Release Notes - ZEBRA TC8000 Lollipop v02.10.02 with Non-GMS

Introduction

What makes TC8000 so special? Everything. It's the ground-breaking all new warehouse mobile computer designed to deliver revolutionary productivity increases in the warehouse. In fact, on average, it saves 14% per worker versus the traditional form factors. It's the only device in the market that simplifies it all — how your workers physically use the device and interact with your warehouse application. TC8000 minimizes motion with an innovative scan angle that eliminates the thousands of times your workers need to tilt their device to see the screen. We integrated flexible handheld and hands-free scanning for an extra productivity boost — another industry handheld first. It's an amazing 33 percent lighter than the traditional device to minimize fatigue. Then we did something completely unprecedented by a device manufacturer — we integrated a tool that allows you to automatically transform your legacy Terminal Emulation (TE) "green screens" into elegant, graphics-based All-touch TE screens that are not only highly intuitive, but also dramatically reduce the number of interactions required to complete a task — no coding and no modifications to your host application are required. The result? Less time to complete the job and increased productivity. The TC8000 — the next big thing in warehouse mobility, only from Zebra.

- 802.11a/b/g/n connectivity for anywhere, anytime access to information

- Zebra's Mobility Extensions (Mx)

- Mobility DNA, a suite of mobility enabling applications, development tools and utilities

- Most advanced scan engine with longer range date capture capability

- Rugged and ready for every day enterprise use inside and outside the four walls

- Standard SKUs have 1GB RAM, 4GB Flash.

- Premium SKUs have 1GB RAM, 8GB Flash.

- Hi-Mem SKUs have 2GB RAM, 16GB Flash.

- Premium and Hi-mem adds a gyroscope, e-compass, camera, and NFC

- Condensation Resistant SKUs do not have NFC

Description
ZEBRA TC8000 Lollipop v02.10.02 with Non-GMS

Special Notes:
- This software supports SE4850 and SE4750CR scan engines
- The first upgrade from Android KitKat to Lollipop will take longer than previous software updates at about 8 minutes, due to boot-up time of 7 minutes. This is due to Android Lollipop pre-optimization, whereby the Applications/Settings will be initiated on boot-up.
- Boot-up time is expected to be longer when performing reboot after Factory Reset or Enterprise Reset because of the reasons stated above.
- On Upgrading from KitKat to Lollipop, the OS has a built-in mechanism to update the latest Scanner Firmware automatically. This is applicable even from an older version of Lollipop to latest version of Lollipop.
- In Android Lollipop, the BSP has logic to check if connected network has internet connectivity or not. If not, it gives priority to other networks hoping to find internet there. This is deviation from KitKat. This connectivity check can be disabled by making captive_portal_detection_enabled flag to 0 or false. The default value for above flag is 1. This means by default system will check for internet connectivity, system will try to access address stored in variable captive_portal_server. Default value for captive_portal_server setting field is NULL. In such case Android system is hard coded to look for address connectivitycheck.android.com if system does not get response code 204 from above server it assumes that internet is not available. If captive_portal_server is configured, then system looks for configured server address and expects 204 response code to stay connected on current network.

  o The Default Value will be like mentioned below:

```
<wap-provisioningdoc>
<characteristic type="Intent" version="4.3">
<parm name="Action" value="Broadcast"/>
<parm name="ActionName" value="captive_portal_settings"/>
 <characteristic type="Extra">
<parm name="ExtraType" value="string"/>
<parm name="ExtraName" value="values"/>
<parm name="ExtraValue" value="1, connectivitycheck.android.com"/>
</characteristic>
</characteristic>
</wap-provisioningdoc>
```

- There are 2 options to overcome this setting if customer wants:

  - Option 1: Customer can choose to disable this whole logic via MDM:

```
<wap-provisioningdoc>
<characteristic type="Intent" version="4.3">
<parm name="Action" value="Broadcast"/>
<parm name="ActionName" value="captive_portal_settings"/>
<characteristic type="Extra">
<parm name="ExtraType" value="string"/>
<parm name="ExtraName" value="values"/>
<parm name="ExtraValue" value="0, connectivitycheck.android.com"/>
</characteristic>
</characteristic>
</wap-provisioningdoc>
```

  - Option 2: Customer can choose to set their own captive portal server for connectivity check which responds with response code 204.

```
<wap-provisioningdoc>
<characteristic type="Intent" version="4.3">
<parm name="Action" value="Broadcast"/>
<parm name="ActionName" value="captive_portal_settings"/>
<characteristic type="Extra">
<parm name="ExtraType" value="string"/>
<parm name="ExtraName" value="values"/>
<parm name="ExtraValue" value="1, zebra.com"/>
</characteristic>
</characteristic>
</wap-provisioningdoc>
```

