

MC-ISAR_AS42x_TC3xx_DEMO_1.30.0

Release Notes

Product name: MC_AURIX2G_SW_MCAL

Release number: 1.30.0

Type of release: PR*

Release method: via Release Area

AUTOSAR specification: 4.2.2

Compiler support: Tasking 6.2r2p2, HighTec GNU 4.9.2.0

Processor platform: TC39xBA, TC39xBB, TC39xBC, TC38xAA, TC38xAB, TC38xAC, TC38xAD, TC37xEDAA, TC37xEDAB, TC37xAA and TC35xAA

Date: 2019-10-24

Previous release number: 1.30.0-rc

About this document

Scope and purpose

This release notes, for the 1.30.0 delivery of TC3xx_SW_MCAL DEMO drivers, details the release contents, all known issues in this 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 the release are:

- Hssl (10.30.1)
- I2C (10.30.1)
- Iom (10.30.1)
- Sent (10.30.1)
- Stm (10.30.0)

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

None.

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Release contents

1 Release contents

1.1 Release overview

This release is of Demo quality. Section 1.4 provides module-wise quality information.

TC36x and TC33x plug-in support is available in the current 1.30.0 release. However, customer should not use this release with TC36x and TC33x as validity of this release is limited to TC39xBA, TC39xBB, TC39xBC, TC38xAA, TC38xAB, TC38xAC, TC38xAD, TC37xEDAA, TC37xEDAB, TC37xAA and TC35xAA.

1.2 Released items

The release is contained in the MC-ISAR_AS42x_TC3xx_Demo_1.30.0.zip file. The contents of this file include MCAL software, EB tresos plugin files (BMD included), User Manuals and Release Notes.

Note: This package is not attached with any quality, and is provided for demonstration purpose only.

Table 1 Release zip contents

Package content	Description
MC-ISAR_AS42x_TC3xx_Demo_1.30.0.exe	Product installer to be used with AUTOSAR Version 4.2.2
User Manuals	Contains the User Manual and MCAL Configuration Verification User Manual
Releasenote_MC-ISAR_AS42x_TC3xx_Demo_1.30.0.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_TC3xx_BASIC_<yyy>-<zzzz> for details on the common files, where <yyy> and <zzzz> are corresponding release numbers.

1.2.3 EB tresos plugin files

Note: Resource_Aurix2G contains the properties for the TC39xBA, TC39xBB, TC39xBC, TC38xAA, TC38xAB, TC38xAC, TC38xAD, TC37xEDAA, TC37xEDAB, TC37xAA and TC35xAA.

Release contents

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

For information on safety, refer to the Safety Case Report document.

1.4 Module-wise quality

Table 4 **Module-wise quality**

Module	Release quality
Hssl	Demo <i>Note: This driver is not supported in TC35x device.</i>
I2c	Demo
Iom	Demo
Sent	Demo <i>Note: This driver is not supported in TC35x device.</i>
Stm	Demo

1.5 Compatibility

This release is tested with the following SFR packages:

- TC37xPD: REG_TC37xPD_UM_V1.2.0.R0
- TC37xED: REG_TC37xED_UM_V1.2.0.R0
- TC35xA: REG_TC35XA_UM_V1.2.0.R0
- TC38xA: REG_TC38XA_UM_V1.1.0.R0
- TC39xB: REG_TC39XB_UM_V1.1.0.R0

Release contents

Note: TC38x and TC39x SFR files were generated using UM 1.1. Changes between HW UM 1.1 and 1.2 were analyzed. No impact to SFR files due to the changes. Hence HW UM 1.2 is valid for TC38x and TC39x SFR files.

Tool information

2 Tool information

Table 5 Tool information

Tool description	Version details
Compiler	TASKING TriCore 6.2r2p2 HighTec TriCore 4.9.2.0
Processor platform	TC39xBA, TC39xBB, TC39xBC, TC38xAA, TC38xAB, TC38xAC, TC38xAD, TC37xEDAA, TC37xEDAB, TC37xAA and TC35xAA
Evaluation hardware	TriBoard TC3x9 TriBoard TC3x7
Code configuration and generation tool	EB tresos Studio 23.0.0 Build Nr. b170330-0431

Note: For more information on WibuKey issue related to the EB Tresos installation, refer to <https://www.wibu.com/us/support/user/downloads-user-software.html>. The WibuKey issue numbers are: CVE-2018-3989, CVE-2018-3990 and CVE-2018-3991. The Tresos license provided by Infineon Technologies does not require WibuKey software.

