

ATR7000 2.16.29 Release Notes

This document summarizes the following firmware releases:

Firmware Release Number	Release Date	See page
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ATR7000 V2.16.29

RELEASE DATE: 02-March-2021

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 issue.

Contents of the release package:

IMAGE TYPE	VERSION	FILE NAME	DATE
RM Server	2.16.29.0	platform_2.16.29.0.tar.gz	03/02/2021
LLRP Server	2.16.29.0		
X-Loader	4.0.0.0	x-load_4.0.0.bin.ift	07/06/2020
U-Boot	201.0.17.0	u-boot_201.0.17.0.bin	07/06/2020
Operating System	201.2.19.0	ulmage_201.2.19.0	07/06/2020
Root FS	201.1.0.0	rootfs_201.1.0.0.jffs2	07/06/2020
OsUpdate Utility	1.0.0	osupdate.elf	02/80/2021
Response	N/A	response.txt	03/02/2021
RFID3 CAPI DLL	5.5.3.6	rfidapi32.so	03/02/2021
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	2.2.25.0	aar2-rev2.2.25.0.ldr	03/02/2021

Radio API	2.2.20.0	03/02/2021
FPGA	1.8.0.0	

Host API release Version Info:

IMAGE TYPE	VERSION	FILE NAME	DATE
RFID3 C API DLL	5.5.3.6	RFIDAPI32PC.DLL	03/02/2021
RFID3 .NET DLL	1.5.3.5	Symbol.RFID3.*.dll	03/02/2021
RFID3 Java JNI DLL	1.4.0.33	RFIDAPI3_JNI_HOST.dll	05/22/2019
RFID3 Java API	1.4.0.33	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 V0.59.8 Installer	PowerSessionSetup.exe	Also see note below

Note:

1. 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
2. Portal directionality demo support is available only in PowerSession version 0.56.1 (and later)

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 WR SKU

ENHANCEMENTS / CHANGES in 2.16.29 with respect to 2.16.21

1. Changes and fixes for robust LLDP Negotiation ensuring that the reader completes the negotiation completely as required by the protocol.
2. Addition of optional parameters in the LLDP packets to support the following TLV's
 - System Name
 - System Description
 - System Capabilities
 - Management Address
 - Port Description

ENHANCEMENTS / CHANGES in 2.16.21 with respect to 2.15.19

1. Support for Standard ATR7000 SKU (ATR7000-S2100A0-XX) and Premium ATR7000 SKU's (ATR7000-P1100A0-XX, ATR7000-P2100A0-XX)
2. Additions to display the ATR7000 part number in the reader web console home page
3. ATR7000 support to allow CLAS application to run only on the Premium SKU.
4. Support for Zone reporting capability over LLRP for Portal Directionality (PD).
5. Power Session Enhancements to configuration of the Portal Directionality and for visualizing zone transition for either 4 zone or 6 zone within the Power session.
6. Include radio firmware V2.2.25.0 supporting tag location reporting, utilized by Portal directionality implementation, and CLAS usage as well.
7. Support for Thailand SKU
8. Enhancements to allow robust firmware upgrade when used with CLAS in batch mode to update multiple readers.

ADDITIONAL NOTES

Summary of major issues and limitations are listed below.

1. Some of the switches do not respond back to the reader power negotiation request if there is no change in the requested power from the reader. Thus, the reader will consider negotiation is successful only at startup. If the LLDP negotiation setting is changed (Off to on) at run time reader will show power negotiation as failed. In these cases, it is recommended to restart the reader on changing the Power Negotiation Configuration.
2. 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 2.15.14 had power negotiation turned off. If ATRs are updated to 2.15.14 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.
3. 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.
4. 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 30 W such that request from the ATR for 25.4W of power can succeed
5. 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 25.4 W at a minimum.
6. When reader web console is set to secure HTTP mode, 'Read Tags' reader operation demonstration page in web console won't 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.
7. 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".
8. Regular inventory operations fail after RFSurvey is performed. Reader needs to be restarted to restore regular operation.
9. Autonomous mode and RSSI filters are not supported.
10. 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.

11. Moderated Timeout for Portal Directionality Events (Zone Entry, Exit or Transition Events) needs to be atleast 5 seconds or above for the moderation to take effect.

ISSUES CORRECTED

- Higher CPU Usage by RM Server due to reader in promiscuous mode and there is increased network packets.

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 and Bluetooth 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.