



MDM9x45 Factory Production Flash Programming

80-NP527-33 A

November 7, 2014

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2016-05-17 06:25:00 PDT
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Revision history

Revision	Date	Description
A	Nov 2014	Initial release

QUALCOMM®
2016-05-17 06:25:00 PDT
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1 Introduction

1.1 Purpose

This document describes an optimized method for flashing blank NAND devices with the MDM9x45 board in a manner that ensures a quick turnaround in the factory; it discusses the approach used to program the blank device from scratch with minimal use of software, hardware, and time.

1.2 Conventions

Function declarations, function names, type declarations, and code samples appear in a different font, e.g., `#include`.

Button and key names appear in bold font, e.g., click **Save** or press **Enter**.

1.3 References

Reference documents are listed in [Table 1-1](#). Reference documents that are no longer applicable are deleted from this table; therefore, reference numbers may not be sequential.

Table 1-1 Reference documents and standards

Ref.	Document	
Qualcomm Technologies		
Q1	Application Note: Software Glossary for Customers	CL93-V3077-1

1.4 Technical assistance

For assistance or clarification on information in this document, submit a case to Qualcomm Technologies, Inc. (QTI) at <https://support.cdmatech.com/>.

If you do not have access to the CDMATech Support website, register for access or send email to support.cdmatech@qti.qualcomm.com.

1.5 Acronyms

For definitions of terms and abbreviations, see [Q1].

2 Method of Fast Flashing

2.1 Methods of flashing

There are multiple ways to flash the MDM9x45 software build into NAND memory. These methods may involve using tools such as Trace32, QPST (Qualcomm Product Support Tool), and Fastboot, as well as hardware accessories such as USB and JTAG. Although these methods are suitable for an individual developer's needs, a factory production line dealing with millions of phones needs a method that minimizes usage of hardware and software modules to save factory resources and time.

2.2 A quick approach to reach Fastboot mode

To reduce the time to reach Fastboot, appsboot.mbn must be loaded as soon as possible. On MDM9x25, in a normal boot-up sequence, the Applications Boot Loader (APPSBL) is loaded to Double Data Rate (DDR) in SBL1. In addition to APPSBL, SBL1 loads the Qualcomm Digital Signal Processor (QDSP) and Audio Digital Signal Processor (ADSP) partitions as well. In general, QDSP, ADSP, and APPSBL must be in DDR to reach Fastboot mode. If any of the above images are missing, SBL1 goes to Download mode so that the missing images can be flashed using the NAND programmers.

On MDM9x45, a method is used to ignore the modem image, and Fastboot can be attained instead of going to Download mode. The recommended method for factory flashing is based on this logic, with the assumption that there is no memory limitation for Fastboot to restrict the size of the image to be downloaded.

This method is illustrated with the process chart in [Figure 2-1](#).

