Texas Instruments

Release Notes
SPNA242–January 2020

Software Diagnostic Library CSP

Contents

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Trademarks

1 New in this release

The following outlines the defects resolved and enhancements done in this release:

- Updated CSP for Hercules Software Diagnostic Library to 2.4.0 release – static analysis of source code has been updated to 2.4.0 source code.

2 Folder Structure

The installer for this software installs by default to the C:\ti\Hercules folder. The folder structure is as shown below:

```
C:\ti\Hercules\SafeTI Diagnostic Library\  Installation Root folder
|
2.4.0                                     Product version number
    |
    +---build\                            Project files for demo
    |                                     application (Device specific)
    |
    +---build_safeTILib                   Project file for building library
    +---build_TPSDriverLib                Project file for building TPS Driver library
    +---demo_app\                         Demo application
    |   |
    |   +---common\                       Source code
    |   \---HALCoGen\                     HALCoGen configuration
    |                                     (Device specific)
    |
    +---docs                              Documentation.
    +---hal                               Device hardware abstraction
    +---libs                              Prebuilt libraries
    +---safety_library                    Source code for Diagnostic
    |                                     Library
    +---Test                              Test automation unit for testing the API.
    \---TPS_driver                        Source code for the TPS65381 Driver
```

3 Contents of CSP

- Quality Review Report - HIS Metrics
- Code Review Report - MISRA C compliance report
- Test results Report
- Traceability report
- Software user guides
- Software release Note
- Software safety requirements document
- Software architecture document
- Software design document
- Software safety manual

4 Fixed in This Release

Table 1. Fixed in This Release

References	Headline	Description
SDOCM00122361	Please clearly document what was tested and what wasn't tested with a certain release.	**Issue Details:** Clearly document which of the following certain releases was tested: MCU's, Kit's, CCS/Compiler Version, IAR Version A matrix to see which combinations were tested and are supported would really help. **Implementation Information:** Updated user's guide and safety manual to document the devices tested against, and compiler tool chains with their versions.
SDOCM00122862	Static analysis shows errors for RM42x/TMS570LS04x/03x and RM46x/TMS570LS12x/11x devices.	**Issue Details:** Static analysis shows errors for RM42x/TMS570LS04x/03x and RM46x/TMS570LS12x/11x devices. **Implementation Information:** Upon running static analysis for these platforms, we get errors for RM42x/TMS570LS04x/03x and RM46x/TMS570LS12x/11x devices. For RM46x/TMS50LS12x/11x: These were because of code specific to these platforms not having appropriate justification. For RM42x/TMS50LS04x/03x: These were because of code not specific to these platforms is not disabled with compile time switches.

5 Known Issues

Table 2. Summary of Known Issues

HERCULES_SW-5194 *FLASH_ADDRESS_PARITY_SELF_TEST fails on LDRA unit testing for RM42x and TMS570LS04x platform.*

Issue details FLASH_ADDRESS_PARITY_SELF_TEST fails on unit testing for diagnostic functionality on RM42x and TMS570LS04x platform.

Devices All RM42x and TMS570LS04x device platforms

Workaround For the test case identified as “FLA4:1”, used to test SL_SelfTest_Flash() to execute properly, sys_startup.c in RM42x and TMS570LS04x SDL TAU should be updated with a code that updates memory region pointed by 'ulHighHandlerStartAddr' with contents from memory address given by 'ulHighHandlerLoadStart' with copy size as 'ulHighHandlerSize'.

User can download the corrected sys_startup.c file from the following link and replace the existing file in CSP before testing with LDRA: http://www.ti.com/tool/SAFETI-HERCULES-DIAG-LIB-CSP.

HERCULES_SW-5196 *SCI and LIN modules untested by LDRA unit testing*

Issue details Software Diagnostic Library product version 2.4.0 does not have unit testing implemented for SCI and LIN module - Cannot test SCI/LIN as the SCI port is used as UART for sending LDRA data to the PC.

Devices All device platforms

Workaround None

HERCULES_SW-5113 *TPS-Driver - Reset on enabling a ABIST and LBIST Run.*

Issue details Power reset is observed when enabling the ABIST/LBIST run by writing the LBIST_EN and ABIST_EN bits in the safety_bist_ctrl register of the TPS device.

Devices All device platforms

Workaround ABIST and LBIST must be run independently. Trying to run both ABIST and LBIST at the same time is not allowed.

HERCULES_SW-5126 *TPS_GetWatchdogFailureStatus giving failure status as TRUE when Watchdog fail count is 7 and Watchdog reset is not enabled*

Issue details The API TPS_GetWatchdogFailureStatus should return the failure status as true only when the watchdog failure count is 7 and the watchdog reset is enabled. But the failure status is returned as TRUE even when the watchdog failure count is 7 and watchdog reset is not enabled.

Devices All device platforms

Workaround The TPS65381A-Q1 datasheet has been updated to provide clarity on the working of the watchdog. When the fail counter reaches 7, device will not cause a RESET. The counter on reaching 7+1(or the next bad event after it has reached 7) will put the device to RESET state.

HERCULES_SW-5147 *MISRA-C violation detected incorrectly in TPS_Interface.c*

Release Note Incorrect violations in TPS driver detected in LDRA

Devices All device platforms

Workaround None

1 *Test case with ID "VIM2A:10" in VIM_UT.xlsx fails*

Issue details In SL_SelfTest_PBIST() in previous version of SDL, there was a if statement check for nERROR_Active status as TRUE and so a test case was specifically added to test this block of code. The nERROR_Active status check is removed from the code in latest version, and so the test case is no more valid but causes failure.

Devices All device platforms

Workaround The test case, identified as "VIM2A:10", used to test SL_SelfTest_PBIST() should be removed from VIM_UT.xlsx before performing VIM Unit Test.

User can download the corrected VIM_UT.xlsx file from the following link and replace the existing file in CSP before testing with LDRA: http://www.ti.com/tool/SAFETI-HERCULES-DIAG-LIB-CSP.

2 *Data-Abort-exception handler code causes test failure*

Issue details Test case fails due to _excpt_vec_abort_data() because of one missing condition check for FLASH_ADDRESS_ECC_SELF_TEST status, during Flash status checks.

Devices All device platforms

Workaround Change the if-statement @ line 171 in exception_handlers.c from:

```
if (((TRUE == SL_FLAG_GET(FLASH_ECC_TEST_MODE_2BIT)))||(TRUE ==
SL_FLAG_GET(FLASH_ECC_ADDR_TAG_REG_MODE)))
```

To:

```
if (((TRUE == SL_FLAG_GET(FLASH_ECC_TEST_MODE_2BIT)))||(TRUE ==
SL_FLAG_GET(FLASH_ADDRESS_ECC_SELF_TEST))||(TRUE ==
SL_FLAG_GET(FLASH_ECC_ADDR_TAG_REG_MODE)))
```

User can download the corrected exceptions_handlers.c file from the following link and replace the existing file in CSP before testing with LDRA: http://www.ti.com/tool/SAFETI-HERCULES-DIAG-LIB-CSP.

3 *Test Report Consolidation script unavailable in CSP*

Issue details Batch Script file used to consolidate Test Reports is not added in CSP.

Devices All device platforms

Workaround The Batch Script file is uploaded onto a TI web-page and the link to download the file is given below.

User can download the Batch Script file from the following link and copy it in the installed CSP's directory in Test\Misc\Scripts: http://www.ti.com/tool/SAFETI-HERCULES-DIAG-LIB-CSP.

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