



HiloUpgrader User Guide

HiLo/HL6



SIERRA
WIRELESS

2174015
13.0
April 1, 2014

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Document History

Version	Date	Updates
0.10	September 04, 2008	Document creation
0.20	September 08, 2008	Update for 1.01 version
0.30	September 16, 2008	Add availability of a progress bar
1.0	November 21, 2008	Update for 2.0 version
1.1	March 24, 2009	Update for 3.0 version
1.2	April 02,2009	Update for 3.0 version
2.0	May 15, 2009	Update for 3.0 version
3.0	July 09, 2009	Update for 3.1 version
3.1	August 24, 2009	Add information in section 6
3.2	October 09, 2009	Update for 3.2 version
4.0	January 22, 2010	Update for 3.3 version
5.0	September 20, 2010	Hilo V2 management and Sagemcom template
6.0	2011	Add MD5
7.0	November 22,2011	Add HiAll module and FAQ
8.0	April 12, 2012	Add typical error chapter
9.0	January 07, 2013	Change loader version
10.0	March 08, 2013	Change loader version
11.0	April 30, 2013	Change loader version
12.0	August 19, 2013	Adding HL6 module
13.0	April 1, 2014	Update for 6.0 version



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1. Overview

1.1. Synopsis

The HiloUpgrader application is designed to upgrade cellular modules software versions.

Hilo V2 modules are supported since HiloUpgrader release 4.0.

HL6 modules are supported since HiloUpgrader release 6.0.

Hilo 3G modules are not supported.

The upgrade procedure is composed of four parts:

1. Saving parameters (create a backup file: '.SAV')
2. Downloading software
3. Restoring saved parameters (with the created backup file '.SAV')
4. Personalization of the module



2. Launching the Application

2.1. Available Files

The installer will automatically install all useful files:

Table 1. HiloUpgrader files

File name	File type
HiloUpgrader.exe	Application executable (Graphical version)
MobileHILO2.dll	DLL for exchanges with cellular module
MobileHILO2.ini	DLL initialization file
flash_nor_16bits_hwasic_evp_4901_2_rel_sc_0_6.hex flash_spi_4bits_hwasic_evp_4902_swi_0_3.hex	Flash loaders
version.txt	Versions of HiloUpgrader.exe, MobileHILO2.dll, MobileHILO2.ini included in the installer package
Unin*.*	Files to uninstall the program
This file	PDF file

2.2. Preparing the application

Before running the application, please read carefully the restrictions (Cf. section [6](#))

In order to make the application work correctly, you must have a serial port available. This serial port can be a standard one, or an emulated one (like with a USB adapter).

You must also have an upgrade file (.pac)

NOTE:

1. **All cables (power supply, communication) MUST be connected BEFORE you start any procedure.**
2. SIM card is not needed.
3. On Sierra Wireless Development Kits, the Power ON pin must be set to ground.