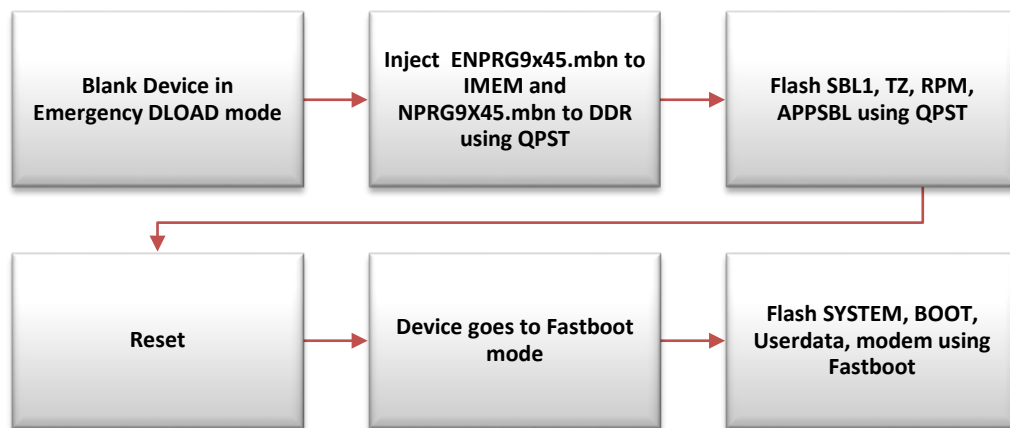


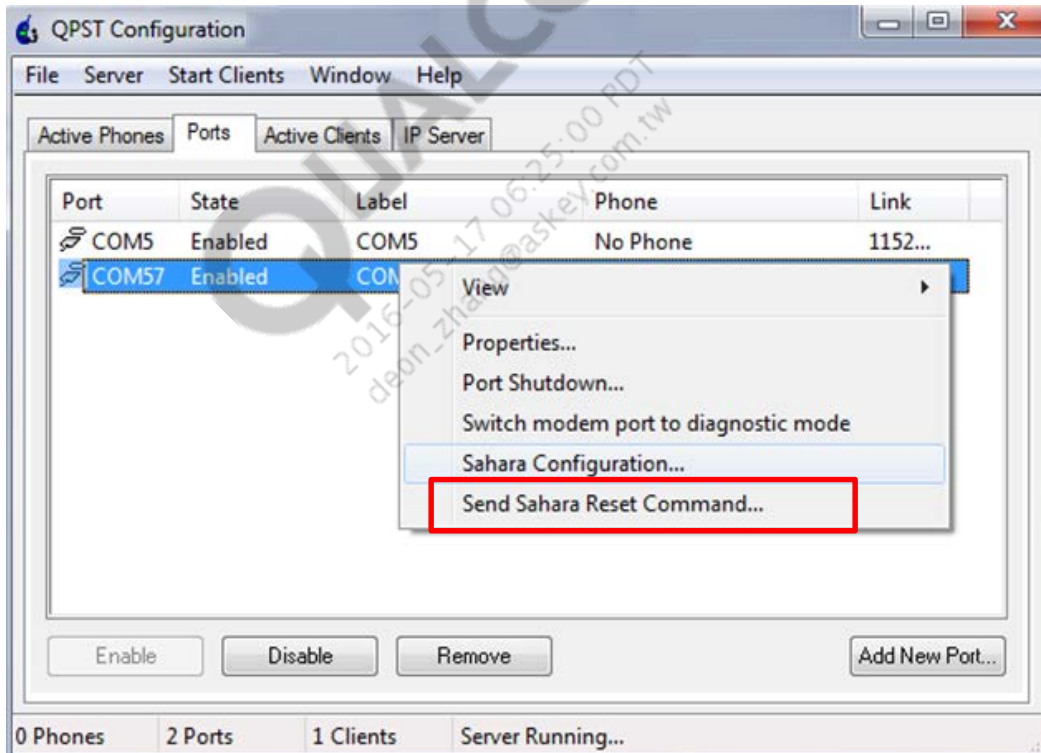
Figure 2-1 Process chart

3 Flashing Process and Command

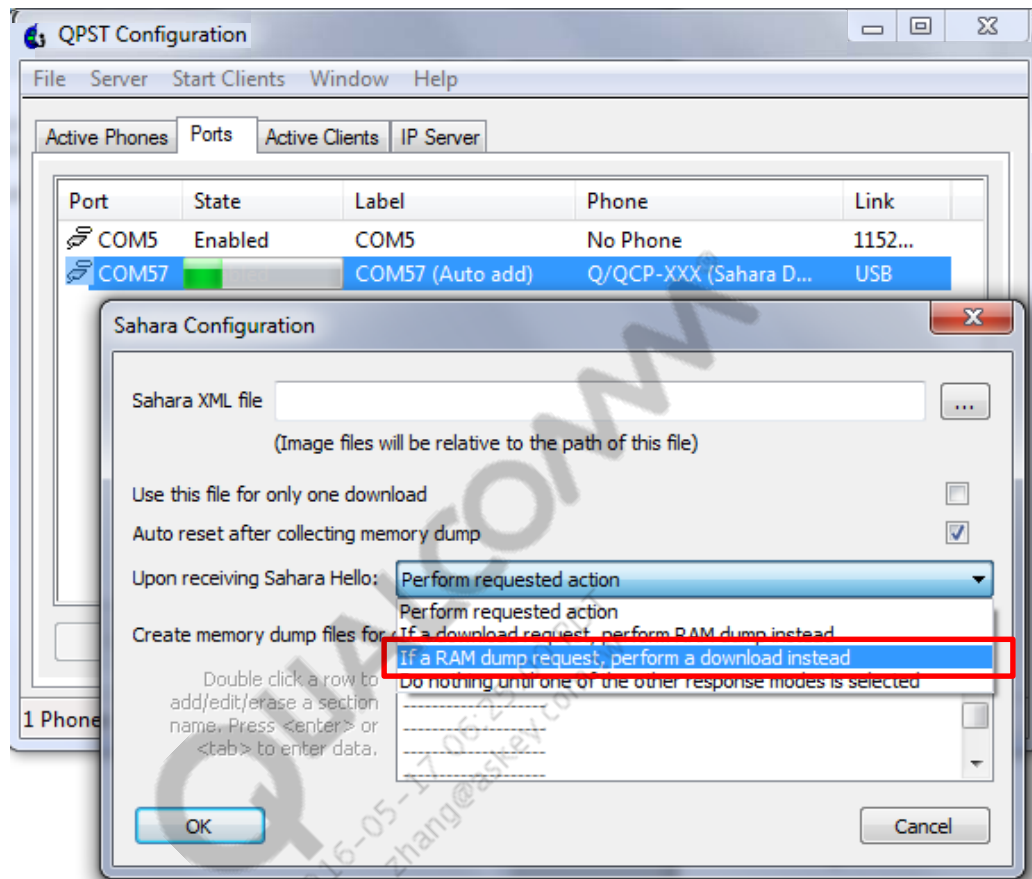
As a prerequisite to flashing the SBL1, TrustZone (TZ), APPSBL, and RPM images using the MDM9x45 NAND programmer, ensure that the latest version of QPST is installed.

