

Below are additional release notes for SSP 1.3.2 and associated tools that augment the release notes published on the Synergy Gallery.

Tools Related Issues

Issue ID: 09007

Title: An internal error occurred during: "ASTDeclarationFinderJob"

Description:

In e2studio 5.4.0 the developer might not get the popup with a description of the module or variable when the mouse is hovered over a keyword. The developer may see an error message instead of the popup.

Work Around: None

SSP Related Issues

Issue ID: 10641

Title: R_CGC: Clock Stop on S7G2 Does not work for HOCO, MOCO and LOCO

Description:

On all Synergy MCUs, the clock sources LOCO, MOCO and HOCO should be checked for stabilization after stopping or they may continue to run. The CGC driver implementation checks for stabilization only on the SUB-CLOCK oscillator. Thus, even after attempting to stop the LOCO, MOCO and HOCO clocks, these clocks may remain running and this can result in unnecessary power consumption by the MCU.

Work Around: None

Issue ID: 10640

Title: Configurator XML Error Reported for TLS

Description:

The configurator for 'NetX Duo TLS Session ' issues an XML error:

g_tls_session NetX Duo TLS Session: Requires NetX Duo TLS Common configuration.xml
/S5D9_Dweet_TLS_LAN Unknown Configuration Error

As a result, the project will not be able to generate source or build the project.

Applies To: S7G2 and S5D9 MCUs in SSP 1.3.0.

Work Around:

The developer should delete the 'NetX Duo TLS Session ' and add it again.

Issue ID: 10639

Title: TLS will not start session with renesas.dweet.io due to crypto error on root cert

Description:

Unable to establish a secure connection using TLS protocol to server renesas.dweet.io. The client can not establish a secure connection due to a mismatch in expected size of the public exponent field of the root certificate received from the server. The client expects the size of the public exponent field to be 3 bytes whereas the server send 1 byte public exponent field in its certificate.

Applies To: S7G2 and S5D9 MCUs

Work Around: None

Issue ID: 10632

Title: Failed Feature Implementation (USBHS): Enable High Speed set to Disable

Description:

The Disable High Speed option field in the USBX Port HCD on sf_el_ux for USBHS module will not disable the High Speed operation of the Host controller even when the Disable option is selected in the SSP configurator. This will result in no reduction in the power consumption since the internal PLL of the PHY module and other high-speed analog circuits will be still running.

Applies To: S7G2 and S5D9 MCUs

Work Around: None.

Issue ID: 10626

Title: NetX secure has a packet leak when an ALERT is received

Description:

When an alert is received from the remote host is indicated by the return value `NX_SECURE_TLS_ALERT_RECEIVED` of `nx_secure_tls_session_receive()` API it causes leakage from the packet pool memory. If too many alerts packets are received from the remote host, the packet pool will be exhausted leading to unpredictable behavior.

Typically ,memory for packets are allocated from the packet pool and freed after packet transmission. In this case, the memory for a packet is allocated from the packet pool but is not freed. This leads to packet pool depletion (leakage).

Applies To: S7G2 and S5D9 MCUs

Work Around: None.

Issue ID: 10572

Title: MQTT multiple client support issue

Description:

The MQTT module works fine with a single client. But when a second client running on a different board and it is connected to the same broker, the first client will immediately issue an error. The error returned by the first client is `NXD_MQTT_NOT_CONNECTED` (0x10002 - The client is not connected to the broker).

Afterwards, the first client will not be able to establish a secure connection with the broker whereas the second client will stay securely connected to the broker.

Applies To: S7G2 and S5D9 MCUs

Work Around: None.

Issue ID: 10386

Title: SF_CONSOLE: Errors that occur during input character processing for `sf_console` are not returned correctly when echo is enabled

Description:

There is no indication that an error occurs during this time. There is little opportunity for errors here though, and the error reporting is just delayed in most cases. Errors could occur if:

- 1) Escape reception is interrupted (the 3-character escape sequence is incomplete), where escape sequences are used for arrow keys, backspace, and delete. This could happen if there is a connection problem in the middle of an escape sequence. In this case, the application will miss this error, but will see another error when attempting to receive the next character.

