Octane 5.2.1 Release Notes

About this Release

This is the Octane 5.2.1 firmware release for the Impinj RAIN RFID Readers (Speedway® Revolution R220 and R420) and Gateways (xPortal R640 and xArray R680). Octane 5.2.1 is not supported on Speedway IPJ-R1000 readers.

For technical support, contact Impinj:

Email: support@impinj.com   Telephone: 866-IMPINJ-0 (866-467-4650)

Web: http://support.impinj.com

Supported Regions of Operation

Impinj has been certified or is in the process of gaining regulatory certification in all of the listed regions. Please contact your Impinj account executive or reseller for the latest certification status and availability.

Model / SKU	Region
IPJ-REV-R420-USA IPJ-REV-R220-USA IPJ-REV-R640-FCC IPJ-REV-R680-USA	FCC, Canada, Mexico
IPJ-REV-R420-EU1 IPJ-REV-R220-EU1 IPJ-REV-R640-EU1 IPJ-REV-R680-EU1	ETSI, India (Note – R680, ETSI only)
IPJ-REV-R420-GX1 IPJ-REV-R220-GX1 IPJ-REV-R640-GX1	Australia, Brazil, Hong Kong, Indonesia, Latin America, Malaysia, New Zealand, Peru, Philippines, Singapore, Taiwan, Thailand, Uruguay, Vietnam
IPJ-REV-R420-GX2 IPJ-REV-R220-GX2	China, Korea, South Africa
IPJ-REV-R420-JPN IPJ-REV-R420-JP2 IPJ-REV-R680-JP2	Japan (956MHz) Japan (920MHz) Japan (920MHz)

Application and Document Compatibility

Application	Minimum Version	Current Version
Octane SDK libraries (.NET)	1.0.0	2.2.0
Octane SDK libraries (Java)	1.0.0 beta	1.0.0 beta
LLRP Toolkit libraries (C, C++, .NET, Java)	10.12.0	10.18.1
Impinj LLRP Vendor Extension Definitions for LLRP Toolkit	1.20	1.20
Octane Embedded Development Tools	5.2.0	5.2.0
Impinj MultiReader (R680 not supported)	6.6.2	6.6.11
Impinj ItemTest	1.0.0	1.0.0

Document	Version
Speedway Installation and Operations Manual	5.2.0
xArray Installation and Operations Manual	5.2.0
Firmware Upgrade Reference Manual	5.2.0
RShell Reference Manual	5.2.0
Octane SNMP	5.2.0
Octane LLRP	5.2.0
LTK Programmers Guide	5.2.0
Embedded Developers Guide	5.2.0

New Features and Changes

Octane 5.2.1

- Addresses Shell Shock vulnerability
- Support for wide area monitoring (WAM) and locationing roles on xArray (R680)
- xArray tilt sensor updates are disabled while a location spec is running
- xArray LED updates are disabled while a location spec is running; if application makes an LLRP connection and immediately starts a ROSpec, the LED may become disabled before changing the LLRP connection LED to solid. Under normal circumstances when an application establishes an LLRP connection, the Octane firmware will set the LLRP connection status LED to solid and then when a ROSpec is started, it disables control of the LEDs before starting the ROSpec. If the connection and ROSpec happen quickly one after the other, the LLRP connection status may remain in a blinking state.
- ReportIntervalSeconds moved from ImpinjLocationReporting to ImpinjLocationConfig and renamed to UpdateIntervalSeconds.
- MotionWindowSeconds renamed to ComputeWindowSeconds

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- If GET_REPORT command is issued when location role is active, we do not recompute the location estimates (xArray returns last computed location for all tags).
- ComputeWindowSeconds and TagAgeIntervalSeconds parameters are 16-bit values now
- xArray maximum tag counts are now dependent on mode:
  - Mode 0: 128 tags
  - Mode 1: 256 tags
  - Mode 2: 1024 tags
  - Mode 3: 2048 tags
  - Mode 4: 512 tags
  - Mode 1000: 256 tags
  - Mode 1002: 2048 tags
- The host name for xArray (R680) is now xarray-xx-xx-xx
- TimeStampUTC in location reports has been renamed to LastSeenTimestampUTC.
- xArray location role returns empty report when GET_REPORT issued with no tags; this used to do nothing in prior firmware versions
- xArray location role forces Tx power to max value in all cases, even if set to lower power in SET_READER_CONFIG

Octane 4.12.0

- Improved reader network discovery; reader will now attempt to set itself to a known IP address (169.254.1.1) when DHCP fails rather than picking a random IP address; in small networks which lack a DHCP server or when directly connecting to the reader from your computer, the reader will set itself to a link local address of 169.254.1.1.
- Peru regulatory region added to GX1 reader.
- Added ability to enable and disable the following network services via RShell:
  - FTP
  - SSH
  - HTTP
  - Telnet
  - NTP
- Telnet is now disabled by default on the reader; this can be enabled through RShell interface.

Octane 4.10.6

- No new features for this release.