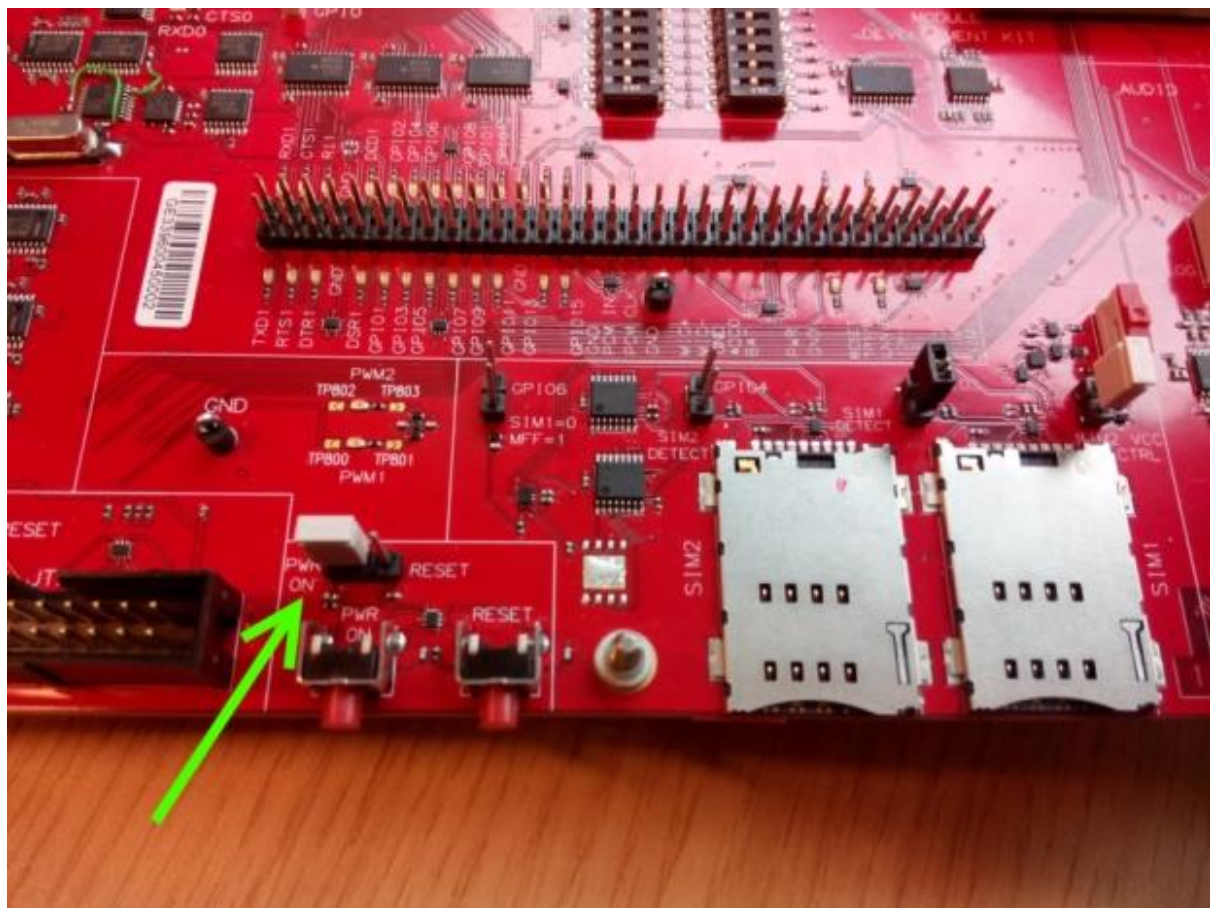


Figure 1 On Sierra Wireless Dev Kit for HL6 series, set the PWR ON jumper to GND



3. Graphical User Interface

Example:



Figure 2 HiloUpgrader Graphical User Interface. H gives the version of HiloUpgrader, M the version of MobileHilo2 DLL.

3.1. Download file field

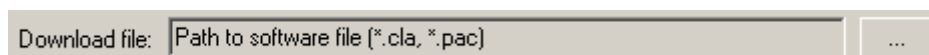



Figure 3 HiloUpgrader download file information

By clicking the  button, you can browse to the location of the upgrade file.

3.2. Serial port parameters' fields

The screenshot shows the 'Settings' window of the HiLoUpgrader application. It features a table with columns for 'Check:', 'Port:', and 'Download speed:'. There are eight rows, each corresponding to a module (M1 through M8). Each row has a checked checkbox in the 'Check:' column, a dropdown menu in the 'Port:' column, and a dropdown menu in the 'Download speed:' column. The 'Download speed:' column also includes a text input field to the right of the dropdown menu.

