MC8705

T1_0_3_2AP & T1_0_3_2BT

Release Notes & Upgrading Instructions

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General

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 24, 2010	Victor He	Created for T1.0 Beta1
Sep 3, 2010	Victor He	Updated for T1.0 Beta 2
Oct 10, 2010	Victor He	Updated for T1.0 Beta 3
Oct 29, 2010	Victor He	Updated for T1.0 Beta 4
Nov 16, 2010	Victor He	Updated for T1.0 Beta 5
Dec 24, 2010	Victor He	Updated for T1.0 Release 1
Jan 28, 2011	Victor He	Updated for T1.0 Release 2
Mar 19, 2011	Victor He	Updated for T1.0 Release 3
Apr 22, 2011	Hailong Zhu	Updated for T1.0 Release 4

Installing and Upgrading the Release

Download the entire 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 MC8705 on the following Microsoft Operating Systems:

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

Upgrade Procedure

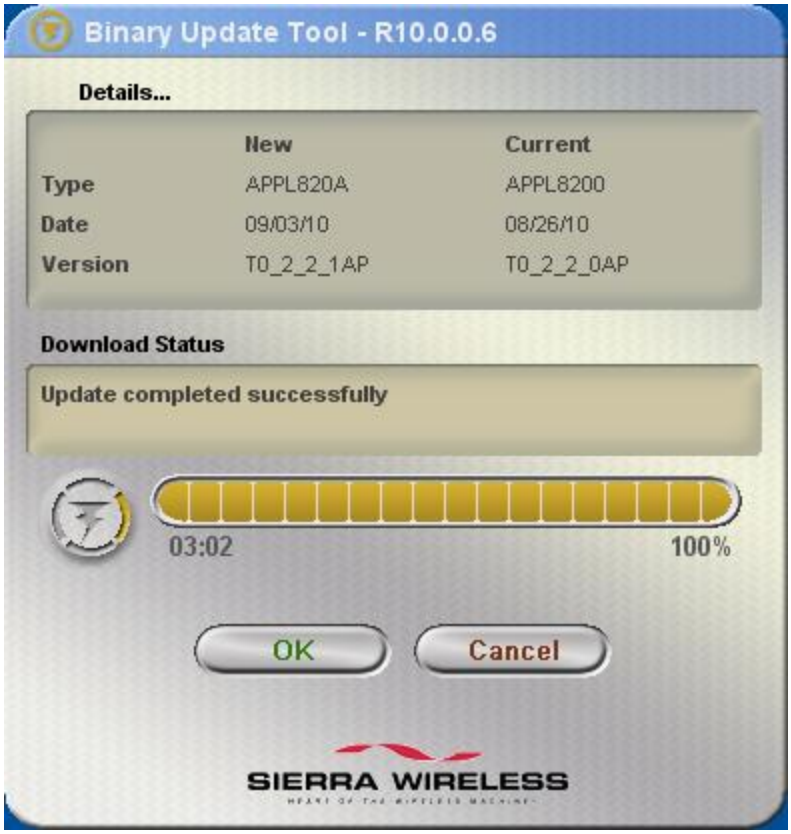
Sierra Wireless firmware upgrades are provided in a One-Click tool, which contains the firmware bundled right in with it. Before you start your upgrade, please ensure the following:

- Your computer is connected to an AC power supply, or that it has at least ½ hour of battery life remaining
- Please close all active sessions such as Hyperterminal, etc. that you may have open, debug logging sessions, etc.
- Please ensure that your card is powered and operating normally

To proceed with the download please follow the next 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

NOTE: The download can take up to 10 minutes to complete. Do not remove the power to either the laptop or the card 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

T1.0 Release 4

Firmware Component Revision Levels

Component	Revision	Compatibility
Hardware	DV2 or newer	
Boot loader	T1_0_3_2bt	DV2 or newer
Application	T1_0_3_2ap	DV2 or newer
Qualcomm Stack Version	1.0.3.94.005	

Firmware Changes

- Qualcomm SBA 1.0.3.94.005
  Fixed small packet crash issue
- Fixed an issue of crashing in ExIPC
- Fixed an issue of modem doesn't enumerating on Linux
- Fixed the issue when set APN, SUPL can't connect to server and report DNS error
- Fixed the issue: SUPL-1.0-con-279 case test fail
- Fixed the issue: Mobile Broadband Connection can't connect successfully

Known Issues with T1.0 Release 4

- **This release contains the following limitations:**
  None
- **The following crashes have been observed via AT!GCDUMP:**
  None

T1.0 Release 3

Firmware Component Revision Levels

Component	Revision	Compatibility
Hardware	DV2 or newer	
Boot loader	T1_0_2_1bt	DV2 or newer
Application	T1_0_2_1ap	DV2 or newer
Qualcomm Stack Version	1.0.3.94	

