



DIGI INTERNATIONAL
9350 Excelsior Blvd, Suite 700
Hopkins, MN 55343, USA
+1 (952) 912-3444 | +1 (877) 912-3444
www.digi.com

XBee RR DigiMesh Release Notes

XBee RR DigiMesh

Version 3012 - (May 19, 2023)

INTRODUCTION

These release notes document changes made to the DigiMesh firmware on the XBee RR RF modules.

- [Product Information] (Product information page coming soon)
- [Documentation](#)
- [Support](#)

SUPPORTED PRODUCTS

- XBRR-24 - XBee RR 2.4 GHz radio module
 - Micro (MMT)
 - Surface Mount (SMT)
 - Through Hole (THT)

KNOWN ISSUES

1. The Diagnostic counts for transmissions (**EA** and **TR**) are not always as expected because sometimes there is an extra network retry. [**XBHAWKDM-200**]
2. The **FT** flow control threshold may not be calculating number of bytes properly. If **FT** is set to too low of a value (less than 0x20), CTS will assert indefinitely. [**XBHAWKDM-611**]
3. If a data transmission is attempted immediately after boot, there is a chance that the packet will be dropped. A small delay after a power cycle should alleviate this issue. [**XBHAWKDM-659**]
4. Duplicate packets can occur if streaming unicast data across multiple synchronous sleep cycles. [**XBHAWKDM-739**]
5. Self-addressed OTA updates may be unreliable. When updating a local device, the serial firmware update process should be used. [**XBHAWK-337**]
6. **C8** bit 3 is the compatibility bit to allow synchronous sleep timing to work with legacy XBee S1 modules.

But, it no longer works. When it is used, the modules will not stay synchronized, whether or not legacy XBee S1 modules are in the network. [XBHAWKDM-947]

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

Initiating an OTA firmware update will erase the file system of the target device.

The file system will need to be formatted after a firmware update before it can be utilized. If a serial firmware update was performed, the file system and bundled code on the device is retained but can only be accessed by the version of firmware that was active at the time it was formatted.

Example: If the file system was formatted for version 3010, it would not be accessible after a serial firmware update to 3011. To make use of the file system, it should be formatted for version 3011. If instead the file system is left untouched and the firmware is serially downgraded back to 3010, the file system from before the firmware update would be accessible.

The following files are included in XBee RR RF firmware releases:

- Firmware
 - GBL: Firmware image for gateways and OEM serial updates
 - OTA: Firmware image for OTA firmware updates
 - OTB: Firmware + bootloader image for OTA updates
- Configuration
 - XML: XCTU-NG 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

Digi recommends Digi Remote Manager for automated device updates. For more information, go to <https://www.digi.com/products/iot-software-services/digi-remote-manager>.

If you prefer manually updating one device at a time, follow these steps:

Serial firmware updates:

Invoke the bootloader using one of two methods:

- Issue the %P AT Command
- [Using hardware flow control lines](#)

Interface with the bootloader at 115200 baud and transfer a bootloader or firmware image as per the [user guide](#).

An [XBee MultiProgrammer](#) is available for serial firmware updates in a production environment.

OTA firmware/file system updates:

Refer to the [user guide](#) for information on performing an OTA firmware and file system update.

The OTA firmware update process for XBee 3 and XBee RR is the same across all supported RF firmwares and utilizes ZCL frames. To perform an OTA bootloader update, use the supplied *.OTB file, which is a combined firmware + bootloader image. The *.OTA file is just the firmware.

GPM OTA firmware updates:

Refer to the [user guide](#) for information on performing an OTA firmware update with GPM commands. This feature provides an alternate method to update the module over-the-air where the update is initiated and facilitated by the the server module in contrast to ZCL updates where the client manages the update.

The [XBee Network Assistant](#) can be used to manage your network and optimize it's configuration prior to performing an OTA update.

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

3012 - XBee RR DigiMesh 2.4 (May 19, 2023)

- This is a recommended release
- Bootloader version: 1.11.5
- Hardware Revisions
 - XBRR-24DMCM, XBRR-24DMRM
 - Rev B
 - XBRR-24DMUM
 - Rev E

NEW FEATURES

1. Added support for **D%** command in order to display manufacturing date.
2. Added support for General Purpose Memory allowing users to use GPM commands to read and write to flash memory as well as perform firmware updates serially and over the air.
3. Added support for resuming a ZCL OTA update after loss of power or a reset occurred.

ENHANCEMENTS

- N/A

SECURITY FIXES

- N/A

BUG FIXES

1. Fixed an issue that if we were configured for pin wakeup(SM1), but switch to cyclic sleep(SM4) after sleep, the pin wakeup interrupt would still be enabled causing us to wake early, resulting in a watchdog. [XBHAWK-956]
 2. Fixed RS485 mode when coming out of sleep so that CTS is only asserted during transmission. [XBHAWKDM-957]
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3011 - XBee RR DigiMesh 2.4 (September 30, 2022)

- This is a recommended release
- Bootloader version: 1.11.5
- MMT Hardware revision: B
- SMT Hardware revision: A
- TH Hardware revision: A

NEW FEATURES

- Added support for the RR Through-Hole variant.

ENHANCEMENTS

- N/A

SECURITY FIXES

- N/A

BUG FIXES

1. Fixed an issue that would prevent the module from sleeping when SSEL is configured as the wakeup pin and the UART is being used as the communication port. [XBHAWK-953]
 2. Fixed a watchdog issue that occurred when attempting to sleep with RTS de-asserted and pending data waiting to be transmitted over the UART. [XBHAWK-955]
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3010 - XBee RR DigiMesh 2.4 (April 18, 2022)

- This is the initial release
- Bootloader version: 1.11.5
- MMT Hardware revision: A

NEW FEATURES

- N/A

ENHANCEMENTS

1. The over-voltage detection limit is set for 3.85 volts which will output an API 0x8A Modem status of 0x0D value when the voltage limit is exceeded. [**XBHAWK-924**] Note: Xbee3 DM product has an over-voltage limit of 3.7 volts.

SECURITY FIXES

- N/A

BUG FIXES

- N/A

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