Release Notes

Sentrius RS1xx Sensor

Version 5.0_19-x-x

This document provides release notes for version 5.0_19-x-x of the Sentrius RS1xx sensor firmware as well as all previous releases.

Release notes are a summary of new and enhanced features, resolved issues, and known issues that are not resolved in this version. Consult the User's Guide for details on the features of this software release.

SOFTWARE VERSION 5.0_19-2-5 (ENGINEERING RELEASE)

Released February 5 2019

Software part number: 480-0111 (RS191) / 480-0114 (RS186)
OS: NA

New or Enhanced Features

- New stack, version 4.4.1, integrated into the code. The firmware now supports new regions Asia (AS923), India (IN865) and South Korea (KR920) as well as existing regions Europe (EU868) and US (US915) (Bug 13878)

Bug Fixes

Known Issues

- Due to the way the new stack handles the Join it is possible with TTI that the module could get stuck at the lowest datarate. In the case of AS923 and US915 this means that an aggregated packet will be too big to transmit. For this engineering release it is advisable to set the aggregate value to 1.

SOFTWARE VERSION 4.5_19-1-2

Released January 2 2019

Software part number: 480-0111 (RS191) / 480-0114 (RS186)
OS: NA

New or Enhanced Features

- We can now update the bootloader over a BLE and Uart connection. (Bugs 13866 and 13930)

Bug Fixes

- Fixed gpio mapping in the bootloader file (Bug 13837)
- Internal gpio interrupts would not trigger once we started monitoring the Uart Rx line. (Bug 13937)
- Current now falls to 7uA after uploading new firmware. (Bug 13792)

Known Issues

As below.

SOFTWARE VERSION 4.4_18-10-17

Released October 17 2018

Software part number: 480-0111 (RS191) / 480-0114 (RS186)
OS: NA

New or Enhanced Features

- RTC requested immediately on connection and not on first data packet. (Bug 13613)
- Now periodically sets the AdrAckReq bit in an uplink data packet to trigger the TTI server to send an ADR command. This should not be required,but fits in with TTI's implementation of the specification. (Bug 13622)
- Immediately after joining the sensor now sends an extra uplink packet containing version information. (Bug 13613)

Bug Fixes

- RTC not reset on failed reconnect., (Bug 13612)
- Previous configuration variables now retained from version 3.x to 4.x. (Bug 13569)
- Switch of HCLK when OneWire device isn't present. This reduces the standby current from 40uA back down to 7uA. (Bug 13621)

Known Issues

As below.

SOFTWARE VERSION 4.3

Released September 24 2018

Software part number: 480-0111 (RS191) / 480-0114 (RS186)
OS: NA

New or Enhanced Features

- Split LED and manual watchdog timer. (Bug 13348)
- Extended watchdog timeout by a factor of 3.
- The sensor will now restart after disconnecting from Bluetooth if a setting had changed. (Bug 13436)
- Decrease the amount of time it will take for the manual watchdog timer to reset the module. (Bug 13361)

Bug Fixes

- First uplink packet now sent at the currently loaded datarate and not the hardcoded value. (Bug 13403)
- Reduce power consumption by only performing temperature check once instead of twice. (Bug 13490)
- When configured for the Cayenne format if the decimal part of the humidity reading was x.0 it was incremented to x.5. (Bug 13436)

- When configured for the Cayenne format the sensor couldn't transmit confirmed uplinks. (Bug 13489)
- No longer include the time it takes to access the TxDone interrupt when calculating the Rx window opening times. (Bug 13535)
- Fixed the code that checks if there is anything connected to the uart CTS line before configuring the Uart. (Bug 13385)

Known Issues

As below.

SOFTWARE VERSION 4.2

Released September 5 2018

Software part number: 480-0111 (RS191) / 480-0114 (RS186)
OS: NA

New or Enhanced Features

- Add support for one wire external temperature sensor probe.
- RTC time now requested via options byte in a data packet.
- Add support for changing LoRa packet format to support off the shelf app servers.
- Add support to enable/disable confirmed packets.
- Added software watchdog timer to reset the sensor if it is not working as expected.
- Bit 3 of the options byte is used to indicate if the sensor has reset.
- Hold user button for 5 seconds to reset the sensor.

Bug Fixes

No new bugs reported.

Known Issues

- There is an issue if you are changing one or more of the ids (DevEui, AppEui, AppKey etc). A change to any of these parameters forces the sensor to rejoin the network. This rejoin is triggered when the next sensor reading would be due. If any of the ids haven't been updated by this point, the sensor will enter a loop where it will just continually attempt to join the network with the wrong parameters and so will fail in the attempt. The only way out of this state is to reboot the sensor by removing the batteries.
- No temperature or humidity data will be output over BLE to the mobile app unless there is first a LoRa connection established.
- Bug 13348 – The software watchdog timer is tied to the LED flash period. If the LED flash period is set to low, the sensor may reset before it can send any data.

SOFTWARE VERSION 4.0

Released August 2018

Software part number: 480-0111 (RS191) / 480-0114 (RS186)
OS: NA

New or Enhanced Features

- Users can now select the format of the uplink data packet in order to meet the requirements of the Cayenne application server. The original packet format from version 3.1 is included under the Laird option.
- User can configure the sensor to transmit unconfirmed uplink packets using the Cayenne packet format. The Laird format can only transmit confirmed uplink packets.

Known Issues

- There is an issue if you are changing one or more of the ids (DevEui, AppEui, AppKey etc). A change to any of these parameters forces the sensor to rejoin the network. This rejoin is triggered when the next sensor reading would be due. If any of the ids haven't been updated by this point, the sensor will enter a loop where it will just continually attempt to join the network with the wrong parameters and so will fail in the attempt. The only way out of this state is to reboot the sensor by removing the batteries.
- No temperature or humidity data will be output over BLE to the mobile app unless there is first a LoRa connection established.

Bug Fixes

- Negative temperature values were being reported incorrectly. This bug had not been previously reported, but has now been fixed. (Bug 13247)

SOFTWARE VERSION 3.1

Released October 2017

Software part number: 480-0111 (RS191) / 480-0114 (RS186)
OS: NA

New or Enhanced Features

- Initial RS1xx firmware release

Known Issues

Firmware

- None.