



**SL808X**

**S4\_0\_0\_7AP & S4\_0\_0\_7BT**

# **Release Notes & Upgrading Instructions**

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## General

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### Purpose

This document is intended to capture technical changes to the release package. The document covers changes in the Modem firmware (Bootloader and Application).

These release notes are **NOT** intended for the end user.

A new revision of this document will be issued when any of the firmware components of the product are updated.

### Scope

This document covers issues that affect carriers and end users.

### Revision History

Date	Author	Summary of changes
Jul 07, 2010	Ian Morrison	Created
Aug 30, 2010	Ian Morrison	Updated for S1_0_0_0
Oct 05, 2010	Ian Morrison	Updated for S1_0_0_3
Oct 22, 2010	Ian Morrison	Updated for S1_0_0_5ap
Dec 08, 2010	Ian Morrison	Updated for S1_0_0_8ap
Dec 23, 2010	Ian Morrison	Updated for S2_0_0_1
Feb 23, 2011	Ming Jiang	Updated for S2_0_0_3
Apr 04, 2011	Ming Jiang	Updated for S2_0_0_8
Apr 08, 2011	Ming Jiang	Updated for S2_0_0_10
Jun 20, 2011	Ming Jiang	Updated for S2_0_0_16
Jun 28, 2011	Ming Jiang	Updated for S2_0_0_17
Jul 13, 2011	Ming Jiang	Updated for S2_0_0_19
Sep 13, 2011	Evan Mao	Updated for S2_0_0_21
Sep 19, 2011	Vincent Liu	Updated for S3_0_0_0
Sep 23, 2011	Vincent Liu	Updated for S3_0_0_1
Sep 18, 2012	Xin Wang	Updated for S4_0_0_6
Sep 29, 2012	Xin Wang	Updated for S4_0_0_7

## Installing and Upgrading the Release

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### Download the Necessary Upgrade Files

Download the files and follow any additional instructions on the download website:

Please contact your Sierra Wireless representative for access/instructions.

### Supported Operating Systems

This software and firmware package supports the Sierra Wireless AirPrime SL808x Series on the following Microsoft Operating Systems:

- Windows XP SP3 (Service Pack 3 or higher)
- Windows Vista SP1 (Service Pack 1 or higher)
- Windows 7

### Upgrade Procedure

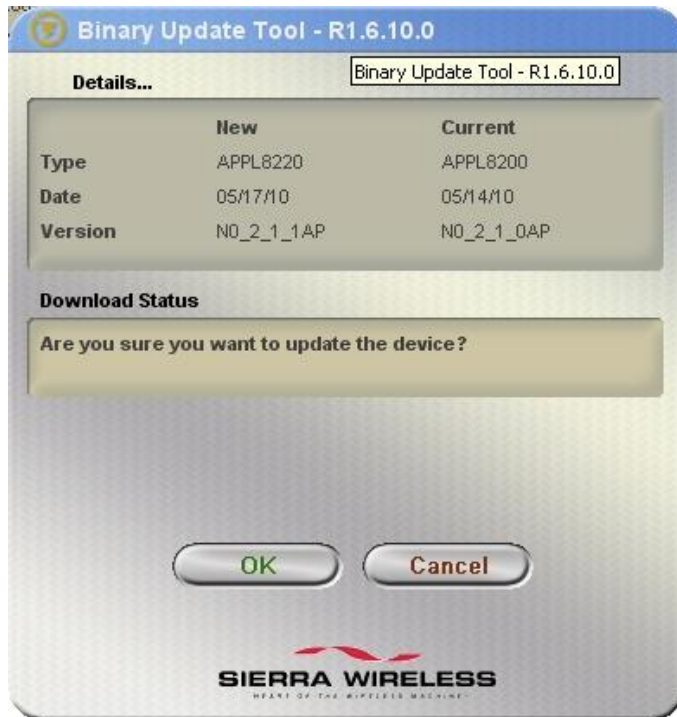
Sierra Wireless firmware upgrades are provided in a One-Click tool, which contains the firmware and download tool bundled in a self-extracting executable. Before starting an upgrade, please ensure the following:

