Release Notes – Zebra Android Pie

02-21-09.00-PG-U20-STD Release (GMS)

Highlights

The details of the Android GMS Pie release 02-21-09.00-PG-U20-STD that covers family of products including TC72, PS20x. Please see, Device Compatibility under Addendum Section for more details.
LifeGuard patches are cumulative and include all previous fixes that are part of earlier patch releases.

Software Packages

Package Name	Description
HE_DELTA_UPDATE_02-21-09.00-PG-U20-STD.zip	LG Package Update

Security Updates

This build is Compliant up to Android Security Bulletin of November 05, 2021.

LifeGuard Update 20:

➢ This LG patch is applicable for 02-21-09.00-PG-U00-STD BSP version.

- o This LG Patch includes following updated components.

  - • **WLAN Firmware :** 1.0.1.629.0

  - o **New Features**
    - • Added support for WLAN Front End Module 45868 on TC72, PS20, and TC52 devices.
    - • Added support for BT Module 22545 on TC72 & TC52 devices.
    - • Added support for LSM6DSM Gyroscope/accelerometer Sensor on PS20 devices.

  - o **Resolved Issues**
    - • SPR- 43818 : Resolved an issue where WiFi advanced option was wrongly translated to Korean.
    - • CVE 2021-1048 Patched the use-after-free security vulnerability which could allow code execution and local

- elevation of privilege to the kernel from an untrusted application (SPR 45273).
  - o **Usage Notes**
    - LG CFE Patch U20 & above is a Mandatory patch for devices with WLAN Front End Module 45868 & BT Module 22545

    - WLAN Front End Module can be identified using adb shell getprop ro.config.device.wlan_fem [ro.config.device.wlan_fem]: [QM45868]

    - BT Module can be identified using adb shell getprop ro.bluetooth.bt_filter [ro.bluetooth.bt_filter]=[QM22545]

LifeGuard Update 12:

➢ This LG patch is applicable for 02-21-09.00-PG-U00-STD BSP version.

- o This LG Patch includes following updated components.
  - **WLAN Firmware :** 1.0.1.599.0
  - **PTT Express :**3.1.54

  - o **New Features**
    - None

  - o **Resolved Issues**
    - SPR-43314 : Resolved an issue wherein PS20 not able to use scanner after update to LG06
    - Added fix for multiple vulnerability issues (FragAttack) with respect to Fragmentation and Forging attacks.
  - o **Usage Notes**
    - None

LifeGuard Update 10:

➢ This LG patch is applicable for 02-21-09.00-PG-U00-STD BSP version.

    o This LG Patch includes following updated components.

            • Google Play Services : 21.15.15

   o New Features

      • Added support for LSM6DSM Gyroscope/accelerometer Sensor on TC72 and TC52 .

   o Resolved Issues

        • None

   o Usage Notes

      o To identify the LSM6DSM Gyroscope/accelerometer sensor on the device users can check the **ro.config.device.gyro** property using getprop command from adb.

      o Devices with LSM6DSM sensor will have [ro.config.device.gyro] = 8.   o   Devices with LSM6DSM sensor will list sensor type as LSM6DSM on "Settings-->About phone-->SW components-->Gyroscope" or "Settings-->About phone-->SW components >Accelerometer".

      o Not advised to install on TC52 ,TC52-HC devices.
       .

LifeGuard Update 09:

➢ This LG patch is applicable for 02-21-09.00-PG-U00-STD BSP version.

The LG Patch includes the following updated components.

      • **WLAN** Firmware: 1.0.1.510.0

      • **MXMF** 9.4.0.4

      • **OSX** release version QCT_90_9.6.44

      • **Google Chrome/Google WebView** 87.0.4280.101

o Resolved Issues

    • SPR- 41891: Resolved an issue wherein network was getting permanently disabled

- SPR- 43087 : Resolved an issue wherein Screen Stays black when power key is pressed.

LifeGuard Update 06:

➢ This LG patch is applicable for 02-21-09.00-PG-U00-STD BSP version.

The LG Patch includes the following updated components.

- **WLAN** FUSION_QA_2_1.1.0.022_P

- **MXMF** 9.4.0.3

LifeGuard Update 02:

➢ This LG patch is applicable for 02-21-09.00-PG-U00-STD BSP version.

The LG Patch includes the following updated components.

- **WLAN** FUSION_QA _2.1.1.0.021_P

- **MXMF** 9.4.0.2

- SPR40289– Resolved an issue where disconnection is bluetooth audio connection with HS3100.
- SPR 37883 – Resolved an issue where PAC file with toLowerCase/toUpperCase were failing.