Table 6 AURIX™2G umbrella device support

AURIX™ 2G umbrella device	Name displayed in Tresos tool	Tresos property file
SAK-TC399XE-256F300S	TC399	AURIX2G_TC399.properties
SAK-TC397XE-256F300S	TC397	AURIX2G_TC397.properties
SAK-TC397XT-256F300S	TC397_ADAS	AURIX2G_TC397_ADAS.properties
SAL-TC389QP-160F300S	TC389	AURIX2G_TC389.properties
SAL-TC387QP-160F300S	TC387	AURIX2G_TC387.properties
SAK-TC389QP-160F300S	TC389	AURIX2G_TC389.properties
SAK-TC387QP-160F300S	TC387	AURIX2G_TC387.properties
SAL-TC377TP-96F300S	TC377	AURIX2G_TC377.properties
SAL-TC375TP-96F300W	TC375	AURIX2G_TC375.properties
SAL-TC377DP-96F300S	TC377	AURIX2G_TC377.properties
SAL-TC377TX-96F300S	TC377_ED_EX	AURIX2G_TC377_ED_EX.properties
SAL-TC377TE-96F300S	TC377_ED	AURIX2G_TC377_ED.properties
SAL-TC375TE-96F300W	TC375_ED	AURIX2G_TC375_ED.properties
SAK-TC377TP-96F300S	TC377	AURIX2G_TC377.properties
SAK-TC375TP-96F300W	TC375	AURIX2G_TC375.properties
SAK-TC377DP-96F300S	TC377	AURIX2G_TC377.properties
SAK-TC356TA-64F300S	TC356_ADAS	AURIX2G_TC356_ADAS.properties
SAK-TC357TT-64F300S	TC357_ADAS	AURIX2G_TC357_ADAS.properties

Tool information

Table 7 AURIX™ 2G marking option device support¹⁾

AURIX™ 2G marking option device	Name displayed in Tresos tool	Tresos property file
SAL-TC399XX-256F300S	TC399	AURIX2G_TC399.properties
SAL-TC399XP-256F300S	TC399	AURIX2G_TC399.properties
SAL-TC397XP-256F300S	TC397	AURIX2G_TC397.properties
SAK-TC399XP-256F300S	TC399	AURIX2G_TC399.properties
SAK-TC399XX-256F300S	TC399	AURIX2G_TC399.properties
SAK-TC397XP-256F300S	TC397	AURIX2G_TC397.properties
SAK-TC397XA-256F300S	TC397	AURIX2G_TC397.properties
SAK-TC397QA-160F300S	TC397	AURIX2G_TC397.properties
SAK-TC397XX-256F300S	TC397	AURIX2G_TC397.properties
SAK-TC397QP-192F300S	TC397	AURIX2G_TC397.properties
SAK-TC397QP-256F300S	TC397	AURIX2G_TC397.properties
SAK-TC397XZ-256F300S	TC397	AURIX2G_TC397.properties
SAK-TC397XM-256F300S	TC397	AURIX2G_TC397.properties
SAL-TC380QP-160F300S	TC389	AURIX2G_TC389.properties
SAK-TC387TP-128F300S	TC387	AURIX2G_TC387.properties
SAL-TC387TP-128F300S	TC387	AURIX2G_TC387.properties
SAK-TC387TP-160F300S	TC387	AURIX2G_TC389.properties
SAL-TC387TP-160F300S	TC387	AURIX2G_TC389.properties
SAK-TC387QN-160F300S	TC387	AURIX2G_TC387.properties
SAK-TC389QN-160F300S	TC389	AURIX2G_TC389.properties
SAL-TC370TP-96F300S	TC377	AURIX2G_TC377.properties
SAK-TC377TX-96F300S	TC377_ED_EX	AURIX2G_TC377_ED_EX.properties
SAK-TC357TA-64F300S	TC357_ADAS	AURIX2G_TC357_ADAS.properties
SAK-TC357TH-64F300S	TC357_ADAS	AURIX2G_TC357_ADAS.properties
SAK-TC356TH-64F300S	TC356_ADAS	AURIX2G_TC356_ADAS.properties

Note: **1.** For TC38x, TC39x, TC37x, TC37xEXT and TC35x marking option device support, range check has to be imposed by user, and not in the MCAL code.