Check:	Port:	Download speed:
<input checked="" type="checkbox"/> M1	[Dropdown]	[Dropdown] [Text Field]
<input checked="" type="checkbox"/> M2	[Dropdown]	[Dropdown] [Text Field]
<input checked="" type="checkbox"/> M3	[Dropdown]	[Dropdown] [Text Field]
<input checked="" type="checkbox"/> M4	[Dropdown]	[Dropdown] [Text Field]
<input checked="" type="checkbox"/> M5	[Dropdown]	[Dropdown] [Text Field]
<input checked="" type="checkbox"/> M6	[Dropdown]	[Dropdown] [Text Field]
<input checked="" type="checkbox"/> M7	[Dropdown]	[Dropdown] [Text Field]
<input checked="" type="checkbox"/> M8	[Dropdown]	[Dropdown] [Text Field]

Figure 4 HiLoUpgrader Serial Port Parameter information

3.2.1. Port

Select a serial port by clicking on the arrow just next to the white space: a list will be shown containing all system declared serial ports, sorted alphabetically.

3.2.2. Speed

It gives a list of possible speeds used for download ONLY.

NOTE: this list is not exhaustive. It offers the possibility to use the maximum default speed for a serial port (115200 bps) and several high speeds for USB devices for example (460800 bps).

Typically:

- with a download speed set at 115200 bps, a full upgrade takes about 7 minutes.
- with a download speed set at 460800 bps, it takes about 3 minutes.

3.2.3. Multi download mode

To perform several downloads simultaneously (up to 8 modules), you just have to fill several port/speed pairs. You can activate or deactivate the set pairs with the tick box on the left.

Warning: *On some hardware, the use of multi download mode may freeze your operating system after some trials because of bad USB drivers.*

3.3. Interface buttons



Figure 5 HiLoUpgrader interface buttons

3.3.1. UPGRADE button

Clicking on this button, you start the upgrade procedure.

The button is unavailable (greyed) by default: it will be available once you select a file and at least a valid pair of port and speed.

You can launch the upgrade of up to 8 modules (M1 to M8) simultaneously.

Remark: *all launched upgrades will not necessarily run at the same speed: upgrade of the M1 module can be the last one to end.*

3.3.2. Quit button

You can use this button to close the application.

The “Quit” button is unavailable while at least one upgrade is ongoing: it is reactivated once all upgrades have ended.

3.3.3. Help button

This documentation is automatically displayed.



4. Progression GUI

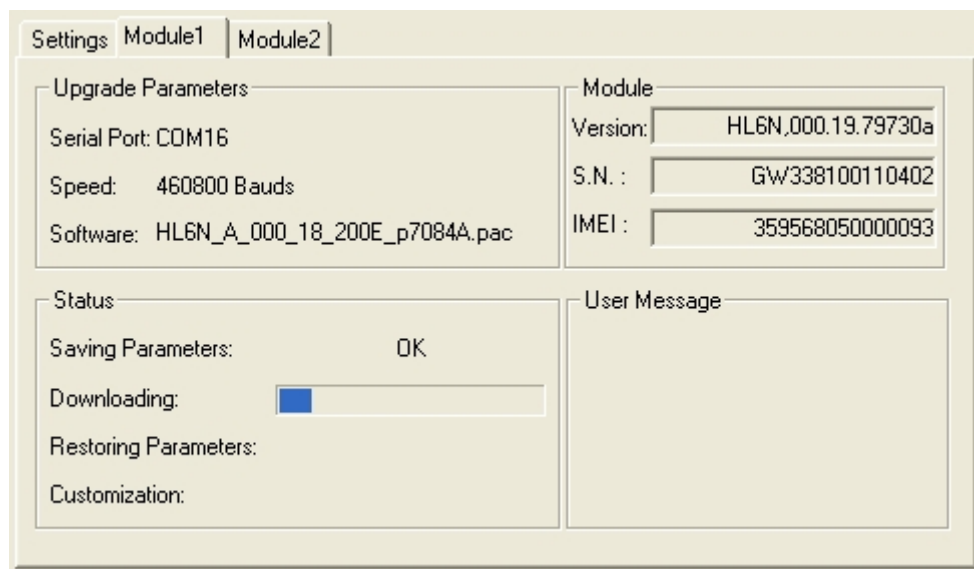


Figure 6 HiLoUpgrader progression tab. One tab is displayed for each module.

