

# **Release Notes - ZEBRA TC70 Lollipop v02.10.02 with GMS**

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## **Introduction**

Work more efficiently and better serve your customers by giving your employees enterprise-class handheld computers that survive life in the field or shop floor, communicate and access information in real time.

The TC70 is the professional-grade Android device built from the ground up for the enterprise.

- Zebra's Mobility Extensions (Mx)
- Mobility DNA, a suite of mobility enabling applications, development tools and utilities
- Most advanced scan engine with longer range data capture capability
- Rugged and ready for every day enterprise use inside

## **Description**

TC70 Lollipop v02.10.02 with GMS

### **Special Note:**

- This Software will support the SE4750 CR Scan Engine
- Reboot after FactoryReset or EnterpriseReset will take a longer time than KitKat.
- 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.

- A Separate downgrade package is released in support central to downgrade smoothly to KitKat via recovery method. This package contains the Enterprise Reset Embedded in it.
- Downgrade from Lollipop to KitKat through MSP is not supported.
- There is a **Mandatory patch** (**T70N0L50ARPEF21002.zip**) to be applied along with this OS which is required to update any package from an External SD card from MDM only.
- 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.

1. 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>
```

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

1. 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>
```

2. 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>

```

- **Button\_L1 (SCAN BTN) cannot be remapped with Recent Apps key**

## ***Component Description and Version***

<b>Component / Description</b>	<b>Version</b>
Product Build Number	02-10-02-LG-00-A release-keys
Android Version	5.1.1
Linux Kernel	3.4.0
Android SDK Level	22
Android security patch level	2017-03-01
Platform	QC 8960 Pro
Flash Size	8GB
RAM Size	1GB
MSP Package	7.08.85
Scanning	16.17.32.00
SimulScan	2.6 SimulScanEngine 1.13.6.4
Datawedge	6.2.24
EMDK	6.3.23.623
OSX/ Mx	OSX QC.51.5.2.14 / MXMF version:6.2.1.0
Wi-Fi	Fusion_QA_2.00.0.0.013
PTT	3.1.27
Touch FW	STYLUS-80_GLOVE-105, FW:1.2.AA
RxLog	4.58.5.0
Mlog	v06.54 / Service v06.54
B2M	1.0.0.297
Bluetooth Pairing Utility	3.7
Data Analytics	1.0.2.1859
File Browser	Ver 1.17
Stage Now	2.6.1.1045
App Gallery	2.8.4.13
Tech Docs	1.0.0
WLAN	WLAN-1240294.1

NFC	NFC_NCIHAL_AR3.5.0_Lollipop, FW:122
Sensors (Accel, Gyro, Light, Prox)	1, 1, 1, 1
Camera	CAM-FRONT-1.0.0 CAM-REAR-1.0.0
MSRN	0.94
MobiControl	12.2.0. Build 23469
ZVC	1.1.23
NFC Payment Manger	2.0.1
IST	App:1.00 build 3/Service: 1.00 build 1/Firmware:1.00 build 4
Battery Manger	1.3.6
DDT	1.14
FingerPrint	Zebra/TC70:5.1.1/02-10-02-LG-00-A/35:user/release-keys

## Contents

File	Description
T70N0LXXARGE21002.zip	Full Software Update
T70N0LXXAREXX21002.zip	Enterprise Reset - Wipes all partitions/data except Enterprise folder/partition & On Device Storage (/sdcard)
T70N0LXXARFXX21002.zip	Factory Reset - Wipes all partitions/folders including enterprise but except On Device Storage (/sdcard)
T70N0L50ARPEF21002.zip	<p><b>Mandatory Patch</b></p> <p>This patch is mandatory with SW v02.10.02. Patch addresses the following:</p> <p>a) If you are using MDM and want to install any package from an External SD card</p> <p>b) Rare Hard Scan trigger not working issue on a device bootup</p>

## Device Compatibility

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

Device	Operating System
TC700H-GC11ES-NA	Android 4.4.3, Android 5.1.1
TC700H-GC11ES-IN	Android 4.4.3, Android 5.1.1
TC700H-GC11ES-IA	Android 4.4.3, Android 5.1.1

## Installation Requirements

This Software has to be used with compatible devices listed above. Internal SD Card should have 500 MB of free space.

How to find the Internal SD card free Space? Here are the methods:

**Method 1:**

1. Connect the device to a PC using Snap-on and allow the PC to access the device storage.
2. Check the Free storage available in “Internal Storage”. Make sure the free storage is more than 500MB.
3. Factory reset or Enterprise Reset can be performed to free up internal storage space.

