

# Release Notes – Zebra TC51HC Android M GA 01-16-04-MN (AOSP)

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## Introduction

Today's Enterprise Mobility IT professionals and workers want a device that is every bit as contemporary and easy to use as the personal smartphone they use every day. But they also need a device that is durable, secure and built with all the mission-critical Enterprise features needed to enable them to achieve peak productivity every day – day after day. Now you can have it all — beauty, brawn and brains. The TC51HC Touch Computer from Zebra — it's everything your workers want, with everything your business needs.

## Description

Zebra TC51HC Android M GA 01-16-04-MN (AOSP)

## Contents

<b>File Name</b>	<b>Description</b>
ATLAS_FPU_AOSP_16_04.zip	Full Package Update includes all components <b>(Mandatory)</b>
non-HLOS-PATCH05-16-04.zip	Non-High Level OS Incremental fixes <b>(Mandatory)</b>
Patch006-16-04-AOSP.zip	OS Incremental fixes <b>(Mandatory)</b>

## Component Version Numbers

<b>Component / Description</b>	<b>Version</b>
Product Build Number	<b>X1-16-04-MN-00</b>
Android Version	6.0.1
Linux Kernel	3.10.84
x-loader	NA
u-boot	NA
Android SDK Level	23
Platform (TI/MPA/ etc)	QC 8956
Bluetooth Stack	NA
Partition Table	NA
Flash Size	16GB
RAM Size	2GB
Audio (Microphone and Speaker)	0.25.0.0
Battery Management	1.3.5
Bluetooth Pairing Utility	3.7.1
RxLogger	4.59.2.0
EHS	2.5.0.9
GMS	NA
NFC	4.3.0_M
PTT	3.1.32
Scanner	17.0.4.0
Touch Panel	1.8-Stylus-2-0, 1.8-Golve-2-0 (TC51HC)
WLAN	FUSION_BA_2_00.0.0.033_M
WWAN (Data or Voice)	FALCON-W160307A-228.1-00101.44
AppGallery	2.8.4.13
Airwatch / Rapid Deployment	1.00.03
DataWedge	6.2.23
EMDK	6.3.23.623
MX	6.2.0.13
OSX	QCT.60.6.3
SOTI / MobiControl	13.3.0 Build 1059
StageNow	2.6.1.1045
Data Analytics Engine	1.0.2.1859
Elemesz-B2M	1.0.0.347
Enterprise Keyboard	1.3.0.0

## Device Compatibility

This software release has been approved for use with the following Zebra devices.

<b>Device</b>	<b>Operating System</b>
TC510K-2HDZU2P-US	Android M

TC510K-2HDZU4P-US	Android M
TC510K-2HDZU2P-A6	Android M
TC510K-2HDZU4P-A6	Android M

## Installation Requirements

Download both Full Package and Reset Packages (Optional)

### Special Note when switching between GMS AND AOSP BUILD

- After Installing Full Package Update, Install Atlas\_Cache\_Reset
- Followed by Factory OR Enterprise Reset.
- Install Patches after completing Above Steps

### Special Note when Downgrading Software

- After Installing Full Package Update, Install Atlas\_Cache\_Reset
- Followed by Factory OR Enterprise Reset.
- Install Patches after completing Above Steps

### Known Issues and Limitation

- When setting default launcher, user has to wait 10 seconds prior to rebooting the device

## Installation Instructions

### Using ADB Sideload

#### Assumptions:

1. ADB installed on PC (the adb drivers and such)
2. TC51HC has Developer options enabled
3. USB debugging ON

Note: For Enabling ADB please see user guide.

#### Procedure:

1. Plug the TC51HC into the USB & Charging Cable and then the Cable to the PC. If you have a Cradle with USB connectivity, connect it now.
2. You may need to pull down the top menu and if you see "USB for charging", touch it and then change it to "File transfers".

3. Open Command Prompt, run *“adb devices”* and check to see if you are able to see the device’s serial number... If yes, proceed... if not you will need to get the PC set up with the proper drivers or install an External SD Card.

Note: You may also get a pop up on your PC (Win 7) that you will be connected as a Portable Media Player... this can be ignored.

