Digi XBee® Industrial Gateway Telit Modem Firmware Update - Verizon

Update Guide

Revision history—90002338

Revision	Date	Description
A	February 2019	Initial release.
B	February 2019	Additional edits.

Trademarks and copyright

Digi, Digi International, and the Digi logo are trademarks or registered trademarks in the United States and other countries worldwide. All other trademarks mentioned in this document are the property of their respective owners.

© 2019 Digi International Inc. All rights reserved.

Disclaimers

Information in this document is subject to change without notice and does not represent a commitment on the part of Digi International. Digi provides this document "as is," without warranty of any kind, expressed or implied, including, but not limited to, the implied warranties of fitness or merchantability for a particular purpose. Digi may make improvements and/or changes in this manual or in the product(s) and/or the program(s) described in this manual at any time.

Warranty

To view product warranty information, go to the following website:

www.digi.com/howtobuy/terms

Send comments

Documentation feedback: To provide feedback on this document, send your comments to techcomm@digi.com.

Technical support

Digi Technical Support: Digi offers multiple technical support plans and service packages to help our customers get the most out of their Digi product. For information on Technical Support plans and pricing, visit us at www.digi.com/support. For questions or assistance contact Technical Support at tech.support@digi.com.

Contents

Verizon network changes: Digi XBee® Industrial Gateway

This document describes how to update cellular modem firmware to comply with Verizon network changes occurring on March 30th, 2019.

It applies to the Digi XBee Industrial Gateway (XGI-2PCZ7-EL1-W0) containing the following LTE modem:

- Telit LE910-NA1 (single SKU, North America/AT&T and Verizon)

Determine if an update is needed

Prerequisites

- Digi XBee Industrial Gateway firmware version 3.2.29.8 (PN 82004081) or later

- Verizon SIM

The LE910 module has two firmware images. The modem revision of the relevant image can only be checked when a Verizon SIM is the active SIM installed in the product.
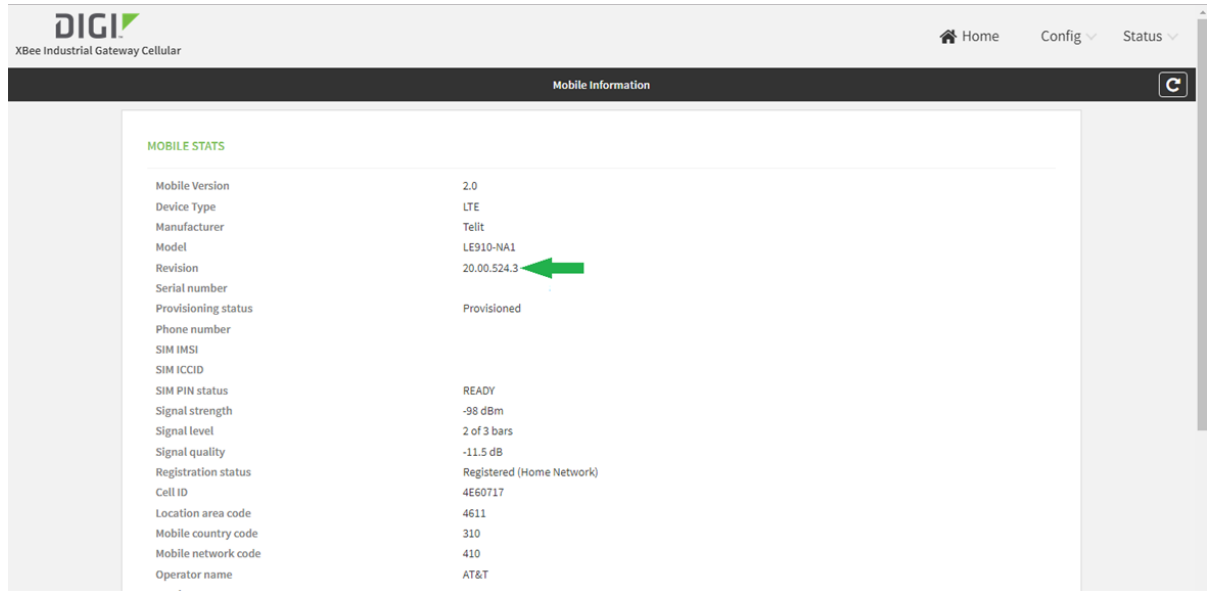
To determine whether an upate is needed:

1. Step 1: Find the modem revision

2. Step 2: Determine if a modem firmware update is required

Step 1: Find the modem revision

Choose one interface from those below to retrieve the modem revision.

