

Firmware Update Procedure for NL-SW-HSPA Skywire Modems

NimbeLink Corp

Updated: January 2019



© NimbeLink Corp. 2019. All rights reserved.

NimbeLink Corp. provides this documentation in support of its products for the internal use of its current and prospective customers. The publication of this document does not create any other right or license in any party to use any content contained in or referred to in this document and any modification or redistribution of this document is not permitted.

While efforts are made to ensure accuracy, typographical and other errors may exist in this document. NimbeLink reserves the right to modify or discontinue its products and to modify this and any other product documentation at any time.

All NimbeLink products are sold subject to its published Terms and Conditions, subject to any separate terms agreed with its customers. No warranty of any type is extended by publication of this documentation, including, but not limited to, implied warranties of merchantability, fitness for a particular purpose and non-infringement.

Skywire and NimbeLink are registered trademarks of NimbeLink Corp. All other trademarks appearing in the document are the property of their respective owners.

Table of Contents

Introduction	3
Overview	3
Orderable Devices	3
Firmware Update Procedure	4
Introduction	4
Install USB device drivers on a Windows PC	4
Plug Modem into Development kit	4
Connect USB cable from Kit to PC	5
Apply Power	5
Wait for Modem Initialization	5
Install the Update Application	6
Run and Configure the Xfp Tool	7
Install the Update	9
Remove Modem	10
Check New Firmware Version	10

1. Introduction

1.1 Overview

As cellular carriers and chipset providers continue to update cellular networks and the devices that operate on them, new features are constantly being added. Accordingly, NimbeLink recommends updating device firmware so that customers can take full advantage of any bug fixes, or improved features that are added with device firmware upgrades.

This document provides instructions on how to update the firmware on NL-SW-HSPA modems with firmware versions that have been approved and released by Telit.

1.2 Orderable Devices

Orderable Device	Description
NL-SWDK	Skywire Development Kit
NL-SW-HSPA	3G Global HSPA
NL-SW-HSPA-B	3G Global HSPA

2. Firmware Update Procedure

2.1 Introduction

The firmware update procedure detailed in this application note utilizes a firmware update tool that is distributed by Telit. This tool, as well as the new firmware file is only available under an NDA.

In order to obtain access to the firmware update tool and the new firmware, please review and complete the following document:

https://nimbelink.com/Documentation/Skywire/1001463_Document-Guide.pdf

Once completed, please include this document in an emailed request for access. Requests can be sent to the following email address:

product.support@nimbelink.com

Furthermore, please note that this firmware update procedure only applies to Windows operating systems. After obtaining access to the the aforementioned files, proceed to [Section 2.2](#).

2.2 Install USB device drivers on a Windows PC

USB drivers for Windows operating systems are available at the following link:

https://nimbelink.com/Documentation/Skywire/Telit_USB_Driver_Win_Desktop.zip

This zip file contains installers for x64 and x86 architectures, as well as a guide for using the installer.

Be sure to install the appropriate drivers before continuing with the firmware update procedure.