❖ Download Image

- a. Full Package Update File and any applicable patches listed above in content section
- b. Reset files (Optional)

4. Entering into Recovery Mode

- a. Choice 1: In Command Prompt, type *“adb reboot recovery”* and click *enter*.
- b. Choice 2:
  - Hold power key until power menu opens
  - select Reset option
  - as device reboots press and hold PTT key on left side of device
  - When Zebra Technologies logo appears on the screen Release the PTT key

5. Your TC51HC will reboot and put you on the Android Recovery screen.

6. if applying update via sideload Method

- a. Use the Volume + and – to highlight, *“Apply update from ADB”* and press the Power Key to select it

7. With your Command Prompt open, type *“adb sideload”* and add a space and then drag and drop the update file the Full Package date zip file on to it and click enter.

- a. Your PC screen will show files being installed and a little blue horizontal progress bar on your device will show status... and after about 6 minutes (could be 10+ minutes if installing GMS) it should be done and you should be back at the Android Recovery screen.

**b. Repeat above steps for all mandatory packages (non-HLOS-PATCH05-16-04.zip and Patch006-16-04-AOSP.zip).**

8. *“Reboot system now”* is highlighted. Press the Power Key to Reboot.

9. Device reboots and you see Zebra on top and POWERED BY android at the bottom and after about 1 minute will transition to the TC51HC1 Touch Computer splash screen with 5 dancing white dots at bottom... it will stay at this screen for a little over another minute (*could be another 7+ minutes if installing GMS*) and then you are at the Factory “Welcome” screen.
10. If you installed a GMS BSP, you will need to complete the process by setting up Wi-Fi and E-mail accounts and such. If on AOSP (non-GMS), there is no process to follow.
11. At the Home Screen, we need to verify that the BSP upgrade took place and set the Date & Time.
  - a. Go to “Settings” and scroll down to “About phone” and look at the “Build number”. It should start with “**01-16-04-MN-PATCH006**”. Now you are on the correct BSP and System Patch006.
  - b. To Validate if non-HLOS-PATCH05-16-04 is installed correctly, enable ADB as explained above and run commands on adb shell as shown in picture
 

```

E:\Images\Falcon>adb shell
shell@TC51:/ $ getprop | grep HLOS
!shell@TC51:/ $
!shell@TC51:/ $ getprop | grep hlos
[ro.config.device.hlos]: [patch005]
          
```
  - c. Setting the Date and Time. If you associate to a WLAN AP, do so now, as it should automatically set the time and date... the only thing left is to set the time zone. Go to “Settings” and scroll to and select “Date & time”. Scroll down to and select “Select time zone”, and scroll down to and select the appropriate time zone and you are done.
12. Now you are all set to use your **TC51HC**.

## Using External SD card

1. Plug the TC51HC into the USB & Charging Cable and then the Cable to the PC. If you have a Cradle with USB connectivity, connect it now.
2. You may need to pull down the top menu and if you see “USB for charging”, touch it and then change it to “File transfers”.
3. Download Images FullPackageZip file, any applicable patches listed above in content section and Reset Files (Optional) and drag & drop the files on External SD card
4. Entering into Recovery Mode

- a. Reset and hold PTT key
  - b. When Zebra Technologies logo appears on the screen Release the PTT Key
5. Your TC51HC will reboot and put you on the Android Recovery screen.
6. applying update via External SD card
- a. Use the Volume + and – to highlight select option to “Apply update from SD card” and press the Power Key to select it
  - b. Use the Volume + and – to highlight package to be installed (Full Package Update Zip file) and press the Power Key to select it.
  - c. **Repeat above steps for all mandatory packages (non-HLOS-PATCH05-16-04.zip and Patch006-16-04-AOSP.zip).**
7. “Reboot system now” is highlighted. Press the Power Key to Reboot.
8. Device reboots and you see Zebra on top and POWERED BY android at the bottom and after about 1 minute will transition to the TC51/ TC56 Touch Computer splash screen with 5 dancing white dots at bottom... it will stay at this screen for a little over another minute (*could be another 7+ minutes if installing GMS*) and then you are at the Factory “Welcome” screen.
9. If you installed a GMS BSP, you will need to complete the process by setting up Wi-Fi and E-mail accounts and such. If on AOSP (non-GMS), there is no process to follow.
10. At the Home Screen, we need to verify that the BSP upgrade took place and set the Date & Time.
- a. Go to “Settings” and scroll down to “About phone” and look at the “Build number”. It should start with “01-16-04-MN-PATCH006”. Now you are on the correct BSP and System Patch006.
  - b. To Validate if non-HLOS-PATCH05-16-04 is installed correctly, enable ADB as explained above and run commands on adb shell as shown in picture
 

```

E:\Images\Falcon>adb shell
shell@TC51:/ $ getprop | grep HLOS
llshell@TC51:/ $
llshell@TC51:/ $ getprop | grep hlos
[ro.config.device.hlos]: [patch005]
      
```
  - c. Setting the Date and Time. If you associate to a WLAN AP, do so now, as it should automatically set the time and date... the only thing left is to set the time zone. Go to “Settings” and scroll to and select “Date & time”. Scroll down to and select “Select time zone”, and scroll down to and select the appropriate time zone and you are done.