- The host computer is connected to an AC power supply, or has at least 30 minutes of battery life remaining
- The device to be upgraded is powered and operating normally
- All applications which communicate with the device, such as Watcher, Hyper-terminal, etc. are closed

Steps:

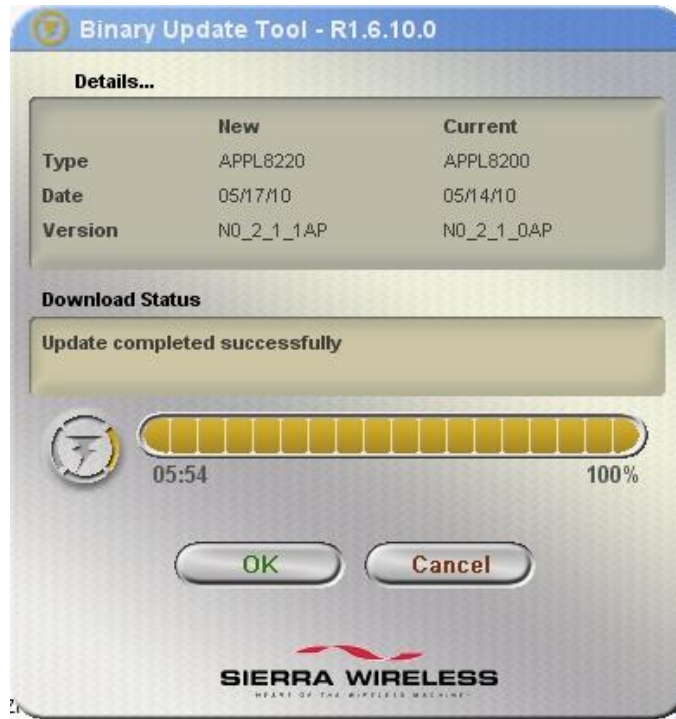
1. Navigate to the folder in the current release containing the folder named "Firmware" and open it
2. Open the folder named "OneClickTool" and click on the executable within that folder to start the BinUpdater tool

- When BinUpdater tool starts, the following window will appear:



- Click OK to begin the download.

**NOTE:** The download can take up to 10 minutes to complete. Do not remove the power to either the laptop or the modem until the Binary Update Tool announces that the upgrade has been successful, as shown here:



**NOTE 2:** There can be more than one firmware image bundled with the One Click Tool. If so, then you will be asked if you want to upgrade the device once for each image. If you click Cancel instead of OK, the remainder of the download will be aborted.

**NOTE 3:** When a boot image is released it is usually bundled with the application firmware within the same OneClickTool executable. That OneClickTool will automatically install both the boot and application images for you. If you intend to perform repeated download stability tests, please use the oneclick tools with just the Application image.

## Debug Tools

Sierra Wireless devices provide support for trace tools such as QXDM or the Sierra Wireless log-gathering tool. Please contact your Sierra Wireless representative for the logger tool and the installation instructions

## Revision History

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### S4.0 Release 2

#### *Firmware Component Revision Levels*

Component	Revision	Compatibility
Hardware	All*	
Boot loader	S4_0_0_7bt	All
Application	S4_0_0_7ap	All

\* GPS, Audio not supported on data-only models

#### *Firmware Changes*

- Fix the issue that GSM-BTR-1-9270 failed in AVL lab testing.

#### *Known Issues with S4.0 Release 2*

- None

### S4.0 Release 1

#### *Firmware Component Revision Levels*

Component	Revision	Compatibility
Hardware	All*	
Boot loader	S4_0_0_6bt	All
Application	S4_0_0_6ap	All

\* GPS, Audio not supported on data-only models

#### *Firmware Changes*

- Fix the issue that when the modem is in idle mode the Rx Level will not be updated
- Fix the issue that AT+CNMA timeout does not result in <mt> = 0
- Fix the issue that Rx Data stops prematurely in PAD TCP client
- Fix the issue that Fix the issue for CMS ERROR 500
- Fix the issue that Fix the issue that AT+CREG? returns "00000000" for cell ID
- Fix the issue that +CREG returned without cell id or LAC when AT+CREG=2
- Fix the issue that excessive +CREG URC cause extra current consumption
- Fix incorrect LAC/CID combinations reported by AT+CREG=2
- Fix the issue that SL8080 does not always go to Sleep in UART operation
- Fix error LAC report from CREG while switching from one cell to another cell
- Fix the issue that AT+CREG? doesn't return LAC-CID in 2G.
- Fix the issue that modem doesn't response for AT+CMGS