4.1. *Upgrade Parameters* fields

This part displays the:

- Serial port used
- Selected download speed
- Selected upgrade file

4.2. *Module* fields

This part displays information read in the module:

- Version of the module: at the start of the process, displays the current software version, at the end displays the upgraded version by reading it in the module.
- S.N. : the Serial Number of the module
- IMEI : the International Mobile Equipment Identifier of the module

4.3. *Status* information

Here is displayed the upgrade progression information with the status of all of the four steps of the process.

For each step, you are informed of the status:

- | | |
|-----------------------|---|
| - Running... | -> The step is ongoing |
| - Detection... | -> The application is trying to detect the module |
| - Waiting... | -> The application waits before further processing |
| - Restoring... | -> The application is restoring some parameters into the module |
| - Bypassed... | -> The step has been skipped |

- | | |
|--------------------|---|
| - Verifying | -> The application is performing final checks |
| - Failed | -> The step has failed |
| - NA | -> The step is not applicable |
| - OK | -> The step is finished successfully |

For the **Downloading** step, the software's download is indicated by a progress bar: as soon as the download starts, a progress bar appears in place of the previous text information.

Pay attention that during the downloading step an operation takes time: "flash erasing" lasts around 1 minute, and progress bar appears during this step.

Once the download ended, the information rolls back to the text information to display the step status as seen above.

4.4. *User message fields*

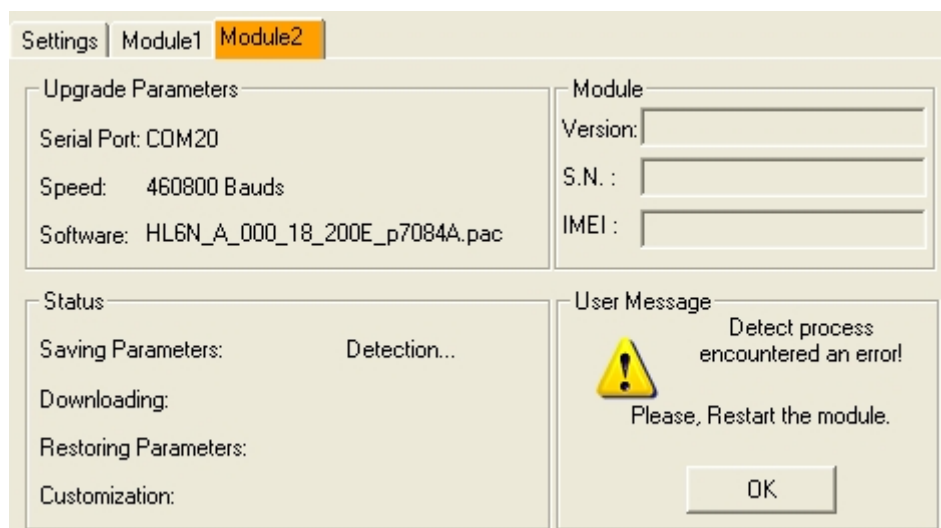


Figure 7 HiLoUpgrader user message fields. Here the detection during Saving Parametres step has failed. A message asks to restart the module.

You will find two types of message:

- The tab is blinking orange: an action is required, please follow the instructions.
- The tab is red. This is an error which prevents HiloUpgrader from upgrading the module.

HiloUpgrader has ways to restore a cellular module after an error. Please check the connection between computer and cellular module, restart the cellular module by powering it off then on and restart the upgrade with HiloUpgrader.

If the problem persists then contact your Field Application Engineer. If possible, provide the log file of the cellular module to help FAE understand the problem. The log file can be found in the LOGS directory in HiloUpgrader Directory, by default: C:\Program Files\HiloUpgrader.



5. Step details

As told in section 3.3.2, the downloading time differs according to the download speed you have chosen.

However, the other steps last each time the same duration.

