FX Series Version 3.1.12 Release Notes

This document summarizes the following firmware releases:

Firmware Release Number	Release Date	See page
V3.1.12	15-October-2019	Page 1

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

FX Series Release V3.1.12

Posting Date: November 13, 2019

Zebra's Fixed reader series comprises of the following readers

1. FX7500 Fixed RFID Reader
2. FX9600 Fixed RFID Reader

Both readers are Linux-based devices driven by powerful a 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 Desktop utility available from the Zebra support site or to configure the reader using FX Connect (available via license). For an evaluation license of FX Connect, please contact your Zebra sales representative.

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

The current build, FX Series 3.1.12, 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 3.1.12 software update package includes the files required to update FX9600 and FX7500 RFID Readers.

Contents of the release package:

IMAGE TYPE	VERSION	FILE NAME	DATE
RM Server LLRP Server	3.1.12 3.1.12	platform_3.1.12.0.jffs2	10/15/2019
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	uImage_3.0.33.0	05/22/2019
Root FS	3.1.2	rootfs_3.1.2.0.jffs2	08/29/2019
OsUpdate Utility	1.0.0	osupdate.elf	10/15/2019
FxUpdate Utility	1.0.0	fxupdate.elf	10/15/2019

Response	N/A	response.txt response_ext.txt	10/15/2019
RFID3 CAPI DLL	5.5.2.21	rfidapi32.so	08/29/2019
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	2.1.22 (FX9600) 1.4.80 (FX7500)		
Radio API	2.2.8.13		

Host API release Version Info:

IMAGE TYPE	VERSION	FILE NAME	DATE
RFID3 C API DLL	5.5.2.21	RFIDAPI32PC.DLL	08/29/2019
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
123RFID Desktop	1.1.0.0	123RFID_Desktop_v1.1.0.0	August 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)	V5.5.2.16 V1.4.0.39	Linux64_SDK.tar_V5.5.2.16.gz	05/22/2019

Embedded SDK:

DESCRIPTION	DOCUMENTATION	FILE NAME	DATE
Zebra Native Java SDK on Windows 7 Zebra Native Java SDK on Windows 10	Zebra-FXSeries-Embedded-Java-SDK-UserGuide_Windows.docx	Zebra-FXSeries-Embedded-SDK-Java-Windows_V1.0.0.zip	06/26/2019
Zebra Java SDK for Linux	Zebra-FXSeries-Embedded-Java-SDK-UserGuide_Linux.docx	Zebra-FXSeries-Embedded-SDK-Java_Linux_V1.0.0.tar.gz ZebraFXSeriesEmbeddedSDKJavaLinux_1.0.0.deb	06/26/2019
Zebra C / CPP SDK for Linux	Zebra-FXSeries-Embedded-C-CPP-SDK-UserGuide_Linux.docx	Zebra-FXSeries-Embedded-SDK-C-CPP_Linux_V1.0.0.tar.gz ZebraFXSeriesEmbeddedSDKCCPPLinux_1.0.0.deb	06/26/2019

Installation Instructions

There are multiple supported ways to upgrade the FX Series RFID readers.

Method 1 – USB Flash Drive:

<u>This is the recommended method</u>. Unzip images and copy to a USB drive. Connect USB drive to the FX Series reader. Upgrade will automatically start in 7-10 seconds.

Method 2 – 123RFID Desktop:

Zebra 123RFID Desktop utility can be used to update the firmware on FX Series readers using a simple and intuitive 3 step process.

Latest 123RFID Desktop can be downloaded from

https://www.zebra.com/us/en/support-downloads/software/utilities/123rfid.html

Refer the video for help on updating the reader firmware using 123RFID Desktop

https://www.youtube.com/watch?v=NNDBPghjOg8&list=PLrcZVTwQp0ldXdysFQHwql9FyoBNuApfM&index=5&t=0s

Method 3 – Web Interface:

Copy images to local drive of PC, log in to the reader, select 'File based upgrade' on reader upgrade webpage, Enter username and password of reader. Select image to upgrade from local PC. 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 4 – FTP Server:

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 V3.1.12 with respect to V3.0.35

- Added support "Auto Start" in serial port "Push Data" mode for FX9600
- Added support for "Egypt" regulatory in FX9600 as per the regulatory spec below.

Country	Frequency Band	Technique	Technical Notes

			4 Channels NO LBT	100mW ERP channels (865.7; 866.3. 866.9; 867.5MHz)
Egypt		865 - 868MHz		

- Addition to optimize the connect to radio on radio power on. Also changed the default value of "Idle Mode Timeout" to 10 seconds instead of 0.
- Support changing the password using web console for rfidadm user
- Addressed issue wherein PoE+ adapter wrongly identified as POE
- Changes to fix the issue of Domain Name Server not taking effect when the reader is configured for Static IP.
- Added mechanism to stop operation and restart radio if timeout in receiving packet from Radio. This addresses the "Radio Busy" issue that was seen when starting inventory.
- Changes to stop inventory with FX Connect when a trial license expires.
- Fixed issue of repeated error messages (auth.err getty[10010]: can't open '/dev/console': No such device) appearing in syslog when the serial port is configured as "Free Port".

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	2.6.7 or earlier to 3.1.12	2-step upgrade	Supported	Supported
	2.7.19 to 3.1.12	Supported	Supported	Supported
	Downgrade			
	3.1.12 to 2.6.7 or earlier	2-step downgrade	Supported	Supported
	3.1.12 to 2.7.19	Supported	Supported	Supported
FX9600	Upgrade	File-Based Update	FTP-Based Update	USB-Based Update
	2.6.7 or earlier to 3.1.12	2-step upgrade	Supported	Supported
	2.7.19 to 3.1.12	Supported	Supported	Supported
	Downgrade			
	3.1.12 to 2.6.7 or earlier	2-step downgrade	Supported	Supported
	3.1.12 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 3.1.12

2-step downgrade: Use file-based method to downgrade to 2.7.19 and then to downgrade to 2.6.7 or earlier

- If reader is upgraded/downgraded from/to any other version prior to 3.1.12, 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 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.
- RFSurvery 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.