2) If there is an error writing back an echoed character. Again, if this occurs, the application will miss this error, but will likely see another error from another write command in the echo processing.

Work Around: None.

Issue ID: 10273

Title: SF_EL_GX - Screen Rotation 90/270 degree collapses screen if 2DG disabled

Description:

In graphics applications with GUIX and SF_EL_GX, users will see their screen image collapsed with the following configurations.

- Rotate screen with 90 or 270 degrees
- 2DG engine is not used
- RGB565 or ARGB8888 color format is used

Applies To: S7G2, S5D9 MCUs

Work Around:

Enable 2DG engine if using RGB565 or ARGB8888 color format, and rotating screen 90 or 270 degree.

Issue ID: 10637

Title: QSPI API on S5 and S7 boards use QSPI read command with too high clock

Description:

The QSPI Serial clock for S7 and S5 devices is running higher than the underlying flash clock specification. This is because QSPI is configured (by Default) to run on 60Mhz (if PCLKA is 120) for Micron and Winbond flash. The QSPI device (Winbond W25Q64FV) used on the S7-SK board, and S5-PK board can use the standard read command up to 50MHz, and the QSPI device used on the S7G2-DK board (Micron N25Q256A) can use the standard read command up to 54MHz. Above these speeds, the fast-read command should be used (and this has dummy clock cycles between the address and the data).

Workaround:

Lower the clock frequency for S7 and S5 devices in the Boards BSP from 60MHz to the actual flash specification.

Issue ID: 10635

Title: SCI I2C disables and clears interrupts before setting priority and vector info of the interrupts

Description:

SCI_I2C may lead to hanging of thread.

Applies To: All MCUs.

Work Around:

To avoid hanging of thread which leads to non-responsive system, use sci_i2c in low priority threads.

Issue ID: 10629

Title: Cellular Framework does not use correct format for connect AT command for CAT M1

Description:

Currently an application using NimbeLink CAT M1 cannot use the cellular common network connect function if it is using command AT+CGDATA. The developer will have to write a module specific implementation of network connect in source file for that module.

Workaround: None

Issue ID: 10628

Title: sf_crypto - inconsistent configurator error message when RSA wrap is used

Description:

If the byt pool size is not more than 270 bytes for the sf_crypto module and the key_type from sf_crypto_key is AES, causes in a compilation error.

Applies To:

All MCUs except S1 MCU series.

Workaround: None

Issue ID: 10623

Title: S5 System Clock setting does not follow recommended HW Manual sequence

Description:

To change the divider values of peripheral clocks, when PLL is the clock source, modify the module stop bits explicitly before and after changing the divider values of peripheral clocks.

Applies To:

S5 series MCUs.

Work Around:

If the current system clock source is PLL, stop the modules using MSTPBx (x: 5,6,7,8,9,11,12,13,15) for ETHERC, EPTPC, EDMAC, SCE7, DRW, JPEG, GLCDC, GPT32EH, and GPT32E respectively in MSTPCRB register before calling the R_CGC_Clockset function from application while updating the dividers of peripheral clocks PCLKA , PCLKB, PCLKC and PCLKD. Delay of 250ns should be added after returning from the R_CGC_Clockset function to ensure the change takes effect.

Issue ID: 10581

Title: MQTT secure re-connect issue

Description:

MQTT API nxd_mqtt_client_secure_connect() hangs when the MQTT client tries to reconnect to a MQTT broker after performing a standard MQTT operations such as publish/subscribe.

Applies To: S7G2 and S5D9 MCUs

Work Around: None.

Issue ID: 10578

Title: USB HID Device Interrupt Priority Issue in between DTC & USBFS

Description:

The DTC interrupt priority must be always higher than the USBX priority while being set in the XML configurator. In some scenarios a constraint or warning message is missing for the incorrect interrupt priority setting of the USB peripheral in the USBX Port HCD or DCD on sf_el_ux component, when DTC transfer is used.

Applies To: All MCU's

Work Around:

The DTC Interrupt priority value should be always set higher than the USB interrupt priority when configured in the xml configurator (interrupt priority value of 0 is highest priority and value of 15 is the lowest priority).

