</b>	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.		
<b>Multiplicity</b>	1..1	<b>Type</b>	EcucBooleanParamDef
<b>Range</b>	TRUE FALSE		
<b>Default value</b>	FALSE		
<b>Post-build variant value</b>	TRUE	<b>Post-build variant multiplicity</b>	-
<b>Value configuration class</b>	Post-Build	<b>Multiplicity configuration class</b>	-
<b>Origin</b>	IFX	<b>Scope</b>	LOCAL
<b>Dependency</b>	-		
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.		

**1 Mcu driver**
**1.3.1.66.18 McuCPU4ESR1TrapEnable**
**Table 296 Specification for McuCPU4ESR1TrapEnable**

<b>Name</b>	McuCPU4ESR1TrapEnable		
<b>Description</b>	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.		
<b>Multiplicity</b>	1..1	<b>Type</b>	EcucBooleanParamDef
<b>Range</b>	TRUE FALSE		
<b>Default value</b>	FALSE		
<b>Post-build variant value</b>	TRUE	<b>Post-build variant multiplicity</b>	-
<b>Value configuration class</b>	Post-Build	<b>Multiplicity configuration class</b>	-
<b>Origin</b>	IFX	<b>Scope</b>	LOCAL
<b>Dependency</b>	-		
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.		

**1.3.1.66.19 McuCPU4SMUTrapEnable**
**Table 297 Specification for McuCPU4SMUTrapEnable**

<b>Name</b>	McuCPU4SMUTrapEnable		
<b>Description</b>	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.		
<b>Multiplicity</b>	1..1	<b>Type</b>	EcucBooleanParamDef
<b>Range</b>	TRUE FALSE		
<b>Default value</b>	FALSE		
<b>Post-build variant value</b>	TRUE	<b>Post-build variant multiplicity</b>	-
<b>Value configuration class</b>	Post-Build	<b>Multiplicity configuration class</b>	-

## 1 Mcu driver

**Table 297 Specification for McuCPU4SMUTrapEnable (continued)**

<b>Origin</b>	IFX	<b>Scope</b>	LOCAL
<b>Dependency</b>	-		
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.		

### 1.3.1.66.20 McuCPU4Trap2Enable

**Table 298 Specification for McuCPU4Trap2Enable**

<b>Name</b>	McuCPU4Trap2Enable		
<b>Description</b>	<p>Enables the trap request for CPU4 from the TRAP2 source.</p> <p>TRUE: MCU CPU4 trap can be generated from the TRAP2 source</p> <p>FALSE: MCU CPU4 trap cannot be generated from the TRAP2 source</p> <p>If CPU4 is not available on the hardware, this parameter is disabled.</p>		
<b>Multiplicity</b>	1..1	<b>Type</b>	EcucBooleanParamDef
<b>Range</b>	<p>TRUE</p> <p>FALSE</p>		
<b>Default value</b>	FALSE		
<b>Post-build variant value</b>	TRUE	<b>Post-build variant multiplicity</b>	-
<b>Value configuration class</b>	Post-Build	<b>Multiplicity configuration class</b>	-
<b>Origin</b>	IFX	<b>Scope</b>	LOCAL
<b>Dependency</b>	-		
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.		

### 1.3.1.66.21 McuCPU5ESR0TrapEnable

**Table 299 Specification for McuCPU5ESR0TrapEnable**

<b>Name</b>	McuCPU5ESR0TrapEnable		
<b>Description</b>	<p>Enables the trap request for CPU5 from the ESR0 source.</p> <p>TRUE: MCU CPU5 trap can be generated from the ESR0 source</p> <p>FALSE: MCU CPU5 trap cannot be generated from the ESR0 source</p> <p>If CPU5 is not available on the hardware, this parameter is disabled.</p>		
<b>Multiplicity</b>	1..1	<b>Type</b>	EcucBooleanParamDef
<b>Range</b>	<p>TRUE</p> <p>FALSE</p>		

**1 Mcu driver**
**Table 299 Specification for McuCPU5ESR0TrapEnable (continued)**

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

**1.3.1.66.22 McuCPU5ESR1TrapEnable**
**Table 300 Specification for McuCPU5ESR1TrapEnable**

<b>Name</b>	McuCPU5ESR1TrapEnable		
<b>Description</b>	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.		
<b>Multiplicity</b>	1..1	<b>Type</b>	EcucBooleanParamDef
<b>Range</b>	TRUE FALSE		
<b>Default value</b>	FALSE		
<b>Post-build variant value</b>	TRUE	<b>Post-build variant multiplicity</b>	-
<b>Value configuration class</b>	Post-Build	<b>Multiplicity configuration class</b>	-
<b>Origin</b>	IFX	<b>Scope</b>	LOCAL
<b>Dependency</b>	-		
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.		

**1.3.1.66.23 McuCPU5SMUTrapEnable**
**Table 301 Specification for McuCPU5SMUTrapEnable**

<b>Name</b>	McuCPU5SMUTrapEnable		
<b>Description</b>	Enables the trap request for CPU5 from the SMU source.  TRUE: MCU CPU5 trap can be generated from the SMU source		

**1 Mcu driver**
**Table 301 Specification for McuCPU5SMUTrapEnable (continued)**

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

**1.3.1.66.24 McuCPU5Trap2Enable**
**Table 302 Specification for McuCPU5Trap2Enable**

<b>Name</b>	McuCPU5Trap2Enable		
<b>Description</b>	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.		
<b>Multiplicity</b>	1..1	<b>Type</b>	EcucBooleanParamDef
<b>Range</b>	TRUE FALSE		
<b>Default value</b>	FALSE		
<b>Post-build variant value</b>	TRUE	<b>Post-build variant multiplicity</b>	-
<b>Value configuration class</b>	Post-Build	<b>Multiplicity configuration class</b>	-
<b>Origin</b>	IFX	<b>Scope</b>	LOCAL
<b>Dependency</b>	-		
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.		

## 1 Mcu driver

### 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 303 Specification for Mcu\_17\_Ccu6\_TimerChIntType**

<b>Syntax</b>	Mcu_17_Ccu6_TimerChIntType	
<b>Type</b>	Structure	
<b>File</b>	Mcu_17_TimerIp.h	
<b>Range</b>	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
<b>Description</b>	Data type for configuring interrupts in CCU6.	
<b>Source</b>	IFX	
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.	

#### 1.3.2.2 Mcu\_17\_Eru\_SrcIdentifierType

**Table 304 Specification for Mcu\_17\_Eru\_SrcIdentifierType**

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

#### 1.3.2.3 Mcu\_17\_Gpt12\_ClkPrescalarType

**Table 305 Specification for Mcu\_17\_Gpt12\_ClkPrescalarType**

<b>Syntax</b>	Mcu_17_Gpt12_ClkPrescalarType	
<b>Type</b>	uint8	
<b>File</b>	Mcu_17_TimerIp.h	
<b>Range</b>	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

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**Table 305 Specification for Mcu\_17\_Gpt12\_ClkPrescalarType (continued)**

	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
<b>Description</b>	This type indicates clock divider value for fGPT for a particular block.	
<b>Source</b>	IFX	
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.	

### 1.3.2.4 Mcu\_17\_Gpt12\_TimerBlockType

**Table 306 Specification for Mcu\_17\_Gpt12\_TimerBlockType**

<b>Syntax</b>	Mcu_17_Gpt12_TimerBlockType	
<b>Type</b>	uint8	
<b>File</b>	Mcu_17_TimerIp.h	
<b>Range</b>	MCU_GPT12_GPT1_BLOCK	GPT1 block
	MCU_GPT12_GPT2_BLOCK	GPT2 block
<b>Description</b>	This type indicates whether the GPT timer block is - GPT1 or GPT2.	
<b>Source</b>	IFX	
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.	

### 1.3.2.5 Mcu\_17\_Gtm\_AtomCh

**Table 307 Specification for Mcu\_17\_Gtm\_AtomCh**

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

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### 1.3.2.6 Mcu\_17\_Gtm\_AtomChArray

**Table 308 Specification for Mcu\_17\_Gtm\_AtomChArray**

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

### 1.3.2.7 Mcu\_17\_Gtm\_MappedPortTimerOutType

**Table 309 Specification for Mcu\_17\_Gtm\_MappedPortTimerOutType**

<b>Syntax</b>	Mcu_17_Gtm_MappedPortTimerOutType	
<b>Type</b>	uint8	
<b>File</b>	Mcu_17_TimerIp.h	
<b>Range</b>	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
	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
<b>Description</b>	Mcu_17_Gtm_MappedPortTimerOutType defines the column series to connect the GTM timers TOM/ATOM to port pins.	
<b>Source</b>	IFX	
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.	

### 1.3.2.8 Mcu\_17\_Gtm\_TimCh

**Table 310 Specification for Mcu\_17\_Gtm\_TimCh**

<b>Syntax</b>	Mcu_17_Gtm_TimCh
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**Table 310 Specification for Mcu\_17\_Gtm\_TimCh (continued)**

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

### 1.3.2.9 Mcu\_17\_Gtm\_TimChArray

**Table 311 Specification for Mcu\_17\_Gtm\_TimChArray**

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

### 1.3.2.10 Mcu\_17\_Gtm\_TimerEnableType

**Table 312 Specification for Mcu\_17\_Gtm\_TimerEnableType**

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

### 1.3.2.11 Mcu\_17\_Gtm\_TimerEnTriggerType

**Table 313 Specification for Mcu\_17\_Gtm\_TimerEnTriggerType**

<b>Syntax</b>	Mcu_17_Gtm_TimerEnTriggerType
<b>Type</b>	Enumeration

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**Table 313 Specification for Mcu\_17\_Gtm\_TimerEnTriggerType (continued)**

<b>File</b>	Mcu_17_TimerIp.h	
<b>Range</b>	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
<b>Description</b>	Data type for enabling channel on trigger.	
<b>Source</b>	IFX	
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.	

### 1.3.2.12 Mcu\_17\_Gtm\_TimerOutputEnableType

**Table 314 Specification for Mcu\_17\_Gtm\_TimerOutputEnableType**

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

### 1.3.2.13 Mcu\_17\_Gtm\_TimerOutputEnTriggerType

**Table 315 Specification for Mcu\_17\_Gtm\_TimerOutputEnTriggerType**

<b>Syntax</b>	Mcu_17_Gtm_TimerOutputEnTriggerType	
<b>Type</b>	Enumeration	
<b>File</b>	Mcu_17_TimerIp.h	
<b>Range</b>	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
<b>Description</b>	Data type for enabling the timer output on a trigger.	
<b>Source</b>	IFX	
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.	

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### 1.3.2.14 Mcu\_17\_Gtm\_TimerUpdateEnableType

**Table 316 Specification for Mcu\_17\_Gtm\_TimerUpdateEnableType**

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

### 1.3.2.15 Mcu\_17\_Gtm\_TomCh

**Table 317 Specification for Mcu\_17\_Gtm\_TomCh**

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

### 1.3.2.16 Mcu\_17\_Gtm\_TomChArray

**Table 318 Specification for Mcu\_17\_Gtm\_TomChArray**

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

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### 1.3.2.17 Mcu\_17\_Gtm\_TomTgc

**Table 319 Specification for Mcu\_17\_Gtm\_TomTgc**

<b>Syntax</b>	Mcu_17_Gtm_TomTgc	
<b>Type</b>	Structure	
<b>File</b>	Mcu_17_TimerIp.h	
<b>Range</b>	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
<b>Description</b>	Data type for TOM TGC.	
<b>Source</b>	IFX	
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.	

### 1.3.2.18 Mcu\_17\_Gtm\_TomTgcArray

**Table 320 Specification for Mcu\_17\_Gtm\_TomTgcArray**

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

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### 1.3.2.19 Mcu\_17\_Stm\_ComIntEnableType

**Table 321 Specification for Mcu\_17\_Stm\_ComIntEnableType**

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

### 1.3.2.20 Mcu\_17\_Stm\_StmCmplIdentifierType

**Table 322 Specification for Mcu\_17\_Stm\_StmCmplIdentifierType**

<b>Syntax</b>	Mcu_17_Stm_StmCmplIdentifierType	
<b>Type</b>	uint8	
<b>File</b>	Mcu_17_TimerIp.h	
<b>Range</b>	0-255	Range of Uint8
<b>Description</b>	Data type to identify STM comparator type.	
<b>Source</b>	IFX	
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.	

### 1.3.2.21 Mcu\_17\_Stm\_StmIdentifierType

**Table 323 Specification for Mcu\_17\_Stm\_StmIdentifierType**

<b>Syntax</b>	Mcu_17_Stm_StmIdentifierType	
<b>Type</b>	uint32	
<b>File</b>	Mcu_17_TimerIp.h	
<b>Range</b>	0-4294967295	Range of uint32
<b>Description</b>	Data type for STM timers.	
<b>Source</b>	IFX	
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.	

### 1.3.2.22 Mcu\_17\_Stm\_TimerConfigType

**Table 324 Specification for Mcu\_17\_Stm\_TimerConfigType**

<b>Syntax</b>	Mcu_17_Stm_TimerConfigType	
<b>Type</b>	Structure	

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**Table 324 Specification for Mcu\_17\_Stm\_TimerConfigType (continued)**

<b>File</b>	Mcu_17_TimerIp.h	
<b>Range</b>	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
<b>Description</b>	Configuration structure for STM configuration.	
<b>Source</b>	IFX	
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.	

### 1.3.2.23 Mcu\_17\_Timer\_CallbackFuncPtrType

**Table 325 Specification for Mcu\_17\_Timer\_CallbackFuncPtrType**

<b>Syntax</b>	Mcu_17_Timer_CallbackFuncPtrType	
<b>Type</b>	Pointer to a function of type void Function_Name ( const uint32 Channel, const uint32 Flags )	
<b>File</b>	Mcu_17_TimerIp.h	
<b>Description</b>	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.	
<b>Source</b>	IFX	
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.	

### 1.3.2.24 Mcu\_RamStateType

**Table 326 Specification for Mcu\_RamStateType**

<b>Syntax</b>	Mcu_RamStateType	
<b>Type</b>	Enumeration	
<b>File</b>	Mcu.h	
<b>Range</b>	0 - MCU_RAMSTATE_INVALID	Ram contents got corrupted in last power down.
	1 - MCU_RAMSTATE_VALID	Ram contents are valid after last power down.
<b>Description</b>	Return type for Mcu_GetRamState. MCU_RAMSTATE_INVALID: RAM contents got corrupted MCU_RAMSTATE_VALID: RAM contents are valid	
<b>Source</b>	AUTOSAR	

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**Table 326 Specification for Mcu\_RamStateType (continued)**

<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.
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### 1.3.2.25 Mcu\_CpuIdType

**Table 327 Specification for Mcu\_CpuIdType**

<b>Syntax</b>	Mcu_CpuIdType	
<b>Type</b>	Enumeration	
<b>File</b>	Mcu.h	
<b>Range</b>	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
<b>Description</b>	Identification for CPU core id.	
<b>Source</b>	IFX	
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.	

### 1.3.2.26 Mcu\_CpuModeType

**Table 328 Specification for Mcu\_CpuModeType**

<b>Syntax</b>	Mcu_CpuModeType	
<b>Type</b>	Enumeration	
<b>File</b>	Mcu.h	
<b>Range</b>	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
<b>Description</b>	Type to specify the current CPU power mode.	
<b>Source</b>	IFX	
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.	

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### 1.3.2.27 Mcu\_TrapRequestType

**Table 329 Specification for Mcu\_TrapRequestType**

<b>Syntax</b>	Mcu_TrapRequestType	
<b>Type</b>	Enumeration	
<b>File</b>	Mcu.h	
<b>Range</b>	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
<b>Description</b>	Type to specify the TRAP type.	
<b>Source</b>	IFX	
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.	

### 1.3.2.28 Mcu\_ConfigType

**Table 330 Specification for Mcu\_ConfigType**

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

### 1.3.2.29 Mcu\_PllStatusType

**Table 331 Specification for Mcu\_PllStatusType**

<b>Syntax</b>	Mcu_PllStatusType	
<b>Type</b>	Enumeration	
<b>File</b>	Mcu.h	
<b>Range</b>	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.



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**Table 331 Specification for Mcu\_PllStatusType (continued)**

<b>Description</b>	This is a status value returned by the Mcu_GetPllStatus function of the MCU module. This type provides the status of PLL lock.
<b>Source</b>	AUTOSAR
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.

### 1.3.2.30 Mcu\_ClockType

**Table 332 Specification for Mcu\_ClockType**

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

### 1.3.2.31 Mcu\_ResetType

**Table 333 Specification for Mcu\_ResetType**

<b>Syntax</b>	Mcu_ResetType	
<b>Type</b>	Enumeration	
<b>File</b>	Mcu.h	
<b>Range</b>	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
	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

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**Table 333 Specification for Mcu\_ResetType (continued)**

	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
<b>Description</b>	This type provides the reset reason types.	
<b>Source</b>	AUTOSAR	
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.	