Method 1: Digi Remote Manager

1. Open a web browser and navigate to https://remotemanager.digi.com.

2. Log in to your account.

3. In the **Devices** tab in Remote Manager, find your device. Double-click on the device entry to display the device properties.

4. Click the **Edit Device Configuration** button.

5. In the new window that opens, select **Mobile information** under **System Information**.

6. Take note of the **Revision** field on the page.

Method 2: Command line

1. SSH into the gateway.

2. Perform the command: `wancm info`

3. Take note of the **Revision** field in the output.

Method 3: Web interface

1. From the web interface, use the side panel to navigate to **Mobile Status**.

2. Take note of the **Revision** field in the output.

Step 2: Determine if a modem firmware update is required

1. The first three groupings of digits should be 20.00.014.x or 20.00.015.x. If any other value is present contact Digi Technical Support for guidance.

2. The value that indicates your module has the correct Verizon update is 20.00.015.0. Any value less than 15 in the third grouping indicates that an update is needed and you should select the process below which meets requirements.

Update the Modem Firmware

Choose one of the following options to update the modem firmware.

- Method 1: Update the modem firmware over the air (FOTA)

- Method 2: Update the modem firmware over an Ethernet connection

Best practices

- Disable network clients, SureLink and Python applications.

- Ensure solid uninterrupted power. There is a small window during the update process where power loss may cause corrupted modem firmware.

Method 1: Update the modem firmware over the air (FOTA)

This section describes how to update the modem over the air. The update process is initiated from the Digi Remote Manager. It requires a working cellular connection. It does not require physical access to the device. This operation will only work before the March 30th deadline.

Prerequisites

- Remote manager account

- Device ID of the gateway to update

- Modem IMEI

- fota.exe application (PN 80010027)