Here are some details about all the upgrade steps:

5.1. Auto-detect (optional)

The aim of this step is to automatically detect the module's current AT speed, and so avoid user to set by himself the AT speed with the AT command AT+IPR=.

This step takes from 6s to 33s.

5.2. Recovering software version

Since version 3.2, HiloUpgrader tries to recover the module embedded software's version. This feature cannot be unselected, and is mandatory in nominal mode. Nevertheless if special mode "Force Download" is activated, this feature will not be blocking for the upgrade process.

This step takes about 3s.

5.3. Saving parameters

The aim of this step is to provide the application a backup file of critical data present on the module (".SAV" file written into the directory "SAV" you can find in the working directory, by default C:\Program Files\HiloUpgrader).

These data are defined by Sierra Wireless.

This step takes about 5 seconds.

Remark: Without the ".SAV" file, the module is no more usable. As said previously, this file contains module's critical datas that **MUST** be embedded into the cellular module to make it operational. Moreover, if the "SAV" file cannot be found during the restoration step, the module will be in state "+CPIN: PH-NET PIN".

5.4. Downloading

Its purpose is to download the new software into the module.

This step can be cut in four parts:

- | | |
|--------------------------------|---|
| 1. Configuration of the module | -> around 3 seconds |
| 2. Erase flash | -> around 1 minute |
| 3. Download new software | -> depends on download speed and software size. |
| 4. Restart module | -> around 18 seconds |

This step takes about 3 minutes.

5.5. Restoring parameters

The aim of this step is to put into the module the saved parameters stored in the “.SAV” file: actually, the new downloaded software uses default parameters and the user may need some modified data. So it is necessary to restore backed up parameters for the module to work correctly.

This step takes about 4 seconds.

5.6. Customization

This step is performed only when you upgrade the module with a .pac file.

Its purpose is to use customer's preferences for some parameters.

This step takes about 10 seconds, but can differ with the number of parameters.

5.7. Successful upgrade

You will know the upgrade is finished successfully when you get the following:

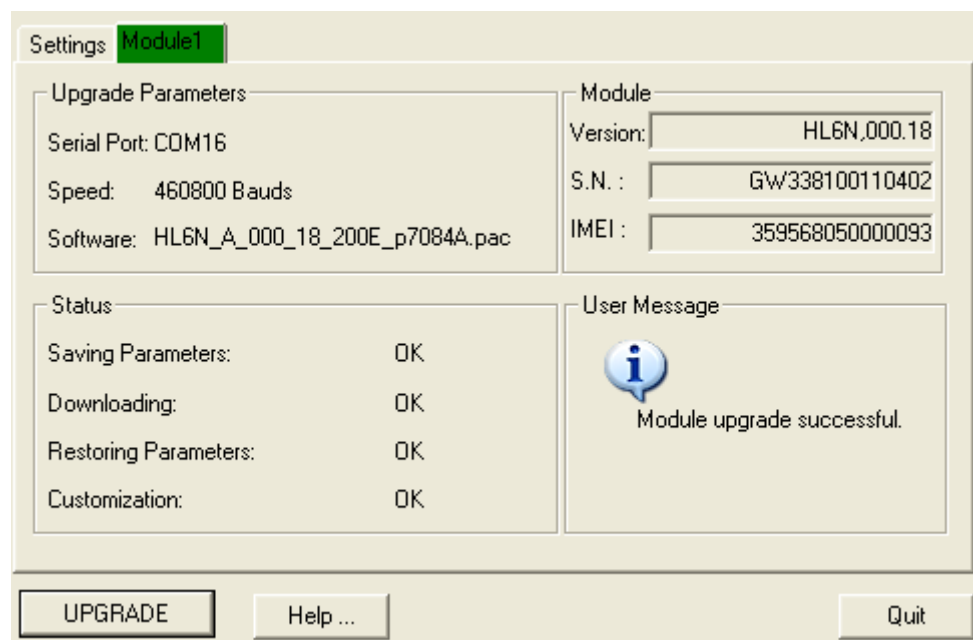


Figure 8 Successful upgrade! The tab is green, the Version in *Module* panel is the new one, the *Status* panel indicates all steps as OK, the *User Message* panel states “Module upgrade successful” and the Quit button is available again.