**1.3.2.32 Mcu\_RawResetType**
**Table 334 Specification for Mcu\_RawResetType**

<b>Syntax</b>	Mcu_RawResetType	
<b>Type</b>	uint32	
<b>File</b>	Mcu.h	
<b>Range</b>	0 - 0xFFFFFFFF	
<b>Description</b>	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.	
<b>Source</b>	AUTOSAR	
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.	

**1.3.2.33 Mcu\_RamSectionType**
**Table 335 Specification for Mcu\_RamSectionType**

<b>Syntax</b>	Mcu_RamSectionType	
<b>Type</b>	uint32	
<b>File</b>	Mcu.h	
<b>Range</b>	0 - (Number of Ram sections - 1)	The range is dependent on the number of RAM sections provided in the configuration structure.

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**Table 335 Specification for Mcu\_RamSectionType (continued)**

<b>Description</b>	Identification for RAM section, which is configured in the configuration structure.
<b>Source</b>	AUTOSAR
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.

### 1.3.2.34 Mcu\_ModeType

**Table 336 Specification for Mcu\_ModeType**

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

### 1.3.2.35 Mcu\_17\_Gtm\_TimChConfigType

**Table 337 Specification for Mcu\_17\_Gtm\_TimChConfigType**

<b>Syntax</b>	Mcu_17_Gtm_TimChConfigType	
<b>Type</b>	Structure	
<b>File</b>	Mcu_17_TimerIp.h	
<b>Range</b>	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.
	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

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**Table 337 Specification for Mcu\_17\_Gtm\_TimChConfigType (continued)**

	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
<b>Description</b>	This structure holds the TIM channel specific parameters details required for the TIM channel initialization.
<b>Source</b>	IFX
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.

### 1.3.2.36 Mcu\_17\_Gtm\_TimerChIdentifierType

**Table 338 Specification for Mcu\_17\_Gtm\_TimerChIdentifierType**

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

### 1.3.2.37 Mcu\_17\_Gtm\_TimerOutType

**Table 339 Specification for Mcu\_17\_Gtm\_TimerOutType**

<b>Syntax</b>	Mcu_17_Gtm_TimerOutType	
<b>Type</b>	uint32	
<b>File</b>	Mcu_17_TimerIp.h	
<b>Range</b>	MCU_GTM_TIMER_TOM	Tom channel
	MCU_GTM_TIMER_ATOM	Atom channel
<b>Description</b>	This type identifies if the GTM output timer is either TOM or ATOM type.	
<b>Source</b>	IFX	
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.	

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### 1.3.2.38 Mcu\_17\_Gtm\_TomAtomChConfigType

**Table 340 Specification for Mcu\_17\_Gtm\_TomAtomChConfigType**

<b>Syntax</b>	Mcu_17_Gtm_TomAtomChConfigType	
<b>Type</b>	Structure	
<b>File</b>	Mcu_17_TimerIp.h	
<b>Range</b>	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
<b>Description</b>	This structure holds the TOM/ATOM channel-specific initialization parameters.	
<b>Source</b>	IFX	
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.	

### 1.3.2.39 Mcu\_17\_Gtm\_TimerStatusType

**Table 341 Specification for Mcu\_17\_Gtm\_TimerStatusType**

<b>Syntax</b>	Mcu_17_Gtm_TimerStatusType	
<b>Type</b>	uint8	
<b>File</b>	Mcu_17_TimerIp.h	
<b>Range</b>	MCU_GTM_TIMER_STOPPED	GTM timer channel is stopped
	MCU_GTM_TIMER_RUNNING	GTM timer channel is enabled/running
<b>Description</b>	This type informs the running state of the GTM timer channel.	
<b>Source</b>	IFX	
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.	

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### 1.3.2.40 Mcu\_17\_Ccu6\_ComparatorType

**Table 342 Specification for Mcu\_17\_Ccu6\_ComparatorType**

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

### 1.3.2.41 Mcu\_17\_Ccu6\_KernelIdentifierType

**Table 343 Specification for Mcu\_17\_Ccu6\_KernelIdentifierType**

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

### 1.3.2.42 Mcu\_17\_Ccu6\_TimerChIdentifierType

**Table 344 Specification for Mcu\_17\_Ccu6\_TimerChIdentifierType**

<b>Syntax</b>	Mcu_17_Ccu6_TimerChIdentifierType	
<b>Type</b>	uint32	
<b>File</b>	Mcu_17_TimerIp.h	
<b>Range</b>	0 - 0xFFFFFFF	
<b>Description</b>	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	
<b>Source</b>	IFX	

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**Table 344 Specification for Mcu\_17\_Ccu6\_TimerChIdentifierType (continued)**

<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.
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### 1.3.2.43 Mcu\_17\_Ccu6\_TimerConfigType

**Table 345 Specification for Mcu\_17\_Ccu6\_TimerConfigType**

<b>Syntax</b>	Mcu_17_Ccu6_TimerConfigType	
<b>Type</b>	Structure	
<b>File</b>	Mcu_17_TimerIp.h	
<b>Range</b>	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
	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

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**Table 345 Specification for Mcu\_17\_Ccu6\_TimerConfigType (continued)**

		contents [1:0] - CC6x Interrupt node pointer contents
<b>Description</b>	This structure holds the CCU6 timer channel specific initialization parameters.	
<b>Source</b>	IFX	
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.	

### 1.3.2.44 Mcu\_17\_Ccu6\_TimerType

**Table 346 Specification for Mcu\_17\_Ccu6\_TimerType**

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

### 1.3.2.45 Mcu\_17\_Gpt12\_TimerChIdentifierType

**Table 347 Specification for Mcu\_17\_Gpt12\_TimerChIdentifierType**

<b>Syntax</b>	Mcu_17_Gpt12_TimerChIdentifierType	
<b>Type</b>	uint32	
<b>File</b>	Mcu_17_TimerIp.h	
<b>Range</b>	MCU_GPT12_TIMER2	T2 timer of GPT12
	MCU_GPT12_TIMER3	T3 timer of GPT12
	MCU_GPT12_TIMER4	T4 timer of GPT12
	MCU_GPT12_TIMER5	T5 timer of GPT12
	MCU_GPT12_TIMER6	T6 timer of GPT12
<b>Description</b>	This type identifies the GPT12 timer used.	
<b>Source</b>	IFX	
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.	



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### 1.3.2.46 Mcu\_17\_Gpt12\_TimerConfigType

**Table 348 Specification for Mcu\_17\_Gpt12\_TimerConfigType**

<b>Syntax</b>	Mcu_17_Gpt12_TimerConfigType	
<b>Type</b>	Structure	
<b>File</b>	Mcu_17_TimerIp.h	
<b>Range</b>	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
<b>Description</b>	This structure holds the GPT12 timer channel-specific initialization parameters.	
<b>Source</b>	IFX	
<b>Autosar Version</b>	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 349 Specification for Mcu\_17\_Gtm\_ConnectTimerOutToPortPin API**

<b>Syntax</b>	<pre>void Mcu_17_Gtm_ConnectTimerOutToPortPin (     const uint16 Tout_IndexNumber,     const Mcu_17_Gtm_MappedPortTimerOutType TimerOutColumnSelect )</pre>	
<b>Service ID</b>	0	
<b>Sync/Async</b>	Synchronous	
<b>ASIL Level</b>	QM	
<b>Re-entrancy</b>	Non Reentrant	
<b>Parameters (in)</b>	Tout_IndexNumber TimerOutColumnSelect	Timer output index number Represents mapped column for the table GTM output to Port Connection in the hardware manual
<b>Parameters (out)</b>	-	-
<b>Parameters (in - out)</b>	-	-
<b>Return</b>	void	-

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**Table 349 Specification for Mcu\_17\_Gtm\_ConnectTimerOutToPortPin API (continued)**

<b>Description</b>	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.
<b>Source</b>	IFX
<b>Error handling</b>	-
<b>Configuration dependencies</b>	-
<b>User hints</b>	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.
<b>SFR accessed</b>	GTM_TOUTSEL(rw) <i>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.</i>
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.

### 1.3.3.2 Mcu\_GetRamState

**Table 350 Specification for Mcu\_GetRamState API**

<b>Syntax</b>	Mcu_RamStateType Mcu_GetRamState ( void )	
<b>Service ID</b>	0x0A	
<b>Sync/Async</b>	Synchronous	
<b>ASIL Level</b>	B	
<b>Re-entrancy</b>	Reentrant	
<b>Parameters (in)</b>	-	-
<b>Parameters (out)</b>	-	-
<b>Parameters (in - out)</b>	-	-
<b>Return</b>	Mcu_RamStateType	Enumeration depicting state of RAM after a power down cycle
<b>Description</b>	Mcu_GetRamState returns the RAM state. MCU_RAMSTATE_INVALID: RAM contents got corrupted MCU_RAMSTATE_VALID: RAM contents are valid	
<b>Source</b>	AUTOSAR	
<b>Error handling</b>	MCU_E_UNINIT	

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**Table 350**      **Specification for Mcu\_GetRamState API (continued)**

<b>Configuration dependencies</b>	-
<b>User hints</b>	None
<b>SFR accessed</b>	CPU_CORE_ID(r), SCU_RSTCON2(r) <i>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.</i>
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.

### 1.3.3.3 Mcu\_Init

**Table 351**      **Specification for Mcu\_Init API**

<b>Syntax</b>	<pre>void Mcu_Init (     const Mcu_ConfigType * const ConfigPtr )</pre>	
<b>Service ID</b>	0x00	
<b>Sync/Async</b>	Synchronous	
<b>ASIL Level</b>	B	
<b>Re-entrancy</b>	Non Reentrant	
<b>Parameters (in)</b>	ConfigPtr	Pointer to the MCU driver configuration set
<b>Parameters (out)</b>	-	-
<b>Parameters (in - out)</b>	-	-
<b>Return</b>	void	-
<b>Description</b>	<p>Mcu_Init initializes the MCU driver. Mcu_Init initializes the power modes, reset, trap and timer global configurations registers.</p> <p>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.</p>	
<b>Source</b>	AUTOSAR	
<b>Error handling</b>	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	
<b>Configuration dependencies</b>	McuClearColdResetStatusApi	
<b>User hints</b>	-	

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**Table 351 Specification for Mcu\_Init API (continued)**

<b>SFR accessed</b>	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(rw), GPT12_T6CON(rw), 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_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)  <i>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.</i>
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.

**1.3.3.4 Mcu\_InitRamSection**
**Table 352 Specification for Mcu\_InitRamSection API**

<b>Syntax</b>	<pre>Std_ReturnType Mcu_InitRamSection (     const Mcu_RamSectionType RamSection )</pre>	
<b>Service ID</b>	0x01	
<b>Sync/Async</b>	Synchronous	
<b>ASIL Level</b>	B	
<b>Re-entrancy</b>	Reentrant for other RAM sections	
<b>Parameters (in)</b>	RamSection	Selects RAM memory section provided in the configuration set
<b>Parameters (out)</b>	-	-
<b>Parameters (in - out)</b>	-	-
<b>Return</b>	Std_ReturnType	E_OK – RAM successfully initialized

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**Table 352 Specification for Mcu\_InitRamSection API (continued)**

	E_NOT_OK – RAM initialization failed
<b>Description</b>	Mcu_InitRamSection initializes the specified RAM section.
<b>Source</b>	AUTOSAR
<b>Error handling</b>	MCU_E_PARAM_RAMSECTION , MCU_E_UNINIT
<b>Configuration dependencies</b>	-
<b>User hints</b>	Protection of the RAM initialization through MPU protection for the RAM address passed in configuration shall be responsibility of the user.
<b>SFR accessed</b>	-
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.

### 1.3.3.5 Mcu\_InitClock

**Table 353 Specification for Mcu\_InitClock API**

<b>Syntax</b>	<pre>Std_ReturnType Mcu_InitClock (     const Mcu_ClockType ClockSetting )</pre>	
<b>Service ID</b>	0x02	
<b>Sync/Async</b>	Synchronous	
<b>ASIL Level</b>	B	
<b>Re-entrancy</b>	Non re-entrant	
<b>Parameters (in)</b>	ClockSetting	Clock setting ID
<b>Parameters (out)</b>	-	-
<b>Parameters (in - out)</b>	-	-
<b>Return</b>	Std_ReturnType	E_OK: Clock successfully initialized E_NOT_OK: Clock not initialized
<b>Description</b>	Mcu_InitClock initializes the system PLL, peripheral PLL and other MCU specific clock options (peripheral clock selection and dividers).	
<b>Source</b>	AUTOSAR	
<b>Error handling</b>	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	
<b>Configuration dependencies</b>	McuInitClock	

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**Table 353**      **Specification for Mcu\_InitClock API (continued)**

<b>User hints</b>	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.
<b>SFR accessed</b>	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)  <i>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.</i>
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.

### 1.3.3.6 Mcu\_DistributePllClock

**Table 354**      **Specification for Mcu\_DistributePllClock API**

<b>Syntax</b>	Std_ReturnType Mcu_DistributePllClock ( void )	
<b>Service ID</b>	0x03	
<b>Sync/Async</b>	Synchronous	
<b>ASIL Level</b>	B	
<b>Re-entrancy</b>	Non Reentrant	
<b>Parameters (in)</b>	-	-
<b>Parameters (out)</b>	-	-
<b>Parameters (in - out)</b>	-	-
<b>Return</b>	Std_ReturnType	E_OK: Clock distribution successful. E_NOT_OK: Clock distribution unsuccessful.
<b>Description</b>	Mcu_DistributePllClock switches the clock source to PLL output.	
<b>Source</b>	AUTOSAR	
<b>Error handling</b>	MCU_E_UNINIT, MCU_E_PLL_NOT_LOCKED, MCU_E_SYSTEM_PLL_TIMEOUT_ERR, MCU_E_CCUCON_UPDATE_ERR, MCU_E_CORE_MISMATCH	

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**Table 354**      **Specification for Mcu\_DistributePllClock API (continued)**

<b>Configuration dependencies</b>	McuNoPll
<b>User hints</b>	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.
<b>SFR accessed</b>	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)  <i>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.</i>
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.

### 1.3.3.7 Mcu\_GetPllStatus

**Table 355**      **Specification for Mcu\_GetPllStatus API**

<b>Syntax</b>	Mcu_PllStatusType Mcu_GetPllStatus ( void )	
<b>Service ID</b>	0x04	
<b>Sync/Async</b>	Synchronous	
<b>ASIL Level</b>	B	
<b>Re-entrancy</b>	Reentrant	
<b>Parameters (in)</b>	-	-
<b>Parameters (out)</b>	-	-
<b>Parameters (in - out)</b>	-	-
<b>Return</b>	Mcu_PllStatusType	A 32-bit enumerator denoting status of PLL
<b>Description</b>	Mcu_GetPllStatus provides the lock status of system and peripheral PLL.	
<b>Source</b>	AUTOSAR	
<b>Error handling</b>	MCU_E_UNINIT	
<b>Configuration dependencies</b>	-	
<b>User hints</b>	-	

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**Table 355**      **Specification for Mcu\_GetPllStatus API (continued)**

<b>SFR accessed</b>	SCU_PERPLLSTAT(r), SCU_SYSPPLLSTAT(r) <i>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.</i>
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.

### 1.3.3.8 Mcu\_GetResetReason

**Table 356**      **Specification for Mcu\_GetResetReason API**

<b>Syntax</b>	Mcu_ResetType    Mcu_GetResetReason ( void )	
<b>Service ID</b>	0x05	
<b>Sync/Async</b>	Synchronous	
<b>ASIL Level</b>	B	
<b>Re-entrancy</b>	Reentrant	
<b>Parameters (in)</b>	-	-
<b>Parameters (out)</b>	-	-
<b>Parameters (in - out)</b>	-	-
<b>Return</b>	Mcu_ResetType	A 32-bit enumerator denoting the cause of reset
<b>Description</b>	Mcu_GetResetReason reads the reset type from the hardware.	
<b>Source</b>	AUTOSAR	
<b>Error handling</b>	MCU_E_UNINIT	
<b>Configuration dependencies</b>	-	
<b>User hints</b>	-	
<b>SFR accessed</b>	-	
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.	



