

CAPTIS DEVICE FIRMWARE - RELEASE NOTES

DATE: 2022-06-10

CELLULAR MODULE

- Telit ME910G1-WW, 37.00.444-POC.440001

SUPPORTED PRODUCTS

- Captis Multi 1.2
- Captis Power+ 1.2
- Captis Pulse 1.2

CAPTIS DEVICE FIRMWARE 1.20.4 TO 1.20.5

ADDED

- None

CHANGED

- None

DEPRECATED

- None

REMOVED

- None

FIXED

- Increased RTCC crystal boot timeout for low temperature startup **PD-241**

SECURITY

- None

DESCRIPTION OF ISSUES FIXED 1.20.4 TO 1.20.5

1. PD-241 – RTC CRYSTAL BOOT TIMEOUT IN COLD TEMPERATURES

Conditions to trigger: Device undergoes a reboot (from magnet reboot, device FOTA, or watchdog timer) and the temperature is below 0 degC

Behaviour: The RTC oscillator will not startup and stabilise before the timeout, and the firmware will failover to the internal oscillator which is up to 20% inaccurate. This will cause timestamps to drift between connections.

Workarounds Available: For device FOTA change the device connection schedule to a warmer part of the day if overnight temperatures are expected to be below zero. Avoid magnet reboots if temperatures are below zero.

Affected versions: HW v1.2 on FWs 1.20.2, 1.20.3, and 1.20.4

CAPTIS DEVICE FIRMWARE 1.20.3 TO 1.20.4

ADDED

- None

CHANGED

- None

DEPRECATED

- None

REMOVED

- None

FIXED

- Increased RTCC crystal boot timeout for alternate part compatibility **CAP-1359**
- ADC lockup
- WDT occurring when device goes to sleep **CAP-1360**

SECURITY

- None

DESCRIPTION OF ISSUES FIXED 1.20.3 TO 1.20.4**1. CAP-1359 – RTC CRYSTAL BOOT TIMEOUT FOR ALTERNATE PARTS**

Conditions to trigger: Device undergoes a reboot (from magnet reboot, device FOTA, or watchdog timer) and the PCB has a specific manufacturers crystal populated

Behaviour: The RTC oscillator will not startup and stabilise before the timeout, and the firmware will failover to the internal oscillator which is up to 20% inaccurate. This will cause timestamps to drift between connections.

Workarounds Available: None.

Affected versions: HW v1.2 on FWs 1.20.2 and 1.20.3

2. ADC LOCKUP

Conditions to trigger: Will happen for any setup/use case but will be exacerbated by enabling the analog channels on a Multi

Behaviour: The device will occasionally lockup for 2min then reboot. The event “BL Msg – WDT” will be reported

Workarounds Available: None.

Affected versions: HW v1.2 on FWs 1.20.2 and 1.20.3

3. CAP-1360 - WDT OCCURRING WHEN DEVICE GOES TO SLEEP

Conditions to trigger: A measurement needs to trigger in a 1 second window immediately prior to sleep. This is much more likely when the measurement interval is less than 2 minutes or switch triggered logging is enabled.

Behaviour: The device will lockup for 2min then reboot. The event “BL Msg – WDT” will be reported

Workarounds Available: Use longer measurement intervals and don't use switch triggered logging.

Affected versions: HW v1.2 on FWs 1.20.2 and 1.20.3

CAPTIS DEVICE FIRMWARE 1.20.2 TO 1.20.3

ADDED

- Tamper action config item to initiate connection on tamper trip **CAP-1357**
- FTP download resume for module FOTA **CAP-1340**

CHANGED

- Config schema version changed to 1.2.0

DEPRECATED

- None

REMOVED

- None

FIXED

- Bootloader version not being reported
- Antenna switching not enabled for Pulse v1.2
- FOTA verification failure for certain images **PD-161**
- Increase module FOTA retries from 3 to 6 and improved dropped connection recovery **CAP-1349**

SECURITY

- None

DESCRIPTION OF ISSUES FIXED 1.20.2 TO 1.20.3

1. BOOTLOADER VERSION NOT BEING REPORTED

Conditions to trigger: Any data connection occurs

Behaviour: The bootloader version should be present in the Cumulocity device software tab or the Azure device twin but it is missing

Workarounds Available: None.

Affected versions: HW v1.2 on FW 1.20.2

2. ANTENNA SWITCHING NOT ENABLED FOR PULSE V1.2

Conditions to trigger: Always present on Pulse v1.2 variant

Behaviour: The RF switch is not driven and will result in very poor LTE signal

Workarounds Available: None.

Affected versions: Pulse v1.2 on FW 1.20.2

3. FOTA VERIFICATION FAILURE FOR CERTAIN IMAGES

Conditions to trigger: Device FOTA images of a certain length will fail the download verification

Behaviour: The FOTA download will complete but wont apply. The event “HTTP Device FOTA File Validation Fail” will be reported.

Workarounds Available: Use a different image.

Affected versions: All variants on FW 1.20.0, and 1.20.2

4. INCREASED MODULE FOTA RETRIES AND IMPROVED DROPPED CONNECTION RECOVERY

Conditions to trigger: Module FOTA in poor signal conditions.

Behaviour: The FOTA download will be incomplete. The device will report event “Module FOTA Download Failure”.

Workarounds Available:

- Try switching network RAT (NB or CatM).
- Hold off on module FW upgrades

Affected versions: All variants on FWs prior to 1.20.3, excluding 1.19.2

CAPTIS DEVICE FIRMWARE 1.20.0 TO 1.20.2 (1.20.1 IS SKIPPED)

ADDED

- Support for common HW v1.2:
 - Antenna switching **JJ-344**
 - Isolated battery measurement **JJ-345**
- Support for Captis Multi 1.2, Captis Power+ 1.2:
 - Support for 2 analog channels **JJ-341**
 - Support for 12V out **JJ-346**
- Antenna switching shell command for HW 1.2 **CAP-1322**

CHANGED

- MQTT Keepalive timeout changed from 1 min to 5 min
- get_power_out shell command now returns voltage measurements of 5V and 12V supplies for HW 1.2
- Cellular registration check exits faster for rejected registration condition **CAP-1315**

DEPRECATED

- None

REMOVED

- None

FIXED

- None

SECURITY

- None