2.1 Compiler options

Table 8 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 --fp-model=1</code>

Tool information
Table 8 TASKING compiler options used (continued)

Options	Description
Assembler options	<code>--core=tc1.6.2 --list-format=1 --optimize=gs</code>
Linker options	<code>-OcLtXY --core=mpe:vtc</code>

Table 9 HighTec compiler options used

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

Configuration changes

Table 10 Configuration changes from 1.30.0-rc to 1.30.0

Compatibility check	Result
Are there any change in parameters supplied from previous version?	Yes
Added parameters	None
Deleted parameters	None
Modified parameters	Hssl, lom, Sent, I2C: Modules SwPatchVersion parameter default value is modified.
Can the previously saved configuration be reused?	Yes

3.1 Issues fixed in release 1.30.0

Table 11 Summary of changes from 1.30.0-rc to 1.30.0

Module	Issue number	Description
Hssl	0000053912-8155	Variables kept in incorrect memmap section.
	0000053912-8237	memmap corrections.
	0000053912-8271	Compiler and linker support for Tasking , GHS, Gnu and windriver to be added in Arxml
	0000053912-8588	Bswmd file to contain defines of Hssl_EventType.
	0000053912-8559	Wrong Memmap section used.
I2c	0000053912-7801	Memory mapping for configuration data has to be changed.
lom	0000053912-7775	Memory mapping for configuration data has to be changed.
Sent	0000053912-7880	Multiple definitions for "SENT_INITIALIZED" in driver files
	0000053912-7984	DET Major and Minor check issue.
	0000053912-8028	Initialized variable in VAR_CLEARED Section in Sent.c file.

Note: Generic ones are to be referred from BASIC Release notes.

3.2 Issues fixed in release 1.30.0-rc

Due to the modifications/enhancements to add new device(s) and features in the configuration structure, all configurations generated with 1.20.0-beta/1.30.0-alpha are not compatible with the 1.30.0-rc product.

Configuration changes

Summary of changes

Table 12 Configuration changes from 1.20.0-beta/1.30.0-alpha to 1.30.0-rc

Compatibility check	Result
Are there any change in parameters supplied from previous version?	Yes
Added parameters	Hssl: HsslRuntimeApiMode
Deleted parameters	No
Modified parameters	Hssl: <ul style="list-style-type: none"> HsslInitApiMode parameter configuration rule is updated HsslStreamingModeTx, HsslStreamingModeRx configuration rule is added I2c: <ul style="list-style-type: none"> I2cSystemClock parameter reference path is modified Sent: <ul style="list-style-type: none"> SentChanDataView parameter range check is modified SentDevErrorDetect parameter default value is modified General: <ul style="list-style-type: none"> For all modules, the default value of the SwMinorVersion parameter is modified
Can the previously saved configuration be reused?	Yes

Table 13 Summary of changes from 1.20.0-beta/1.30.0-alpha to 1.30.0-rc

Module	Issue number	Description
Generic	0000053912-7100	<Mod>_Bswmd.arxml file enum data type update is required.
	0000053912-5999	I2c ARXML files issue with Mentor RTE generator.
Hssl	0000053912-7340	The Hssl_StartStream API is supported with HSSL1 channel.
	0000053912-7062	Stream operation is unable to trigger more than 4 stream frames.
	0000053912-6984	Hssl_Id API works only in Channel 0 in Interrupt mode and hits trap in the polling mode.
	0000053912-6743	BSWMD file updated for to align with the latest code updated.
	0000053912-6659	Streaming modes (Tx and RX) are grayed out if HsslCh2Mode is not selected.
	0000053912-6587	The Hssl_ActivateSlave API is selecting the slave with wrong Slave ID.
I2c	0000053912-7409	ASync Read/Write operation is not working after I2c_AsyncRead API is called with data size more than 4 bytes.
	0000053912-7140	TC397_ADAS and TC397 device support added for I2c.
	0000053912-6303	The I2c multi-master mode is supported.

Summary of changes

Table 13 Summary of changes from 1.20.0-beta/1.30.0-alpha to 1.30.0-rc (continued)

Module	Issue number	Description
lom	0000053912-6276	The lom_GetResetStatus() API gives wrong value after initiating the kernel reset.
Sent	0000053912-7221	SENT_MASTER_CORE_UNINIT is reported by the Sent_Init API executed from cores other than master core.
	0000053912-7220	SENT_E_CHANNEL_NOT_ENABLED DET is reported after enabling the channel.
	0000053912-7180	BSWMD corrected for: <ul style="list-style-type: none"> added missing datatypes in the section ImplementationDataTypes added missing compumethods changed the implementation data ref type of enums to sint32 corrected the implementation section by removing local functions and notification function added re-entrancy for the function and remove minimum start time
Stm	0000053912-6249	Stm supported for the following Mstart values: 0, 4, 8, 12, 16 and 20.

3.3 Issues fixed in release 1.30.0-alpha

This is the first Alpha delivery for the product.

3.4 Enhancements and issues fixed from 1.10.0 to 1.30.0-rc

This chapter describes the enhancements and issues fixed from 1.10.0 to 1.30.0-rc.