Firmware Changes

- Qualcomm stack 1.0.3.93
- Qualcomm stack 1.0.3.94
- Fixed an issue of change in RSCP level failing
- Fixed an issue when the PP, PU locks, AT!NVPLMNCLR returns OK and

actually clears the PLMN list
- Fixed the issue where GPSEND=0 doesn't end the position location session
- Fixed the issue: [TNZ Issue 3] AC326 power off and cold reset USIM at random during testing
- Darwin RF NV update

Known Issues with T1.0 Release 3
- **This release contains the following limitations:**
  None
- **The following crashes have been observed via AT!GCDUMP:**
  None

T1.0 Release 2

Firmware Component Revision Levels

Component	Revision	Compatibility
Hardware	DV2 or newer	
Boot loader	T1_0_1_1bt	DV2 or newer
Application	T1_0_1_1ap	DV2 or newer
Qualcomm Stack Version	1.0.3.91	

Firmware Changes
- Qualcomm stack 1.0.3.90
- Qualcomm stack 1.0.3.91
- Fixed an issue of No RRC connection established after CP-ERROR with cause "Network Failure" in MO SMS
- Fixed a crash observed when starting GPS fix

Known Issues with T1.0 Release 2
- **This release contains the following limitations:**
  None
- **The following crashes have been observed via AT!GCDUMP:**
  - Crash in Err_exception_handler.c when conducting PIN2 testing (this crash has been discovered on previous releases since Beta4) [Resolved in T1.0 Rel3]
  - Crash in mmoc.c when conducting OS warm boot testing

T1.0 Release 1

Firmware Component Revision Levels

Component	Revision	Compatibility
Hardware	DV2 or newer	
Boot loader	T1_0_0_2bt	DV2 or newer
Application	T1_0_0_2ap	DV2 or newer
Qualcomm Stack Version	1.0.3.88	

Firmware Changes

- Qualcomm stack 1.0.3.84
- Qualcomm stack 1.0.3.88
- Android RIL support - AT command to return DNS addresses
- Added dual-IMSI support

Known Issues with T1.0 Release 1

- **This release contains the following limitations:**
  None
- **The following crashes have been observed via AT!GCDUMP:**
  None

T1.0 Beta Release 5

Firmware Component Revision Levels

Component	Revision	Compatibility
Hardware	DV2 or newer	
Boot loader	T0_2_5_2bt	DV2 or newer
Application	T0_2_5_2ap	DV2 or newer
Qualcomm Stack Version	1.0.3.82	

Firmware Changes

- Qualcomm stack 1.0.3.82
- Fixed a crash in timer_qemu_task.c when conducting throughput testing
- Fixed a crash in smd_internal.c when conducting throughput testing
- Support USB product ID 68A2

Known Issues with T1.0 Beta Release 5

- **This release contains the following limitations:**
  None
- **The following crashes have been observed via AT!GCDUMP:**
  None

T1.0 Beta Release 4

Firmware Component Revision Levels

Component	Revision	Compatibility
Hardware	DV2 or newer	
Boot loader	T0_2_4_1bt	DV2 or newer
Application	T0_2_4_1ap	DV2 or newer
Qualcomm Stack Version	1.0.3.80	

Firmware Changes

- Qualcomm stack 1.0.3.75
- Qualcomm stack 1.0.3.80
- Fixed issue of inaccurate PA temperature reading
- Fixed USB eye diagram issue
- support SIMLPM
- support USB QMI with PID 0x68A9
- NV transition table for Beta4(T0_2_4_1)
- support AT commands: +CCLK?, !GPSMOLRSETTING, AT&C2&W, $CSQ,
  +COLR, +VTD, +CHUP, +CPAS

Known Issues with T1.0 Beta Release 4

- **This release contains the following limitations:**
  - cell reselection from W2100 to W900 in CELL_FACH state being unstable
    [Resolved in T1.0 Beta 5]
- **The following crashes have been observed via AT!GCDUMP:**
  - Crash in timer_qemu_task.c when conducting throughput testing
    [Resolved in T1.0 Beta 5]
  - Crash in smd_internal.c when conducting throughput testing
    [Resolved in T1.0 Beta 5]

T1.0 Beta Release 3

Firmware Component Revision Levels

Component	Revision	Compatibility
Hardware	DV2 or newer	
Boot loader	T0_2_3_0bt	DV2 or newer
Application	T0_2_3_0ap	DV2 or newer
Qualcomm Stack Version	1.0.3.70	

