ATR7000 2.15.19 Release Notes

This document summarizes the following firmware releases:

Firmware Release Number	Release Date	See page
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ATR7000 V2.15.19

RELEASE DATE: 26-February-2020

ATR7000 is a powerful EPC Gen-2 compliant overhead reader that can create electronically steerable beams. It is a Linux based device driven by a new and powerful RFID engine that enables users to integrate RFID into their business logic and applications with great ease and high efficiency.

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

Contents of the release package:

IMAGE TYPE	VERSION	FILE NAME	DATE
RM Server LLRP Server	2.15.19.0 2.15.19.0	platform_2.15.19.0.tar.gz	02/26/2020
X-Loader	4.0.0.0	x-load_4.0.0.bin.ift	06/18/2019
U-Boot	201.0.16.0	u-boot_201.0.16.0.bin	06/18/2019
Operating System	201.2.19.0	uImage_201.2.19.0	06/18/2019
Root FS	201.0.14.0	rootfs_201.0.14.0.jffs2	12/22/2019
OsUpdate Utility	1.0.0	osupdate.elf	02/26/2020
Response	N/A	response.txt	02/26/2020
RFID3 CAPI DLL	5.5.3.2	rfidapi32.so	08/08/2019
RFID3 JNI DLL	1.4.0.33	librfidapi32jni	07/08/2019
RFID3 Java API	1.4.0.33	Symbol.RFID.API3.jar	07/08/2019
Linux Kernel	2.6.32		
Radio Firmware	2.2.23.0	aar2-rev2.2.23.0.ldr	12/16/2019
Radio API	2.2.14.0		11/28/2019

FPGA	1.8.0.0	

Host API release Version Info:

IMAGE TYPE	VERSION	FILE NAME	DATE
RFID3 C API DLL	5.5.3.2	RFIDAPI32PC.DLL	08/08/2019
RFID3 .NET DLL	1.5.3.1	Symbol.RFID3.*.dll	07/16/2019
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

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

Contents of PowerSession folder:

IMAGE TYPE	FILE NAME	REMARKS
PowerSession V0.53.8 Installer	PowerSessionSetup.exe	Also see note below

Note: PowerSession v 0.52 or above will be needed to correctly show up configuration for ATR7000 reader running reader software version 2.14.11 or above due to the model name change in reader software from AAR to ATR7000

Installation Requirements

Installation Instructions

There are multiple supported ways to upgrade the ATR7000RFID reader

Method 1:

Download and copy the software package to the local drive of a PC. Log in to the reader and select 'File based upgrade' on the reader upgrade webpage. Enter the username and password of the reader. Browse and select the image to upgrade from your local PC. Click 'Start upgrade'

Method 2:

Download and copy images to an FTP server. Navigate to the reader upgrade webpage and select 'FTP upgrade' option. Enter the username and password of the FTP server. Click 'Start upgrade'.

✓ An FTP/SCP or FTPS server can be used to host images to upgrade the readers.

Method 3 – Using PowerSession

The PowerSession demo application can also be used to upgrade multiple ATR7000 readers with a single operation. Please refer to the RFID Demo Application Guide for detailed upgrade procedures.

HARDWARE REQUIREMENTS

- ATR7000 US SKU
- ATR7000 900 MHz SKU

ENHANCEMENTS / CHANGES in 2.15.19 Over 2.14.32

1. Includes Radio firmware 2.2.23 with improved location estimate.
2. Addition of Health & Monitoring APIs to get health status of the components in ATR7000.
3. ATR additions to work with Switches that support LLDP negotiation for POE+. This also includes the ATR7000 changes to acquire power up to 22.9W from a POE+ compatible switch
4. Added support in DHCP client configuration to work with DHCP servers that don't report DNS server information
5. Support for following regulatory regions on ATR 900 MHz SKU
   Argentina
   Australia
   Brazil
   China
   Hong Kong
   Korea
   Malaysia
   Mexico
   New Zealand
   Philippines
   Singapore
   Thailand
6. Security Enhancements to support newer user trfidadm for CLAS applications.
7. Support for Mandatory signature validation for trusted apps, to be executed in the context of trfidadm user
8. Support for MQTT client library in ATR7000
9. Auto recovery attempt on radio communication failure and light RED led on unrecoverable radio communication errors.
10. Removed Java applet dependencies and added web console support for latest IE, Chrome and FireFox browsers.
    a. ReadTags along with enhancements to ReadTags Page
    b. File based firmware update
    c. User Application deployment
    d. SysLog
    e. Profiles Page
11. RFID3 C API additions to support enhanced functionality:
    Get LLRP client Connect status and the connected client IP Address
    Get / Set NTP Config
    Get / Set Network Config
    Get / Set Wireless Config

