

FXSERIES Version 3.0.35 Release Notes

This document summarizes the following firmware releases:

Firmware Release Number	Release Date	See page
V3.0.35	30-May-2019	Page 1

For support, please visit www.zebra.com/support

FXSERIES Release V3.0.35

RELEASE DATE: 30-May-2019

Zebra's Fixed reader series comprises of the following readers

1. FX7500 RFID reader is a powerful EPC Gen-2 compliant business class fixed reader
2. FX9600 RFID reader is a powerful EPC Gen-2 compliant industrial fixed reader

Both these readers are Linux based devices driven by powerful RFID engine that enables users to integrate RFID into their business logic and applications with great ease and high efficiency

For a friendly user experience, it is recommended to use the 123RFID utility available from the Zebra support site.

Release Notes lists new features, any specific usage instructions, and any known issue.

The current build FXSeries 3.0.35 is aimed at both FX9600 and FX7500 readers.

The features and the issues mentioned in this document are **applicable for all FX9600 and FX7500 SKUs**

Note: The version 3.0.35 software update package includes the files required to update FX9600 and FX7500 RFID Readers. An FTP/SCP/FTPS server is required to upgrade the readers.

Contents of the release package:

IMAGE TYPE	VERSION	FILE NAME	DATE
RM Server	3.0.35	platform_3.0.35.0.tar.gz	05/30/2019
LLRP Server	3.0.35		
X-Loader	4.0.0	x-load_4.0.0.0.bin.ift	08/26/2018
U-Boot	3.0.13	u-boot_3.0.13.0.bin	01/14/2019
Operating System	3.0.33	ulmage_3.0.33.0	05/22/2019
Root FS	3.0.33	rootfs_3.0.33.0.jffs2	05/22/2019
OsUpdate Utility	1.0.0	osupdate.elf	05/30/2019
FxUpdate Utility	1.0.0	fxupdate.elf	05/30/2019

Response	N/A	response.txt response_ext.txt	05/30/2019
RFID3 CAPI DLL	5.5.2.18	rfidapi32.so	05/30/2019
RFID3 JNI DLL	1.4.0.39	librfidapi32jni	05/22/2019
RFID3 Java API	1.4.0.39	Symbol.RFID.API3.jar	05/22/2019
Linux Kernel	4.9.75		
Radio Firmware	2.1.16 (FX9600) 1.4.72 (FX7500)		
Radio API	2.2.8.12		

Host API release Version Info:

IMAGE TYPE	VERSION	FILE NAME	DATE
RFID3 C API DLL	5.5.2.18	RFIDAPI32PC.DLL	05/30/2019
RFID3 .NET DLL	1.5.1.13	Symbol.RFID3.*.dll	05/22/2019
RFID3 Java JNI DLL	1.4.0.39	RFIDAPI3_JNI_HOST.dll	05/22/2019
RFID3 Java API	1.4.0.39	Symbol.RFID.API3.jar	05/22/2019
PowerSession	0.52.10	PowerSessionSetup_0_52_10.zip	05/29/2019

Native DLL's available for 64-bit. 32-bit RFID C Dll will be provided on request.

Host SDK:

DESCRIPTION	VERSION	FILE NAME	DATE
Zebra RFID FXSeries Host C SDK for Windows 7 and 10	V1.0.2	Zebra-RFID-FXSeries-Host-C-SDK_v1.0.2.msi	05/29/2019

Zebra RFID FXSeries Host .NET SDK for Windows 7 and 10	V1.0.2	Zebra-RFID-FXSeries-Host-DotNet-SDK_V1.0.2.msi	05/29/2019
Zebra RFID FXSeries Host Java SDK for Windows 7 and 10	V1.4	Zebra-RFID-FXSeries-Host-Java-SDK_V1.4.msi	05/29/2019
Zebra RFID C and Java SDK for 64 bit Host Linux (CentOS & Ubuntu)	V5.5.2.18 V1.4.0.39	Linux64_SDK.tar_V5.5.2.18.gz	05/29/2019

Embedded SDK:

DESCRIPTION	DOCUMENTATION	FILE NAME	DATE
Zebra Native Java SDK on Windows 7	Zebra-FXSeries-Embedded-SDK-UserGuide_15_May.docx	Zebra-FXSeries-Embedded-SDK.zip	05/28/2019
Zebra Native Java SDK on Windows 10		Zebra-FXSeries-Embedded-SDK.zip	05/28/2019
Zebra Native Java SDK for ubuntu 16.04	Zebra-FXSeries-Embedded-SDK-UserGuide_Ubuntu_03_May.docx	Zebra-FXSeries-Embedded-SDK.tar.gz	05/28/2019
Zebra Native C SDK for ubuntu 16.04	Zebra-FXSeries-Embedded-C-Cpp-SDK-UserGuide_v1-2.docx	Zebra-FXSeries-Embedded-Native-C-SDK-Linux.tar.gz	05/28/2019

Installation Instructions

There are three supported ways to upgrade the FXSERIES RFID reader

Method 1:

This is the recommended method. Unzip images and copy to a USB drive. Connect USB drive to FXSERIES reader. Upgrade will automatically start in 7-10 seconds.

Method 2:

Copy images to local drive of PC, log in to the reader. Enter username and password of reader, then select 'File based upgrade' on reader upgrade webpage. Open PC folder containing image files, then select all files. Click 'Start upgrade'. This method **should not** be used if updating from an old version. If you must use this method, please ensure to execute a two-step update. First update to version 2.7.19 and then to this new version.

Method 3:

Copy images to FTP server. Navigate to the reader upgrade webpage and select 'FTP upgrade' page. Enter username and password of the FTP server. 'Start upgrade'.

- ✓ FTP/SCP/FTPS server can be used to upgrade the readers.
- ✓ The latest version of PowerSession demo application (0.50.4 and higher) can also be used to upgrade multiple readers with a single operation. Please refer to the Integrator Guide document for detailed upgrade procedures.

HARDWARE REQUIREMENTS

- FX9600 & FX7500 All SKUs
- A USB drive can also be used directly to initiate the upgrade process. The recommended browsers are Edge, IE11, Mozilla Firefox and Chrome V68

ENHANCEMENTS / CHANGES in V3.0.35 with respect to V2.7.19

V3.0.35 has the below additions / enhancements over the V2.7.19 release of FX Reader firmware.

- Updated Linux kernel to version 4.9.75
- Java virtual machine with Java 1.8 support
- Updated C and Java RFID SDK Eclipse based package for remote development/debugging of embedded java applications
- Added support for new ways to push data out of the reader under FX Connect feature set. "FX Connect enhancements":
 - Support for Flexera Licensing for FX Connect.
 - Enable licenses via off line method as well as support for Local Flexera License Server
 - Push RFID tag data over HTTP Post

- Push RFID tag data over USB HID. FX reader can send RFID data to an active application in a computer by using keyboard emulation over the USB interface
- Push RFID data to generic and configurable TCP port
- Write RFID data to a USB flash thumb drive
- Changes to support response txt extensions for firmware update facilitating a single firmware folder for all 3 (FTP, File based and USB) modes of firmware update.
- Improved out of box performance with Automac
- Support for Regulatory Transmit Delay. This allows the RFID reader to turn off the transmit when it senses that no RFID tags are present in its antenna field of view. It also helps to manage the temperature foot print in readers.
- Removal of Commit option in web interface to enable one step configuration.
- Support for identification of stationary vs moving tags using LLRP and RFID3 API
- Israel Regulatory Changes to support Link profiles with PIE 2.0 and Tari 25 us
- Added Bonjour support to enhance zero configuration networking by making it easier to discover reader IP address.
- Previously Chrome and FireFox required folder selection in the PC to start file-based update. File-based update using reader web interface now uses the same procedure regardless of the browser in use. Now, all files in a firmware release package must be selected before update is started.
- RFID SDK / Power Session updated to support file-based update from V2.6.9 to 2.7.19
- Support for use case specific default profiles. The following built in profiles are supported
 1. Default
 2. Maximum Data Rate
 3. Dock door without motion sensor
 4. Conveyor
 5. Transition Point

ADDITIONAL NOTES

Summary of major issues and limitations are listed below.