#### *Known Issues with S4.0 Release 1*

- None

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## S3.0 Release 2

### *Firmware Component Revision Levels*

Component	Revision	Compatibility
Hardware	All*	
Boot loader	S3_0_0_1bt	All
Application	S3_0_0_1ap	All

\* GPS, Audio not supported on data-only models

### *Firmware Changes*

- [TCESIM\_AUTH\_1\_x\_0] GSM authentication shouldn't be allowed when PCSCDISABLE = 2 or 3
- Increase SVN to 5
- at!bsmccheck? issue

### *Known Issues with S3.0 Release 2*

- None

## S3.0 Release 1

### *Firmware Component Revision Levels*

Component	Revision	Compatibility
Hardware	All*	
Boot loader	S3_0_0_0bt	All
Application	S3_0_0_0ap	All

\* GPS, Audio not supported on data-only models

### *Firmware Changes*

- Smartsynch needs way to query assigned IP address without opening socket
- AT command to get GSM/WCDMA instant TX power value
- !PADUNREAD notifications at disconnect
- AT!BAND output alignment error
- SL Module GSM TX power compensation
- Telular request: Persistent AT commands
- Corporate personalization caused device crash
- Disable non-applicable AT commands
- Fix display in pcvolt
- [TC4786]Disable DIO channel 3 and check configuration persistence failed
- CMUX issues
- Support ESIM

### *Known Issues with S3.0 Release 1*

- None

## S2.0 Release 2

### *Firmware Component Revision Levels*

Component	Revision	Compatibility
Hardware	All*	
Boot loader	S2_0_0_13bt	All
Application	S2_0_0_21ap	All

\* GPS, Audio not supported on data-only models

### *Firmware Changes*

- Fixed the issue of excessive current draw in sleep with VREG\_CDC2 enabled.
- Fixed the non Signalling BER measurement broken issue.
- Fixed ATT: GSM-BTR-1-9840 failure issue
- Fixed modem locks up when going to sleep
- Updated SVN to 4.

### *Known Issues with S2.0 Release 1*

- None

## S2.0 Release 1

### *Firmware Component Revision Levels*

Component	Revision	Compatibility
Hardware	All*	
Boot loader	S2_0_0_13bt	All
Application	S2_0_0_19ap	All

\* GPS, Audio not supported on data-only models

### *Firmware Changes*

- Updated RSSI reporting
- Fixed extra USB re-enumeration at startup
- Applied QC SBA for GPS SUPL issue

### *Known Issues with S2.0 Release 1*

- None

## S2.0 Beta 6

### *Firmware Component Revision Levels*

Component	Revision	Compatibility
Hardware	All*	
Boot loader	S2_0_0_13bt	All
Application	S2_0_0_17ap	All

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\* GPS, Audio not supported on data-only models

#### ***Firmware Changes***

- Updates to fix SMS handling via AT command
- Add support to dynamically change PAD profiles

#### ***Known Issues with S2.0 Beta 6***

- Extra USB re-enumeration on startup

## **S2.0 Beta 5**

#### ***Firmware Component Revision Levels***

<b>Component</b>	<b>Revision</b>	<b>Compatibility</b>
Hardware	All*	
Boot loader	S2_0_0_13bt	All
Application	S2_0_0_16ap	All

\* GPS, Audio not supported on data-only models

#### ***Firmware Changes***

- Updates to fix SSL authentication issues
- Fix AT command corruption when PPP is escaped
- Fix AT+IPR command response
- Fix AT+CCLK command response
- Updates for PTCRB and AT&T compliance

#### ***Known Issues with S2.0 Beta 5***

- Extra USB re-enumeration on startup

## **S2.0 Beta 4**

#### ***Firmware Component Revision Levels***

<b>Component</b>	<b>Revision</b>	<b>Compatibility</b>
Hardware	All*	
Boot loader	S2_0_0_5bt	All
Application	S2_0_0_10ap	All