Component Description and Version

Component / Description	Version

Product Build Number	02-10-02-L-00-A
Finger Print ID	Zebra/TC8000/TC8000:5.1.1/02-10-02-LG-00A/42:user/release-keys
Android Version	5.1.1
Android security patch level	2017-03-01
Linux Kernel	3.4.0
Android SDK Level	22
Platform	Qualcomm - APQ8060A Pro
Flash Size	4GB/8GB/16GB
RAM Size	1GB/2GB
MSP Package	7.08.85 (Included for Airwatch support only)
Scanning	16.17.43.0
Datawedge	6.2.24
OSX/ Mx	OSX QC.51.5.2.14 / MXMF version:6.2.1.0
Wi-Fi	FUSION_QA_2.00.0.0.013
Mlog	MLogPackage v06.54 / MLogManager v06.54 / Service v06.54
PTT Express	3.1.27
EMDK Service	6.3.23.623
SimulScan	2.6 SimulScanEngine 1.13.6.4
RxLogger	4.58.5.0
Touch FW	TTDA.03.04.721053 FW:2.0.860395, TTCONFIG0017
Zebra Volume Control	1.1.23
B2M	1.0.0.297
Bluetooth Pairing Utility	3.7
DataAnalytics	1.0.2.1768
File Browser	1.17
Stage Now	2.5.1.1045
App Gallery	2.8.4.13
WLAN FW	MAAAAANAZW1240301
NFC	2.0.0.14
Sensors (Accel, Gyro, Light, Prox)	1
MobiControl	12.2.0. Build 23469
Wavelink Velocity	1.2.101
Tap and Pair	2.0

Contents

File	Description
T8KN0LXXVRGEF21002.zip	Full Software Update
T8KN0LXXVREXX21002.zip	Enterprise Reset - Wipes all partitions/data except Enterprise folder/partition & On Device Storage (/sdcard)
T8KN0LXXVRFXX21002.zip	Factory Reset - Wipes all partitions/folders including enterprise but except On Device Storage (/sdcard)

Device Compatibility

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

Device	Operating System
TC80N0-A000K110NA	Android 4.4.3, Android 5.1.1
TC80N0-1000K210NA	Android 4.4.3, Android 5.1.1
TC80N0-2000K210NA	Android 4.4.3, Android 5.1.1
TC80N0-3000K210NA	Android 5.1.1
TC80N0-A001K31CNA	Android 4.4.3, Android 5.1.1
TC80N0-1001K31CNA	Android 4.4.3, Android 5.1.1
TC80N0-2001K31CNA	Android 4.4.3, Android 5.1.1
TC80N0-3001K31CNA	Android 5.1.1
TC80NH-A101K320NA	Android 4.4.3, Android 5.1.1
TC80NH-1101K420NA	Android 4.4.3, Android 5.1.1
TC80NH-2101K420NA	Android 4.4.3, Android 5.1.1
TC80NH-3101K420NA	Android 5.1.1
TC80N0-1101K42ENA	Android 4.4.3, Android 5.1.1
TC80N0-A000K110IN	Android 4.4.3, Android 5.1.1
TC80N0-1000K210IN	Android 4.4.3, Android 5.1.1
TC80N0-2000K210IN	Android 4.4.3, Android 5.1.1
TC80N0-3000K210IN	Android 5.1.1
TC80N0-A001K31CIN	Android 4.4.3, Android 5.1.1
TC80N0-1001K31CIN	Android 4.4.3, Android 5.1.1
TC80N0-2001K31CIN	Android 4.4.3, Android 5.1.1
TC80N0-3001K31CIN	Android 5.1.1
TC80NH-A101K320IN	Android 4.4.3, Android 5.1.1
TC80NH-1101K420IN	Android 4.4.3, Android 5.1.1
TC80NH-2101K420IN	Android 4.4.3, Android 5.1.1

TC80NH-3101K420IN	Android 5.1.1
TC80N0-1101K42EIN	Android 4.4.3, Android 5.1.1
TC80NH-2101K42ENA	Android 4.4.3, Android 5.1.1
TC80NH-2101K42EIN	Android 4.4.3, Android 5.1.1
TC80NH-1102K420NA	Android 5.1.1
TC80NH-3102K420NA	Android 5.1.1
TC80NH-1102K420IN	Android 5.1.1
TC80NH-3102K420IN	Android 5.1.1
TC80NH-1101K42ENA	Android 4.4.3, Android 5.1.1
TC80NH-1101K42EIN	Android 4.4.3, Android 5.1.1

Installation Requirements

This Software is compatible for above listed devices.

