

# MC- ISAR\_AS42x\_AURIX2G\_TC38xA\_TC39xB\_CD\_1.0.0-rc

## Release Notes

Product name: MC\_AURIX2G\_SW\_MCAL

Release number: 1.0.0-rc

Type of release: RC\*

Release method: via Release Area

AUTOSAR specification: 4.2.2

Compiler support: Tasking 6.2r2, HighTec GNU 4.9.2.0, WindRiver v5.9.6.4, Patch Diab5964\_CSO-31481

Processor platform: TC38xAA, TC38xAB, TC38xAC, TC38xAD, TC39xBA, TC39xBB, TC39xBC

Date: 2018-10-08

Previous release number: 1.0.0-beta

## About this document

### Scope and purpose

This release notes, for the 1.0.0-rc delivery of TC3xx\_SW\_MCAL complex drivers, details the release contents, all known issues in the release and the changes from the last release. This document also provides information on tools, compiler options and support packages.

New issues identified since the last release of this document are detailed first, followed by all issues identified in previous versions of this release.

The modules supported in this release are:

- Dma (2.1.0)
- FlsLoader (3.0.0)
- Smu (3.0.0)

Further generic references to Modules are indicated as <Mod>, where <Mod> represents the above module short names.

*Note:        \* This release is not intended for production use.*

**Attention:**    *Refer to the Limitations and deviations section before using the software for integration.*

### Intended audience

This document is intended for anyone using the TC3xx\_SW\_MCAL software.

### Reference documents

Not applicable.

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## Release contents

# 1 Release contents

## 1.1 Release overview

This release is of RC quality. Section 1.4 provides module-wise quality information. This build is meant to start the integration and not for production usage, hence no legal liabilities.

## 1.2 Released items

The release is contained in the MC-ISAR\_AS42x\_AURIX2G\_TC38xA\_TC39xB\_CD\_1.0.0-rc.zip file. The contents of this file include MCAL software, EB tresos plugin files (BMD included), and User Manual and Release Notes.

*Note: The package also includes Build Environment and Demo Application, which are not attached with any quality but provided for demonstration purpose only.*

**Table 1 Release zip contents**

Package content	Description
MC-ISAR_AS42x_AURIX2G_TC38xA_TC39xB_CD_1.0.0-rc.exe	Product installer to be used with AUTOSAR Version 4.2.2
User Manuals	Contains the User Manual
MC-ISAR_AS42x_AURIX2G_TC3xx_CD_1.0.0-rc.pdf	Contains the Release Notes

### 1.2.1 Driver files

**Table 2 Driver file description**

File name	Description
<Mod>_<Ie>.c	Contains the <Mod>_<Ie> source files located in \McIsar\Src\Mcal\Tricore\<Mod>\ssc\src.
<Mod>_<Ie>.h	Contains the <Mod>_<Ie> header files located in \McIsar\Src\Mcal\Tricore\<Mod>\ssc\inc.

*Note: In the above table, Ie stands for implementation specific.*

### 1.2.2 Common files

Refer to the MC-ISAR\_AS42x\_AURIX2G\_TC3xx\_BASIC\_<yyy>-<zzz> for details on the common files, where <yyy> and <zzz> represent the corresponding release numbers.

## Release contents

### 1.2.3 EB tresos plugin files

Note: Resource\_Aurix2G contains the properties for the TC38xA and TC39xB devices.

**Table 3** Plugin files

Folder name	Description
Autosar	Contains the BMD files for the module located in \McIsar\PluginsTresos\eclipse\Plugins\<Mod>_Aurix2G
Config	Contains the XDM tresos plugin files for the module located in \McIsar\PluginsTresos\eclipse\Plugins\<Mod>_Aurix2G
Generate	Contains the template for the generated files for the module located in \McIsar\PluginsTresos\eclipse\Plugins\<Mod>_Aurix2G
plugin.properties	Contains the plugin property for the module located in \McIsar\PluginsTresos\eclipse\Plugins\<Mod>_Aurix2G
plugin.xml	Contains the plug-in information, located in \McIsar\PluginsTresos \eclipse\Plugins\<Mod>_Aurix2G
anchors.xml	

### 1.3 Safety

This release has no safety claim.