11. Now you are all set to use your **TC51HC**.

## **Change Notes**

### **Non-HLOS Patch05**

- HLOS Patch 5
  - [ProxSensor] Capella Sensor on TC51 & 56 Calibration values are wrong.

### **Patch06**

- Patch 6, This is cumulative patch, contains following fixes
  - MSR Support Patch
  - [BSPA-24487] When connected to automobile BT hands free does not work as ...
  - BSPA-28614 Ironman audio tune files to improve Handling Noise over VoIP call
  - WIFI Fusion Power Table changes for HC SKU
  - [BSPA-27235] CTS R16 failures
  - PILOT-245 [Ironman] Fix issue, Ringtone becomes silent after two VoIP

### **StageNow**

The following features are added for StageNow 2.6:

- Added support for MX 6.2 which adds functionality to the following setting types for devices:
  - Ethernet Manager – Added new setting type to configure
    - Ethernet Proxy Server Settings
    - Configure IP
      - DHCP IP Settings
      - Static IP Settings
  - Persist Manager - Added new feature
    - Device Lock - Lock the device (USB, Touch) once the device settings persistence is in progress after device enterprise reset - Once the reapply of profiles is done, Lock will be removed and User will be having access
    - On Battery Removal - Re-apply/persist the device configuration persisted settings if battery is removed while device in enterprise reset mode
    - OS Upgrade -
  - Touch Manager - Added support for
    - Device Type - Select the Device Type to configure touch sensitivity
    - Protector - Enable or disable the screen protector on the supported devices
  - KeyMapping Manager – Added key mapping support for NAV PAD Button
  - Cellular Manager – Added support for
    - Selecting active SIM socket types, SIM1, SIM2, SIM3 and SIM4
    - Enable/Disable SIM socket selection

- Support for retaining Host Name after device reboot in Host Manager CSP
- Support for handling advanced options on unsupported device in Wi-Fi Manager CSP
- Support for Regional PC settings for most of the format on the Windows 7 workstation

## EMDK API

1. This version does not support Payment APIs. EMDK for Android v5.0 is the only version that supports Payment APIs.
2. Added support for MX v6.2 in Profile Manager:
  - Touch Manager
    - i. Device Type - Select the Device Type to configure touch sensitivity.
    - ii. Protector - Enable or disable the screen protector on the supported devices.
  - Cellular Manager
    - i. SimSocketSelect - Select the SIM card to connect to the network.
    - ii. SimSocketUsage - Allow or disallow the SIM card selection for network connection.
  - KeyMapping Manager - Added key mapping support for NAV PAD Button.
3. Enhanced Barcode Manager APIs with the following features:
  - Added support for new pluggable scanner RS5000 to be used with WT6000 device. **The following enhanced feature available in this release is for beta use only. It must not be used in production environment. A future version of EMDK will formally support this feature.**
    - i. Added "PLUGGABLE\_IMAGER\_RS5000" under BarcodeManager.DeviceIdentifier for selecting this scanner.
  - Added new reader parameters in each ImagerSpecific, CameraSpecific and LaserSpecific classes under ScannerConfig.ReaderParams.ReaderSpecific:
    - i. aimTimer - Sets the duration for timed aim types such as timed hold and timed release.
    - ii. sameSymbolTimeout - This setting is used to prevent the scanner driver from decoding the same symbol within this time interval during continuous scan.
    - iii. differentSymbolTimeout - This setting is used to prevent the scanner from decoding another symbol within this time interval during continuous scan.
    - iv. picklistEx - Allows the imager or camera to decode only the barcode that is directly under the cross-hair (+)/ center of the reticle part of the pattern. This replaces the Picklist field under the imager specific class . This feature also allows selecting the hardware or software picklist.