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### 1.3.3.9 Mcu\_GetResetRawValue

**Table 357 Specification for Mcu\_GetResetRawValue API**

<b>Syntax</b>	<pre>Mcu_RawResetType Mcu_GetResetRawValue (     void )</pre>	
<b>Service ID</b>	0x06	
<b>Sync/Async</b>	Synchronous	
<b>ASIL Level</b>	B	
<b>Re-entrancy</b>	Reentrant	
<b>Parameters (in)</b>	-	-
<b>Parameters (out)</b>	-	-
<b>Parameters (in - out)</b>	-	-
<b>Return</b>	Mcu_RawResetType	32-bit unsigned integer denoting raw reset value
<b>Description</b>	Mcu_GetResetRawValue reads the reset type from the hardware register.	
<b>Source</b>	AUTOSAR	
<b>Error handling</b>	MCU_E_UNINIT	
<b>Configuration dependencies</b>	-	
<b>User hints</b>	-	
<b>SFR accessed</b>	-	
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.	

### 1.3.3.10 Mcu\_PerformReset

**Table 358 Specification for Mcu\_PerformReset API**

<b>Syntax</b>	<pre>void Mcu_PerformReset (     void )</pre>	
<b>Service ID</b>	0x07	
<b>Sync/Async</b>	Synchronous	
<b>ASIL Level</b>	B	
<b>Re-entrancy</b>	Non Reentrant	
<b>Parameters (in)</b>	-	-

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**Table 358**      **Specification for Mcu\_PerformReset API (continued)**

<b>Parameters (out)</b>	-	-
<b>Parameters (in - out)</b>	-	-
<b>Return</b>	void	-
<b>Description</b>	Mcu_PerformReset performs a microcontroller reset (software reset).	
<b>Source</b>	AUTOSAR	
<b>Error handling</b>	MCU_E_UNINIT, MCU_E_SW_RESET_FAILED	
<b>Configuration dependencies</b>	McuPerformResetApi	
<b>User hints</b>	-	
<b>SFR accessed</b>	SCU_CCUCON0(r), SCU_EICON0(rw), SCU_OSCCON(r), SCU_SWRSTCON(rw), SCU_SYSPLLCON0(r), SCU_SYSPLLCON1(r), STM_TIM0(r) <i>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.</i>	
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.	

### 1.3.3.11 Mcu\_SetMode

**Table 359**      **Specification for Mcu\_SetMode API**

<b>Syntax</b>	<pre>void Mcu_SetMode (     const Mcu_ModeType McuMode )</pre>	
<b>Service ID</b>	0x08	
<b>Sync/Async</b>	Synchronous	
<b>ASIL Level</b>	B	
<b>Re-entrancy</b>	Concurrency Safe for IDLE mode transition requests and non re-entrant for other transitions	
<b>Parameters (in)</b>	McuMode	Set different MCU power modes configured in the configuration set
<b>Parameters (out)</b>	-	-
<b>Parameters (in - out)</b>	-	-
<b>Return</b>	void	-
<b>Description</b>	Mcu_SetMode activates the MCU power modes. The 3 power modes supported are Idle, Sleep and StandBy.	

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**Table 359**      **Specification for Mcu\_SetMode API (continued)**

	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.	
<b>Source</b>	AUTOSAR	
<b>Error handling</b>	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	
<b>Configuration dependencies</b>	-	
<b>User hints</b>	<p>The API Mcu_SetMode assumes that all interrupts are disabled prior to the call of API by the calling instance.</p> <p>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.</p>	
<b>SFR accessed</b>	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) <p><i>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.</i></p>	
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.	

### 1.3.3.12 Mcu\_GetVersionInfo

**Table 360**      **Specification for Mcu\_GetVersionInfo API**

<b>Syntax</b>	<pre>void Mcu_GetVersionInfo (     const Std_VersionInfoType * const versioninfo )</pre>	
<b>Service ID</b>	0x09	
<b>Sync/Async</b>	Synchronous	
<b>ASIL Level</b>	B	
<b>Re-entrancy</b>	Reentrant	
<b>Parameters (in)</b>	versioninfo	Pointer to where to store the version information of this module.
<b>Parameters (out)</b>	-	-

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**Table 360**      **Specification for Mcu\_GetVersionInfo API (continued)**

<b>Parameters (in - out)</b>	-	-
<b>Return</b>	void	-
<b>Description</b>	Mcu_GetVersionInfo returns the version information of this module.	
<b>Source</b>	AUTOSAR	
<b>Error handling</b>	MCU_E_PARAM_POINTER	
<b>Configuration dependencies</b>	McuVersionInfoApi	
<b>User hints</b>	-	
<b>SFR accessed</b>	-	
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.	

### 1.3.3.13 Mcu\_ClearColdResetStatus

**Table 361**      **Specification for Mcu\_ClearColdResetStatus API**

<b>Syntax</b>	<pre>void Mcu_ClearColdResetStatus (     void )</pre>	
<b>Service ID</b>	0x50	
<b>Sync/Async</b>	Synchronous	
<b>ASIL Level</b>	B	
<b>Re-entrancy</b>	Non-reentrant	
<b>Parameters (in)</b>	-	-
<b>Parameters (out)</b>	-	-
<b>Parameters (in - out)</b>	-	-
<b>Return</b>	void	-
<b>Description</b>	Mcu_ClearColdResetStatus is used to clear the cause of the cold reset.	
<b>Source</b>	IFX	
<b>Error handling</b>	MCU_E_UNINIT	
<b>Configuration dependencies</b>	McuClearColdResetStatusApi	
<b>User hints</b>	-	

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**Table 361**      **Specification for Mcu\_ClearColdResetStatus API (continued)**

<b>SFR accessed</b>	SCU_CCUCON0(r), SCU_EICON0(rw), SCU_OSCCON(r), SCU_RSTCON2(rw), SCU_SYSPLLCON0(r), SCU_SYSPLLCON1(r), STM_TIM0(r)  <i>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.</i>
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.

### 1.3.3.14 Mcu\_DeInit

**Table 362**      **Specification for Mcu\_DeInit API**

<b>Syntax</b>	<pre>void Mcu_DeInit (     void )</pre>	
<b>Service ID</b>	0x51	
<b>Sync/Async</b>	Synchronous	
<b>ASIL Level</b>	B	
<b>Re-entrancy</b>	Non-reentrant	
<b>Parameters (in)</b>	-	-
<b>Parameters (out)</b>	-	-
<b>Parameters (in - out)</b>	-	-
<b>Return</b>	void	-
<b>Description</b>	<p>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.</p> <p>Mcu_DeInit also de-initializes the module clock for GTM, CCU6, GPT12 and Converter control block.</p> <p>Mcu_DeInit also resets all the global variables to uninitialized state.</p>	
<b>Source</b>	IFX	
<b>Error handling</b>	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	
<b>Configuration dependencies</b>	MculfxDeInitApi	
<b>User hints</b>	-	
<b>SFR accessed</b>	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),	

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**Table 362 Specification for Mcu\_DeInit API (continued)**

	CPU_TPS_EXTIM_EXIT_LVAL(w), GPT12_CLC(rw), 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_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)  <i>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.</i>
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.

**1.3.3.15 Mcu\_GetCpuIdleModeInitiator**
**Table 363 Specification for Mcu\_GetCpuIdleModeInitiator API**

<b>Syntax</b>	uint32 Mcu_GetCpuIdleModeInitiator ( void ) 	
<b>Service ID</b>	0x52	
<b>Sync/Async</b>	Synchronous	
<b>ASIL Level</b>	B	
<b>Re-entrancy</b>	Reentrant	
<b>Parameters (in)</b>	-	-
<b>Parameters (out)</b>	-	-
<b>Parameters (in - out)</b>	-	-
<b>Return</b>	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

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**Table 363 Specification for Mcu\_GetCpuIdleModeInitiator API (continued)**

		7U in case idle mode is not configured
<b>Description</b>	The CPU responsible for initiating the idle mode entry of other CPUs is returned by the interface.	
<b>Source</b>	IFX	
<b>Error handling</b>	MCU_E_UNINIT	
<b>Configuration dependencies</b>	MculfxLpmApi	
<b>User hints</b>	-	
<b>SFR accessed</b>	SCU_PMSWCR1(r) <i>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.</i>	
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.	

### 1.3.3.16 Mcu\_GetCpuState

**Table 364 Specification for Mcu\_GetCpuState API**

<b>Syntax</b>	<pre> Mcu_CpuModeType Mcu_GetCpuState (     const Mcu_CpuIdType CpuId )           </pre>	
<b>Service ID</b>	0x53	
<b>Sync/Async</b>	Synchronous	
<b>ASIL Level</b>	B	
<b>Re-entrancy</b>	Reentrant	
<b>Parameters (in)</b>	CpuId	CpuId CPU Identifier
<b>Parameters (out)</b>	-	-
<b>Parameters (in - out)</b>	-	-
<b>Return</b>	Mcu_CpuModeType	Cpu state for the input Cpu ID
<b>Description</b>	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.	
<b>Source</b>	IFX	
<b>Error handling</b>	MCU_E_UNINIT, MCU_E_PARAM_CPUID	
<b>Configuration dependencies</b>	MculfxLpmApi	

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**Table 364**      **Specification for Mcu\_GetCpuState API (continued)**

<b>User hints</b>	-
<b>SFR accessed</b>	SCU_PMCSR0(r), SCU_PMCSR1(r), SCU_PMCSR2(r), SCU_PMCSR3(r), SCU_PMCSR4(r), SCU_PMCSR5(r) <i>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.</i>
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.

### 1.3.3.17 Mcu\_GetWakeupCause

**Table 365**      **Specification for Mcu\_GetWakeupCause API**

<b>Syntax</b>	uint32 Mcu_GetWakeupCause ( void )	
<b>Service ID</b>	0x54	
<b>Sync/Async</b>	Synchronous	
<b>ASIL Level</b>	B	
<b>Re-entrancy</b>	Reentrant	
<b>Parameters (in)</b>	-	-
<b>Parameters (out)</b>	-	-
<b>Parameters (in - out)</b>	-	-
<b>Return</b>	uint32	Standby mode wakeup cause
<b>Description</b>	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.	
<b>Source</b>	IFX	
<b>Error handling</b>	MCU_E_UNINIT	
<b>Configuration dependencies</b>	MculfxLpmApi	
<b>User hints</b>	-	
<b>SFR accessed</b>	PMS_PMSWSTAT2(r) <i>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.</i>	



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**Table 365**      **Specification for Mcu\_GetWakeupCause API (continued)**

<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.
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### 1.3.3.18 Mcu\_ClearWakeupCause

**Table 366**      **Specification for Mcu\_ClearWakeupCause API**

<b>Syntax</b>	<pre>void Mcu_ClearWakeupCause (     const uint32 WakeupCause )</pre>	
<b>Service ID</b>	0x55	
<b>Sync/Async</b>	Synchronous	
<b>ASIL Level</b>	B	
<b>Re-entrancy</b>	Reentrant	
<b>Parameters (in)</b>	WakeupCause	Wakeup causes to be cleared by this API
<b>Parameters (out)</b>	-	-
<b>Parameters (in - out)</b>	-	-
<b>Return</b>	void	-
<b>Description</b>	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.	
<b>Source</b>	IFX	
<b>Error handling</b>	MCU_E_UNINIT	
<b>Configuration dependencies</b>	MculfxLpmApi	
<b>User hints</b>	User should ensure that the wake-up cause(s) which triggered wakeup during STANDBY, shall be cleared explicitly before next STANDBY entry.	
<b>SFR accessed</b>	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) <i>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.</i>	
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.	

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### 1.3.3.19 Mcu\_GetTrapCause

**Table 367 Specification for Mcu\_GetTrapCause API**

<b>Syntax</b>	<pre>uint32 Mcu_GetTrapCause (     void )</pre>	
<b>Service ID</b>	0x56	
<b>Sync/Async</b>	Synchronous	
<b>ASIL Level</b>	B	
<b>Re-entrancy</b>	Reentrant	
<b>Parameters (in)</b>	-	-
<b>Parameters (out)</b>	-	-
<b>Parameters (in - out)</b>	-	-
<b>Return</b>	uint32	Returns the reason for the occurrence of the trap
<b>Description</b>	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.	
<b>Source</b>	IFX	
<b>Error handling</b>	MCU_E_UNINIT	
<b>Configuration dependencies</b>	MculfxTrapApi	
<b>User hints</b>	-	
<b>SFR accessed</b>	SCU_TRAPSTAT(r) <i>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.</i>	
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.	

### 1.3.3.20 Mcu\_SetTrapRequest

**Table 368 Specification for Mcu\_SetTrapRequest API**

<b>Syntax</b>	<pre>void Mcu_SetTrapRequest (     const Mcu_TrapRequestType TrapRequestId )</pre>	
<b>Service ID</b>	0x57	
<b>Sync/Async</b>	Synchronous	

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**Table 368 Specification for Mcu\_SetTrapRequest API (continued)**

<b>ASIL Level</b>	B	
<b>Re-entrancy</b>	Reentrant for other Trap Ids	
<b>Parameters (in)</b>	TrapRequestId	Type of the trap request to be set
<b>Parameters (out)</b>	-	-
<b>Parameters (in - out)</b>	-	-
<b>Return</b>	void	-
<b>Description</b>	Mcu_SetTrapRequest is used to manually assert the specified trap request.	
<b>Source</b>	IFX	
<b>Error handling</b>	MCU_E_UNINIT, MCU_E_PARAM_TRAPID	
<b>Configuration dependencies</b>	MculfxTrapApi	
<b>User hints</b>	-	
<b>SFR accessed</b>	SCU_CCUCON0(r), SCU_EICON0(rw), SCU_OSCCON(r), SCU_SYSPLLCON0(r), SCU_SYSPLLCON1(r), SCU_TRAPSET(w), STM_TIM0(r) <i>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.</i>	
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.	

### 1.3.3.21 Mcu\_ClearTrapRequest

**Table 369 Specification for Mcu\_ClearTrapRequest API**

<b>Syntax</b>	<pre>void Mcu_ClearTrapRequest (     const Mcu_TrapRequestType TrapRequestId )</pre>	
<b>Service ID</b>	0x58	
<b>Sync/Async</b>	Synchronous	
<b>ASIL Level</b>	B	
<b>Re-entrancy</b>	Reentrant for other Trap IDs	
<b>Parameters (in)</b>	TrapRequestId	Type of the trap request to be cleared
<b>Parameters (out)</b>	-	-
<b>Parameters (in - out)</b>	-	-

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**Table 369 Specification for Mcu\_ClearTrapRequest API (continued)**

<b>Return</b>	void	-
<b>Description</b>	Mcu_ClearTrapRequest is used to clear the trap status currently set.	
<b>Source</b>	IFX	
<b>Error handling</b>	MCU_E_UNINIT, MCU_E_PARAM_TRAPID	
<b>Configuration dependencies</b>	MculfxTrapApi	
<b>User hints</b>	-	
<b>SFR accessed</b>	SCU_TRAPCLR(w) <i>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.</i>	
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.	

### 1.3.3.22 Mcu\_UpdateCpuCcuconReg

**Table 370 Specification for Mcu\_UpdateCpuCcuconReg API**

<b>Syntax</b>	<pre>void Mcu_UpdateCpuCcuconReg (     const Mcu_CpuIdType CpuId,     const uint8 DivVal,     const uint8 Delay )</pre>	
<b>Service ID</b>	0x59	
<b>Sync/Async</b>	Synchronous	
<b>ASIL Level</b>	B	
<b>Re-entrancy</b>	Reentrant for other cores	
<b>Parameters (in)</b>	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
<b>Parameters (out)</b>	-	-
<b>Parameters (in - out)</b>	-	-
<b>Return</b>	void	-
<b>Description</b>	Mcu_UpdateCpuCcuconReg is used to update the CCUCONx divider value of CPUx to the user provided value.	
<b>Source</b>	IFX	
<b>Error handling</b>	MCU_E_UNINIT, MCU_E_PARAM_CPUID, MCU_E_PARAM_DIV_VAL	

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**Table 370**      **Specification for Mcu\_UpdateCpuCcuconReg API (continued)**

<b>Configuration dependencies</b>	MculfxCpuCcuconApi
<b>User hints</b>	-
<b>SFR accessed</b>	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) <i>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.</i>
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.

### 1.3.3.23 Mcu\_InitCheck

**Table 371**      **Specification for Mcu\_InitCheck API**

<b>Syntax</b>	Std_ReturnType Mcu_InitCheck ( const Mcu_ConfigType * const ConfigPtr )	
<b>Service ID</b>	0x5A	
<b>Sync/Async</b>	Synchronous	
<b>ASIL Level</b>	B	
<b>Re-entrancy</b>	Non-reentrant	
<b>Parameters (in)</b>	ConfigPtr	Pointer to MCU driver configuration set.
<b>Parameters (out)</b>	-	-
<b>Parameters (in - out)</b>	-	-
<b>Return</b>	Std_ReturnType	E_OK: Initcheck is successful E_NOT_OK: Initcheck failed
<b>Description</b>	Mcu_InitCheck verifies the initialization done by the MCU driver in Mcu_Init(), Mcu_InitClock() and Mcu_DistributePllClock() APIs.	
<b>Source</b>	IFX	
<b>Error handling</b>	-	
<b>Configuration dependencies</b>	MculnitCheckApi	
<b>User hints</b>	None	

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**Table 371 Specification for Mcu\_InitCheck API (continued)**

<b>SFR accessed</b>	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_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)  <i>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.</i>
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.