### 1.4 Module-wise quality

**Table 4** Module-wise quality

Module	Release quality
Dma	RC
FlsLoader	RC
Smu	RC

### 1.5 Compatibility

This release is tested with the following SFR packages:

- TC38x - REG\_TC38X\_UM\_V1.0.0.R0
- TC39xB - REG\_TC39XB\_UM\_V1.0.0.R0

## Tool information

## 2 Tool information

**Table 5 Tool information**

Tool description	Version details
Compiler	TASKING TriCore 6.2r2 HighTec TriCore 4.9.2.0 WindRiver v5.9.6.4, Patch Diab5964_CSO-31481
Processor platform	TC38xAA, TC38xAB, TC38xAC, TC38xAD TC39xBA, TC39xBB, TC39xBC
Evaluation hardware	TriBoard TC3x9 TriBoard TC3x7
Code configuration and generation tool	EB tresos Studio 23.0.0 Build Nr. b170330-0431

### 2.1 Compiler options

**Table 6 TASKING compiler options used**

Options	Description
Compiler options	<code>--core=tc1.6.2 --iso=99 -O2 --eabi-compliant -AGKpvX --switch=auto --integer-enumeration --default-near-size=0 --fpmodel=1</code>
Assembler options	<code>--core=tc1.6.2 --list-format=1 --optimize=gs</code>
Linker options	<code>--map-file -OcLtXY --core=mpe:vtc</code>

**Table 7 HighTec compiler options used**

Options	Description
Compiler options	<code>-DGNU -Wall -std=c99 -c -O2 -mtc162 -meabi -fno-short-enums \ -ffunction-sections -fdata-sections -fstrict-volatile-bitfields</code>
Assembler options	<code>-DGNU -Wall -std=c99 -c -O2 -mtc162 -meabi -fno-short-enums \ -ffunction-sections -fdata-sections -fstrict-volatile-bitfields</code>
Linker options	<code>-Wl,--mcpu=tc162 -Wl,--gc-sections -nostartfiles -n</code>

**Table 8 WindRiver Diab compiler options used**

Options	Description
Compiler options	<code>-tTC162NF:simple -O -XO -Xsection-split=1 \ -Xkeep-assembly-file=2 -g3 -Xinline=0 -Xdialect-c99 -ei5388,2273,5387 \ -ei1824 -Xsmall-data=0 -Xsmall-const=0</code>
Assembler options	<code>-tTC162NF:simple -O -XO -Xsection-split=1 \ -Xkeep-assembly-file=2 -g3 -Xinline=0 -Xdialect-c99 -ei5388,2273,5387 \ -ei1824 -Xsmall-data=0 -Xsmall-const=0</code>

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**Tool information****Table 8**                      **WindRiver Diab compiler options used (continued)**

Options	Description
Linker options	<code>-tTC162NF:simple -m6 -Xremove-unused-sections</code>

*Note:*                      *Compiler options which influence code generation and are not listed, should be left to the default compiler settings. All the above-listed compiler options are mandatory.*

**Attention:**    *If the compiler options are changed by the user, and if the generated binary output is different than the one generated by the usage of the mandatory compiler options, the functionality and reliability of the drivers cannot be ensured.*

## Summary of changes

### 3 Summary of changes

This chapter describes the fixes for issues from previous version(s).

#### Configuration changes

Compatibility check	Result
Are there any change in parameters supplied from previous version?	No
Added parameters	No
Deleted parameters	No
Modified parameters	No
Can the previously saved configuration be reused?	Yes

#### 3.1 Issues fixed in release 1.0.0-rc

This chapter describes the fixes for issues from previous version(s).

