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XBee SX868 Release Notes

XBee SX868

Version A00B - October 14, 2022

INTRODUCTION

These release notes document changes made to the XBee SX868 firmware.

- Product Information
- Documentation
- Support

SUPPORTED PRODUCTS

- XBee SX868 DM
  - XB8X

KNOWN ISSUES

1. When the UART parity of the module is configured differently than the UART parity of the host, unpredictable output may occur on the serial port. This is easily resolved by setting the parity the same on the host and the module. **[XBX-253]**

2. The associate LED may not blink at the correct rate while transmitting or receiving with the over-the-air baud rate at its lowest setting (ie when **BR** is 0). **[XBX-154]**

3. For certain operations that take significant time, (e.g. changing **BR**), applying changes does not complete until about 30ms after a successful response to the AT command. As a result, there is a race condition that can occur if a transmission is attempted too soon after the response to the AT command. (**[XBX-337]**) Likewise, in AT command mode, a transmission immediately after an **RE**, **CN** sequence can also result in not receiving a TX status frame for that transmission **[XBXSX868-215]**.
The workaround for both of these and related problems is to issue an **AC** command after the parameter change so that the changes are completely applied prior to any subsequent transmission attempt.

4. When streaming AT commands (0x08 or 0x09) in API mode with less than 19ms between commands, those AT commands can be intermittenly dropped and the setting will not be applied. It is recommended to wait for the command response (x88) before issuing the next AT command to prevent this issue.

[XBSX868-263]

UPDATE CONSIDERATIONS

XCTU (XBee Configuration and Test Utility) is recommended for updating the firmware of your radio module to the latest firmware version: www.digi.com/xctu

The following files are included in XBee SX868 firmware releases:

- Firmware
    - EBIN: Firmware image for serial updates
- Configuration
    - MXI: Legacy X-CTU configuration file

UPDATE BEST PRACTICES

Digi recommends the following best practices:

1. Test the new release in a controlled environment with your application before you update production devices.
2. Unless otherwise noted, apply updates in the following order:
    1. Device firmware
    2. Modem firmware
    3. Configuration
    4. Application

TECHNICAL SUPPORT

Get the help you need via our Technical Support team and online resources. Digi offers multiple support levels and professional services to meet your needs. All Digi customers have access to product documentation. firmware, drivers, knowledge base and peer-to-peer support forums.

Visit us at https://www.digi.com/support to find out more.

CHANGE LOG

A00B - XBee SX868 (October 14, 2022)

- This is a recommended release

NEW FEATURES

- N/A

ENHANCEMENTS

- N/A

SECURITY FIXES

- N/A

BUG FIXES

1. Fixed a lockup problem on a pin sleep module operating in API mode where sleep was requested immediately following a transmission in API mode. **[XBSX868-279]**

2. Fixed an issue where the RSSI LED gets reset without reporting signal strength when we try to change IO settings using remote AT commands with Apply Changes enabled. **[XBSX868-276]**

A00A - XBee SX868 (May 27, 2021)

BUG FIXES

1. Fixed an issue where the serial DMA buffers were getting overran when doing a flash write causing the module not to process valid serial data properly. In addition when updating the encryption Nonce the last four RF channels would become unusable. **[XBSX868-245]**

A009 - XBee SX868 (November 6, 2020)

NEW FEATURES

1. Added support for counter mode encryption. CBC mode is still supported by default.

2. Added support for sleep immediate to allow user to save battery by sleeping the network after it is known that needed traffic has completed.

3. Added Synch pulse on DIO9 (aka OnSleep) pin when configured for special function 6 (D9 6). This allows DIO9 to toggle at the same time on all radios in the network.

ENHANCEMENTS

1. Expanded sleepy end device I/O sampling capability, when **IF** is set to zero allows I/O samples to be sent before the device sleeps and occurring thereafter every wake cycle specified by **IR** sample rate. **[XBHAWKDM-829]**

2. Added randomized I/O sampling option for synchronous sleep networks with setting **SO** bit 10 and setting **IR** to zero. This will randomize the I/O sample over the **ST** time period. The **IR** I/O sampling option can be used in conjunction with this option where the first sample is randomized and thereafter I/O samples will occur on the **IR* interval sending x samples or x samples - 1.** [XBX-314]**

3. Pending commands (commands that don't give immediate results e.g. *ND*), no longer need to be completed before a non-pending command can execute, provided that non-pending command is *not* entered from command mode. This means that it is either an API AT command or a remote AT command. The purpose of this enhancement is to improve the performance of gateway software, especially in a synchronously sleeping network. **[XBX-316]**

SECURITY FIXES

- N/A

BUG FIXES

1. Eliminated incorrect overriding sync messages in a synchronous sleep network. **[XBSX868-198]**

2. Disabled API 0xFE diagnostic frame which will no longer be emitted. **[XBX-324]**

3. Fixed issue when operating the modules with **BR** set to zero where the **TO** transmit option was using DigiMesh instead of point to multi-point transmit packet option. **[XBX-315]**

4. Fixed an issue where if a sync sleep coordinator left the network sometimes a sleeping node would become the new sleep coordinator instead of a sleep support node **[XBSX868-168]**

5. Fixed a known issue where an extra network level retry sometimes would occur which would cause TR and EA counts to be inflated on a failed unicast transmission. **[XBSX868-106]**

A007 - XBee SX868 (October 12, 2018)

BUG FIXES

1. Added the HP command to the module configuration. It will now appear in the XCTU module configuration. **[XBSX868-177]**

2. When a module configured for synchronous sleep was not associated to a network and the sleep duration was changed by the user, the wake time would also increase for one cycle. This could cause sub-optimal power usage in battery powered networks. **[XBSX868-176]**

3. Improved reliability of mixed networks that contain both S8 and SX modules that are configured for synchronized cyclic sleep. **[XBSX868-134]**

A006 - XBee SX868 (January 15, 2018)

BUG FIXES

1. Synchronously sleeping nodes were failing to output sleep status API frames after ~30 mins.

2. When operating in SPI mode, sleep status API frames were being queued due to the SPI_ATTN line not being asserted correctly.

3. Nodes operating in pin sleep mode were locking up after ~30 minutes of numerous transmit/sleep cycles.

A005 - XBee SX868 (June 6, 2017)

NEW FEATURES

1. **PL** now supports 5 levels.

BUG FIXES

1. When streaming unicast data from radio to radio with mismatched UART baud rates, data was occasionally lost.

2. **DB** command did not always report accurate values.

3. **SS** was not updated on a module after it became the sleep coordinator with new **ST** and **SP** parameters.

A004 - XBee SX868 (May 9, 2017)

NEW FEATURES

1. Initial BETA release

2. Compared to XBee S8 868LP, some features were added including

    - I/O line passing
    - **PL** is limited to 0, 1, and 2
    - Transmissions no longer occur on channels 9 and 24 which are near the band edge

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