**1.3.3.24 Mcu\_17\_Gtm\_AtomChannelInit**
**Table 372 Specification for Mcu\_17\_Gtm\_AtomChannelInit API**

<b>Syntax</b>	<pre>void Mcu_17_Gtm_AtomChannelInit (     const Mcu_17_Gtm_TomAtomChConfigType * const ConfigPtr )</pre>	
<b>Service ID</b>	0x64	
<b>Sync/Async</b>	Synchronous	
<b>ASIL Level</b>	B	
<b>Re-entrancy</b>	Reentrant for other channels	
<b>Parameters (in)</b>	ConfigPtr	Pointer to the configuration data of an ATOM channel
<b>Parameters (out)</b>	-	-
<b>Parameters (in - out)</b>	-	-
<b>Return</b>	void	-

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**Table 372**      **Specification for Mcu\_17\_Gtm\_AtomChannelInit API (continued)**

<b>Description</b>	Mcu_17_Gtm_AtomChannelInit configures an instance of an ATOM channel. User of an ATOM channel invokes this interface at the time of initialization.
<b>Source</b>	IFX
<b>Error handling</b>	-
<b>Configuration dependencies</b>	-
<b>User hints</b>	-
<b>SFR accessed</b>	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) <i>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.</i>
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.

### 1.3.3.25 Mcu\_17\_Gtm\_AtomChInitCheck

**Table 373**      **Specification for Mcu\_17\_Gtm\_AtomChInitCheck API**

<b>Syntax</b>	<pre>Std_ReturnType Mcu_17_Gtm_AtomChInitCheck (     const Mcu_17_Gtm_TomAtomChConfigType * const ConfigPtr )</pre>	
<b>Service ID</b>	0x7B	
<b>Sync/Async</b>	Synchronous	
<b>ASIL Level</b>	B	
<b>Re-entrancy</b>	Non-reentrant	
<b>Parameters (in)</b>	ConfigPtr	Configuration of the ATOM channel that is to be verified
<b>Parameters (out)</b>	-	-
<b>Parameters (in - out)</b>	-	-
<b>Return</b>	Std_ReturnType	E_OK: ATOM initcheck is successful E_NOT_OK: ATOM initcheck failed
<b>Description</b>	Mcu_17_Gtm_AtomChInitCheck verifies the initialization done by the MCU driver in the Mcu_17_Gtm_AtomChannelInit() API for the input ATOM channel.	
<b>Source</b>	IFX	
<b>Error handling</b>	-	

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**Table 373**      **Specification for Mcu\_17\_Gtm\_AtomChInitCheck API (continued)**

<b>Configuration dependencies</b>	-
<b>User hints</b>	None
<b>SFR accessed</b>	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) <i>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.</i>
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.

### 1.3.3.26 Mcu\_17\_Gtm\_AtomChannelDeInit

**Table 374**      **Specification for Mcu\_17\_Gtm\_AtomChannelDeInit API**

<b>Syntax</b>	<pre>void Mcu_17_Gtm_AtomChannelDeInit (     const uint8 Module,     const uint8 Channel )</pre>	
<b>Service ID</b>	0x66	
<b>Sync/Async</b>	Synchronous	
<b>ASIL Level</b>	B	
<b>Re-entrancy</b>	Reentrant for other channels	
<b>Parameters (in)</b>	Module Channel	ATOM module number ATOM channel number
<b>Parameters (out)</b>	-	-
<b>Parameters (in - out)</b>	-	-
<b>Return</b>	void	-
<b>Description</b>	Mcu_17_Gtm_AtomChannelDeInit resets an ATOM channel to reset values.	
<b>Source</b>	IFX	
<b>Error handling</b>	-	
<b>Configuration dependencies</b>	-	
<b>User hints</b>	-	
<b>SFR accessed</b>	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)	



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**Table 374**      **Specification for Mcu\_17\_Gtm\_AtomChannelDeInit API (continued)**

	<i>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.</i>
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.

### 1.3.3.27 Mcu\_17\_Gtm\_AtomChannelEnable

**Table 375**      **Specification for Mcu\_17\_Gtm\_AtomChannelEnable API**

<b>Syntax</b>	<pre>void Mcu_17_Gtm_AtomChannelEnable (     const uint8 Module,     const uint8 Channel,     const Mcu_17_Gtm_TimerOutputEnableType TimerOutputEn )</pre>	
<b>Service ID</b>	0x6A	
<b>Sync/Async</b>	Synchronous	
<b>ASIL Level</b>	B	
<b>Re-entrancy</b>	Reentrant for other channels	
<b>Parameters (in)</b>	Module	ATOM module number
	Channel	ATOM channel number
	TimerOutputEn	ATOM output enable configuration
<b>Parameters (out)</b>	-	-
<b>Parameters (in - out)</b>	-	-
<b>Return</b>	void	-
<b>Description</b>	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.	
<b>Source</b>	IFX	
<b>Error handling</b>	-	
<b>Configuration dependencies</b>	-	
<b>User hints</b>	-	
<b>SFR accessed</b>	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)  <i>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.</i>	

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**Table 375**      **Specification for Mcu\_17\_Gtm\_AtomChannelEnable API (continued)**

<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.
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### 1.3.3.28 Mcu\_17\_Gtm\_AtomChannelDisable

**Table 376**      **Specification for Mcu\_17\_Gtm\_AtomChannelDisable API**

<b>Syntax</b>	<pre>void Mcu_17_Gtm_AtomChannelDisable (     const uint8 Module,     const uint8 Channel )</pre>	
<b>Service ID</b>	0x6B	
<b>Sync/Async</b>	Synchronous	
<b>ASIL Level</b>	B	
<b>Re-entrancy</b>	Reentrant for other channels	
<b>Parameters (in)</b>	Module Channel	ATOM module number ATOM channel number
<b>Parameters (out)</b>	-	-
<b>Parameters (in - out)</b>	-	-
<b>Return</b>	void	-
<b>Description</b>	Mcu_17_Gtm_AtomChannelDisable stops the specified timer. The timer output is unconditionally disabled.	
<b>Source</b>	IFX	
<b>Error handling</b>	-	
<b>Configuration dependencies</b>	-	
<b>User hints</b>	-	
<b>SFR accessed</b>	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)  <i>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.</i>	
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.	

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### 1.3.3.29 Mcu\_17\_Gtm\_IsAtomChannelEnabled

**Table 377 Specification for Mcu\_17\_Gtm\_IsAtomChannelEnabled API**

<b>Syntax</b>	<pre> Mcu_17_Gtm_TimerStatusType Mcu_17_Gtm_IsAtomChannelEnabled (     const uint8 Module,     const uint8 Channel ) </pre>	
<b>Service ID</b>	0x6F	
<b>Sync/Async</b>	Synchronous	
<b>ASIL Level</b>	B	
<b>Re-entrancy</b>	Reentrant	
<b>Parameters (in)</b>	Module Channel	ATOM module number ATOM channel number
<b>Parameters (out)</b>	-	-
<b>Parameters (in - out)</b>	-	-
<b>Return</b>	Mcu_17_Gtm_TimerStatus Type	MCU_GTM_TIMER_RUNNING : Timer is running. MCU_GTM_TIMER_STOPPED : Timer is stopped
<b>Description</b>	Mcu_17_Gtm_IsAtomChannelEnabled confirms whether or not the specified timer slice is running.	
<b>Source</b>	IFX	
<b>Error handling</b>	-	
<b>Configuration dependencies</b>	-	
<b>User hints</b>	-	
<b>SFR accessed</b>	GTM_ATOM_AGC_ENDIS_STAT(r) <i>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.</i>	
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.	

### 1.3.3.30 Mcu\_17\_Gtm\_AtomChannelShadowTransfer

**Table 378 Specification for Mcu\_17\_Gtm\_AtomChannelShadowTransfer API**

<b>Syntax</b>	<pre> void Mcu_17_Gtm_AtomChannelShadowTransfer (     const uint8 Module,     const uint8 Channel ) </pre>
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**Table 378**      **Specification for Mcu\_17\_Gtm\_AtomChannelShadowTransfer API (continued)**

<b>Service ID</b>	0x65	
<b>Sync/Async</b>	Synchronous	
<b>ASIL Level</b>	B	
<b>Re-entrancy</b>	Reentrant	
<b>Parameters (in)</b>	Module Channel	ATOM module number ATOM channel number
<b>Parameters (out)</b>	-	-
<b>Parameters (in - out)</b>	-	-
<b>Return</b>	void	-
<b>Description</b>	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.	
<b>Source</b>	IFX	
<b>Error handling</b>	-	
<b>Configuration dependencies</b>	-	
<b>User hints</b>	-	
<b>SFR accessed</b>	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) <i>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.</i>	
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.	

### 1.3.3.31 Mcu\_17\_Gtm\_AtomChUpdateEnDis

**Table 379**      **Specification for Mcu\_17\_Gtm\_AtomChUpdateEnDis API**

<b>Syntax</b>	<pre>void Mcu_17_Gtm_AtomChUpdateEnDis (     const uint8 Module,     const uint8 Channel,     const Mcu_17_Gtm_TimerUpdateEnableType UpEnVal )</pre>	
<b>Service ID</b>	0x7C	
<b>Sync/Async</b>	Synchronous	
<b>ASIL Level</b>	B	

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**Table 379 Specification for Mcu\_17\_Gtm\_AtomChUpdateEnDis API (continued)**

<b>Re-entrancy</b>	Reentrant for other channels	
<b>Parameters (in)</b>	Module Channel UpEnVal	Specifies the module used Specifies the GTM channel used Specifies if GTM timer update is enabled or disabled
<b>Parameters (out)</b>	-	-
<b>Parameters (in - out)</b>	-	-
<b>Return</b>	void	-
<b>Description</b>	Mcu_17_Gtm_AtomChUpdateEnDis is used to update the value of the ATOM Channel Update Enable/ Disable Control register.	
<b>Source</b>	IFX	
<b>Error handling</b>	-	
<b>Configuration dependencies</b>	-	
<b>User hints</b>	-	
<b>SFR accessed</b>	GTM_ATOM_AGC_GLB_CTRL(w), SCU_CCUCON0(r), SCU_OSCCON(r), SCU_SYSPLLCON0(r), SCU_SYSPLLCON1(r), STM_TIM0(r) <i>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.</i>	
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.	

**1.3.3.32 Mcu\_17\_Gtm\_AtomChEndisStatUpdate**
**Table 380 Specification for Mcu\_17\_Gtm\_AtomChEndisStatUpdate API**

<b>Syntax</b>	<pre>void Mcu_17_Gtm_AtomChEndisStatUpdate (     const uint8 Module,     const uint8 Channel,     const Mcu_17_Gtm_TimerEnableType TimerEnDis )</pre>	
<b>Service ID</b>	0x80	
<b>Sync/Async</b>	Synchronous	
<b>ASIL Level</b>	B	
<b>Re-entrancy</b>	Reentrant for other channels	
<b>Parameters (in)</b>	Module Channel TimerEnDis	Specifies the module used Specifies the GTM channel used Specifies whether timer is enabled or disabled

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**Table 380**      **Specification for Mcu\_17\_Gtm\_AtomChEndisStatUpdate API (continued)**

<b>Parameters (out)</b>	-	-
<b>Parameters (in - out)</b>	-	-
<b>Return</b>	void	-
<b>Description</b>	Mcu_17_Gtm_AtomChEndisStatUpdate is used by applications to enable or disable the ATOM channel directly.	
<b>Source</b>	IFX	
<b>Error handling</b>	-	
<b>Configuration dependencies</b>	-	
<b>User hints</b>	-	
<b>SFR accessed</b>	GTM_ATOM_AGC_ENDIS_STAT(w), SCU_CCUCON0(r), SCU_OSCCON(r), SCU_SYSPLLCON0(r), SCU_SYSPLLCON1(r), STM_TIM0(r) <i>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.</i>	
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.	

### 1.3.3.33 Mcu\_17\_Gtm\_AtomChEndisCtrlUpdate

**Table 381**      **Specification for Mcu\_17\_Gtm\_AtomChEndisCtrlUpdate API**

<b>Syntax</b>	<pre>void Mcu_17_Gtm_AtomChEndisCtrlUpdate (     const uint8 Module,     const uint8 Channel,     const Mcu_17_Gtm_TimerEnTriggerType TimerEnDis )</pre>	
<b>Service ID</b>	0x7F	
<b>Sync/Async</b>	Synchronous	
<b>ASIL Level</b>	B	
<b>Re-entrancy</b>	Reentrant for other channels	
<b>Parameters (in)</b>	Module Channel TimerEnDis	Specifies the module being used Specifies the GTM channel being used Enable/disable the ATOM channel on a trigger
<b>Parameters (out)</b>	-	-
<b>Parameters (in - out)</b>	-	-

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**Table 381**      **Specification for Mcu\_17\_Gtm\_AtomChEndisCtrlUpdate API (continued)**

<b>Return</b>	void	-
<b>Description</b>	Mcu_17_Gtm_AtomChEndisCtrlUpdate is used by applications to enable or disable the ATOM channel on a trigger.	
<b>Source</b>	IFX	
<b>Error handling</b>	-	
<b>Configuration dependencies</b>	-	
<b>User hints</b>	-	
<b>SFR accessed</b>	GTM_ATOM_AGC_ENDIS_CTRL(w), SCU_CCUCON0(r), SCU_OSCCON(r), SCU_SYSPLLCON0(r), SCU_SYSPLLCON1(r), STM_TIM0(r) <i>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.</i>	
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.	

### 1.3.3.34 Mcu\_17\_Gtm\_AtomChOutEnStatUpdate

**Table 382**      **Specification for Mcu\_17\_Gtm\_AtomChOutEnStatUpdate API**

<b>Syntax</b>	<pre>void Mcu_17_Gtm_AtomChOutEnStatUpdate (     const uint8 Module,     const uint8 Channel,     const Mcu_17_Gtm_TimerOutputEnableType TimerOutputEnDis ) </pre>	
<b>Service ID</b>	0x7E	
<b>Sync/Async</b>	Synchronous	
<b>ASIL Level</b>	B	
<b>Re-entrancy</b>	Reentrant for other channels	
<b>Parameters (in)</b>	Module Channel TimerOutputEnDis	Specifies the module used Specifies the GTM channel used Specifies whether GTM timer output is enabled or disabled
<b>Parameters (out)</b>	-	-
<b>Parameters (in - out)</b>	-	-
<b>Return</b>	void	-
<b>Description</b>	Mcu_17_Gtm_AtomChOutEnStatUpdate is used by applications to enable or disable the output of an ATOM channel directly.	
<b>Source</b>	IFX	

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**Table 382**      **Specification for Mcu\_17\_Gtm\_AtomChOutEnStatUpdate API (continued)**

<b>Error handling</b>	-
<b>Configuration dependencies</b>	-
<b>User hints</b>	-
<b>SFR accessed</b>	GTM_ATOM_AGC_OUTEN_STAT(w), SCU_CCUCON0(r), SCU_OSCCON(r), SCU_SYSPLLCON0(r), SCU_SYSPLLCON1(r), STM_TIM0(r) <i>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.</i>
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.

### 1.3.3.35 Mcu\_17\_Gtm\_AtomChOutEnCtrlUpdate

**Table 383**      **Specification for Mcu\_17\_Gtm\_AtomChOutEnCtrlUpdate API**

<b>Syntax</b>	<pre>void Mcu_17_Gtm_AtomChOutEnCtrlUpdate (     const uint8 Module,     const uint8 Channel,     const Mcu_17_Gtm_TimerOutputEnTriggerType TimerOutputEnDis )</pre>	
<b>Service ID</b>	0x7D	
<b>Sync/Async</b>	Synchronous	
<b>ASIL Level</b>	B	
<b>Re-entrancy</b>	Reentrant for other channels	
<b>Parameters (in)</b>	Module Channel TimerOutputEnDis	Specifies the module being used Specifies the GTM channel being used Enable/disable the ATOM channel output on a trigger
<b>Parameters (out)</b>	-	-
<b>Parameters (in - out)</b>	-	-
<b>Return</b>	void	-
<b>Description</b>	Mcu_17_Gtm_AtomChOutEnCtrlUpdate is used by applications to enable or disable the output of an ATOM channel on a trigger.	
<b>Source</b>	IFX	
<b>Error handling</b>	-	
<b>Configuration dependencies</b>	-	
<b>User hints</b>	-	



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**Table 383 Specification for Mcu\_17\_Gtm\_AtomChOutEnCtrlUpdate API (continued)**

<b>SFR accessed</b>	GTM_ATOM_AGC_OUTEN_CTRL(w), SCU_CCUCON0(r), SCU_OSCCON(r), SCU_SYSPLLCON0(r), SCU_SYSPLLCON1(r), STM_TIM0(r) <i>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.</i>
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.