**Table 9** Summary of changes from 1.0.0-beta to 1.0.0-rc

Module	Issue number	Description
Dma	0000053912-3130	The Dma_MEInterruptDispatcher API does not check for ETRL and TRL bit before calling the interrupt handler for that channel.
	0000053912-2022	Common array accessed across cores are split across different cores.
	0000053912-2278	The handling of the interrupts is updated to service the interrupts fired during a short span of time.
FlsLoader	0000053912-3003	Inconsistent naming corrected in the BSWMD file.
	0000053912-3271	Added support for UCB programming.
	0000053912-3272	Incorrect alignment on source address input in FlsLoader_Write updated.
	0000053912-3395	Removed critical section for Flash command sequence handling.
	0000053912-3105	FlsLoader_Erase is failing across physical sectors if the starting address of erase is other than the first logical sector of the bank.
	0000053912-2406	FlsLoader_Erase() is reporting DET as FLSLOADER_E_PARAM_LENGTH while passing invalid target addresses in the range of PFlash.
	0000053912-2482	Page mode Write is failing for PFlash while executing with GHS compiler.

## Summary of changes

**Table 9** Summary of changes from 1.0.0-beta to 1.0.0-rc (continued)

Module	Issue number	Description
Smu	0000053912-2779	For Standby Alarm Groups, the Smu_SetAlarmAction API is not retaining the configuration of other alarm positions while configuring the desired position.
	0000053912-2673	SmuFSPFaultStateDuration range changed from 1 to 0.
	0000053912-2901	Smu_SetAlarmAction does not return E_NOT_OK if a wrong group is passed and DET is OFF.
	0000053912-3078	Incorrect step to clear the Smu_stdby alarm groups 20 and 21 in Smu_IClearAllAlarms corrected.
	0000053912-3086	Wrong code generation when Smu_stdby is disabled.
	0000053912-3106	The ORIGIN of configuration parameters changed to INFINEON_AURIX2G.
	0000053912-3197	Support for the User mode corrected in the Smu_IClearAllAlarms API.
	0000053912-3562	AUTOSAR release version verification check removed.
	0000053912-4024	Interrupt locking time for the Smu_RTStop is exceeding the limit of 100 µs in multicore scenario.

## 3.2 Issues fixed in release 1.0.0-beta

**Table 10** Summary of changes from 1.0.0-alpha.1 to 1.0.0-beta

Module	Issue number	Description
Dma	0000053912-2282	Multicore errors are not reported when DMA_MULTICORE_ERROR_DETECT is OFF.
	0000053912-1714	The Dma_GetMoveEngineEvent API returns ZERO for all the move engine events.
	0000053912-1708	Compilation error is observed upon allocation of channel to the CPU cores other than master CPU core.
	0000053912-2156	Error interrupt notification is not called from other than CORE 0.
	0000053912-1867	The DMA_ChInit API and Tresos configuration are not configuring channels properly.
	0000053912-2732	A trap is occurring in the User mode.
	0000053912-2637	First input parameters of TRUSTED_Mcal_SetBitAtomic function are passed as uint32 data instead of pointer.
	0000053912-1786	Register settings are incorrect in the Dma_ChInterruptEnable API.