- Due to increase of firmware foot print when upgrading/downgrading from/to old versions sometimes firmware update needs to be a 2-step process:

Firmware update support table				
	Upgrade	File-Based Update	FTP-Based Update	USB-Based Update
FX7500	2.6.9 or earlier to 3.0.35	2-step upgrade	Supported	Supported
	2.7.19 to 3.0.35	Supported	Supported	Supported
	Downgrade			
	3.0.35 to 2.6.9 or earlier	2-step downgrade	Supported	Supported
	3.0.35 to 2.7.19	Supported	Supported	Supported
	FX9600	Upgrade	File-Based Update	FTP-Based Update
2.6.9 or earlier to 3.0.35		2-step upgrade	Supported	Supported

	2.7.19 to 3.0.35	Supported	Supported	Supported
	Downgrade			
	3.0.35 to 2.6.9 or earlier	2-step downgrade	Supported	Supported
	3.0.35 to 2.7.19	Supported	Supported	Supported

Supported: upgrade/downgrade is supported as usual

2-step upgrade: Use file-based method to upgrade to 2.7.19 first and then upgrade to 3.0.35

2-step downgrade: Use file-based method to downgrade to 2.7.19 and then to downgrade to 2.6.9 or earlier (using power session for file based downgrade)

- If reader is upgraded/downgraded from/to any other version prior to 3.0.35, then some UI pages will not work properly due to cached pages from previous build. Hence it is required to clear the browser cache after any upgrade/downgrade.
- User applications installed on older release (2.7.x, 2.6.x etc.) will not execute on 3.0.x build. Users will have to recompile their apps using the new tool chain. If app cannot be recompiled, then user can easily revert back to version 2.7.19 using the revert back feature in the web UI.
- Applications that use RFID3 API to perform reader firmware update must use RFID3 API for C dll version 5.5.2.15. There is no need to recompile the app as the dll signature has not changed.
- If software update fails when downgrading to 2.7.x or earlier, it is likely due to the lack of free RAM. The reader status web page should show more than 120 MB of free RAM before attempting a download to an old version. It is recommended to reset the reader to free up enough RAM before downgrading to an old version.
- File based update cannot be used to upgrade the reader to 3.0.35 from older versions prior to 2.7.19). In this scenario the user can follow a 2 steps upgrade. First upgrade the reader to 2.7.19 and then update to 3.0.33 using file-based update.
- File based update cannot be used to downgrade from 3.0.35 (and above) to a lower version (2.6.x and earlier) on FXSeries readers using web console. FTP Based or USB flash drive method can be used to downgrade the reader in the above scenario.
- File based update of the firmware release does not support platform type validation.
- For Keyboard Emulation under FX Connect feature, Data Suffix and Data Prefix will work for lower-case alphabets only other special characters may not work.
- Tag Data from Keyboard Emulation uses all lower-case alphabets.
- In Reader Wireless Settings Parameter web page, WiFi signal strength is always shown as 100%. To read the correct strength, refer to the ESSID field
- Number of rounds stop trigger when more than one antenna is enabled does not stop reads after N rounds
- LLRP settings if changed to secure mode will prevent the ReadTags, Advanced Antenna Config, Serial port communication and Zebra FX Connect pages from functioning properly. To use the above functionality, it is recommended to set LLRP to non-secure mode to use these features.
- Returning FX Connect license requires a reader reset. If an evaluation license expires, the reader needs to be reset to stop any current inventory operation.
- Serial Port configuration (including BaudRate, StopBits, DataBits, Flowcontrol and Parity) and Mode of usage (Debug, Push Data or free Port) changes need reader reboot before these changes take effect. However, the Tag reporting and inventory settings in push data mode take effect immediately without reboot.

- After changing serial port configuration, banner message “reboot required” is not consistent. It is recommended to follow above note whenever serial port configuration is changed.
- Large file names are not supported when importing reader configuration in Reader Profiles web page
- It is not possible to disable GPI function as defined in the LLRP standard. It is simply recommended to just not use the GPI function if it is not needed for a use case.
- Embedded applications using auto start feature (specified in start script in deb package) may not start up properly because the app can start ahead of the main reader server. It is recommended to modify the app to retry the connection a number of times with a small time delay in between retries.
- RFSurvey is not supported in FXSeries Readers even though the LLRP capability reports true for canDoRFSurvey.
- Before the successful tunnel creation two ping packets are sent and received unencrypted.
- IPSEC hand shake is not successful with CISCO router.
- After successful tunnel creation reader accepts unencrypted packets momentarily from the destination.