### 1.3.3.36 Mcu\_17\_Gtm\_AtomTriggerRequest

**Table 384 Specification for Mcu\_17\_Gtm\_AtomTriggerRequest API**

<b>Syntax</b>	<pre>void Mcu_17_Gtm_AtomTriggerRequest (     const uint8 Module,     const uint16 TriggerChannels )</pre>	
<b>Service ID</b>	0x7A	
<b>Sync/Async</b>	Synchronous	
<b>ASIL Level</b>	B	
<b>Re-entrancy</b>	Reentrant for other AGC	
<b>Parameters (in)</b>	Module TriggerChannels	ATOM Module ID Mask for the channels to be triggered
<b>Parameters (out)</b>	-	-
<b>Parameters (in - out)</b>	-	-
<b>Return</b>	void	-
<b>Description</b>	Interface is used by applications to enable or disable the ATOM channel on a trigger.	
<b>Source</b>	IFX	
<b>Error handling</b>	-	
<b>Configuration dependencies</b>	-	
<b>User hints</b>	No force update will be performed by Mcu_17_Gtm_AtomTriggerRequest() API.	
<b>SFR accessed</b>	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) <i>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.</i>	
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.	

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### 1.3.3.37 Mcu\_17\_Gtm\_TomChannelInit

**Table 385** Specification for Mcu\_17\_Gtm\_TomChannelInit API

<b>Syntax</b>	<pre>void Mcu_17_Gtm_TomChannelInit (     const Mcu_17_Gtm_TomAtomChConfigType * const ConfigPtr )</pre>	
<b>Service ID</b>	0x60	
<b>Sync/Async</b>	Synchronous	
<b>ASIL Level</b>	B	
<b>Re-entrancy</b>	Reentrant for other channels	
<b>Parameters (in)</b>	ConfigPtr	Pointer to the configuration data of a TOM channel
<b>Parameters (out)</b>	-	-
<b>Parameters (in - out)</b>	-	-
<b>Return</b>	void	-
<b>Description</b>	Mcu_17_Gtm_TomChannelInit configures an instance of the TOM channel. User of a TOM channel invokes this interface at the time of initialization.	
<b>Source</b>	IFX	
<b>Error handling</b>	-	
<b>Configuration dependencies</b>	-	
<b>User hints</b>	-	
<b>SFR accessed</b>	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) <i>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.</i>	
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.	

### 1.3.3.38 Mcu\_17\_Gtm\_TomChInitCheck

**Table 386** Specification for Mcu\_17\_Gtm\_TomChInitCheck API

<b>Syntax</b>	<pre>Std_ReturnType Mcu_17_Gtm_TomChInitCheck (     const Mcu_17_Gtm_TomAtomChConfigType * const ConfigPtr )</pre>	
<b>Service ID</b>	0x74	

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**Table 386**      **Specification for Mcu\_17\_Gtm\_TomChInitCheck API (continued)**

<b>Sync/Async</b>	Synchronous	
<b>ASIL Level</b>	B	
<b>Re-entrancy</b>	Non-reentrant	
<b>Parameters (in)</b>	ConfigPtr	Configuration of the TOM channel that is to be verified
<b>Parameters (out)</b>	-	-
<b>Parameters (in - out)</b>	-	-
<b>Return</b>	Std_ReturnType	E_OK: TOM initcheck is successful E_NOT_OK: TOM initcheck failed
<b>Description</b>	Mcu_17_Gtm_TomChInitCheck verifies the initialization done by the MCU driver in the Mcu_17_Gtm_TomChannelInit() API for the input TOM channel.	
<b>Source</b>	IFX	
<b>Error handling</b>	-	
<b>Configuration dependencies</b>	-	
<b>User hints</b>	None	
<b>SFR accessed</b>	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) <i>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.</i>	
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.	

### 1.3.3.39 Mcu\_17\_Gtm\_TomChannelDeInit

**Table 387**      **Specification for Mcu\_17\_Gtm\_TomChannelDeInit API**

<b>Syntax</b>	<pre>void Mcu_17_Gtm_TomChannelDeInit (     const uint8 Module,     const uint8 Channel )</pre>	
<b>Service ID</b>	0x63	
<b>Sync/Async</b>	Synchronous	
<b>ASIL Level</b>	B	
<b>Re-entrancy</b>	Reentrant for other channels	

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**Table 387**      **Specification for Mcu\_17\_Gtm\_TomChannelDeInit API (continued)**

<b>Parameters (in)</b>	Module Channel	TOM module number TOM channel number
<b>Parameters (out)</b>	-	-
<b>Parameters (in - out)</b>	-	-
<b>Return</b>	void	-
<b>Description</b>	Mcu_17_Gtm_TomChannelDeInit resets a TOM channel to reset values.	
<b>Source</b>	IFX	
<b>Error handling</b>	-	
<b>Configuration dependencies</b>	-	
<b>User hints</b>	-	
<b>SFR accessed</b>	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) <i>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.</i>	
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.	

### 1.3.3.40 Mcu\_17\_Gtm\_TomChannelEnable

**Table 388**      **Specification for Mcu\_17\_Gtm\_TomChannelEnable API**

<b>Syntax</b>	<pre>void Mcu_17_Gtm_TomChannelEnable (     const uint8 Module,     const uint8 Channel,     const Mcu_17_Gtm_TimerOutputEnableType TimerOutputEn )</pre>	
<b>Service ID</b>	0x63	
<b>Sync/Async</b>	Synchronous	
<b>ASIL Level</b>	B	
<b>Re-entrancy</b>	Reentrant for other channels	
<b>Parameters (in)</b>	Module Channel TimerOutputEn	TOM module number TOM channel number TOM output enable configuration
<b>Parameters (out)</b>	-	-

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**Table 388**      **Specification for Mcu\_17\_Gtm\_TomChannelEnable API (continued)**

<b>Parameters (in - out)</b>	-	-
<b>Return</b>	void	-
<b>Description</b>	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.	
<b>Source</b>	IFX	
<b>Error handling</b>	-	
<b>Configuration dependencies</b>	-	
<b>User hints</b>	-	
<b>SFR accessed</b>	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) <i>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.</i>	
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.	

### 1.3.3.41 Mcu\_17\_Gtm\_TomChannelDisable

**Table 389**      **Specification for Mcu\_17\_Gtm\_TomChannelDisable API**

<b>Syntax</b>	<pre>void Mcu_17_Gtm_TomChannelDisable (     const uint8 Module,     const uint8 Channel )</pre>	
<b>Service ID</b>	0x69	
<b>Sync/Async</b>	Synchronous	
<b>ASIL Level</b>	B	
<b>Re-entrancy</b>	Reentrant for other channels	
<b>Parameters (in)</b>	Module Channel	TOM module number TOM channel number
<b>Parameters (out)</b>	-	-
<b>Parameters (in - out)</b>	-	-
<b>Return</b>	void	-

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**Table 389**      **Specification for Mcu\_17\_Gtm\_TomChannelDisable API (continued)**

<b>Description</b>	Mcu_17_Gtm_TomChannelDisable stops the specified timer. The timer output is unconditionally disabled.
<b>Source</b>	IFX
<b>Error handling</b>	-
<b>Configuration dependencies</b>	-
<b>User hints</b>	-
<b>SFR accessed</b>	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)  <i>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.</i>
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.

### 1.3.3.42 Mcu\_17\_Gtm\_IsTomChannelEnabled

**Table 390**      **Specification for Mcu\_17\_Gtm\_IsTomChannelEnabled API**

<b>Syntax</b>	Mcu_17_Gtm_TimerStatusType Mcu_17_Gtm_IsTomChannelEnabled ( const uint8 Module, const uint8 Channel )	
<b>Service ID</b>	0x68	
<b>Sync/Async</b>	Synchronous	
<b>ASIL Level</b>	B	
<b>Re-entrancy</b>	Reentrant	
<b>Parameters (in)</b>	Module Channel	TOM module number TOM channel number
<b>Parameters (out)</b>	-	-
<b>Parameters (in - out)</b>	-	-
<b>Return</b>	Mcu_17_Gtm_TimerStatusType	MCU_GTM_TIMER_RUNNING : Timer is running. MCU_GTM_TIMER_STOPPED : Timer is stopped
<b>Description</b>	Mcu_17_Gtm_IsTomChannelEnabled confirms whether or not the specified timer slice is running.	
<b>Source</b>	IFX	

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**Table 390**      **Specification for Mcu\_17\_Gtm\_IsTomChannelEnabled API (continued)**

<b>Error handling</b>	-
<b>Configuration dependencies</b>	-
<b>User hints</b>	-
<b>SFR accessed</b>	GTM_TOM_TGC0_ENDIS_STAT(r), GTM_TOM_TGC1_ENDIS_STAT(r) <i>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.</i>
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.

### 1.3.3.43      Mcu\_17\_Gtm\_TomChannelShadowTransfer

**Table 391**      **Specification for Mcu\_17\_Gtm\_TomChannelShadowTransfer API**

<b>Syntax</b>	<pre>void Mcu_17_Gtm_TomChannelShadowTransfer (     const uint8 Module,     const uint8 Channel )</pre>	
<b>Service ID</b>	0x61	
<b>Sync/Async</b>	Synchronous	
<b>ASIL Level</b>	B	
<b>Re-entrancy</b>	Reentrant	
<b>Parameters (in)</b>	Module Channel	TOM module number TOM channel number
<b>Parameters (out)</b>	-	-
<b>Parameters (in - out)</b>	-	-
<b>Return</b>	void	-
<b>Description</b>	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.	
<b>Source</b>	IFX	
<b>Error handling</b>	-	
<b>Configuration dependencies</b>	-	
<b>User hints</b>	-	
<b>SFR accessed</b>	GTM_TOM_TGC0_ENDIS_CTRL(rw), GTM_TOM_TGC0_FUPD_CTRL(rw), GTM_TOM_TGC0_GLB_CTRL(w), GTM_TOM_TGC0_OUTEN_CTRL(rw),	

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**Table 391 Specification for Mcu\_17\_Gtm\_TomChannelShadowTransfer API (continued)**

	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)  <i>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.</i>
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.

### 1.3.3.44 Mcu\_17\_Gtm\_TomChUpdateEnDis

**Table 392 Specification for Mcu\_17\_Gtm\_TomChUpdateEnDis API**

<b>Syntax</b>	<pre>void Mcu_17_Gtm_TomChUpdateEnDis (     const uint8 Module,     const uint8 Channel,     const Mcu_17_Gtm_TimerUpdateEnableType UpEnVal )</pre>	
<b>Service ID</b>	0x75	
<b>Sync/Async</b>	Synchronous	
<b>ASIL Level</b>	B	
<b>Re-entrancy</b>	Reentrant for other channels	
<b>Parameters (in)</b>	Module Channel UpEnVal	Specifies the module being used Specifies the GTM channel being used Specifies if the GTM timer update is enabled or disabled
<b>Parameters (out)</b>	-	-
<b>Parameters (in - out)</b>	-	-
<b>Return</b>	void	-
<b>Description</b>	Mcu_17_Gtm_TomChUpdateEnDis is used to update the value of the TOM Channel update enable/disable control register.	
<b>Source</b>	IFX	
<b>Error handling</b>	-	
<b>Configuration dependencies</b>	-	
<b>User hints</b>	-	
<b>SFR accessed</b>	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)	



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**Table 392 Specification for Mcu\_17\_Gtm\_TomChUpdateEnDis API (continued)**

	<i>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.</i>
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.

### 1.3.3.45 Mcu\_17\_Gtm\_TomChOutEnStatUpdate

**Table 393 Specification for Mcu\_17\_Gtm\_TomChOutEnStatUpdate API**

<b>Syntax</b>	<pre>void Mcu_17_Gtm_TomChOutEnStatUpdate (     const uint8 Module,     const uint8 Channel,     const Mcu_17_Gtm_TimerOutputEnableType TimerOutputEnDis )</pre>	
<b>Service ID</b>	0x77	
<b>Sync/Async</b>	Synchronous	
<b>ASIL Level</b>	B	
<b>Re-entrancy</b>	Reentrant for other Channels	
<b>Parameters (in)</b>	Module	Specifies the module being used
	Channel	Specifies the GTM channel being used
	TimerOutputEnDis	Specifies if the timer output is enabled or disabled
<b>Parameters (out)</b>	-	-
<b>Parameters (in - out)</b>	-	-
<b>Return</b>	void	-
<b>Description</b>	Mcu_17_Gtm_TomChOutEnStatUpdate is used to update the value of the TOM Channel Output Enable/ Disable Status register.	
<b>Source</b>	IFX	
<b>Error handling</b>	-	
<b>Configuration dependencies</b>	-	
<b>User hints</b>	-	
<b>SFR accessed</b>	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)	
	<i>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.</i>	

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**Table 393**      **Specification for Mcu\_17\_Gtm\_TomChOutEnStatUpdate API (continued)**

<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.
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### 1.3.3.46 Mcu\_17\_Gtm\_TomChOutEnCtrlUpdate

**Table 394**      **Specification for Mcu\_17\_Gtm\_TomChOutEnCtrlUpdate API**

<b>Syntax</b>	<pre>void Mcu_17_Gtm_TomChOutEnCtrlUpdate (     const uint8 Module,     const uint8 Channel,     const Mcu_17_Gtm_TimerOutputEnTriggerType TimerOutputEnDis )</pre>	
<b>Service ID</b>	0x76	
<b>Sync/Async</b>	Synchronous	
<b>ASIL Level</b>	B	
<b>Re-entrancy</b>	Reentrant for other channels	
<b>Parameters (in)</b>	Module Channel TimerOutputEnDis	Specifies the module being used Specifies the GTM channel being used Enable/disable the TOM channel output on a trigger
<b>Parameters (out)</b>	-	-
<b>Parameters (in - out)</b>	-	-
<b>Return</b>	void	-
<b>Description</b>	Mcu_17_Gtm_TomChOutEnCtrlUpdate is used to update the value of the TOM Channel Output Enable/ Disable Control register.	
<b>Source</b>	IFX	
<b>Error handling</b>	-	
<b>Configuration dependencies</b>	-	
<b>User hints</b>	-	
<b>SFR accessed</b>	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) <i>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.</i>	
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.	

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### 1.3.3.47 Mcu\_17\_Gtm\_TomChEndisStatUpdate

**Table 395 Specification for Mcu\_17\_Gtm\_TomChEndisStatUpdate API**

<b>Syntax</b>	<pre>void Mcu_17_Gtm_TomChEndisStatUpdate (     const uint8 Module,     const uint8 Channel,     const Mcu_17_Gtm_TimerEnableType TimerEnDis )</pre>	
<b>Service ID</b>	0x79	
<b>Sync/Async</b>	Synchronous	
<b>ASIL Level</b>	B	
<b>Re-entrancy</b>	Reentrant for other channels	
<b>Parameters (in)</b>	Module Channel TimerEnDis	Specifies the module being used Specifies the GTM channel being used Specifies if the timer is enabled or disabled
<b>Parameters (out)</b>	-	-
<b>Parameters (in - out)</b>	-	-
<b>Return</b>	void	-
<b>Description</b>	Mcu_17_Gtm_TomChEndisStatUpdate is used to update the value of the TOM channel enable/disable status register.	
<b>Source</b>	IFX	
<b>Error handling</b>	-	
<b>Configuration dependencies</b>	-	
<b>User hints</b>	-	
<b>SFR accessed</b>	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) <i>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.</i>	
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.	

### 1.3.3.48 Mcu\_17\_Gtm\_TomChEndisCtrlUpdate

**Table 396 Specification for Mcu\_17\_Gtm\_TomChEndisCtrlUpdate API**

<b>Syntax</b>	<pre>void Mcu_17_Gtm_TomChEndisCtrlUpdate (     const uint8 Module,</pre>
---------------	---

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**Table 396**      **Specification for Mcu\_17\_Gtm\_TomChEndisCtrlUpdate API (continued)**

	<pre>const uint8 Channel, const Mcu_17_Gtm_TimerEnTriggerType TimerEnDis )</pre>	
<b>Service ID</b>	0x78	
<b>Sync/Async</b>	Synchronous	
<b>ASIL Level</b>	B	
<b>Re-entrancy</b>	Reentrant for other channels	
<b>Parameters (in)</b>	Module Channel TimerEnDis	Specifies the module being used TOM channel used Enable/disable the TOM channel on a trigger
<b>Parameters (out)</b>	-	-
<b>Parameters (in - out)</b>	-	-
<b>Return</b>	void	-
<b>Description</b>	Mcu_17_Gtm_TomChEndisCtrlUpdate is used to update the value of the ATOM Channel Enable/ Disable Control register.	
<b>Source</b>	IFX	
<b>Error handling</b>	-	
<b>Configuration dependencies</b>	-	
<b>User hints</b>	-	
<b>SFR accessed</b>	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) <i>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.</i>	
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.	