\* GPS, Audio not supported on data-only models

#### ***Firmware Changes***

- Add support for multiple PAD sessions. Note that connecting with multiple PDP profiles (different APNs) is still not supported.
- Update PA switchpoints to improve ILPC on FW upgrade

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**Known Issues with S2.0 Beta 4**

- None

**S2.0 Beta 3****Firmware Component Revision Levels**

Component	Revision	Compatibility
Hardware	All*	
Boot loader	S2_0_0_5bt	All
Application	S2_0_0_8ap	All

\* GPS, Audio not supported on data-only models

**Firmware Changes**

- Enabled 4-wire UART by default
- Slow FW download issue corrected
- GPS support added
- Enabled RAT balancing

**Known Issues with S2.0 Beta 2**

- None

**S2.0 Beta 2****Firmware Component Revision Levels**

Component	Revision	Compatibility
Hardware	All*	
Boot loader	S2_0_0_3bt	All
Application	S2_0_0_3ap	All

\* GPS, Audio not supported on data-only models

**Firmware Changes**

- Support for firmware download via UART
- Applied SBA 2030R from QC
- Support for AT!RESET on PDPx
- POWER\_ON\_N behavior was changed to match PTS

**Known Issues with S2.0 Beta 2**

- None

## S2.0 Beta 1

### *Firmware Component Revision Levels*

Component	Revision	Compatibility
Hardware	All*	
Boot loader	S2_0_0_0bt	All
Application	S2_0_0_1ap	All

\* GPS, Audio not supported on data-only models

### *Firmware Changes*

- Support for 8-wire UART
- Support for PAD
- Support for analog and PCM audio (not fully tested)

### *Known Issues with S2.0 Beta 1*

- Possible firmware abort when issuing AT!PADCONN=1

## S1.0 Rel 2

### *Firmware Component Revision Levels*

Component	Revision	Compatibility
Hardware	All	
Boot loader	S1_0_0_3bt	All
Application	S1_0_0_8ap	All

### *Firmware Changes*

- Updates for PTCRB Compliance
- NV support for SL8084/85 variants
- Support for USB suspend
- Enhancement for ATT GSM-BTR-1-7630: Device behavior - MM Reject #2

### *Known Issues with S1.0 Rel 2*

- none

## S1.0 Rel 1

### *Firmware Component Revision Levels*

Component	Revision	Compatibility
Hardware	All	
Boot loader	S1_0_0_3bt	All
Application	S1_0_0_5ap	All

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**Firmware Changes**

- Support for W\_DISABLE added
- Support for POWER\_ON\_N added
- Updates for GCF Compliance

**Known Issues with S1.0 Rel 1**

- USB Suspend not supported

**S1.0 Beta 2****Firmware Component Revision Levels**

Component	Revision	Compatibility
Hardware	All	
Boot loader	S1_0_0_3bt	All
Application	S1_0_0_3ap	All

**Firmware Changes**

- NV defaults updated for SL8082/3
- Support for 32MB RAM
- Phase 1 of low-power support – further reductions in phase 2
- Support for alternate USB configurations:  
Direct IP, Composite MUX, Composite non-MUX, non-Composite
- AT commands to support Android

**Known Issues with S1.0 Beta 2**

- W\_DISABLE, WAKE\_N, POWER\_ON\_N functions not implemented
- USB Suspend not supported

**S1.0 Beta 1****Firmware Component Revision Levels**

Component	Revision	Compatibility
Hardware	Eng 1, 2, 2.2	
Boot loader	S1_0_0_0bt	Eng 1, 2, 2.2
Application	S1_0_0_0ap	Eng 1, 2, 2.2

**Firmware Changes**

- NV defaults added
- New AT!BAND implementation
- Support for Embedded SIM
- SMS issues resolved

**Known Issues with S1.0 Beta 1**

- Flash programming time is slow
- NV defaults need updating for E.U. & Australian variants (cal. file required)
- Direct IP interface only

**S1.0 Alpha 1****Firmware Component Revision Levels**

Component	Revision	Compatibility
Hardware	Eng1 or Eng2	
Boot loader	S0_0_0_0bt	Eng1 or Eng2
Application	S0_0_0_1ap	Eng1 or Eng2