- Digi XBee Industrial Gateway firmware version 3.2.29.8 (PN 82004081) or later

Step 1: Open Remote Manager

1. Open a web browser and navigate to https://remotemanager.digi.com.

2. Log into your account.

3. Click on the **Device Management** tab.

4. Find your device using the device ID.

5. Double-click to open your device.

6. Click **Edit Device Configurations**.

The device ID looks like: 00000000-00000000-0004F3FF-FFxxxxxx. It contains the MAC address of the modem. You will need the device ID later to start the FOTA process.
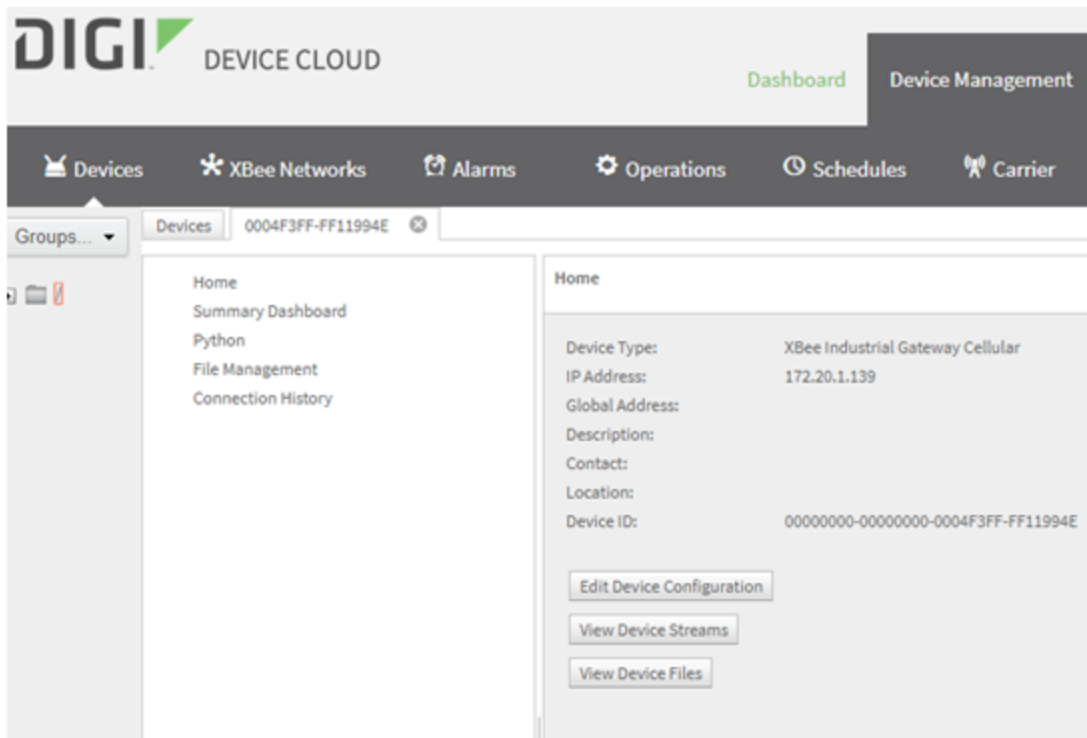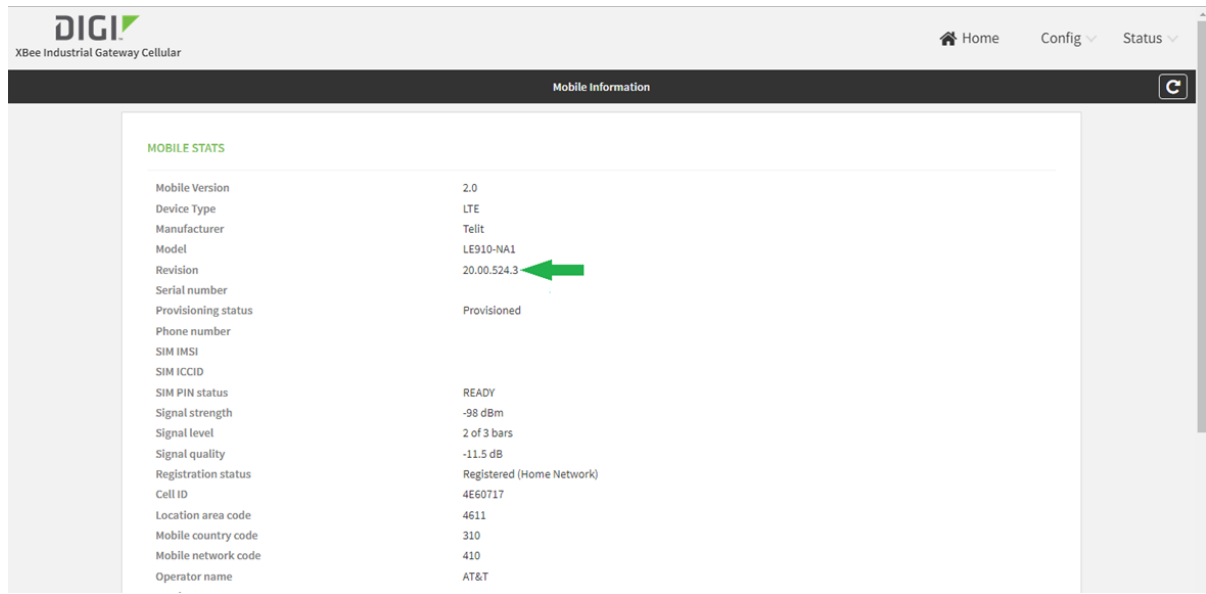
Step 2: Confirm the current firmware revision

1. In Digi Remote Manager, select **Mobile information** under **System Information**.

2. Note the current **Revision**.

   The desired revision is 20.00.015.0 for a module with a Verizon SIM or 20.00.525.2 for a module with a non-Verizon SIM. The Verizon firmware must be updated.

   If there isn't a fourth field in the revision, the gateway's firmware needs to be updated first. If the modem is already at the desired revision, no modem firmware update is needed.

Step 3: Determine the update string

This section includes some of the typical update strings for the Digi XBee Industrial Gateway. Find the firmware revision from Step 2, above, and copy the corresponding update string.

Revision 20.00.014.5

Update file name: UpdPkg_LE910_SV1_NA1_1G_SKU_20.00.014.5_20.00.015.0.bin

Patch size: 258202

Update string:
ZnRwMS5kaWdpLmNvbQAyMQBhbm9ueW1vdXMAdGVzdABzdXBwb3J0L3RlbGl0AFVwZFBrZ19MRTkxM
F9TVjFfTkExXzFHX1NLVV8yMC4wMC4wMTQuNV8yMC4wMC4wMTUuMC5iaW4=

Revision 20.00.014.11

Update file name: UpdPkg_LE910_SV1_NA1_1G_SKU_20.00.014.11_20.00.015.0.bin

Patch size: 214762

Update string:
ZnRwMS5kaWdpLmNvbQAyMQBhbm9ueW1vdXMAdGVzdABzdXBwb3J0L3RlbGl0AFVwZFBrZ19MRTkxM
F9TVjFfTkExXzFHX1NLVV8yMC4wMC4wMTQuMTFfMjAuMDAuMDE1LjAuYmlu