Firmware Changes

- Qualcomm stack 1.0.3.60
- Qualcomm stack 1.0.3.65
- Qualcomm stack 1.0.3.70
- Fixed an issue of GPS crash at startup
- Enable NEMA output when GPS is enabled
- Couple NV value changes improving RF performance
- added NV transition table from Beta2 to Beta3
- Made AT!BAND=0 set to band mask that AC326U actually supports instead of band mask that MDM8200A supports
- Fixed an issue of roaming icon and roaming charge pop up appear intermittently on EPLMN
- Fixed an issue where UE can't get satellite information after position fixed
- Added generic method to load files into the modem
- Support TRU_flow
- Resolved AT port unstable issue

Known Issues with T1.0 Beta Release 3

- **This release contains the following limitations:**
  - W_DISABLE is broken with interrupt debounce time > 0
- **The following crashes have been observed via AT!GCDUMP:**
  - Crash in l1_drx.c when conducting overnight idle testing [Resolved in T1.0 Beta 4]
  - Crash in timer_qemu_task.c when conducting throughput testing

T1.0 Beta Release 2

Firmware Component Revision Levels

Component	Revision	Compatibility
Hardware	DV2 or newer	
Boot loader	T0_2_2_0bt	DV2 or newer
Application	T0_2_2_0ap	DV2 or newer
Qualcomm Stack Version	1.0.3.55	

Firmware Changes

- Qualcomm stack 1.0.3.55
- Fixed an issue of AT+COPS returning unexpected values
- Fixed wrong WINS address issue
- Fixed wrong response of 3G QoS(AT+CGEQNEG)

- Keep WCDMA PA power supply always on
- Support customization STARTLPM and RADIORESET
- Added basic support of AGPS SUPL
- Fixed SIM STK issue
- Removed External TX power detector
- Added band selection support via AT and CnS
- Resolved a potential issue of uplink data stall
- Resolved an issue where extra PC reboot is required after SWoC installation

Known Issues with T1.0 Beta Release 2

- **This release contains the following limitations:**
  - Limited support on AGPS
- **The following crashes have been observed via AT!GCDUMP:**
  - Crash in dog_keepalive.c when doing repetitive hibernate/resume testing
    [Not observed in T1.0 Beta 3]
  - Crash in l1_drx.c when conducting overnight idle testing
  - Crash in timer_qemu_task.c when conducting throughput testing

T1.0 Beta Release 1

Firmware Component Revision Levels

Component	Revision	Compatibility
Hardware	DV1 or newer	
Boot loader	T0_2_1_0bt	DV1 or newer
Application	T0_2_1_0ap	DV1 or newer
Qualcomm Stack Version	1.0.3.30	

Firmware Changes

- initial Beta release

Known Issues with T1.0 Beta Release 1

- **This release contains the following limitations:**
  - GPRS and EDGE related functionalities are not fully supported
  - 3G to 2G cell reselection is not stable
  - AT port is not stable with some scenarios
  - Limited support on AGPS
- **The following crashes have been observed via AT!GCDUMP:**
  - Crash in dog_keepalive.c when doing repetitive hibernate/resume testing

[Debugging in progress]

- Crash in wl1m.c when switching radio on/off and conducting throughput testing
  [Resolved in T1.0 Beta 2]
- Crash in dsm_queue.c when conducting throughput testing
  [Resolved in T1.0 Beta 2]
- Crash in err.c(FatalError: Excep) when conducting throughput testing and overnight idle testing
  [Not observed in T1.0 Beta 2]
- Crash in rrccmd.c when conducting overnight idle testing
  [Resolved in T1.0 Beta 2]
- Crash in l1_drx.c when conducting overnight idle testing
  [Debugging in progress]
- Crash in timer_qemu_task.c when conducting throughput testing
  [Debugging in progress]

Troubleshooting

The following sections describe troubleshooting information when using the AirPrime when using in a live network and when using with a test box.

Ciphering/Integrity

If you're not attaching, check your 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

Should the UE crash 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

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.

a. Open the **Control Panel**
b. Select the **Power Options** applet
c. For whichever item is selected as the current Power Mode (ie: Maximum Battery Life), select **Change plan settings**
d. Select **Change advanced power settings**
e. Expand **USB Settings**
f. Expand **USB Selective Suspend settings**
g. Change the settings for **Plugged in** to **DISABLED**
h. Change the settings for **On Battery** to **DISABLED**
i. 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 a notepad
2. Type the following text into notepad

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

Compass885 use SWUMX80 instead of SWUMX32
AC885E use SWUMX59 instead of SWUMX32

3. Save the text file you just created with the filename ***disableSelSus.reg*** to the Desktop
4. Exit Notepad
5. Double-click the file you just created (***disableSelSus.reg***)
6. When prompted by Vista to allow this information to be added to the registry, select Yes.
7. Select OK
8. Reboot the PC