To flash those non-HLOS images:

1. Open the QPST Configuration client application.
2. Right-click the port on which the phone is present.
3. Select **Sahara Configuration**.

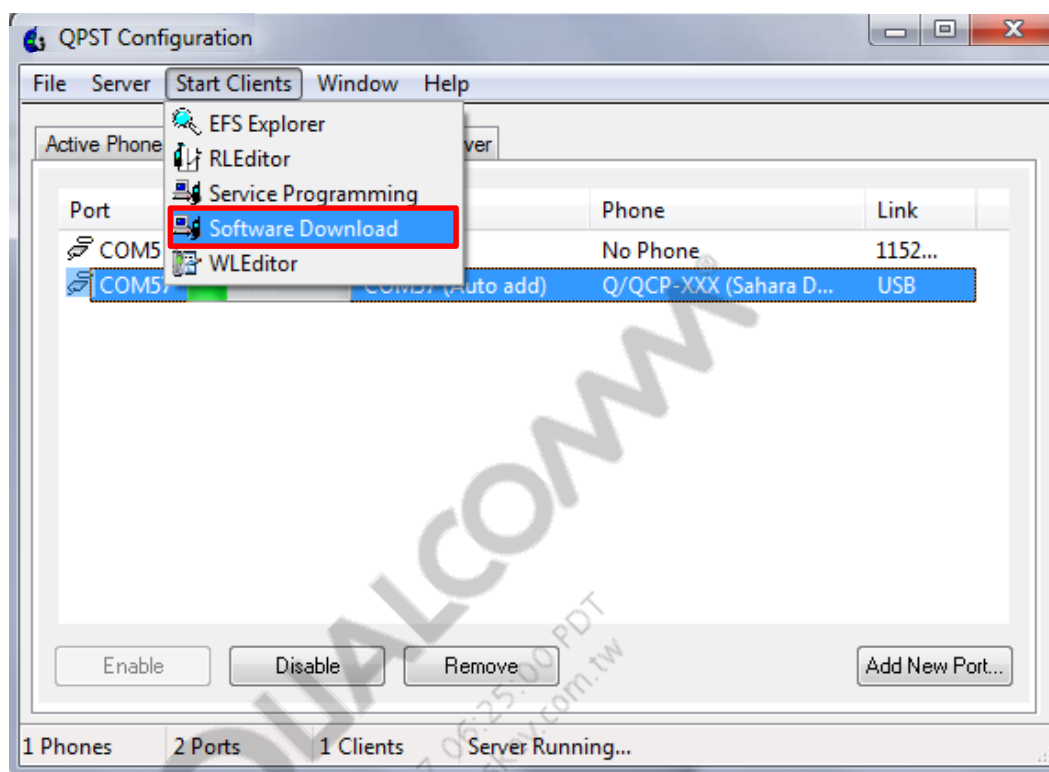


4. In the Sahara Configuration dialog, upon receiving Sahara Hello, and set the third option.

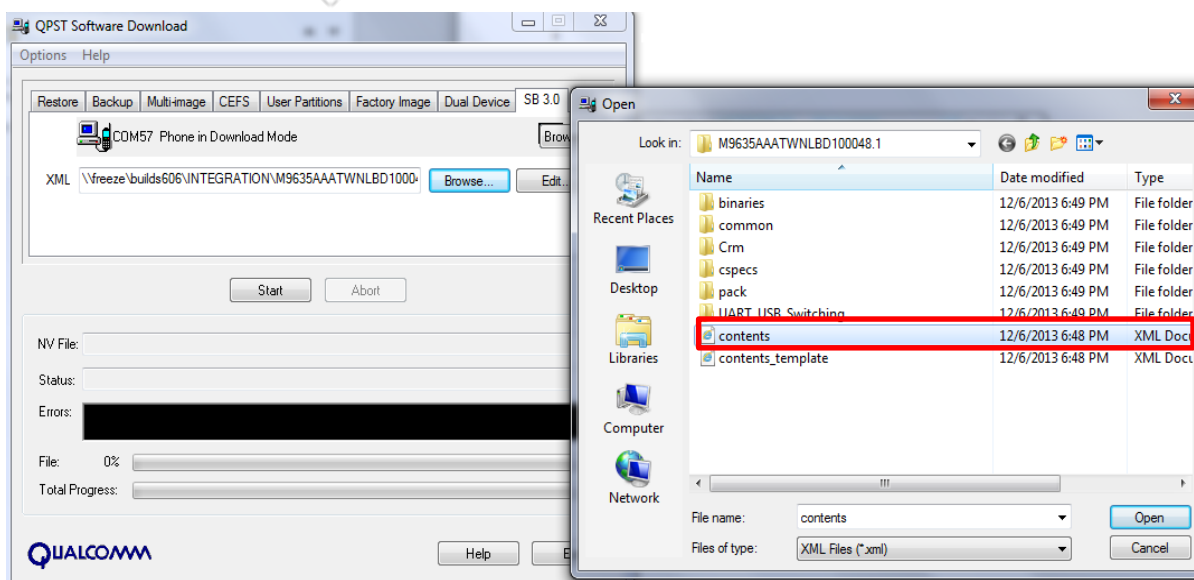


5. Click **OK**.

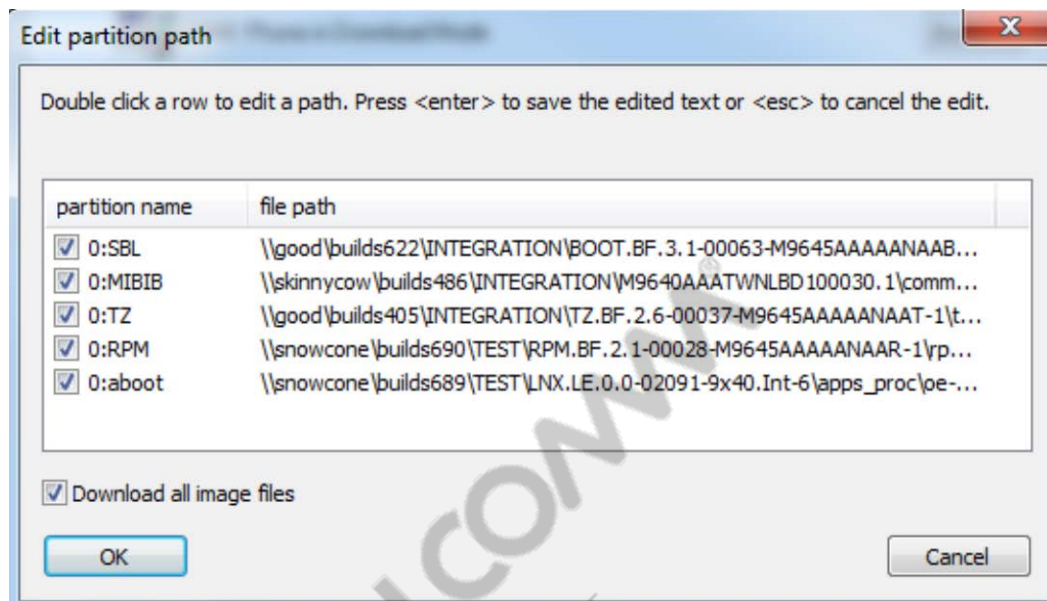
6. Open the QPST **Software Download** application.



7. Scroll to the left and click the SB 3.0 tab.
8. For the XML input, browse to the metabuild (common build) location and select the contents.xml from the metabuild.



9. Use the **Edit** button to select the checkboxes of the download images.



10. Click **OK**.
11. Click **Start**.
12. Reset the phone.
13. You should see the device in the command window when you use the Fastboot devices command.
14. Flash the rest of the MODEM, BOOT, SYSTEM, and USERDATA partitions by running the following commands:

```
fastboot flash system <APPSbuild>\apps_proc\oe-core\build\tmp-eglibc\deploy\images\mdmzirc\mdmzirc-sysfs.ubi
```

```
fastboot flash userdata <APPSbuild>\apps_proc\oe-core\build\tmp-eglibc\deploy\images\mdmzirc\mdmzirc-usrfs.ubi
```

```
fastboot flash boot <APPSbuild>\apps_proc\oe-core\build\tmp-eglibc\deploy\images\mdmzirc\mdmzirc-boot.img
```

```
fastboot flash modem <meta-build>\common\build\NON-HLOS.ubi
```

```
fastboot continue
```