### 1.3.3.49 Mcu\_17\_Gtm\_TomTriggerRequest

**Table 397**      **Specification for Mcu\_17\_Gtm\_TomTriggerRequest API**

<b>Syntax</b>	<pre>void Mcu_17_Gtm_TomTriggerRequest (     const uint8 Module,     const uint8 TomTgcIndex,     const uint16 TriggerChannels )</pre>	
<b>Service ID</b>	0x73	

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**Table 397**      **Specification for Mcu\_17\_Gtm\_TomTriggerRequest API (continued)**

<b>Sync/Async</b>	Synchronous	
<b>ASIL Level</b>	B	
<b>Re-entrancy</b>	Reentrant for other TGC	
<b>Parameters (in)</b>	Module TomTgcIndex TriggerChannels	TOM Module ID TOM TGC ID Channels to be triggered
<b>Parameters (out)</b>	-	-
<b>Parameters (in - out)</b>	-	-
<b>Return</b>	void	-
<b>Description</b>	Mcu_17_Gtm_TomTriggerRequest is used by applications to enable or disable multiple TOM channels.	
<b>Source</b>	IFX	
<b>Error handling</b>	-	
<b>Configuration dependencies</b>	-	
<b>User hints</b>	-	
<b>SFR accessed</b>	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)  <i>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.</i>	
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.	

### 1.3.3.50 Mcu\_17\_Gtm\_TimChannelInit

**Table 398**      **Specification for Mcu\_17\_Gtm\_TimChannelInit API**

<b>Syntax</b>	<pre>void Mcu_17_Gtm_TimChannelInit (     const Mcu_17_Gtm_TimChConfigType * const ConfigPtr )</pre>	
<b>Service ID</b>	0x62	
<b>Sync/Async</b>	Synchronous	
<b>ASIL Level</b>	B	
<b>Re-entrancy</b>	Reentrant for other channels	
<b>Parameters (in)</b>	ConfigPtr	Pointer to the configuration data of a TIM channel

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**Table 398**      **Specification for Mcu\_17\_Gtm\_TimChannelInit API (continued)**

<b>Parameters (out)</b>	-	-
<b>Parameters (in - out)</b>	-	-
<b>Return</b>	void	-
<b>Description</b>	Mcu_17_Gtm_TimChannelInit configures an instance of a TIM channel. Consumer of a TIM channel invokes this interface at the time of initialization.	
<b>Source</b>	IFX	
<b>Error handling</b>	-	
<b>Configuration dependencies</b>	-	
<b>User hints</b>	-	
<b>SFR accessed</b>	GTM_TIM_CH_CTRL(w), 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)  <i>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.</i>	
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.	

### 1.3.3.51 Mcu\_17\_Gtm\_TimChInitCheck

**Table 399**      **Specification for Mcu\_17\_Gtm\_TimChInitCheck API**

<b>Syntax</b>	<pre>Std_ReturnType Mcu_17_Gtm_TimChInitCheck (     const Mcu_17_Gtm_TimChConfigType * const ConfigPtr )</pre>	
<b>Service ID</b>	0x81	
<b>Sync/Async</b>	Synchronous	
<b>ASIL Level</b>	B	
<b>Re-entrancy</b>	Non-reentrant	
<b>Parameters (in)</b>	ConfigPtr	Configuration of the TIM channel that is to be verified
<b>Parameters (out)</b>	-	-
<b>Parameters (in - out)</b>	-	-
<b>Return</b>	Std_ReturnType	E_OK: TIM initcheck is successful E_NOT_OK: TIM initcheck failed

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**Table 399 Specification for Mcu\_17\_Gtm\_TimChInitCheck API (continued)**

<b>Description</b>	Mcu_17_Gtm_TimChInitCheck verifies the initialization done by the MCU driver in the Mcu_17_Gtm_TimChannelInit API for the input TIM channel.
<b>Source</b>	IFX
<b>Error handling</b>	-
<b>Configuration dependencies</b>	-
<b>User hints</b>	None
<b>SFR accessed</b>	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)  <i>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.</i>
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.

### 1.3.3.52 Mcu\_17\_Gtm\_TimChannelDeInit

**Table 400 Specification for Mcu\_17\_Gtm\_TimChannelDeInit API**

<b>Syntax</b>	<pre>void Mcu_17_Gtm_TimChannelDeInit (     const uint8 Module,     const uint8 Channel )</pre>	
<b>Service ID</b>	0x67	
<b>Sync/Async</b>	Synchronous	
<b>ASIL Level</b>	B	
<b>Re-entrancy</b>	Reentrant for other channels	
<b>Parameters (in)</b>	Module Channel	TIM module number TIM channel number
<b>Parameters (out)</b>	-	-
<b>Parameters (in - out)</b>	-	-
<b>Return</b>	void	-
<b>Description</b>	Mcu_17_Gtm_TimChannelDeInit resets a TIM channel to default values.	
<b>Source</b>	IFX	
<b>Error handling</b>	-	
<b>Configuration dependencies</b>	-	

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**Table 400**      **Specification for Mcu\_17\_Gtm\_TimChannelDeInit API (continued)**

<b>User hints</b>	-
<b>SFR accessed</b>	GTM_TIM_CH_IRQ_NOTIFY(w), GTM_TIM_RST(rw) <i>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.</i>
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.

### 1.3.3.53 Mcu\_17\_Gtm\_TimChannelEnable

**Table 401**      **Specification for Mcu\_17\_Gtm\_TimChannelEnable API**

<b>Syntax</b>	<pre>void Mcu_17_Gtm_TimChannelEnable (     const uint8 Module,     const uint8 Channel )</pre>	
<b>Service ID</b>	0x6C	
<b>Sync/Async</b>	Synchronous	
<b>ASIL Level</b>	B	
<b>Re-entrancy</b>	Reentrant for other channels	
<b>Parameters (in)</b>	Module Channel	TIM module number TIM channel number
<b>Parameters (out)</b>	-	-
<b>Parameters (in - out)</b>	-	-
<b>Return</b>	void	-
<b>Description</b>	Mcu_17_Gtm_TimChannelEnable starts the specified timer.	
<b>Source</b>	IFX	
<b>Error handling</b>	-	
<b>Configuration dependencies</b>	-	
<b>User hints</b>	-	
<b>SFR accessed</b>	GTM_TIM_CH_CTRL(rw) <i>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.</i>	
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.	



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### 1.3.3.54 Mcu\_17\_Gtm\_TimChannelDisable

**Table 402 Specification for Mcu\_17\_Gtm\_TimChannelDisable API**

<b>Syntax</b>	<pre>void Mcu_17_Gtm_TimChannelDisable (     const uint8 Module,     const uint8 Channel )</pre>	
<b>Service ID</b>	0x6D	
<b>Sync/Async</b>	Synchronous	
<b>ASIL Level</b>	B	
<b>Re-entrancy</b>	Reentrant for other channels	
<b>Parameters (in)</b>	Module Channel	TIM module number TIM channel number
<b>Parameters (out)</b>	-	-
<b>Parameters (in - out)</b>	-	-
<b>Return</b>	void	-
<b>Description</b>	Mcu_17_Gtm_TimChannelDisable stops the specified timer.	
<b>Source</b>	IFX	
<b>Error handling</b>	-	
<b>Configuration dependencies</b>	-	
<b>User hints</b>	-	
<b>SFR accessed</b>	GTM_TIM_CH_CTRL(rw) <i>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.</i>	
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.	

### 1.3.3.55 Mcu\_17\_Gtm\_IsTimChannelEnabled

**Table 403 Specification for Mcu\_17\_Gtm\_IsTimChannelEnabled API**

<b>Syntax</b>	<pre>Mcu_17_Gtm_TimerStatusType Mcu_17_Gtm_IsTimChannelEnabled (     const uint8 Module,     const uint8 Channel )</pre>	
<b>Service ID</b>	0x70	
<b>Sync/Async</b>	Synchronous	

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**Table 403 Specification for Mcu\_17\_Gtm\_IsTimChannelEnabled API (continued)**

<b>ASIL Level</b>	B	
<b>Re-entrancy</b>	Reentrant	
<b>Parameters (in)</b>	Module Channel	TIM module number TIM channel number
<b>Parameters (out)</b>	-	-
<b>Parameters (in - out)</b>	-	-
<b>Return</b>	Mcu_17_Gtm_TimerStatus Type	MCU_GTM_TIMER_RUNNING: Timer is running MCU_GTM_TIMER_STOPPED: Timer is stopped
<b>Description</b>	Mcu_17_Gtm_IsTimChannelEnabled confirms whether or not the specified timer slice is running.	
<b>Source</b>	IFX	
<b>Error handling</b>	-	
<b>Configuration dependencies</b>	-	
<b>User hints</b>	-	
<b>SFR accessed</b>	GTM_TIM_CH_CTRL(r) <i>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.</i>	
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.	

### 1.3.3.56 Mcu\_17\_Gtm\_ConnectPortPinToTim

**Table 404 Specification for Mcu\_17\_Gtm\_ConnectPortPinToTim API**

<b>Syntax</b>	<pre>void Mcu_17_Gtm_ConnectPortPinToTim (     const uint8 Module,     const uint8 Channel,     const uint8 TimerChselValue )</pre>	
<b>Service ID</b>	0x72	
<b>Sync/Async</b>	Synchronous	
<b>ASIL Level</b>	B	
<b>Re-entrancy</b>	Reentrant for other TIM modules	
<b>Parameters (in)</b>	Module Channel TimerChselValue	TIM module number TIM channel number Timer input select register CHxSEL bit-field value

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**Table 404**      **Specification for Mcu\_17\_Gtm\_ConnectPortPinToTim API (continued)**

<b>Parameters (out)</b>	-	-
<b>Parameters (in - out)</b>	-	-
<b>Return</b>	void	-
<b>Description</b>	Mcu_17_Gtm_ConnectPortPinToTim is used to connect a port pin to an input GTM channel (TIM).	
<b>Source</b>	IFX	
<b>Error handling</b>	-	
<b>Configuration dependencies</b>	-	
<b>User hints</b>	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.	
<b>SFR accessed</b>	GTM_TIMINSEL(rw) <i>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.</i>	
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.	

### 1.3.3.57 Mcu\_17\_Ccu6\_TimerInit

**Table 405**      **Specification for Mcu\_17\_Ccu6\_TimerInit API**

<b>Syntax</b>	<pre>void Mcu_17_Ccu6_TimerInit (     const Mcu_17_Ccu6_TimerConfigType * const ConfigPtr )</pre>	
<b>Service ID</b>	0x82	
<b>Sync/Async</b>	Synchronous	
<b>ASIL Level</b>	B	
<b>Re-entrancy</b>	Reentrant for other channels	
<b>Parameters (in)</b>	ConfigPtr	Ccu6 timer channel initialization contents
<b>Parameters (out)</b>	-	-
<b>Parameters (in - out)</b>	-	-
<b>Return</b>	void	-

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**Table 405**      **Specification for Mcu\_17\_Ccu6\_TimerInit API (continued)**

<b>Description</b>	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.
<b>Source</b>	IFX
<b>Error handling</b>	-
<b>Configuration dependencies</b>	-
<b>User hints</b>	-
<b>SFR accessed</b>	CCU6_CC63SR(w), CCU6_CC6SR(w), CCU6_IEN(rw), CCU6_INP(rw), CCU6_ISR(rw), CCU6_MODCTR(rw), CCU6_PISEL0(rw), CCU6_PSLR(rw), CCU6_T12(w), CCU6_T12MSEL(rw), CCU6_T12PR(w), CCU6_T13(w), CCU6_T13PR(w), CCU6_TCTR0(rw)  <i>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.</i>
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.

### 1.3.3.58 Mcu\_17\_Ccu6\_TimerInitCheck

**Table 406**      **Specification for Mcu\_17\_Ccu6\_TimerInitCheck API**

<b>Syntax</b>	<pre>Std_ReturnType Mcu_17_Ccu6_TimerInitCheck (     const Mcu_17_Ccu6_TimerConfigType * const ConfigPtr )</pre>	
<b>Service ID</b>	0x89	
<b>Sync/Async</b>	Synchronous	
<b>ASIL Level</b>	B	
<b>Re-entrancy</b>	Non-reentrant	
<b>Parameters (in)</b>	ConfigPtr	Configuration of the CCU6 comparator channel that is to be verified
<b>Parameters (out)</b>	-	-
<b>Parameters (in - out)</b>	-	-
<b>Return</b>	Std_ReturnType	E_OK: CCU6 initcheck is successful E_NOT_OK: CCU6 initcheck failed
<b>Description</b>	Mcu_17_Ccu6_TimerInitCheck verifies the initialization done by the MCU driver in the Mcu_17_Ccu6_TimerInit() API for the input CCU6 comparator.	
<b>Source</b>	IFX	
<b>Error handling</b>	-	

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**Table 406**      **Specification for Mcu\_17\_Ccu6\_TimerInitCheck API (continued)**

<b>Configuration dependencies</b>	-
<b>User hints</b>	None
<b>SFR accessed</b>	CCU6_CC63SR(r), CCU6_CC6SR(r), CCU6_CLC(r), CCU6_IEN(r), CCU6_INP(r), CCU6_MODCTR(r), CCU6_PISEL0(r), CCU6_PSLR(r), CCU6_T12MSEL(r), CCU6_T12PR(r), CCU6_T13PR(r), CCU6_TCTR0(r) <i>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.</i>
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.

### 1.3.3.59 Mcu\_17\_Ccu6\_TimerDeInit

**Table 407**      **Specification for Mcu\_17\_Ccu6\_TimerDeInit API**

<b>Syntax</b>	<pre>void Mcu_17_Ccu6_TimerDeInit (     const Mcu_17_Ccu6_TimerChIdentifierType TimerId )</pre>	
<b>Service ID</b>	0x83	
<b>Sync/Async</b>	Synchronous	
<b>ASIL Level</b>	B	
<b>Re-entrancy</b>	Reentrant for other channels	
<b>Parameters (in)</b>	TimerId	CCU6 timer to be de-initialized
<b>Parameters (out)</b>	-	-
<b>Parameters (in - out)</b>	-	-
<b>Return</b>	void	-
<b>Description</b>	Mcu_17_Ccu6_TimerDeInit de-initializes the CCU6 timer channel to default values.	
<b>Source</b>	IFX	
<b>Error handling</b>	-	
<b>Configuration dependencies</b>	-	
<b>User hints</b>	-	
<b>SFR accessed</b>	CCU6_CC63SR(w), CCU6_CC6SR(w), CCU6_IEN(rw), CCU6_INP(rw), CCU6_MODCTR(rw), CCU6_PISEL0(rw), CCU6_PSLR(rw), CCU6_T12(w), CCU6_T12MSEL(rw), CCU6_T12PR(w), CCU6_T13(w), CCU6_T13PR(w), CCU6_TCTR0(rw)	

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**Table 407**      **Specification for Mcu\_17\_Ccu6\_TimerDeInit API (continued)**

	<i>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.</i>
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.

### 1.3.3.60      Mcu\_17\_Ccu6\_TimerStart

**Table 408**      **Specification for Mcu\_17\_Ccu6\_TimerStart API**

<b>Syntax</b>	<pre>void Mcu_17_Ccu6_TimerStart (     const Mcu_17_Ccu6_TimerChIdentifierType TimerId )</pre>	
<b>Service ID</b>	0x84	
<b>Sync/Async</b>	Synchronous	
<b>ASIL Level</b>	B	
<b>Re-entrancy</b>	Reentrant for other channels	
<b>Parameters (in)</b>	TimerId	CCU6 timer channel to be enabled
<b>Parameters (out)</b>	-	-
<b>Parameters (in - out)</b>	-	-
<b>Return</b>	void	-
<b>Description</b>	Mcu_17_Ccu6_TimerStart starts the specified CCU6 timer.	
<b>Source</b>	IFX	
<b>Error handling</b>	-	
<b>Configuration dependencies</b>	-	
<b>User hints</b>	-	
<b>SFR accessed</b>	CCU6_ISR(rw), CCU6_TCTR4(rw) <i>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.</i>	
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.	