LifeGuard Update 01:

➢ This LG patch is applicable for 02-21-09.00-PG-U00-STD BSP version.

The LG Patch includes the following updated components.

• **WLAN** FUSION_QA _2_1.1.0.020_P

• **DataWedge**   7.4.56
• **EMDK** 7.4.26.2426

• **Osx** QCT.90.9.6.43

• **MXMF** 9.4.0.1

• **Stagenow** 3.4.1.5

Version Information
Below Table contains important information on versions

Description	Version
Product Build Number	02-21-09.00-PG-U20-STD
Android Version	9
Security Patch level	November 05, 2021
Linux Kernel	4.4.153
Component Versions	Please see Component Version under Addendum section

New Features
- Added support for Tianma display panel for TC72. This image is backward compatible with existing Innolux display.

Important Links
- **Requirements and Instructions**
- Installation and setup instructions

Upgrade Options

Below table provides detailed information on shortest path to upgrade based on current version of software.

Current Software Version on Device	Steps to get to this Release	Comments
02-11-01.00-PG-Uxx	Apply Full Package Update HE_FULL_UPDATE_02-21-09.00-PG-U00-STD.zip **Followed by** Apply Delta Update HE_DELTA_UPDATE_02-21-09.00-PG-U20-STD.zip	
02-21-09.00-PG-Uxx	Apply Delta Package Update HE_DELTA_UPDATE_02-21-09.00-PG-U20-STD.zip	

NOTE: The TC72 devices with Tianma display are not allowed to downgrade to Android P BSP 2.11.01 or older Oreo versions below BSP 01.30.04. To identify the display type on TC72 devices user can check the ro.config.device.display property using getprop command from adb shell – For TC72 Innolux device – [ro.config.device.display]: [900] For TC72 Tianma device – [ro.config.device.display]: [512]

Known Constraints and Workarounds

Below are Known Constraints and workaround if applicable.

• If VPN is configured with 'Always On' on a device, on a reboot, there is an intermittent occurrence of device not connecting to VPN server. User can work around the issue by configuring the VPN as not 'Always On'.

• As per SPR40881 "Android P does not supports RS5100. Customer needs to upgrade to Android 10".

Addendum

Device Compatibility

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

Device Family	Part Number	Device Specific Manuals and Guides
TC72	TC720L-0ME24B0-A6 TC720L-0ME24B0-NA TC720L-0ME24B0-BR TC720L-0ME24B0-IA TC720L-0ME24B0-TN	TC72 Home Page
PS20	PS20J-P4G1A600 PS20J-P4G1NA00 PS20J-B2G1A600 PS20J-B2G1NA00 PS20J-P4H1A600 PS20J-P4H1NA00	PS20 Home Page

Component Versions

Component / Description	Version
ActiveEdge	2.7.4
AnalyticsMgr	2.4.0.1251

Audio (Microphone and Speaker)	0.12.0.0
Battery Manager	Version: 1.4.2
Battery Swap	Version: 2.1.1
Bluetooth Pairing Utility	Version 3.16
PS20 Cradle	Utility 1.01 FWUpdater : 1.0

DataWedge	7.4.56
Device Central	2.2.0.8
Diagnostic Tool	NA

EMDK	7.4.26.2426

Enterprise Keyboard	2.2.2.3
Fota	1.0.0.5
License Manager and License Agent	version 3.2.0 and version 3.2.0.3.2.0
MSRN	2.01
MX	MXMF version:9.4.0.4
NFC	NFC_NCIHALx_AR40.9.3.0
OSX	QCT.90.9.6.44
PTT Express	3.1.54

Rxlogger and RxLoggerUtility	Version 6.0.0.0 and Version: 2.0.5.0
Scanning Framework	22.1.17.0
Simulscan	Version: 4.0.5 and SimulscanEngine 3.2.3
WorryFree Wifi Analyzer	WFW_QA_2_3.0.0.009_P
StageNow	3.4.1.5
Touch Panel	TC72 : 2.0.1-Finger 1-0 PS20 : v08
WLAN	FUSION_QA _2_1.1.0.024_P
Zebra Bluetooth	2.1
Zebra Data Service	9.0.0.1210

Zebra Volume Control	2.2.0.8
Zebra Folders	9.1
GMS Version	9_201907

Revision History

REV	DESCRIPTION	DATE
1.0	Initial draft release	10/29/2021
2.0	Retriggered Build Patched the use-after-free security vulnerability which could allow code execution and local elevation of privilege to the kernel from an untrusted application	11/29/2021
3.0	Fix Music app Crash	12/22/2021