KitKat/Lollipop to Lollipop Installation Instructions

1. Plug the TC8000 to the USB Cable and then the Cable to the PC. If you have a Cradle with USB connectivity, connect it.

2. You will be connected as a media device.

3. Download following packages

    a. T8KN0LXXVRGEF021002.zip (Full Package Update v02.10.02)

    b. T8KN0LXXVRFXX021002.zip (Factory Reset Package v02.10.02)

    c. T8KN0LXXVREXX021002.zip (Enterprise Reset Package v02.10.02)

4. Now, copy the .zip files (and the Optional files too) to your TC8000's storage.

5. Put the TC8000 into Recovery Mode using the following steps:

    a. Hold the Power Key until "Reset" option appears, then release the power key.

    b. Tap the "Reset" option in the menu and then immediately hold the "Power key" and "Scan Key" until the Zebra boot screen is displayed

    c. Once on the Recovery Screen, scroll up/down using "Volume Keys" +/- to "Apply update from internal storage" and press the "Scan Key" to select.

d. Follow same procedure and select the T8KN0LXXVRGEF021002.zip (the Full Package Update v02.10.02), with "Scan Key"

e. Upon completion, you will be back at the Recovery Mode screen.

Note: Since Partition has changed, system by default will not backup user data partition. To end user this is similar to Enterprise Reset.

f. The following is required only if you are switching between GMS and Non-GMS software or while upgrading to Lollipop, otherwise this step is not required.

- If you are updating the device from GMS to Non-GMS or vice-versa, it is required to perform a factory reset (using T8KN0LXXVRFXX021002.zip), this will give complete OOB experience or at minimum it is required to do an enterprise reset. (using T8KN0LXXVREXX021002.zip).

g. If you are going to install the optional packages, then do so now with the same procedure used above.

h. Upon completion of all of the updates, you will be back at the Recovery Mode screen. Select, "reboot system now" with the "Scan Key", you will see it reboot, then you will see "Android is upgrading…" and then you will see the Google Setup Wizard screen.

6. Google Setup Wizard will guide you through a few screens where you can setup Language, Date and Time, Wireless LAN, Google Account etc. Once Setup Wizard completes you will be presented with the Home screen.

7. Go to "Settings" and scroll down to "About Device" and check the "Build number". It should end with "02-10-02-L-00-A". Now, you can start using TC8000 with the updated OS.

If you choose to skip setting up date and time in Setup Wizard, please manually set the date and time. Go to "Settings" and scroll down to "Date & time" and set the correct date and time by unchecking "Automatic date & time" and "Automatic time zone". Then select "Select time zone" to setup your time zone. Select "Set date" and setup the date. Select "Set time" to setup the time. Finally, put check marks back in "Automatic date & time" and "Automatic time zone".

8. Now you are all set to use your updated TC8000 with Non-GMS.

Lollipop to KitKat Downgrade Instructions

1. Plug the TC8000 to the USB Cable and then the Cable to the PC. If you have a Cradle with USB connectivity, connect it.

2. You will be connected as a media device.

3. Download the following packages and copy into internal or External Storage of the device
   a. TC8K0K300PUWW20000.zip (Full Package Update)
   b. TC8K0K3E0REWW20000.zip (Enterprise Reset Package)

4. You will need to put your device into Recovery Mode.
a. Hold the "Power Key" until "Reset" option appears and then release

b. Tap "Reset" and then immediately hold the "Scan Key" until recovery mode is initiated (Let go after you feel the vibration)

c. Once on the Recovery Screen, scroll down using "Volume Keys" +/- to the location where you copied the files and press the "Scan Key"

d. Scroll down using "Volume Keys" +/- and select TC8K0K300PUWW20000.zip (the Full Package Update) with the "Scan Key"

e. Update the Enterprise Reset with same method mentioned above

f. Upon completion of installation, you will be back at the Recovery Mode screen. Select, "reboot system now" with the "Scan Key"

5. Go to "Settings" and scroll down to "About Device" and check the "Build number". It should end with "01-23257-K-02-00-00-MV". Now you can start using the TC8000.