Issue ID: 10573

Title: MQTT subscribe issue

Description:

If a MQTT client subscribes to a MQTT topic whose length is more than the configured length, the `nxd_mqtt_client_subscribe()` API does not return an error. When the client subsequently does a publish and receive it returns an error. This issue can also be seen if the client subscribes to a topic with non-ASCII characters.

Applies To: S7G2 and S5D9 MCUs

Work Around: None.

Issue ID: 10568

Title: Cellular Framework does not let you specify the MRU size in PPP

Description:

MRU size and minimum MRU size are set to 1500 bytes by default in NX PPP Common and NXD PPP common. The developer will not be able to override the default values of PPP while using the Cellular framework.

Applies To: S7G2 and S5D9 MCUs

Work Around: None.

Issue ID: 10371

Title: TLS bug with `NX_SECURE_ALLOW_SELF_SIGNED_CERTIFICATES` option

Description:

The 'Self Signed Certificate' property of the 'NetX Duo TLS Common' module when disabled do not take desired effect

Applies To: S7G2 and S5D9 MCUs

Work Around:

With access to the NetX Secure code, a developer should comment out the line below line in nx_secure_tls.h

```
#define NX_SECURE_ALLOW_SELF_SIGNED_CERTIFICATES.
```

The developer can then use the configurator to enable/disable the 'self signed certificate' property.

Issue ID: 10333

Title: Wait states not set correctly for S7G2 MCU in some cases

Description:

Wait states are not being set for the S7G2 MCU SRAM0 DED area. As a result, there is always 1 wait state being inserted, which is the requirement at ICLK frequencies above 120 MHz.

- At ICLK frequencies < 120 MHz a wait state is not required.
- At ICLK = 80 MHz there should be no ROM wait states inserted, instead there are 1.
- At ICLK = 160 MHz there should be 1 wait ROM state inserted, instead there are 2.

This results in SRAM0 DED performance being not as fast as it could be at ICLK frequencies < 120 MHz.

Workaround:

If running ICLK at exactly 80 or 160 MHz, a ROM performance improvement might be seen by reducing ICLK frequency slightly such that it is < 80 or < 160 MHz respectively

Issue ID: 10313

Title: Initialization may fail for r_sdmmc for eMMC devices that do not support high speed mode.

Description:

Initialization may fail for r_sdmmc for eMMC devices that do not support high speed mode.

Applies to: S7G2, S5D9, S5D5, S3A7, S3A6, S3A3

Workaround: None

Issue ID: 10269

Title: Cellular Framework fails while downloading large amounts of data and performance is reduced

Description:

TCP connection is disconnected when downloading file of size 5 MB or greater. Also the download rate will reduce as the download size increases

Applies To:

Cellular Framework for NimbeLink CAT1/CAT3 modules on Verizon Network

Work Around:

Update the below values in ISDE properties to successfully download files above 5 MB (this does not improve the download rate)

- a. NetX IP instance pool packet size to 1500 bytes and pool size to 16
- b. NetX PPP instance pool packet size to 1500 bytes and pool size to 16
- c. HTTP pool packet size to 1500 bytes and pool size to 200
- d. HTTP Operation timeout : 60 sec
- e. TCP Socket window size (bytes) : 10240

Issue ID: 10247

Title: BSP_ALIGN_VARIABLE not functional on IAR

Description:

The BSP_ALIGN_VARIABLE macro does not work correctly with IAR compiler..

Applies To: All MCUs

Workaround:

Use #pragma data_alignment = value to align data on IAR

Issue ID: 10242

Title: WIFI Multicast filter feature is not useable

Description:

GT-202 vendor driver code does not provide API for multicast filtering. Synergy WiFi framework's multicastListAdd() and multicastListDelete() APIs for GT-202 module return error code indicating feature is not supported (i.e. SSP_ERR_UNSUPPORTED).

Applies To:

WiFi Framework for GT202 on S7G2, S3A7, S5D9, S5D5, S3A6 (Only socket), S3A3 Synergy MCUs

Workaround: None

Issue ID: 10171

Title: SCI SPI slave issue with S5D5 TB board

Description:

SCI SPI slave doesn't work on the S5D5 TB board. This is possibly due to a hardware issue on the TB-S5D5. The SCI-SPI slave mode in SSP has not been determined as the source of the issue and is expected to work correctly once the hardware issue is resolved.