Table 14 Enhancements and issues fixed from 1.10.0 to 1.30.0-rc

Module	Issue number	Description
Stm	0000053912-6249	Stm supported for the following Mstart values: 0, 4, 8, 12, 16 and 20.

Known issues

4 Known issues

No known issues.

Note: Generic ones are to be referred from BASIC Release notes.

Limitations and deviations

5 Limitations and deviations

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

5.1 Limitations

Table 15 Known limitations

Reference	Limitation
Enum input parameter	MCAL does not support negative values for enumeration type. User shall ensure that valid enumeration values are passed for the APIs where arguments of enumeration type are accepted.

Note: For driver specific Deviations and limitations refer to Deviations and limitations section in the respective driver chapters of MCAL User Manual.

5.2 Deviations

Table 16 Known deviations

Module name	Description	Impact on module
Tresos Tool/BMD	The BMD files provided in the package are not fully compliant to AS4.2.2.	<p>Following warnings are observed in the plugin files:</p> <ul style="list-style-type: none"> Software version check: No corresponding BSW-IMPLEMENTATION node for component 'MOD' found Vendor ID check: No corresponding BSW-IMPLEMENTATION node for component 'MOD' found BSW-IMPLEMENTATION node should exist but was not found <p>ArMajorVersion/ArMinorVersion/ArPatchVersion/SwMajorVersion/SwMinorVersion/SwPatchVersion/VendorId/VendorApiInfix should not be set in the CommonPublishedInformation container in AUTOSAR Version 3.x or higher.</p> <ul style="list-style-type: none"> Parameter maximum value should not be set with the value 'INF' in VSMD
	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.
Generic	MCAL treats the DET services to be of "void" return type.	<ul style="list-style-type: none"> MCAL treats the DET services Det_ReportError() and Det_ReportRuntimeError() to be of "void" return type. This is an AUTOSAR deviation as AUTOSAR requires the return type to be "Std_ReturnType". As per AUTOSAR SWS, E_OK shall be the only return value for DET services. For MCAL, MISRA Rule 17.7 violation will be reported for the modules calling the DET services. No functional impact seen.

Limitations and deviations

5.2.1 HIS-MISRA violations

Table 17 MISRA violations

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 in the called function in many scenarios.	Hssl
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.	I2c, Stm, Hssl, Sent, lom
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.	I2c, Stm, Sent, lom, Hssl
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 the generated code.)	I2c, Stm, Hssl, Sent, lom
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 the generated code.)	I2c, Stm, Hssl, Sent, lom
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 the generated code.)	I2c, Stm, Hssl, Sent, lom
5.5	Identifiers shall be distinct from macro names	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 the generated code.)	I2c, Stm, Hssl, Sent, lom
8.4	A compatible declaration shall be visible when an	Allowed violations for the following intrinsic	Stm

Limitations and deviations

Table 17 MISRA violations (continued)

MISRA_2012_Rule	Rule description	Justification for deviation	Modules applicable
	object or function with external linkage is defined	functions: IMASKLDMST, EXTRACT.	
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 an API scope may lead to confusion.	Stm, Hssl, lom
10.3	The value of an expression shall not be assigned to an object with a narrower essential type or of a different essential type category	DataType is defined as enum to differentiate between type of data NORMAL DATA and IMMEDIATE DATA. It is defined as enum to increase the readability of the code such that the values being used could be identified. Changing this will compromise the code maintainability and readability.	Sent
10.5	The value of an expression should not be cast to an inappropriate essential type	DataType is defined as enum to differentiate between type of data NORMAL DATA and IMMEDIATE DATA. It is defined as enum to increase the readability of the code such that the values being used could be identified. Changing this will compromise the code maintainability and readability.	Sent
10.8	The value of a composite expression shall not be cast to a different essential type category or a wider essential type	Impermissible cast of composite expression used for hardware descriptor access. Hence no issues are seen.	I2c, Sent
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.	Stm, Hssl

Limitations and deviations

Table 17 MISRA violations (continued)

MISRA_2012_Rule	Rule description	Justification for deviation	Modules applicable
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.	Hssl
11.6	A cast shall not be performed between pointer to void and an arithmetic type	Allowed violations for SFR access only.	Hssl
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.	Stm
14.3	Relational operator '>' always evaluates to 'false'	The maximum number for instance is two, that is, HSSL0 and HSSL1 hence this conversion does not cause any issue.	Hssl
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, the value of timer is within range.	lom
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.	Stm
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.	Stm, Hssl
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 AUTOSAR.	I2c, Stm, Hssl, Sent, lom
20.5	#undef should not be used	Function like macro is defined for User mode support in code. No side effects foreseen by violating this MISRA rule.	Hssl

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 different folders/files.

Table 18 **Demo workspace**

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

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