**Method 2:**

1. In the device, Open “Storage” under “Setting” menu and look for Available space under “Internal Storage” section (which has total space as 1GB).
2. The Available memory should be more than 500MB.
3. Factory reset or Enterprise Reset can be performed to free up internal storage space.

**Installation Instructions**

1. Plug the TC70 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. T70N0LXXARGE21002.zip (Full Package Update v02.10.02)
  - b. T70N0LXXARFXX21002.zip (Factory Reset Package v02.10.02)
  - c. T70N0LXXAREXX21002.zip (Enterprise Reset Package v02.10.02)
  - d. T70N0L50ARPEF21002.zip (Mandatory Patch for v02.10.02)
4. Now, copy the .zip files (and the Optional files too) to your TC70’s storage.
5. 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. Follow same procedure and select the **T70N0LXXARGE21002.zip** (Full Package Update v02.10.02) with “Scan Key”
  - e. Follow same procedure and select the **T70N0L50ARPE21002.zip** (Mandatory Patch for v02.10.02) with “Scan Key”
  - f. Upon completion, the device will reboot to Recovery Mode screen.
  - g. Next step only if you are switching between GMS and NON-GMS software, otherwise this step is not required.
    - If you are updating device from GMS to NON-GMS or Vice Versa, it is required to either use **T70N0LXXARFX21002.zip** (Factory Reset Package v02.10.02) (Factory Reset, this will give complete OOB experience) or at Minimum, please do a **T70N0LXXARE21002.zip** (Enterprise Reset Package v02.10.02)
  - h. If you are going to install the optional packages, then do so now with the same procedure used above.
  - i. Upon completion of all the updates, the device will reboot to Recovery Mode screen. Select, “reboot system now” with the “Scan Key”, you will see device reboot to Android Home Screen, then,
6. Go to “Settings” and scroll down to “About phone” and look at the “Build number”. It should end with “02-10-02-LG-00-A”. Now, you can start using the TC70, please manually set the date and time. Go to “Settings” and scroll down to “Date & time” and set the correct Date/Time by un-checking “Automatic date & time” and “Automatic time zone” and then select “Select time zone”, “Set date”, “Set time” to set the desired values. Lastly, put check marks back in “Automatic date & time” and “Automatic time zone”.
  7. Now you are all set to use your updated **TC70 with GMS**.

### **Downgrade instruction from Lollipop to KitKat:**

Follow the same steps mentioned above to downgrade but replace the package with latest KitKat packages. The latest version for KitKat Non-GMS is available [here](#). When downgrading via Recovery method, make sure to use OS Recovery package followed by enterprise Reset together. This is a must step to downgrade smoothly. A special recovery package is released to downgrade to KitKat Non-GMS v18.03 which contains the Enterprise Reset Embedded to it. The same should be used for downgrading via MDMs (SOTI & Airwatch).

## Feature added/supported

- Key Remapping feature supported
- RS6000 scanner supported (equivalent of RS507 functionality)

## 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 release and Zoom is not working

[SPR-31852]: SimulScan issue with scanning passport Netherland passport

[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-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-31713]: SE4750MR: Scanner stops working intermittently

[SPR-31442]: Lollipop certificates in Keystore is unstable

[SPR-31732]: TC75 is unable to launch camera after apps being installed from Avalanche.

[SPR-30582]: [TC75] Fix TC75 KK AT@T random data network connection drop

[SPR-30591]: Fix for Camera Flash light affected by Sim card

[SPR-29035]: Adding the support of "fullfactoryreset" on TC70/TC75 L

[SPR-31171]: TC75 L 20-05 DataRoaming not applied using EMDK CellularMgr

[SPR-31446]: TC75 L intermittent Bluetooth discoverability issue with iMZ320 BT printer

[SPR-31775]: TC70 Scanner Failed to Activate after update to Lollipop

[SPR-32056]: DataWedge Version 6.0.18. versus Enterprise Browser 1,6 Profile disabled after reboot

[SPR-30935]: TC75 Lollipop Sluggish

## 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
T70N0LXXARGE21002
T70N0LXXAREXX21002
T70N0LXXARFXX21002
T70N0L50ARPEF21002

May 26, 2017