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### 1.3.3.61 Mcu\_17\_Ccu6\_TimerStop

**Table 409 Specification for Mcu\_17\_Ccu6\_TimerStop API**

<b>Syntax</b>	<pre>void Mcu_17_Ccu6_TimerStop (     const Mcu_17_Ccu6_TimerChIdentifierType TimerId )</pre>	
<b>Service ID</b>	0x85	
<b>Sync/Async</b>	Synchronous	
<b>ASIL Level</b>	B	
<b>Re-entrancy</b>	Reentrant for other channels	
<b>Parameters (in)</b>	TimerId	CCU6 timer channel to be disabled
<b>Parameters (out)</b>	-	-
<b>Parameters (in - out)</b>	-	-
<b>Return</b>	void	-
<b>Description</b>	Mcu_17_Ccu6_TimerStop stops the specified CCU6 timer.	
<b>Source</b>	IFX	
<b>Error handling</b>	-	
<b>Configuration dependencies</b>	-	
<b>User hints</b>	-	
<b>SFR accessed</b>	CCU6_TCTR4(rw) <i>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.</i>	
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.	

### 1.3.3.62 Mcu\_17\_Ccu6\_TimerIntEnDis

**Table 410 Specification for Mcu\_17\_Ccu6\_TimerIntEnDis API**

<b>Syntax</b>	<pre>void Mcu_17_Ccu6_TimerIntEnDis (     const Mcu_17_Ccu6_TimerChIntType Ccu6IntConfig )</pre>	
<b>Service ID</b>	0x87	
<b>Sync/Async</b>	Synchronous	
<b>ASIL Level</b>	B	

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**Table 410**      **Specification for Mcu\_17\_Ccu6\_TimerIntEnDis API (continued)**

<b>Re-entrancy</b>	Reentrant for other channels	
<b>Parameters (in)</b>	Ccu6IntConfig	CCU6 timer channel interrupt configuration
<b>Parameters (out)</b>	-	-
<b>Parameters (in - out)</b>	-	-
<b>Return</b>	void	-
<b>Description</b>	Mcu_17_Ccu6_TimerIntEnDis enables/disables the specified interrupt of the CCU6 timer.	
<b>Source</b>	IFX	
<b>Error handling</b>	-	
<b>Configuration dependencies</b>	-	
<b>User hints</b>	-	
<b>SFR accessed</b>	CCU6_IEN(rw) <i>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.</i>	
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.	

### 1.3.3.63 Mcu\_17\_Ccu6\_TimerShadowTransfer

**Table 411**      **Specification for Mcu\_17\_Ccu6\_TimerShadowTransfer API**

<b>Syntax</b>	<pre>void Mcu_17_Ccu6_TimerShadowTransfer (     const Mcu_17_Ccu6_TimerChIdentifierType TimerId )</pre>	
<b>Service ID</b>	0x86	
<b>Sync/Async</b>	Synchronous	
<b>ASIL Level</b>	B	
<b>Re-entrancy</b>	Reentrant for other CCU6 timers	
<b>Parameters (in)</b>	TimerId	CCU6 timer channel
<b>Parameters (out)</b>	-	-
<b>Parameters (in - out)</b>	-	-
<b>Return</b>	void	-



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**Table 411 Specification for Mcu\_17\_Ccu6\_TimerShadowTransfer API (continued)**

<b>Description</b>	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.
<b>Source</b>	IFX
<b>Error handling</b>	-
<b>Configuration dependencies</b>	-
<b>User hints</b>	-
<b>SFR accessed</b>	CCU6_TCTR4(rw) <i>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.</i>
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.

### 1.3.3.64 Mcu\_17\_Gpt12\_TimerInit

**Table 412 Specification for Mcu\_17\_Gpt12\_TimerInit API**

<b>Syntax</b>	<pre>void Mcu_17_Gpt12_TimerInit (     const Mcu_17_Gpt12_TimerConfigType * const ConfigPtr )</pre>	
<b>Service ID</b>	0x8A	
<b>Sync/Async</b>	Synchronous	
<b>ASIL Level</b>	B	
<b>Re-entrancy</b>	Reentrant for other channels	
<b>Parameters (in)</b>	ConfigPtr	GPT12 timer channel initialization contents
<b>Parameters (out)</b>	-	-
<b>Parameters (in - out)</b>	-	-
<b>Return</b>	void	-
<b>Description</b>	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.	
<b>Source</b>	IFX	
<b>Error handling</b>	-	
<b>Configuration dependencies</b>	-	
<b>User hints</b>	-	

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**Table 412 Specification for Mcu\_17\_Gpt12\_TimerInit API (continued)**

<b>SFR accessed</b>	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) <i>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.</i>
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.

### 1.3.3.65 Mcu\_17\_Gpt12\_TimerInitCheck

**Table 413 Specification for Mcu\_17\_Gpt12\_TimerInitCheck API**

<b>Syntax</b>	Std_ReturnType Mcu_17_Gpt12_TimerInitCheck ( const Mcu_17_Gpt12_TimerConfigType * const ConfigPtr )	
<b>Service ID</b>	0x8B	
<b>Sync/Async</b>	Synchronous	
<b>ASIL Level</b>	B	
<b>Re-entrancy</b>	Non-reentrant	
<b>Parameters (in)</b>	ConfigPtr	Configuration of the GPT12 timer channel that is to be verified
<b>Parameters (out)</b>	-	-
<b>Parameters (in - out)</b>	-	-
<b>Return</b>	Std_ReturnType	E_OK: GPT12 initcheck is successful E_NOT_OK: GPT12 initcheck failed
<b>Description</b>	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.	
<b>Source</b>	IFX	
<b>Error handling</b>	-	
<b>Configuration dependencies</b>	-	
<b>User hints</b>	None	
<b>SFR accessed</b>	GPT12_CLC(r), GPT12_PISEL(r), GPT12_T2CON(r), GPT12_T3CON(r), GPT12_T4CON(r), GPT12_T5CON(r), GPT12_T6CON(r) <i>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.</i>	

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**Table 413**      **Specification for Mcu\_17\_Gpt12\_TimerInitCheck API (continued)**

<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.
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### 1.3.3.66 Mcu\_17\_Gpt12\_TimerDeInit

**Table 414**      **Specification for Mcu\_17\_Gpt12\_TimerDeInit API**

<b>Syntax</b>	<pre>void Mcu_17_Gpt12_TimerDeInit (     const Mcu_17_Gpt12_TimerChIdentifierType TimerId )</pre>	
<b>Service ID</b>	0x8C	
<b>Sync/Async</b>	Synchronous	
<b>ASIL Level</b>	B	
<b>Re-entrancy</b>	Reentrant for other channels	
<b>Parameters (in)</b>	TimerId	GPT12 timer to be de-initialized
<b>Parameters (out)</b>	-	-
<b>Parameters (in - out)</b>	-	-
<b>Return</b>	void	-
<b>Description</b>	Mcu_17_Gpt12_TimerDeInit de-initializes the input GPT12 timer channel to default values.	
<b>Source</b>	IFX	
<b>Error handling</b>	-	
<b>Configuration dependencies</b>	-	
<b>User hints</b>	-	
<b>SFR accessed</b>	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) <i>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.</i>	
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.	

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### 1.3.3.67 Mcu\_17\_Gpt12\_TimerStart

**Table 415 Specification for Mcu\_17\_Gpt12\_TimerStart API**

<b>Syntax</b>	<pre>void Mcu_17_Gpt12_TimerStart (     const Mcu_17_Gpt12_TimerChIdentifierType TimerId )</pre>	
<b>Service ID</b>	0x8D	
<b>Sync/Async</b>	Synchronous	
<b>ASIL Level</b>	B	
<b>Re-entrancy</b>	Reentrant for other channels	
<b>Parameters (in)</b>	TimerId	GPT12 timer channel to be enabled
<b>Parameters (out)</b>	-	-
<b>Parameters (in - out)</b>	-	-
<b>Return</b>	void	-
<b>Description</b>	Mcu_17_Gpt12_TimerStart starts the specified GPT12 timer.	
<b>Source</b>	IFX	
<b>Error handling</b>	-	
<b>Configuration dependencies</b>	-	
<b>User hints</b>	-	
<b>SFR accessed</b>	GPT12_T2CON(rw), GPT12_T3CON(rw), GPT12_T4CON(rw), GPT12_T5CON(rw), GPT12_T6CON(rw) <i>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.</i>	
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.	

### 1.3.3.68 Mcu\_17\_Gpt12\_TimerStop

**Table 416 Specification for Mcu\_17\_Gpt12\_TimerStop API**

<b>Syntax</b>	<pre>void Mcu_17_Gpt12_TimerStop (     const Mcu_17_Gpt12_TimerChIdentifierType TimerId )</pre>	
<b>Service ID</b>	0x8E	
<b>Sync/Async</b>	Synchronous	

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**Table 416**      **Specification for Mcu\_17\_Gpt12\_TimerStop API (continued)**

<b>ASIL Level</b>	B	
<b>Re-entrancy</b>	Reentrant for other channels	
<b>Parameters (in)</b>	TimerId	GPT12 timer channel to be disabled
<b>Parameters (out)</b>	-	-
<b>Parameters (in - out)</b>	-	-
<b>Return</b>	void	-
<b>Description</b>	Mcu_17_Gpt12_TimerStop stops the specified GPT12 timer.	
<b>Source</b>	IFX	
<b>Error handling</b>	-	
<b>Configuration dependencies</b>	-	
<b>User hints</b>	-	
<b>SFR accessed</b>	GPT12_T2CON(rw), GPT12_T3CON(rw), GPT12_T4CON(rw), GPT12_T5CON(rw), GPT12_T6CON(rw) <i>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.</i>	
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.	

### 1.3.3.69 Mcu\_17\_Stm\_SetupComparator

**Table 417**      **Specification for Mcu\_17\_Stm\_SetupComparator API**

<b>Syntax</b>	<pre>void Mcu_17_Stm_SetupComparator (     const Mcu_17_Stm_TimerConfigType * const ConfigPtr )</pre>	
<b>Service ID</b>	0x90	
<b>Sync/Async</b>	Synchronous	
<b>ASIL Level</b>	B	
<b>Re-entrancy</b>	Reentrant for other STM comparators	
<b>Parameters (in)</b>	ConfigPtr	STM Timer Compare operation contents
<b>Parameters (out)</b>	-	-
<b>Parameters (in - out)</b>	-	-

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**Table 417**      **Specification for Mcu\_17\_Stm\_SetupComparator API (continued)**

<b>Return</b>	void	-
<b>Description</b>	Mcu_17_Stm_SetupCompareOperation configures the compare register of the STM timer.	
<b>Source</b>	IFX	
<b>Error handling</b>	-	
<b>Configuration dependencies</b>	-	
<b>User hints</b>	-	
<b>SFR accessed</b>	STM_CMCON(rw), STM_CMP(w), STM_ICR(rw), STM_ISCR(rw) <i>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.</i>	
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.	

### 1.3.3.70 Mcu\_17\_Stm\_CheckComparator

**Table 418**      **Specification for Mcu\_17\_Stm\_CheckComparator API**

<b>Syntax</b>	<pre>void Mcu_17_Stm_CheckComparator (     const Mcu_17_Stm_TimerConfigType * const ConfigPtr )</pre>	
<b>Service ID</b>	0x91	
<b>Sync/Async</b>	Synchronous	
<b>ASIL Level</b>	B	
<b>Re-entrancy</b>	Non-reentrant	
<b>Parameters (in)</b>	ConfigPtr	STM Timer channel initialization contents
<b>Parameters (out)</b>	-	-
<b>Parameters (in - out)</b>	-	-
<b>Return</b>	void	-
<b>Description</b>	Mcu_17_Stm_CheckCompareRegContent checks the configuration of the compare register against the passed configuration.	
<b>Source</b>	IFX	
<b>Error handling</b>	-	
<b>Configuration dependencies</b>	-	
<b>User hints</b>	User should verify the value of the Compare register as its value can change at the run-time	

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**Table 418**      **Specification for Mcu\_17\_Stm\_CheckComparator API (continued)**

<b>SFR accessed</b>	STM_CMCON(r), STM_ICR(r) <i>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.</i>
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.

### 1.3.3.71 Mcu\_17\_Stm\_ComparatorIntDisable

**Table 419**      **Specification for Mcu\_17\_Stm\_ComparatorIntDisable API**

<b>Syntax</b>	<pre>void Mcu_17_Stm_ComparatorIntDisable (     const uint8 StmTimerId,     const uint8 StmComparatorId )</pre>	
<b>Service ID</b>	0x88	
<b>Sync/Async</b>	Synchronous	
<b>ASIL Level</b>	B	
<b>Re-entrancy</b>	Reentrant for other STM Timers	
<b>Parameters (in)</b>	StmTimerId StmComparatorId	STM Timer Id STM Comparator Id
<b>Parameters (out)</b>	-	-
<b>Parameters (in - out)</b>	-	-
<b>Return</b>	void	-
<b>Description</b>	Mcu_17_Stm_ComparatorIntDisable disables the comparator interrupt.	
<b>Source</b>	IFX	
<b>Error handling</b>	-	
<b>Configuration dependencies</b>	-	
<b>User hints</b>	-	
<b>SFR accessed</b>	STM_ICR(w) <i>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.</i>	
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.	

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### 1.3.4 Notifications and Callbacks

This section lists all the notification and callbacks of MCU driver.

#### 1.3.4.1 Mcu\_ClockFailureNotification

**Table 420**      **Specification for Mcu\_ClockFailureNotification API**

<b>Syntax</b>	<pre>void Mcu_ClockFailureNotification (     void )</pre>	
<b>Service ID</b>	0xFF	
<b>Sync/Async</b>	Synchronous	
<b>ASIL Level</b>	B	
<b>Re-entrancy</b>	Non Reentrant	
<b>Parameters (in)</b>	-	-
<b>Parameters (out)</b>	-	-
<b>Parameters (in - out)</b>	-	-
<b>Return</b>	void	-
<b>Description</b>	<p>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 DEMs.</p> <p>If the root cause of a PLL loss of lock is an oscillator failure, then MCU_E_OSC_FAILURE DEM is reported.</p> <p>Availability of this function is controlled by the McuClockSourceFailureNotification parameter.</p>	
<b>Source</b>	IFX	
<b>Error handling</b>	MCU_E_SYSTEM_PLL_LOCK_LOSS, MCU_E_PERIPHERAL_PLL_LOCK_LOSS, MCU_E_OSC_FAILURE	
<b>Configuration dependencies</b>	McuClockSourceFailureNotification	
<b>User hints</b>	-	
<b>SFR accessed</b>	SCU_OSCCON(r), SCU_PERPLLSTAT(r), SCU_SYSPLLSTAT(r) <i>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.</i>	
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.	



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### 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\_Channellsr

**Table 421** Specification for Mcu\_17\_Ccu6\_ChannelIsr API

<b>Syntax</b>	<pre>void Mcu_17_Ccu6_ChannelIsr (     const Mcu_17_Ccu6_KernelIdentifierType Kernel,     const Mcu_17_Ccu6_ComparatorType Comparator )</pre>	
<b>Service ID</b>	0x95	
<b>Sync/Async</b>	Synchronous	
<b>ASIL Level</b>	B	
<b>Re-entrancy</b>	Reentrant for different channels	
<b>Parameters (in)</b>	Kernel Comparator	CCU6 Kernel CCU6 Comparator type
<b>Parameters (out)</b>	-	-
<b>Parameters (in - out)</b>	-	-
<b>Return</b>	void	-
<b>Description</b>	Mcu_17_Ccu6_Channellsr 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_Channellsr identifies the user of the specified channel and invokes a known call back function associated with the user.	
<b>Source</b>	IFX	
<b>Error handling</b>	MCU_E_INVALID_ISR	
<b>Configuration dependencies</b>	-	
<b>User hints</b>	-	
<b>SFR accessed</b>	CCU6_IEN(r), CCU6_IS(r), CCU6_ISR(w) <i>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.</i>	
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.	

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### 1.3.6.2 Mcu\_17\_Eru\_GatingIsr

**Table 422 Specification for Mcu\_17\_Eru\_GatingIsr API**

<b>Syntax</b>	<pre>void Mcu_17_Eru_GatingIsr (     const Mcu_17_Eru_SrcIdentifierType EruSrcId )</pre>	
<b>Service ID</b>	0x98	
<b>Sync/Async</b>	Synchronous	
<b>ASIL Level</b>	B	
<b>Re-entrancy</b>	Reentrant for different channels	
<b>Parameters (in)</b>	EruSrcId	Input Channel
<b>Parameters (out)</b>	-	-
<b>Parameters (in - out)</b>	-	-
<b>Return</b>	void	-
<b>Description</b>	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.	
<b>Source</b>	IFX	
<b>Error handling</b>	MCU_E_INVALID_ISR	
<b>Configuration dependencies</b>	-	
<b>User hints</b>	The value of parameter IrqFlag is always zero as it is checked and passed. This parameter is just to maintain the consistency	
<b>SFR accessed</b>	SCU_EIFR(r), SCU_FMR(w), SCU_IGCR(r), SCU_PDRR(r) <i>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.</i>	
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.	