Revision 20.00.524.3

Update file name: UpdPkg_LE910_NA1_1G_SKU_20.00.524.3_20.00.525.2.bin

Patch size: 325026

Update string:
ZnRwMS5kaWdpLmNvbQAyMQBhbm9ueW1vdXMAdGVzdABzdXBwb3J0L3RlbGl0AFVwZFBrZ19MRTkxM
F9OQTFfMUdfU0tVXzIwLjAwLjUyNC4zXzIwLjAwLjUyNS4yLmJpbg==

Revision 20.00.524.11

Update file name: UpdPkg_LE910_NA1_1G_SKU_20.00.524.11_20.00.525.2.bin

Patch size: 287222

Update string:

ZnRwMS5kaWdpLmNvbQAyMQBhbm9ueW1vdXMAdGVzdABzdXBwb3J0L3RlbGl0AFVwZFBrZ19MRTkxM
F9OQTFfMUdfU0tVXzIwLjAwLjUyNC4xMV8yMC4wMC41MjUuMi5iaW4=

Generate update strings for other revisions

If your firmware version is not listed above, run the fota application from a Windows command prompt along with the ftp address, port, userid, password, path, and the correct update file.

In order to determine the correct update file, use the current revision and target revision found in the previous step. For example if the current revision was 20.00.014.3 and the target is 20.00.015.0 the corresponding file would be: **UpdPkg_LE910_SV1_NA1_1G_SKU_**20.00.014.3_20.00.015.0.**bin**

Use this file name with the fota application as follows:

```
C:\>fota ftp1.digi.com 21 anonymous test support/telit UpdPkg_LE910_SV1_
1G_20.00.012.2_20.00.015.0.bin
```

ZnRwMS5kaWdpLmNvbQAyMQBhbm9ueW1vdXMAdGVzdABzdXBwb3J0L3RlbGl0AFVwZFBrZ19MRTkxM
F9TVjFfMUdfMjAuMDAuMDEyLjJfMjAuMDAuMDE1LjAuYmlu

Step 4: Initiate the firmware update
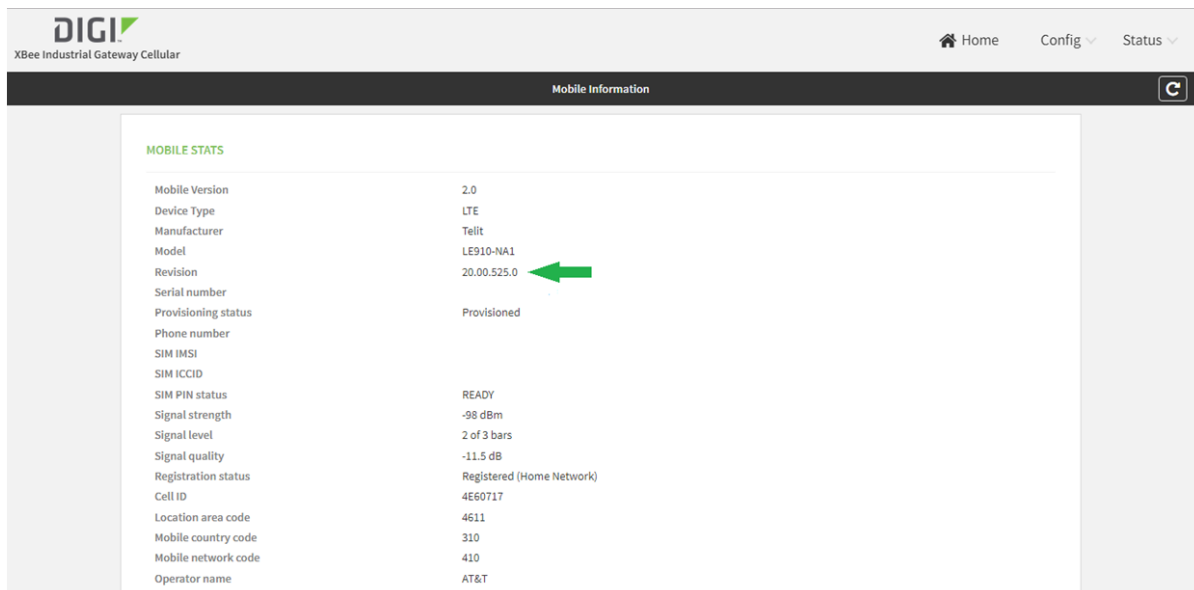
1. In the Remote Manager, select **Documentation**, then **API Explorer**.