## Summary of changes

**Table 10** Summary of changes from 1.0.0-alpha.1 to 1.0.0-beta (continued)

Module	Issue number	Description
FlsLoader	0000053912-2375	ROM_VERSION check is failing.
	0000053912-1688	FlsLoader_Write is failing with page mode on PFlash.
	0000053912-1242	FlsLoader_Write is not returning FLSLOADER_E_LOCKED while working on DFlash.
	0000053912-1211	FlsLoader_Write returns DET 4( FLSLOADER_E_UNINIT ) when tested for erase busy condition.
	0000053912-1111	The FlashLoader_Erase API is not working when a value of 63 is passed for input parameter.
	0000053912-1411	Description in xdm to be corrected for container FlsLoaderPFlash0ProtConfig.
	0000053912-2534	Warning in the FlsLoader_Platform.c file while compiling with the Tasking compiler.
Smu	0000053912-1934	The Smu_GetAlarmStatus() and Smu_GetAlarmDebugStatus() APIs are returning trap for the invalid value of alarm group (greater than 255).
	0000053912-1876	The Smu_GetAlarmAction API is returning E_NOT_OK and not returning the alarm action configured even if the driver is initialized correctly.
	0000053912-1863	The following APIs are multicore capable and concurrency safe (earlier implemented as non-re-entrant): Smu_RegisterMonitor, Smu_LockConfigRegs and Smu_InitCheck.
	0000053912-1770	The Smu_ReleaseFSP() API is returning E_OK and passing DEM even in case the API is called in FAULT_STATE but the EFRST is not kept enabled.
	0000053912-2057	The Smu_GetRTMissedEvent and Smu_GetVersionInfo APIs are not reporting correct DET/SAFETY error, if NULL pointer is passed.
	0000053912-2775	Tresos is not reporting error for the invalid bits in the Group21 and reporting the error for AlarmPos6 of Group20.
	0000053912-2492	Warnings observed in the Smu.c when both the SAFETY and DET switches are kept OFF.
	0000053912-2696	Incorrect Resource Property files for TC39x.
	0000053912-2640	Smu_LockConfigRegs API returns E_OK in case DET or Safety or both are kept ON and due to hardware failure KEYS register is not permanently LOCKED.

### 3.3 Issues fixed in release 1.0.0-alpha.1

There are no fixed issues for this release.

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## Summary of changes

### 3.4 Issues fixed in release 1.0.0-alpha

This is the first Alpha delivery for the product.

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**Known issues**

## 4 Known issues

This chapter describes the prescribed workarounds for all the open issues identified.

**Table 11** Known issues

Module	Issue number	Description
General	0000053912-3945	Impact: Potential issue due to TASKING compiler errata T TCVX-43309 and TCVX-43620. Workaround: The initial review has been done and no issues seen.

## Limitations and deviations

# 5 Limitations and deviations

This chapter describes the limitations and deviations due to software/hardware design constraints.

## 5.1 Limitations

Refer to the *Deviation and limitations* section in the respective MCAL User Manual.

## 5.2 Deviations

**Table 12** Known limitations

Module name	Description	Impact on module
Tresos Tool/BMD	The BMD files provided in the package are not 100% compliant to AS4.2.2.	<p>Following warnings are observed in the plugin files:</p> <ul style="list-style-type: none"> <li>Software version check: No corresponding BSW-IMPLEMENTATION node for component MOD found</li> <li>Vendor ID check: No corresponding BSW-IMPLEMENTATION node for component MOD found</li> <li>BSW-IMPLEMENTATION node should exist but was not found. ArMajorVersion/ArMinorVersion/ArPatchVersion/SwMajorVersion/SwMinorVersion/SwPatchVersion/VendorId/VendorApiInfix should not be set in the CommonPublishedInformation container in AUTOSAR Version 3.x or higher.</li> <li>Parameter maximum value should not be set with the value 'INF' in VSMD</li> </ul>
	Limited variation point support	Configuration testing with Variation Point Support is limited due to EB tresos tool issue. The tool hangs randomly with the variation points added.

### 5.2.1 HIS-MISRA violations

**Table 13** MISRA violations due to SFR access / compiler intrinsic functions and AUTOSAR

MISRA_2012_Rule	Rule description	Justification for deviation	Modules applicable
1.3	There shall be no occurrence of undefined or critical unspecified behavior	This rule violation is agreed as we need to store the address passed is in the called function in many scenarios.	Dma
4.9	A function should be used in preference to a function-like macro where they are interchangeable	Allowed violations in cases where function like macro, '*_GetVersionInfo', and intrinsic macros.	Dma, Smu
4.10	Precautions shall be taken in order to prevent the contents of a header file being included more than once	Allowed violations in case where Mod_Memmap.h is repeatedly included without include guard. This is as per AUTOSAR.	Dma, FlsLoader, Smu