**Firmware Changes**

- N/A - This is the first release of S1.X firmware

**Known Issues with S1.0 Alpha 1**

NV defaults not populated. Calibration file must be uploaded to device  
 Unable to turn on radio through watcher  
 Radio On/Off Power State is not Stored in NVRAM  
 Unable to read/write phonebook entry from SIM  
 Device crashes (WMS :MisAlgn) when sending SMS  
 Device is unable to receive SMS  
 AT port is gone if AT!udusbcomp=3  
 SIM associated profile is not created on Watcher at startup  
 Invalid MCC/MNC is displayed  
 Empty profile is created after device resets  
 AT+CPBS is not supported  
 Assigning PLMN list after unlocking modem doesn't work  
 SMS AT commands: AT+CRSM, AT+CMGS, AT+CMGW do not work  
 AT+RSCP (Relative test: Change the NodeB level, check tha...

## Troubleshooting

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The following sections describe troubleshooting information when using the SL808x on a live network or a test box.

### Ciphering/Integrity

If the unit is failing to attach, check the ciphering settings. The UE needs to use the same settings as the network/test set. Generally, live networks will have ciphering/integrity enabled. Test sets may have them enabled or disabled, but it is common for test sets to leave it disabled unless explicitly testing that feature.

The AT command is noted below:

AT Command	Description
AT!GCIPHER=X	Set the card to support integrity and ciphering with the following settings: X = 0, Ciphering OFF, Integrity OFF X = 1, Ciphering ON, Integrity OFF X = 2, Ciphering ON, Integrity ON
AT!GCIPHER?	Query the GCIPHER settings.

## Crash Investigation

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If the UE crashes, there are a number of different means to provide useful feedback to Sierra Wireless for resolution of the issue.

### Full memory dump

This is the preferred process because it captures the most crash information.

#### *Configuring the UE for crash dump capture*

This must be done to enable or disable the crash capture feature on the UE. This configuration is stored in NV so it is persistent across power cycles / power removal. The UE must be reset after changing the setting before the changes take effect.

To enable crash dump capture  
AT!EROPTION=0

To enable UE reset upon a crash (default behaviour)  
AT!EROPTION=1

#### *Capturing a crash dump*

1. Wait for / cause a crash to occur
2. Close connection manager software (to release the com port)
3. Run SwiMemDebug
4. Click Start to initiate crash dump collection. If this fails, the application likely cannot open the com port (see step 2)
5. Once 100% is reached, the crash dump collection is complete. Click Reset to reset the modem (optional), and Exit to exit the program
6. Crash files will be in the same location as SwiMemDebug. Zip up the crash files and label the zip file with a unique name (date/timestamp is suggested) and send the zip to Sierra Wireless for analysis

### Mini Dump

If a crash occurs, the summary of why the crash occurs is saved in memory. The command following command will display the crash summary:

```
AT!GCDUMP
```

Note that this crash summary is lost once power is removed from the device (or manually cleared via AT!GCCLR).

### Error Listing

The AT!ERR command will display “points of interest” that have occurred in the UE. These are not crashes, but are often used by developers to highlight areas they wish to examine.

## Vista Recommendations

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For optimum performance and stability in Microsoft Vista, it is recommended that USB Selective Suspend be disabled. In order to disable Selective Suspend properly, follow both procedures (B.1 and B.2) below:

### B.1 Disabling Global Selective Suspend

The following procedure will disable the global selective suspend setting in Microsoft Vista:

1. Open the Control Panel
2. Select the Power Options applet
3. For whichever item is selected as the current Power Mode (ie: Maximum Battery Life), select Change plan settings
4. Select Change advanced power settings
5. Expand USB Settings
6. Expand USB Selective Suspend settings
7. Change the settings for Plugged in to DISABLED
8. Change the settings for On Battery to DISABLED
9. Close the Power Options applet

### B.2 Disabling Device Specific Selective Suspend for Generic Sierra Wireless Drivers

The following procedure will disable the device specific selective suspend setting in Microsoft Vista when using a device configured with the generic Sierra Wireless drivers:

1. Open notepad
2. Type the following text into notepad

```
[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\SWUMX32\Parameters]
"IdleDetect"=dword:00000000
"UsbSelSus"=dword:00000000
```