Octane 4.10.4

- Increased the transmit power from 30dBm to 31.5dBm on FCC units when Antenna Hub environment is enabled. This enhancement is available for use in USA and Mexico only. A feature key is provided by Impinj to unlock this feature.
- Removed the feature key requirement for use with Sierra Wireless cellular modems, enabling operation with the newest compatible Sierra Wireless GX400 modem.

Octane 4.10.0

- Added support to easily deploy a Speedway Revolution R420 reader with Speedway Antenna Hubs. The Speedway Antenna Hub enables up to 32 antennas to be connected to a single reader, and the Octane 4.10 firmware provides Web UI, RShell, LLRP and SNMP support for this feature.
- Added new Latin America region to the WebUI region pull-down menu, and RShell region configuration options on the GX1 readers. This region supports countries in Latin America that have not, or are in the process of allocating RF band, and those that have synchronized to the US

RF plan for UHF RFID. At the time of release, these countries include the following. This list will change without notice.

Argentina
Chile
Colombia
Costa Rica
Dominican Republic
El Salvador
Guatemala
Honduras
Jamaica
Mexico
Nicaragua
Panama
Paraguay
Puerto Rico
Trinidad & Tobago

- Added support for Gen 2 UHF RFID support in 916 – 920 MHz band that runs on the JP2 reader hardware, IPJ-REV-R420-JP21M1. This change supports the RF band reorganization as published by Japan's regulatory agency for radio communications, which take effect on July 25, 2012.

Resolved Issues

Octane 5.2.0

- Fixed issue where Java LTK AntennaEvent.getAntennaID() reports an incorrect Antenna ID
- Fixed condition where Peru region was rejected by SET_READER_CONFIG
- Fixed issue causing NTP data for static servers being deleted in RShell
- Reader web UI updated with correct ETSI standard 302 208 v1.4.1 NOT 302 208 v1.2.1.

Octane 4.12.0

- Fixed condition where certain standard library functions (libc) were failing for on-reader applications using LTKCPP.
- Fixed issue causing Speedway Connect "keyboard emulation" function to stop working correctly

Octane 4.10.6

- Fixed condition where OpSpec returns "Success" when not writing all the requested data
- Corrected syslog error "mDNSResponder: ERROR: getOptRdata – unknown opt 4"
- Corrected SNMP errors in syslog for antModuleTable
- Disabled SSHv1 on reader
- Reader no longer truncates EPC during inventory under certain memory configurations

Octane 4.10.4

- Added current Impinj EULA information to Speedway Revolution WebUI

Octane 4.10.2

- New Japan (JP2) reader does not support manual "Channel_list" mode
- WebUI inaccurately showed an active "Connections" link when Antenna Hub is disabled
- WebUI was missing Brazil region in the R220 GX1 drop down menu
- 3rd Party licenses information is not available from WebUI

Octane 4.10.0

- Lower 11 bits of PC word are set to zero when FastID is used.

- OpSpec returns "Success" when not writing all the requested data.
- Added LLRP mode 5, labeled Dense Reader (M=4) 2 mode, support for China, India, Japan, Korea, and South Africa regions. Mode 5 has a faster R->T data rate than LLRP mode 4 (Max Miller), and matches the LLRP mode 1 (Hybrid mode) used in Octane 4.6.

Known Issues

- If reader is networked via USB Wi-Fi adapters, tag reads will be delayed due to packet loss
- C1G2 read with length=0 is not supported
- When firmware upgrades are performed using a metafile, if retrieve-period is set to less than 5 minutes, firmware upgrade may fail
- NTP data for static servers may return only alias; for NTP servers like time.nist.gov, getHostByName is only returning one address, and which one it returns seems to be non-deterministic.
- Sending a GET_READER_CONFIG with "All Capabilities" causes a memory leak in Speedway Readers (R220/R420) and xPortal (R640). There is no memory leak in xArray.
- Reader may stop working when attempting blockWrite of 32 words and 8 OpSpecs without specifying ImpinjBlockWriteWordCount.
- Reader may stop working when executing a ROSpec with one AccessSpec and 16 OpSpecs in 1 AccessCommand.
- Broadcast UDP snmp messages are not being sent from the reader.
- Antenna Hub WebUI misaligned port numbers rendered in the image when using Chrome.
- GPS coordinates reported in Rshell from cellular modem is incorrect, and do not match the correct coordinates reported via LLRP.
- The show image summary command in LastOperationStatus field returns with a typo, "LastOperationStatus='couldn"""t connect to host".
- Applying a ROSpec with multiple AISpecs may cause reader to reboot.
- Manually applying a VAR region upgrade (.upg) using the WebUI causes the browser to lose HTTP connectivity. Workaround – use region dropdowns in WebUI or Rshell for region upgrades with .upg file.
- Firmware downgrades to a version earlier than region is supported will cause the reader to revert to a state with no region assigned and the reader does not operate.
- If a reader is assigned a hostname from DHCP and then not assigned a host name when the DHCP lease is renewed, the assigned hostname will be used until the reader is rebooted and the original default hostname (e.g. speedwayr-xx-xx-xx) is used.

Notices:

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