## Limitations and deviations

**Table 13 MISRA violations due to SFR access / compiler intrinsic functions and AUTOSAR (continued)**

MISRA_2012_Rule	Rule description	Justification for deviation	Modules applicable
5.1	External identifiers shall be distinct	Allowed violations in cases where external identifiers are going beyond 32 chars (some due to AS naming conventions, some due to module design, but mostly in generated code.)	Dma, FlsLoader
5.2	Identifiers declared in the same scope and name space shall be distinct	Allowed violations in cases where external identifiers are going beyond 32 chars (some due to AS naming conventions, some due to module design, but mostly in generated code.)	Dma, FlsLoader
5.4	Macro identifiers shall be distinct	Allowed violations in cases where external identifiers are going beyond 32 chars (some due to AS naming conventions, some due to module design, but mostly in generated code.)	Dma, FlsLoader
5.5	Identifiers shall be distinct from macro names	Allowed violations in cases where Macro names are going beyond 32 chars (some due to AS naming conventions, some due to module design, but mostly in generated code.)	Dma, FlsLoader
8.9	An object should be defined at block scope if its identifier only appears in a single function	Global constants not declared within block scope, but used only in one function. Declaring const in a API scope may lead to confusion.	Dma, FlsLoader
8.13	A pointer should point to a const-qualified type whenever possible	Use of assembly instruction on some address pointers, hence cannot pass them as const.	FlsLoader
11.4	A conversion should not be performed between a pointer to object and an integer type	Allowed violations in cases where rule is violated for SFR access only.	Dma, FlsLoader

## Limitations and deviations

**Table 13 MISRA violations due to SFR access / compiler intrinsic functions and AUTOSAR (continued)**

MISRA_2012_Rule	Rule description	Justification for deviation	Modules applicable
11.5	A conversion should not be performed from pointer to void into pointer to object	SFR access. No side effects foreseen by violating this MISRA rule.	FlsLoader
11.6	A cast shall not be performed between pointer to void and an arithmetic type	Allowed violations for SFR access only.	Dma, FlsLoader
11.8	A cast shall not remove any const or volatile qualification from the type pointed to by a pointer	Allowed violation for SFR access only and the solution gives compile time warning with different compilers.	Dma
18.4	The +, -, += and -= operators should not be applied to an expression of pointer type	Allowed violation in cases where pointer arithmetic other than array indexing is used.	FlsLoader
19.2	The union keyword should not be used	Allowed violation in cases where pointer arithmetic other than array indexing is used for SFR access.	Dma, FlsLoader
20.1	#include directives should only be preceded by pre-processor directives or comments	Allowed violations in cases where declaration before #include memap.h as per the AUTOSAR.	Dma, FlsLoader, Smu

**Table 14 MISRA violations in drivers**

MISRA_2012_Rule	Rule description	Justification for deviation	Modules applicable
11.3	A cast shall not be performed between a pointer to object type and a pointer to a different object type	Cast performed between a pointer to object type and a pointer to a different object type due to SFR access.	Dma, FlsLoader, Smu
18.1	A pointer resulting from arithmetic on a pointer operand shall address an element of the same array as that pointer operand	The timer values are read from status register and therefore value of timer is within range.	Smu

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## Support packages

# 6 Support packages

**Attention:** *The following information is given for evaluation purposes only. Modifications to these packages are made at your own risk.*

## 6.1 Example demo application

These files contain the TC3xx demo routines. The following table describes the different folders/files.

**Table 15** Demo workspace

Folder / file name	Description
\DemoWorkspace\McalDemo\<TC38A/TC39B>\0_Src	Contains the source files needed to run the Demo application
\DemoWorkspace\McalDemo\<TC38A/TC39B>\1_ToolEnv	Contains the tools necessary to build the Demo application

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