### 1.3.6.3 Mcu\_17\_Gpt12\_Channellsr

**Table 423 Specification for Mcu\_17\_Gpt12\_ChannelIsr API**

<b>Syntax</b>	<pre>void Mcu_17_Gpt12_ChannelIsr (     const Mcu_17_Gpt12_TimerChIdentifierType Timer )</pre>	
<b>Service ID</b>	0x96	

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**Table 423**      **Specification for Mcu\_17\_Gpt12\_ChannelIsr API (continued)**

<b>Sync/Async</b>	Synchronous	
<b>ASIL Level</b>	B	
<b>Re-entrancy</b>	Reentrant for different channels	
<b>Parameters (in)</b>	Timer	GPT12 timer
<b>Parameters (out)</b>	-	-
<b>Parameters (in - out)</b>	-	-
<b>Return</b>	void	-
<b>Description</b>	Mcu_17_Gpt12_Channellsr 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_Channellsr identifies the user of the specified channel and invokes a known call back function associated with the user.	
<b>Source</b>	IFX	
<b>Error handling</b>	-	
<b>Configuration dependencies</b>	-	
<b>User hints</b>	-	
<b>SFR accessed</b>	-	
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.	

### 1.3.6.4 Mcu\_17\_Gtm\_AtomChannellsr

**Table 424**      **Specification for Mcu\_17\_Gtm\_AtomChannelIsr API**

<b>Syntax</b>	<pre>void Mcu_17_Gtm_AtomChannelIsr (     const uint8 Module,     const uint8 Channel )</pre>	
<b>Service ID</b>	0x93	
<b>Sync/Async</b>	Synchronous	
<b>ASIL Level</b>	B	
<b>Re-entrancy</b>	Reentrant for different channels	
<b>Parameters (in)</b>	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)
<b>Parameters (out)</b>	-	-

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**Table 424**      **Specification for Mcu\_17\_Gtm\_AtomChannelIsr API (continued)**

<b>Parameters (in - out)</b>	-	-
<b>Return</b>	void	-
<b>Description</b>	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.	
<b>Source</b>	IFX	
<b>Error handling</b>	MCU_E_INVALID_ISR	
<b>Configuration dependencies</b>	-	
<b>User hints</b>	-	
<b>SFR accessed</b>	GTM_ATOM_CH_IRQ_EN(r), GTM_ATOM_CH_IRQ_NOTIFY(rw) <i>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.</i>	
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.	

### 1.3.6.5 Mcu\_17\_Gtm\_TimChannellsr

**Table 425**      **Specification for Mcu\_17\_Gtm\_TimChannelIsr API**

<b>Syntax</b>	<pre>void Mcu_17_Gtm_TimChannelIsr (     const uint8 Module,     const uint8 Channel )</pre>	
<b>Service ID</b>	0x94	
<b>Sync/Async</b>	Synchronous	
<b>ASIL Level</b>	B	
<b>Re-entrancy</b>	Reentrant for different channels	
<b>Parameters (in)</b>	Module Channel	TIM module number TIM channel number
<b>Parameters (out)</b>	-	-
<b>Parameters (in - out)</b>	-	-
<b>Return</b>	void	-
<b>Description</b>	Mcu_17_Gtm_TimChannellsr is the interrupt service routine of a TIM channel and is invoked by the interrupt frame installed in the interrupt vector table.	
<b>Source</b>	IFX	

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**Table 425**      **Specification for Mcu\_17\_Gtm\_TimChannelIsr API (continued)**

<b>Error handling</b>	MCU_E_INVALID_ISR
<b>Configuration dependencies</b>	-
<b>User hints</b>	-
<b>SFR accessed</b>	GTM_TIM_CH_IRQ_EN(r), GTM_TIM_CH_IRQ_NOTIFY(rw) <i>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.</i>
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.

### 1.3.6.6 Mcu\_17\_Gtm\_TomChannellsr

**Table 426**      **Specification for Mcu\_17\_Gtm\_TomChannelIsr API**

<b>Syntax</b>	<pre>void Mcu_17_Gtm_TomChannelIsr (     const uint8 Module,     const uint8 Channel )</pre>	
<b>Service ID</b>	0x92	
<b>Sync/Async</b>	Synchronous	
<b>ASIL Level</b>	B	
<b>Re-entrancy</b>	Reentrant for different channels	
<b>Parameters (in)</b>	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)
<b>Parameters (out)</b>	-	-
<b>Parameters (in - out)</b>	-	-
<b>Return</b>	void	-
<b>Description</b>	Mcu_17_Gtm_TomChannellsr is the interrupt service routine of a TOM channel and is invoked by the interrupt frame installed in the interrupt vector table.	
<b>Source</b>	IFX	
<b>Error handling</b>	MCU_E_INVALID_ISR	
<b>Configuration dependencies</b>	-	
<b>User hints</b>	-	
<b>SFR accessed</b>	GTM_TOM_CH_IRQ_EN(r), GTM_TOM_CH_IRQ_NOTIFY(rw)	

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**Table 426**      **Specification for Mcu\_17\_Gtm\_TomChannelIsr API (continued)**

	<i>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.</i>
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.

### 1.3.6.7 Mcu\_17\_Stm\_CompareMatchIsr

**Table 427**      **Specification for Mcu\_17\_Stm\_CompareMatchIsr API**

<b>Syntax</b>	<pre>void Mcu_17_Stm_CompareMatchIsr (     const Mcu_17_Stm_StmIdentifierType StmTimerId,     const Mcu_17_Stm_StmCmpIdentifierType StmCmpId )</pre>	
<b>Service ID</b>	0x97	
<b>Sync/Async</b>	Synchronous	
<b>ASIL Level</b>	B	
<b>Re-entrancy</b>	Reentrant for other STM timers	
<b>Parameters (in)</b>	StmTimerId StmCmpId	STM timer ID STM comparator ID
<b>Parameters (out)</b>	-	-
<b>Parameters (in - out)</b>	-	-
<b>Return</b>	void	-
<b>Description</b>	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.	
<b>Source</b>	IFX	
<b>Error handling</b>	MCU_E_INVALID_ISR	
<b>Configuration dependencies</b>	-	
<b>User hints</b>	-	
<b>SFR accessed</b>	STM_ICR(r), STM_ISCR(w) <i>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.</i>	
<b>Autosar Version</b>	Applicable for Autosar versions 4.2.2 and 4.4.0.	

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### 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)
<b>MCU_E_CCUC6_CLC_DISABLE_ERROR:</b> Inability to turn OFF the CCUC6 kernel clock disable bit	IFX	Assigned by DEM	DEM	Assigned by DEM	DEM
<b>MCU_E_CCUC6_CLC_ENABLE_ERROR:</b> Inability to turn ON the CCUC6 kernel Clock enable bit	IFX	Assigned by DEM	DEM	Assigned by DEM	DEM
<b>MCU_E_CCUCON_UPDATE_ERROR:</b> Inability to update the CCUCON register	IFX	Assigned by DEM	DEM	Assigned by DEM	DEM
<b>MCU_E_CONVCTRL_CLC_DISABLE_ERROR:</b> Inability to turn OFF the CONVCTRL Clock disable bit	IFX	Assigned by DEM	DEM	Assigned by DEM	DEM
<b>MCU_E_CONVCTRL_CLC_ENABLE_ERROR:</b> Inability to turn ON the CONVCTRL Clock enable bit	IFX	Assigned by DEM	DEM	Assigned by DEM	DEM
<b>MCU_E_CORE_MISMATCH:</b> API is called from a core which is not the master core	IFX	0X68	DET_SAFETY	0X68	DET_SAFETY
<b>MCU_E_GPT12_CLC_DISABLE_ERROR:</b> Inability to turn OFF the GPT12 clock disable bit	IFX	Assigned by DEM	DEM	Assigned by DEM	DEM
<b>MCU_E_GPT12_CLC_ENABLE_ERROR:</b> Inability to turn ON the GPT12 Clock enable bit	IFX	Assigned by DEM	DEM	Assigned by DEM	DEM
<b>MCU_E_GTM_CLC_DISABLE_ERROR:</b> Inability to turn OFF the GTM clock disable bit	IFX	Assigned by DEM	DEM	Assigned by DEM	DEM
<b>MCU_E_GTM_CLC_ENABLE_ERROR:</b> Inability to turn ON the GTM Clock enable bit	IFX	Assigned by DEM	DEM	Assigned by DEM	DEM
<b>MCU_E_INIT_FAILED:</b> Error is reported when Mcu_Init() API is called when it is already initialized	AUTOSAR	0X11	DET_SAFETY	0X11	DET_SAFETY
<b>MCU_E_INVALID_ISR:</b> Error is reported if an ISR is invoked on a spurious interrupt	IFX	0XCA	SAFETY	0XCA	SAFETY

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Error Name: Description	Source	Error ID (AS422)	Type (AS422)	Error ID (AS440)	Type (AS440)
<b>MCU_E_OSC_FAILURE:</b> Inability of the oscillator to deliver correct clock	IFX	Assigned by DEM	DEM	Assigned by DEM	DEM
<b>MCU_E_PARAM_CLOCK :</b> ClockSetting parameter does not match the corresponding data in the Mcu_ConfigType object	AUTOSAR	0X0B	DET_SAFETY	0X0B	DET_SAFETY
<b>MCU_E_PARAM_CONFIG:</b> ConfigPtr passed to Mcu_Init is NULL	AUTOSAR	0X0A	DET_SAFETY	0X0A	DET_SAFETY
<b>MCU_E_PARAM_CPUID:</b> Input argument for CPU Id passed with an invalid core index	IFX	0X13	DET_SAFETY	0X13	DET_SAFETY
<b>MCU_E_PARAM_DIV_VAL:</b> CpuCcucon divider update requested with value higher than maximum possible divider value	IFX	0X15	DET_SAFETY	0X15	DET_SAFETY
<b>MCU_E_PARAM_MODE :</b> McuMode parameter does not match the corresponding data in the Mcu_ConfigType object	AUTOSAR	0X0C	DET_SAFETY	0X0C	DET_SAFETY
<b>MCU_E_PARAM_POINTER:</b> Versioninfo pointer passed to Mcu_GetVersionInfo is NULL	AUTOSAR	0X10	DET_SAFETY	0X10	DET_SAFETY
<b>MCU_E_PARAM_RAMSECTION :</b> RamSection parameter does not match the corresponding data in the Mcu_ConfigType object	AUTOSAR	0X0D	DET_SAFETY	0X0D	DET_SAFETY
<b>MCU_E_PARAM_TRAPID:</b> Trap-related read or write with an invalid trap source id	IFX	0X14	DET_SAFETY	0X14	DET_SAFETY
<b>MCU_E_PERIPHERAL_PLL_LOCK_LOSS:</b> This DEM is raised when Loss of Peripheral PLL lock occurs	IFX	Assigned by DEM	DEM	Assigned by DEM	DEM
<b>MCU_E_PERIPHERAL_PLL_TIME_OUT_ERR:</b> DEM 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	DEM	Assigned by DEM	DEM



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Error Name: Description	Source	Error ID (AS422)	Type (AS422)	Error ID (AS440)	Type (AS440)
<b>MCU_E_PHSCFG_UPDATE_ERR:</b> Error is raised when phase configuration register of Converter Control update fails	IFX	0XCB	SAFETY	0XCB	SAFETY
<b>MCU_E_PLL_NOT_LOCKED:</b> Either the system or peripheral PLL is not locked	AUTOSAR	0X0E	DET_SAFETY	0X0E	DET_SAFETY
<b>MCU_E_PMSWCR_UPDATE_ERR:</b> Inability to update the PMSWCRx register	IFX	Assigned by DEM	DEM	Assigned by DEM	DEM
<b>MCU_E_SW_RESET_FAILED:</b> Error is reported when software reset fails after calling the Mcu_PerformReset API	IFX	0XC9	SAFETY	0XC9	SAFETY
<b>MCU_E_SYSTEM_PLL_LOCK_LOSS:</b> This DEM is raised when Loss of System PLL lock occurs	IFX	Assigned by DEM	DEM	Assigned by DEM	DEM
<b>MCU_E_SYSTEM_PLL_TIMEOUT_ERR:</b> DEM 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	DEM	Assigned by DEM	DEM
<b>MCU_E_UNAUTHORIZED_REQUESTER:</b> Power down mode entry is requested by an unauthorized CPU	IFX	0X12	DET_SAFETY	0X12	DET_SAFETY
<b>MCU_E_UNINIT:</b> 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 428 Known deviations**

Reference	Deviation
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**Table 428 Known deviations (continued)**

Safety error for unintended service request	Refer to Reporting of unintended service requests.
Deviation from Autosar specific configuration parameters	<p>The MCU driver deviates from Autosar specification on following configuration parameters</p> <ul style="list-style-type: none"> <li>- McuClockReferencePointFrequency</li> <li>- McuNumberOfMcuModes</li> <li>- McuRamSectors</li> <li>- McuClockSrcFailureNotification</li> </ul> <p>These parameters are not used and have no effect on code generation.</p>
AUTOSAR requirement: SWS_Mcu_00152	<p>The datatypes related for DEM are availed via Dem.h instead of Rte_Dem_Type.h.</p> <p><i>Note: Applicable for Autosar version 4.4.0 only</i></p>

### 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 429 Violations reported by VSMD checker tool for Constr\_5520**

Rule ID:	Constr_5520
VSMD Node(s):	/AURIX2G/EcucDefs/Mcu/McuPublishedInformation/McuResetReasonConf/McuResetReason
Description:	The values of EcucParameterDefs with symbolicNameValue attribute set to true shall have their valueConfigClass.configClass set to PreCompile
Additional Information:	-

**Table 430 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!

**1 Mcu driver**
**Table 430**      *Violations reported by VSMD checker tool for EB03 (continued)*

Additional Information:	-
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**Table 431**      *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 432**      *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 433**      *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

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**Table 433**      **Violations reported by VSMD checker tool for EcucSws\_1035 (continued)**

	/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
Description:	For Containers, Parameters and References elements UUID must be unique (also between StMD and VSMD).
Additional Information:	-

**Table 434**      **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:	-

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**Table 435**      *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 436**      *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 437**      **Known limitations**

Reference	Limitation
Syntax to be followed for short name of configuration container and parameters	<p>The short name for following containers and their respective sub-containers shall follow the syntax &lt;Container_Name&gt;_&lt;x&gt; where &lt;x&gt; is an integer:</p> <ul style="list-style-type: none"> <li>- McuEruAllocationConf</li> <li>- McuGtmAllocationConf</li> <li>- McuCcu6ModuleAllocationConf</li> <li>- McuGpt12ModuleAllocationConf</li> <li>- GtmTomGlobalConf</li> <li>- GtmTomChannelConf</li> <li>- GtmTimGlobalConf</li> <li>- GtmTimChannelConf</li> <li>- GtmAtomGlobalConf</li> <li>- GtmAtomChannelConf</li> </ul> <p><i>Note: The above naming convention is by default followed in Tresos, when new containers are added or when project is created.</i></p>

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**Table 437 Known limitations (continued)**

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.
Restriction on usage of options provided in configuration parameters McuExtClockOutSel0 and McuExtClockOutSel1 based on hardware user manual v2.0	<ul style="list-style-type: none"> <li>- User shall not make use of option "TCK_EXT_CLOCK0_SEL13" in configuration parameter "McuExtClockOutSel0".</li> <li>- User shall not make use of option "OSCFL_EXT_CLOCK1_SEL15" in configuration parameter "McuExtClockOutSel1".</li> </ul> <p>As per hardware user manual v2.0, the aforementioned configuration options will be deprecated</p>

## 1.4 Revision History

**Table 438 Revision History**

Date	Version	Description
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	<ul style="list-style-type: none"> <li>- File structure updated for inclusion of IfxPms_bf.h</li> <li>- PMS unsupported features updated</li> <li>- Description updated for McuStdbymodeClkSelection</li> <li>- Note added in McuStdbymodeClkSelection</li> </ul>
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	<ul style="list-style-type: none"> <li>- Container and parameters for Port pin to GTM TIM connection added</li> <li>- Configuration parameters added for VDD and VEXT standby support</li> <li>- AoU "SMU alarms with clock initialization" updated with details of alarms</li> </ul>
2020-08-14	1.0	Document is released
2020-07-28	0.1	<ul style="list-style-type: none"> <li>-Initial Version</li> <li>-MCU driver chapter moved from MC-ISAR_TC3xx_UM_Basic to this document</li> <li>-VSMD violations added</li> <li>-Limitation on naming convention of configuration containers and parameters in Tresos added</li> <li>-Deviations from software specification added</li> <li>-Limitation related to "#undef ACCESS" added</li> </ul>

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**1 Mcu driver****Table 438**      ***Revision History (continued)***

		-Deviation related to use of Rte_Dem_Type.h for ASR 440 added
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