Get the current state of antenna connection
Get the alarm statistics for various reader alarms as part of RFID_GetReaderStats
Get the Reader temperature

12. Added flash bad block handling during system start up.
13. Added guards to reject firmware update operation when firmware meant for different reader family is accidentally used.
14. Added support for Microsoft Edge on Windows 10
15. Added support for Safari browser on MAC

POWERSESSION CHANGES in 0.53.8

1. Tag Reads window display enhancements to show read results from all beams
2. Allow debug beams 400-413 to be specified in 'Antenna Sequence'
3. Only the enabled beams in settings page will be displayed in tag reads page
4. Bug fixes to periodic read status logging to file

ISSUES CORRECTED

• None

ADDITIONAL NOTES

Summary of major issues and limitations are listed below.

1. If POE power negotiation is turned off in web console, LLDP power negotiation will not be performed. It may be noted that older version of ATR software prior to 2.15.12 had power negotiation turned off. If ATRs are updated to 2.15.12 from any of the older versions, as reader configurations are migrated and reused, power negotiation will not be enabled by default. User need to either reset readers to factory default settings or explicitly turn on Power Negotiation from 'Configure Reader' link in Web Console.

2. Power negotiation requires ATRs to be connected to PoE+ compliant switch and switch to be configured with power negotiation via LLDP enabled. If switch ports are configured to supply PoE+ power levels and power negotiation is disabled in the switch, ATRs need to be configured to turn off power negotiation. Else ATR will attempt power negotiation and as switch will not respond to negotiation attempt, ATR will assume failure to negotiate power and reader operator will not be allowed to run radio operations.

3. Maximum power configured for each port on the switch should account for power losses on the connectors, CATx cable used and its length. Typically, 4.5 W/port of loss is normal. As such, configuration for maximum power per port typically needs to be around 27.4 W such that request from the ATR for 22.9W of power can succeed

4. Power negotiation is not possible with PoE Injectors. If ATR is powered over PoE injectors, user need to ensure PoE injector is rated to supply 22.9 W at a minimum.

5. When reader web console is set to secure HTTP mode, 'Read Tags' reader operation demonstration page in web console wont be loaded in some of the browsers (latest Firefox and

Internet Explorer) unless trusted certificates are used on the reader or default self-signed certificate is trusted by the browser.

6. File based update cannot be used to downgrade the ATR7000 to firmware versions 2.14.32 or below. Only upgrades to further versions of ATR7000 can be performed using "File based update".

7. Regular inventory operations fail after RFSurvey is performed. Reader needs to be restarted to restore regular operation.

8. Autonomous mode and RSSI filters are not supported.

9. Performing changes in the reader and committing the same while LLRP is upgrading the Radio firmware can cause LLRP to shutdown and not start back. To confirm readers are operational after an update, please check the version page to confirm 'Radio firmware version' shows up with values matching image version number table above.

Differences with FXSERIES Readers

ATR7000 RM / Web console differences

ATR7000 web console does not support the following web pages (when compared to FX7500)

1. Wireless config is not supported

Number of Antenna's (beams) exposed in ATR7000

ATR7000 exposes 480 antenna's as part of the capability. However, with the current ATR7000 firmware only the following beams are supported

- Beams 101-197
- Beams 201-297
- Beams 301-397

Beams other than the above do not result in Tag reads. These are left unused for future use and will provide appropriate error in a subsequent release.