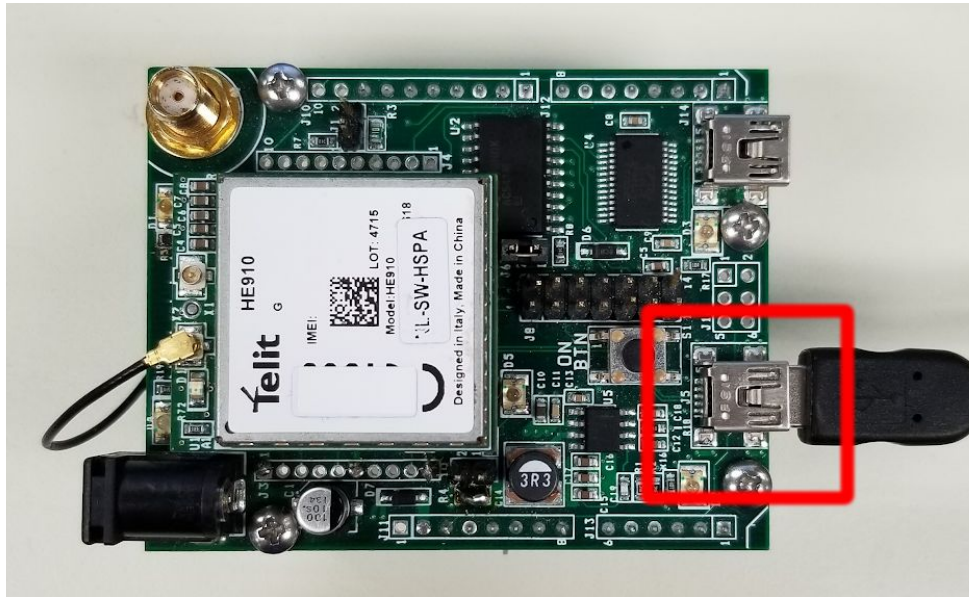
2.3 Plug Modem into Development kit

It is recommended to use an NL-SWDK for the firmware update procedure. Refer to the SWDK user manual for the step-by-step procedure of how to install a Skywire modem into the SWDK.

https://nimbelink.com/Documentation/Development_Kits/NL-SWDK/30005_NL-SWDK_UserManual.pdf

2.4 Connect USB cable from Kit to PC

Connect the USB cable to USB connector J5 and to the PC.



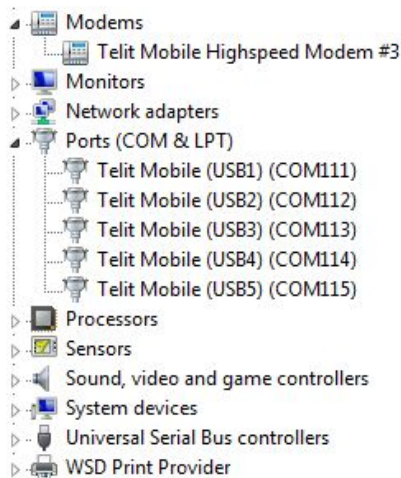
2.5 Apply Power

Plug a compatible power supply into connector/barrel jack J3 and turn on the modem by pressing the ON_BTN for at least 5 seconds.

2.6 Wait for Modem Initialization

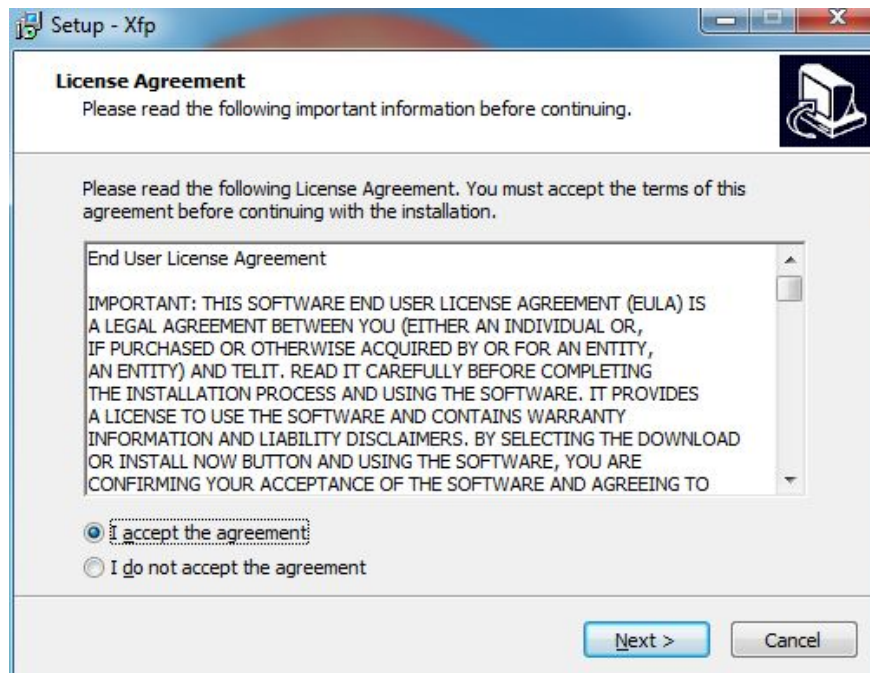
After applying power, it will take 3-5 seconds before the USB ports are initialized and recognized by the operating system. Wait for any drivers to be updated and for the COM ports to fully enumerate.