NOTE: when upgrade is ongoing, as long as you have not a **GREEN** or **RED** status on the **Module** tab, the process is not finished so **DO NOT** unplug the module!



6. Restrictions

6.1. Application information

The application software version greater or equal to 5.0.0 **MUST NOT** be used with a MobileHilo2.dll version lower than version 3.1.0 (anyway the application will not start if such a case happens).

NEVER edit a '.pac' file: it would make the application crash.

A log file is generated automatically with all necessary debug information.

NEVER edit this file: otherwise, no help could be provided.

6.2. Hardware warning

Some problems may occur using some laptop computer that leads to freeze the OS (so manual restart is necessary).

6.3. Operating system

This tool has been tested and validated under Windows XP Pro operating system (SP1/2/3).

Sierra Wireless declines all responsibility if used under another operating system.

WARNING if used with Windows7 64 bits:

As HiloUpgrader is a 32 bits application, when writing in some directories (typically ProgramFiles(x86) or ProgramFiles), the System redirects the writing in a VirtualStore (%SystemDrive%\Users\%username%\AppData\Local\VirtualStore). The files are therefore not appearing in the original directory. They can be found by clicking "Compatibility Files" in Windows Explorer. This 'virtualization' is a Windows7 64 bits process and HiloUpgrader has no way to avoid it. This can impact .ini files needed for the initialization of the application, .log files containing the upgrade process log or the .sav files which are the backed up information from the module and that must be restored in order to get a functional module.

6.4. Application rights in the file system

The application and the user **MUST** have rights for writing/reading/executing data in the directory where HiloUpgrader is installed.

6.5. Using a "black box" to communicate with module

If you use a unit of your own to communicate with the cellular module, you should make very light software that adds no latency in the communication process: it is really sensible with timings, so a

simple copy of data from the entrance UART to the exit UART should work well (copy byte per byte). The tool has been tested exclusively with direct connection to HiLo.

6.6. Com port

To upgrade a cellular module it is mandatory to have a COM port speed higher or equal to 9600Bauds.

COM Port cable must not be removed during upgrade (wait until the green or red status).



7. Logging data

The application stores log files into the “Logs” directory you can find into the working directory (by default C:\Program Files\HiloUpgrader).

The log file has a precise format, containing the time and date of the day.

Here is the formalism:

HiloUpgrader_yyyymmdd_HHMMSS_xxx.log

With:

- yyyymmdd -> date of the day (example: 20110502)
- HHMMSS -> time of the day (example: 120402)
- xxx -> index of the file (example : 007)

NEVER edit the .log file to avoid loss of information needed for support.



8. Frequently Asked Question

Q: I launched the update process and it crashed while the following message was prompted onto User Message window: “This status is not managed”.

A: Just follow the instruction and open a ticket to your FAE with generated log file.

Q: My computer has stopped running (freeze) during a multi download process.

A: This can happen when using a USB to Serial converter. This may happen on some hardware and this is because of USB drivers: reboot your computer, then the cellular module and restart downloads. It should happen only during the “Saving parameters” step, so just restart process (the module is still operational).

Q: When doing a normal upgrade, shall I have a SAV file in SAV folder at first?

A: It depends on the IMEI value, if the IMEI is valid, Hilo Upgrader will generate a SAV file by itself, but if the IMEI is 3300000000000001 or 350050500005942 (the default value), a SAV file is needed. Otherwise, download will fail.

Q: Why cellular module may not answer AT commands after a successful download?

A: Please restart the module by powering down (un-plug then re-plug the power).

Q: Why does the Log file show “Detect process encountered an error” message after I follow the “restart the module” indication and the download process is successful?

A: You probably did a restart with press the restart button. Please restart the module by powering down (un-plug then re-plug the power).



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