   Please manually set the date and time. Go to "Settings" and scroll down to "Date & time" and set the correct date and time by unchecking "Automatic date & time" and "Automatic time zone". Then select "Select time zone" to setup your time zone. Select "Set date" and setup the date. Select "Set time" to setup the time. Finally, put check marks back in "Automatic date & time" and "Automatic time zone".

6. Now you are all set to use your updated TC8000 with KitKat Non-GMS.

NOTE: Downgrade to KitKat for SE4850 scan engine and 2GB RAM premium devices are restricted.

Feature added/supported

SPR fixes:

[SPR-31131]: Imager BeamTimer has max value of 30, but EMDK site states 60.
[SPR-31662]: Datawedge Version 6.0.18. versus Enterprise Browser 1.6 Profile disabled after reboot.
[SPR-31973]: Datawedge Export path shows /storage/emulated/0/Android/data/com.symbol.datawedge/files in GUI which doesn't exist on device
[SPR-31898]: Camera icon not showing or Camera intermittently not launching when Keyguard Camera Disabled is ticked. This is also causing customer's app not to launch camera app.
[SPR-31454]: Browser Page displayed is tiny compared to KitKat 01.00.71 release and Zoom is not working
[SPR-31852]: SimulScan issue with scanning passport Netherland passport
[SPR-31705]: SE4850 scan-range decreased after enabling picklist mode
[SPR-31850]: SE4750 MR HW Picklist mode not working - accuracy.
[SPR-31003]: Scanner stays ON for approx. 2-3 Minutes but flickers/goes dark and then illuminates again noticeably.
[SPR-32040]: ScanningService crashed while scanning barcode via customer app.
[SPR-32020]: XAMARIN EMDK SCANNER ISSUE.
[SPR-31081]: Decoder I2OF5 fails to decode if scanner is disabled and enabled.
[SPR-31863]: Lollipop SE4850 Imager datawedge randomly stops working requires reboot.
[SPR-31453]: Certificate Error message is displayed Browsing to an URL issue is not seen with the NON GMS KK BSP 01.00.71 MR1 release.
[SPR-31415]: Accelerometer and Gyro INS platform BADLY misconfigured on Lollipop platform and not incorrect on KitKat.
[SPR-31713]: TC8000 non-GMS: SE4750MR: Scanner stops working intermittently.

Component Release Notes (only major features since last release):

Fusion_QA_2.00.0.0.013
Change Details

[SPR-31002]: WLAN driver will not set the device state as disconnected resulting in device not connecting to network in the next attempt.
[SPR-29965]: WPA-PSK authentication handshake failure.

Details	Description

Wireless LAN Radio	802.11a/b/g/n/d/h/i/k/r
Data Rates	5GHz: 802.11a/n — up to 150 Mbps 2.4GHz: 802.11b/g/n — up to 72.2 Mbps
Operating Channels	Chan 36 - 165 (5180 - 5825 MHz); Chan 1 - 13 (2412 - 2472 MHz); Actual operating channels/frequencies depend on regulatory rules and certification agency
Security and Encryption	WEP, WPA – TKIP, WPA2- TKIP, WPA2-TKIP AES EAP TTLS, PAP, MSCHAP, MSCHAP v2, PEAPv0-MSCHAPv2, PEAPv1- EAP-GTC, EAP-TLS, EAP-FAST, LEAP
Multimedia Wi-Fi Multimedia™	(WMM)
Certifications	WFA (802.11n, WMM), WMM-PS, CCXv4, Wi-Fi Direct, WPS2.0
Fast Roam	PMKID caching, Cisco CCKM, OKC, 802.11r
Network Connections	Bluetooth; USB 2.0 OTG Host docking interface; 802.11r and 802.11k for enterprise voice roaming included

Mx / OSX: QC.51.5.2.14/MXMF: 6.2.1.0

Feature	Brief Description
Clear Clipboard	Clearing the data copied into clipboard
Enable/Disable Clipboard	Enable/Disable the clipboard features to cut/copy/paste
Factory Reset	Wipe - Data+Enterprise+Cache
Enterprise Reset	Wipe - Data+Cache
Full Device Wipe	Wipe - Data+Enterprise+Cache+InternalSD+External SD
Enable/Disable Enterprise Reset in Settings App	API to Enable/Disable the Enterprise Reset UI in Settings Application
Display OSX Version	OSX version can be seen in Settings => About Device => SW Components => OSX version
Enable Disable AppInfo Access	Enabling and disabling, App info from settings
Allow/Disallow App to submit XML	Add/delete/query packages which are allowed to SubmitXML to MxMgtFw
Enable Disable UMS/PTP/MTP	MassStorage, MediaTransfer and PTP modes can be Blocked and Unblocked
Enable Disable External USB Storage	Enable/Disable Mounting of External USB Pen-drive storage with device
Enable/Disable Browser	Enable/Disable Native Browser Address Bar
Enable/Disable access to Applications Section of Settings UI	Hide Apps section of Settings Application