- v. aimType - Allows selecting the aim type such as continuous, press & release, timed hold and timed release.
  - o The ContinuousRead class which can be used to enable the continuous scanning has been deprecated. It is recommended to use the aimType, sameSymbolTimeout, differentSymbolTimeout of camera, imager and laser specific reader parameters.
- 4. Enhanced Profile Manager for the following features:
  - o DataCapture feature:
    - i. Support for selecting RS5000 as the scanning device. **This enhanced feature available in this release is for beta use only. It must not be used in production environment. A future version of EMDK will formally support this feature.**
    - ii. Support for the new "Data Capture Plus (DCP)" feature. This feature Data Capture Plus (formerly known as the "Data Capture Panel") enables areas of the device screen to be designated as scan triggers. By tapping on a designated screen area, DataWedge will respond as it would to a scanner button-press or other hardware trigger.
    - iii. Support for the new "Keep enabled on suspend" feature. Enabling this feature will keep the Bluetooth scanner enabled when the device is in suspend mode. Pressing the Bluetooth scan trigger will wake up the device for scanning.
  - o Added new parameter "Receiver foreground flag" in Intent Output for delivering the captured data via Broadcast Intent to broadcast recipient permission to run at the foreground priority with a shorter timeout interval.
  - o Added the following new parameters in Keystroke Output feature:
    - i. Multi byte character delay - Sets an inter character delay in milliseconds for multi byte characters. This setting was required to be set in-order to overcome data dispatching errors when dispatching multi byte characters to browser.
    - ii. Key event delay - Sets a delay in milliseconds for dispatching control characters as keystrokes correctly to the foreground application.
- 5. Enhanced Serial Comm APIs with the following features:
  - o Added getConfig() and setConfig() for accessing the current configuration settings such as baudRate, parity, dataBit and stopBit.
  - o Added getSignalState() to query the signal status such as DTR, DCD, DSR, RI, RTS and CTS.

- Added new method setSignalState() to set the signal status such as RTS and DTR.
- Added getPortInfo() to query the port name.

## **DataWedge**

1. TUT-15194 - DCP appears on Launcher after device reboot even without DCP being enabled in the Launcher profile.
2. MC-142556 - Application not Launching from the Home screen on single touch (Further improvements).
3. TUT-14685 - "Keep Enabled on Suspend" option is disabled for RS5000.
4. MC-142556 - Application not Launching from the Home screen on single touch.
5. TUT-13153 - Integrated new DCP binary with fixes done related to EKB.
6. TUT-14416 - DataWedge crashes when launched post a device (connected with RS6000) reboot.
7. TUT-14227 - Delete profile intent causing profile switching failure after setting a user created profile as default profile
8. TUT-14228 - Default Profile settings still taking effect after manually deleting the default profile.
9. TUT-13222 - Support for RS5000 Plugable Serial SSI Scanner.
10. TUT-14264,14265 - Able to rename Profileo/DWDEmo from intent API.

## **Scanner Framework**

1. BSPA-25367: Keep pairing info variable datatype needs to be changed from String to Integer
2. BSPA-25475: RS6000/RS507/DS3678 does not get paired after flashing the device
3. BSPA-22974: Heptic Feedback is not working in Ironman
4. Cost reduced SE4750 firmware supported.
5. BSPA-24558 - Huge logs are getting generated in wlan logs
6. BSPA-22708 - It can decode barcode when disable some param in Code128
7. BSPA-24529: Disable decode signature symbology for BT scanners
8. BSPA-17312: Aim Timer value should be less than the Beam Timer in Reader Params.
9. BSPA-16074 AFM - scanning is not running successfully with DS3578 scanner
10. BSPA-16067 Timed Hold and Timed Release modes with RS507 is buggy
11. BSPA-16310 [ATLAS] Bluetooth pairing utility version showing differently

12. BSPA-13239 [IRONMAN] Scan decode audio feedback will not be heard for first scan after unplugging wired headset.
13. BSPA-16682 In continuous read setting, Image scanner turned on forever after the first scan
14. BSPA-15353 Fail to set non default decode notification sound (/sdcard/file-name.wav) for scanning
15. BSPA-15702 Scanner.Parameters.setValueAsString() does not throw ScannerException if invalid value set for decoder\_gs1\_databar\_lim
16. BSPA-16006: barcode gets scanned even after disabling all decoders
17. BSPA-15353 scanningservice is allowed to access the sdcard for custom wav files of the user.

## **WLAN**

1. BSPA-24805 - Modification in Wi-Fi stack to send an intent when authentication fails due to keystore error.
2. BSPA-25667 - Device showing wrong BSSID (AP MAC address) after 802.11r roam
3. BSPA-25554 - WLAN connection time is high for Disable/Enable Wi-Fi scenario with 802.11d off.
4. BSPA-19915 - Release DHCP address when Wi-Fi profile is removed from device.