2. Select **Examples/SCI/Data Service/Send Binary Request**.

3. A template request (in XML) appears. Delete the template and replace with XML below.

4. Patch the `#Device ID#` with the correct value from step 1.

5. Patch the `#update string#` with the update string from step 3.

```
<sci_request version="1.0">
  <data_service allowOffline="false" synchronous="true">
    <targets>
      <device id="#Device ID#"/>
    </targets>
    <requests>
      <device_request target_name="FTP_OTA" format="base64">
        #update string#
      </device_request>
    </requests>
  </data_service>
</sci_request>
```

6. Click **Send** button.

7. Enter your user name and password.

8. Once started, the update will take a few minutes to complete. After the device completes the update, it will reconnect to Digi Remote Manager.

Updating multiple devices

The above example shows how to update a single XBee Industrial Gateway. More than one device can be updated with a single Remote Manager request.

To update a list of devices, add their device IDs to `<targets>` in the request. For example:

```
<targets>
  <device id="00010000-00000000-03566100-79000697"/>
  <device id="00010000-00000000-03566100-79000698"/>
  <device id="00010000-00000000-03566100-79000699"/>
  <device id="00010000-00000000-03566100-7900069A"/>
  <device id="00010000-00000000-03566100-7900069B"/>
</targets>
```

To update all devices in a Remote Manager group, add the group name to `<targets>`. For example:

```
<targets>
  <group path="my_group"/>
</targets>
```

Note All devices in the request must have the same modem revision and update string. Devices will individually connect as scheduled and perform the update.

See the *Digi Remote Manager User Guide* and *Digi Remote Manager Programming Guide* on the **Remote Manager Documentation** tab for more information.

Step 5: Verify that the update was successful

1. Confirm the new modem firmware revision. See Step 1: Find the modem revision for information about finding the revision.

2. Note the new **Revision**, which should now be 20.00.015.0 (Verizon) or 20.00.525.2 (other North American carriers).

Method 2: Update the modem firmware over an Ethernet connection

This section describes how to update the modem over an Ethernet connection. It uses the Python script provided to automatically verify the modem revision and update to the correct revision. It requires physical access to the device. This method will work after the March 30th deadline.

Prerequisites

- XBee Industrial Gateway firmware version 3.2.29.8 (PN 82004081) or later

- Update assistance Python application: telit-update.py (PN 83000126_A)

- Wired Ethernet connection with HTTP access to the server **ftp1.digi.com**

Step 1: Install the Python update application

The *telit-update.py* file (PN 83000126_A) is a single Python file. The file must be placed on the file system of the gateway using one of the methods below.

Method 1: Web interface

1. Open a browser and navigate to the web interface of the gateway.

2. From the navigation pane on the left side of the page click **File Management**.

3. Upload the Python application to the device file system.

Method 2: Command Line

Use SCP to copy the file to the home directory of the gateway's file system:

`/userfs/WEB/python`

Step 2: Execute the Python update application

1. Over the local Ethernet connection, SSH into the gateway.

2. Execute the Python application as follows:

   `python telit-update.py –a`

3. The script will identify the necessary update file and apply it to the module. The script outputs the update status. Two firmware updates will be applied.

The output of the script will contain the following lines to indicate the update status:

Script output	Meaning
Module is at the target patch version for verizon	The first of two modem firmware updates completed successfully. (Verizon)
Done with telit firmware secondary	The Second and final modem firmware update has completed successfully (other North American carriers).
Module is at the target patch version for verizon	The modem does not need to be updated (for Verizon).
Module is at the target patch version for secondary	The modem does not need to be updated (for other North American carriers).

Step 3: Verify that the update was successful

1. Confirm the new modem firmware revision. See Step 1: Find the modem revision for information about finding the revision.

2. Note the new **Revision**, which should now be 20.00.015.0 (Verizon) or 20.00.525.2 (other North American carriers).

Troubleshooting the update

If the device does not report the expected revision, follow these steps:

1. Check if the device has connected to Digi Remote Manager since the firmware update was initiated. Select **Connection History** on the Digi Remote Manager device page.

2. Update device information by clicking **Refresh** at the bottom of the device page.

3. Try the update again.

4. If none of the above work, contact Digi Tech support at tech.support@digi.com.