Initiate NTP Sync	Enable/Disable/Initiate NTP
Ethernet Settings	Enable/Disable & TurnOn/TurnOff
Enable/Disable Use of Background Data	Enable/Disable Background data in SIM devices
Auto Correction	Enable/Disable the ability of auto correction of words in soft keyboard
Wi-Fi	Enable/Disable Wi-Fi
Safe Mode	Enable/Disable Safe mode
Unknown sources	Enable/Disable Unknown sources UI
BT Pairing Pop up	Enable/Disable BT pairing pop up
SD card Usage	Enable/Disable SD card Usage
Enable/Disable Power button instantly lock	Enable/Disable Power button instantly lock UI
Turn On/Off Power button instantly lock	Turn On/Off Power button instantly lock
Enable/Disable Power button menu items	Enable/Disable menu displayed when power button is long pressed
Hide/unhide Power button menu	Hide/Unhide menu displayed when power button is displayed
Enable/ Disables Settings Icon on Notification drag-down page	Enable/ Disables Settings Icon on Notification drag-down page
Turn On/Off Notification Bar (whether the bar shows and can be "pulled down")	Turn On/Off Notification Bar (whether the bar shows and can be "pulled down")

- 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.
- KeyMapping Manager - Added key mapping support for NAV PAD Button.

Scanning Framework Version: 16.17.43.00

Features:
- Support for RS6000 (equivalent to RS507)
Limitation:
- After updating the Image from KK to L, upon first boot, Scanner firmware update to scan engine will take place. While the update is in progress, if the user tries to scan, scanner will fail to trigger.

Datawedge v6.2.24

- Added...

  - Support for RS5000 Plugable Serial SSI Scanner.
  - DataWedge Intent APIs to..
  - Rename a profile.
  - Querythe active profile.
  - Enable or disable DataWedge.
  - Clone a profile from an existing profile.
  - Query the list of profiles.
  - Delete a profile.
  - Full list of label types added in the ADF criteria selection.

- Fixed...

  - Device is rebooting when Safe battery swap is performed with DWDemo application running in Foreground/Background.
  - Application not Launching from the Home screen on single touch.
  - Disabled AppList feature of Datawedge gets reloaded after rebooting the device.
  - Disabled word suggestion on all the EditTextPreferences.
  - Removed Webcode from supported label types.

EMDK v6.3.23.623

Features:

- This version does not support Payment APIs. EMDK for Android v5.0 is the only version that supports Payment APIs.
- Enhanced Barcode Manager APIs with the following features:
  a. Added new reader parameters in each ImagerSpecific, CameraSpecific and LaserSpecific classes under ScannerConfig.ReaderParams.ReaderSpecific:
     - aimTimer - Sets the duration for timed aim types such as timed hold and timed release.
     - sameSymbolTimeout - This setting is used to prevent the scanner driver from decoding the same symbol within this time interval during continuous scan.
     - differentSymbolTimeout - This setting is used to prevent the scanner from decoding another symbol within this time interval during continuous scan.
     - 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.

- aimType - Allows selecting the aim type such as continuous, press
& release, timed hold and timed release.

b. 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.

- Enhanced Profile Manager for the following features:
    a. DataCapture feature:
        - Support for selecting RS5000 as the scanning device.
        - 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 another hardware
        trigger.
        - 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.
    b. 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.
    c. Added the following new parameters in Keystroke Output feature:
        - 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.
        - Key event delay - Sets a delay in milliseconds for dispatching
        control characters as keystrokes correctly to the foreground
        application.
- Enhanced Serial Comm APIs with the following features:
    a. Added getConfig() and setConfig() for accessing the current configuration
    settings such as baudRate, parity, dataBit and stopBit.
    b. Added getSignalState() to query the signal status such as DTR, DCD,
    DSR, RI, RTS and CTS.
    c. Added new method setSignalState() to set the signal status such as RTS
    and DTR.
    d. Added getPortInfo() to query the port name.

Part Number and Release Date

Part Numbers
T8KN0LXXVRGEF21002
T8KN0LXXVRFXX21002
T8KN0LXXVREXX21002

May 29, 2017