If desired, use the Windows Device Manager to monitor the modem's connection status as it initializes. Once the modem has been connected properly, the Windows Device Manager window should look something like the image on the next page:

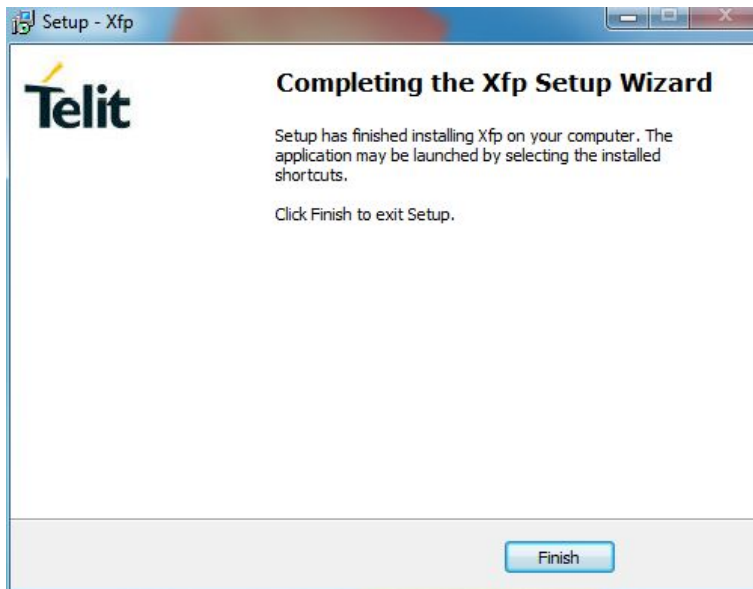


2.7 Install the Update Application

After ensuring that the modem is initialized properly, install Telit's Xfp application. To do so, run the "Xfp Ver_x.y.z.exe" installer. If prompted, enter in administrator credentials, and accept the license agreement. Refer to the image below:

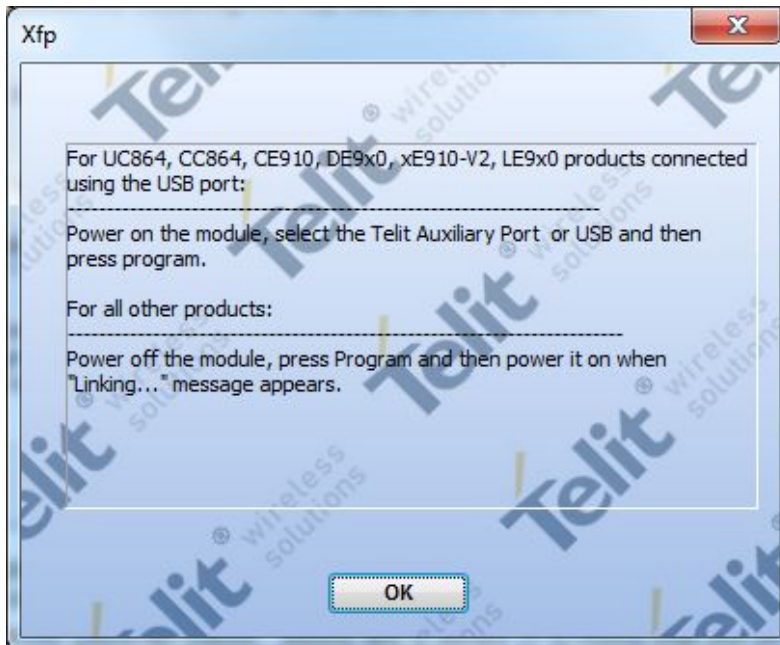


After accepting the license agreement, continue through the other prompts to select an installation folder and start menu folder. The installer will now run for a few brief moments. After the installation is complete, select "Finish" to complete the installation.



2.8 Run and Configure the Xfp Tool

After successfully installing the Xfp tool, run the tool and click "Ok" on the first windows that appears. Refer to the image on the below.