Work Around:

It is recommended to use RSPI driver on S5D5 TB board for using the SPI slave functionality.

Issue ID: 10152

Title: SNTP Client max adjustment to server time updates not effective

Description:

Since the SNTP Client does not keep track of time, if the polling interval time exceeds the maximum time adjustment allowed, the time update will only work for the first time and will fail afterwards.

Applies To: S7G2, S5D9 and S5D5 MCUs

Work Around:

Configure polling interval time less than maximum time adjustment allowed.

Issue ID: 10151

Title: WIFI ProvisioningGet API return channel number as 81

Description:

While using Synergy WiFi framework with GT-202, if provisioningSet() API fails to provision the device in client mode. The driver API which queries the channel get the frequency as 0. The Synergy framework implementation uses a formula to convert this channel frequency into the correct channel number. This formula incorrectly returns 81 when the driver API returns frequency 0.

Applies To: WiFi Framework for GT202 on all supported Synergy MCUs

Issue ID: 10150

Title: WIFI ProvisioningSet API fails intermittently

Description:

The GT-202 Vendor driver sometimes fails to connect to given SSID when SSID is not in close proximity. This causes Synergy WiFi framework's provisioningSet() API to fail while provisioning the device in client mode.

Applies To:

WiFi Framework for GT202 on all supported Synergy MCUs

Work Around:

Implement retries in code while provisioning the device in client mode, i.e. call provisioningSet() API from a loop which will run for 5 times trying to provision the device in client mode and on successful provisioning break out of the loop.

Issue ID: 10106

Title: WIFI scan API does not return AP list if device is already connected WIFI AP

Description:

GT-202 vendor driver code fails to perform SSID scan operation if the device is already successfully provisioned in client mode and connected to access point. Due to this, the Synergy WiFi framework's scan() API may fail if it is called after the device is successfully provisioned in client mode.

Applies To: WiFi Framework for GT202 on all supported Synergy MCUs

Work Around: None

Issue ID: 10017

Title: SF_Console: Input to console thread using control characters is not working

Description:

Providing an up-arrow key and then an enter key in the console command does not execute the previous command.

Applies To: All Synergy MCUs.

Work Around: None.

Issue ID: 10007

Title: BLE GAP Authorization does not work on RL78G1D

Description:

Due to unavailability of GAP Authorization, GATT profile and standard on-board profiles will not work in Authorized mode. Rest of the profile and GAP security modes are not affected.

Applies To: BLE Framework for RL78G1D on all supported Synergy MCUs

Workaround: None

Issue ID: 09964

Title: GUIX 5.3.3 button lock in auto-repeat

Description:

Whenever the user presses a button with auto-repeat and then moves his/her finger outside the boundary of the button and then releases, the button is locked in auto-repeat state.

Applies To: S7G2 and S5D9 MCU's

Workaround: None

Issue ID: 08592

Title: R_IIC timeout changed to short mode in 1.2.0, causing issues in some applications

Description:

RIIC master driver will timeout faster in case of a clock stretch. This will cause communication failure when operating with slaves which spends more time in processing by holding the SCL line low (Clock stretching).

Applies To: All MCUs

Work Around:

After opening the driver, set the time out of the RIIC channel to LONG mode by clearing TMOS bit in ICMR2 register of the RIIC channel.

Issue ID: 10627

Title: Magic Numbers in Delays

Description:

tx_thread_sleep would not assert the desired delay as expected if the ThreadX tick time configuration is set less than 10ms per tick. It is recommended to not change the ThreadX tick time configuration to avoid mismatch in the timing calculation.

Applies to: All MCU.

Workaround:

Do not configure the ThreadX tick time to be less than 10ms in the SSP configurator.

Issue ID: 09819

Title: SF_THREAD_MONITOR: Application hangs/blocks in SF_THREAD_MONITOR_open function

Description:

If the WDT HAL driver has not been opened when the thread monitor internal thread queries the WDT settings to calculate its delay period, it gets invalid values.

Applies To: All MCU's

Work around:

1. Disable auto-initialization of the thread monitor.
2. Open the HAL WDT driver using the configuration data from the thread monitor.
3. Unlock the WDT HAL driver.
4. Open the thread monitor.