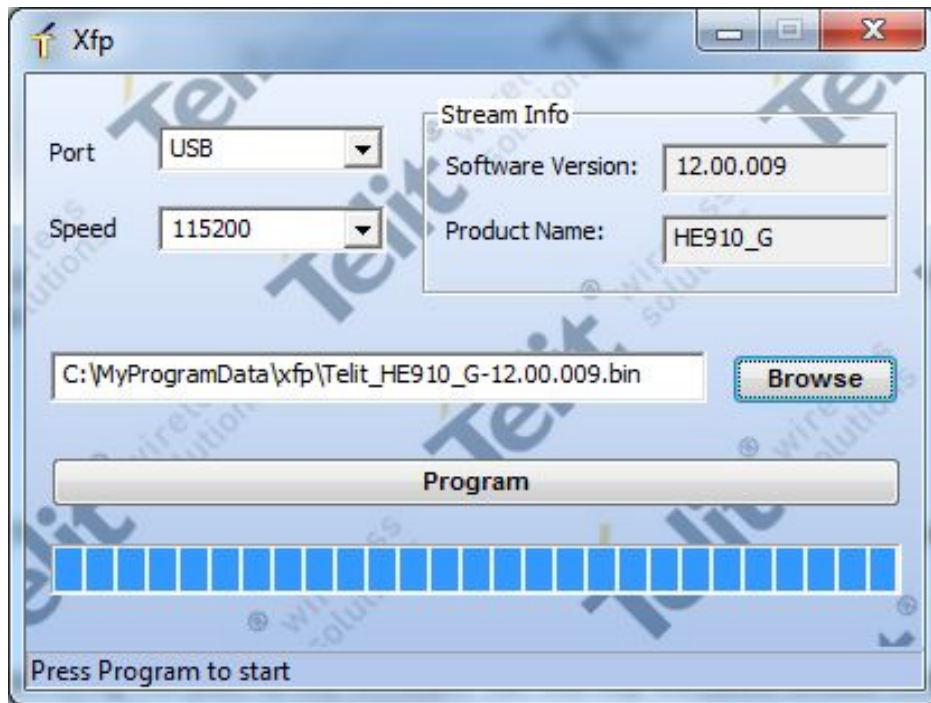


Next, specify the path to the firmware update file. To do this, click on the "Browse" button in the main screen of the Xfp application. In this example, the firmware file was placed at the following path:

```
C:\MyProgramData\xfp\Telit_HE910_G-12.00.009.bin
```

This is the default folder that the Xfp tool opens when pressing the "Browse" button.

After specifying the path to the firmware file, specify the proper baud rate and port. In the drop down menu "Speed" select "115200", and in the "Port" menu select "USB". After doing this, the Xfp window should look like the image below.



The next step is to shut down the modem. To do so, press the ON_BTN on the SWDK for at least 5 seconds. This will shut down the modem gracefully.

After ensuring that the Xfp tool is configured properly, and that the modem is powered down, continue to [Section 2.9](#).

2.9 Install the Update

To install the update, press the "Program" button. Then, quickly hold down the ON_BTN until the Xfp tool displays two messages that state:

"Linking..." followed by "Programming..."

After these messages are presented, the Xfp tool will begin to update the firmware on the device. The update should take around 6 minutes to complete over USB.

Note: it is possible to do the update over UART, with a similar process. Instead of selecting USB, select whichever COM port enumerated for the modem. Then, the rest of the procedure is the same as the procedure for USB.

However, a UART update can take around 20 minutes to complete, so NimbeLink recommends to do the update over USB if possible.

After the update completes, the Xfp program will present a success message. It should look something like this:



If the Xfp tool was successful, the firmware update process is complete. If the tool returns a message stating that it was unable to locate the modem, try selecting "USB1" as the target port. If this alternate port fails, then it may be required to perform the firmware update over UART.

2.10 Remove Modem

After updating, the modem can be installed back into custom hardware or a NimbeLink development kit. Be sure to properly shut down the modem before removing the power supply from the SWDK.

2.11 Check New Firmware Version

If desired, the success of the firmware version can be further tested. It is recommended to verify that the firmware version has changed after any firmware update on any Skywire modem.

In the case of the NL-SW-HSPA, issue the following command to check the firmware version:

AT+CGMR

The modem should respond with something similar to:

12.00.009

If the firmware version has changed, then the update was successful.