Release Notes

PTX2xxR/W Reader Universal Library (RUL) SDK v1.2.0

SW-NFC2K-RUL-001

Abstract

This document contains the release notes for the Renesas PTX2xxR/W Reader Universal Library (RUL) Software Development Kit, version 1.2.0

Contents

Tables

1 Terms and Definitions

GA	General access
LA	Limited access
NFC	Near Field Communication
SDK	Software Development Kit
FW	Firmware
API	Application Programming Interface

2 Release Data

Table 1: Information Table

Software	Software Development Kit (SDK)
Device Number	PTX2xxR/W
Software Release Date	December 12th, 2025
Software Version Number	1.2.0
Software Release Type (Note 1)	FULL (GA)

Note 1 Releases can be of the following types: FULL (GA), FULL (LA), RELEASE CANDIDATE, ENGINEERING, PATCH or BINARY.

3 License

Licenses covering this SDK release are listed in the license.txt file in the SDK doc folder.

4 Related Documentation and References

PTX2xxR/W RUL (Reader Universal Library) SDK User Manual	R35US0015EU0106

5 Release Description

5.1 Version 1.2.0

This is a FULL (GA) release of the RUL SDK for the PTX2xxR/W device supporting all the features listed in section 5.1.1 and – unless otherwise stated – all features from previous SDK releases.

The SDK deliverable itself may also contain (source code) modules which are intended to be released in a future SDK version and are marked either as “Partially” and / or “Not fully verified yet”. Such modules should not be considered for final application development using the current SDK version.

5.1.1 Features of 1.2.0

Table 2: 1.2.0 Features

Feature Number	Description
120_001	Updated E2 Studio Project-files to work with version E2 Studio 2025.07 / FSP 6.1.0
120_002	Supported HAL Reference Implementations: - Renesas RA2E2 MCU: I3C **Attention:** The I3C HAL-driver provided is for reference only!
120_003	Added new compile-switch “ENABLE_EXTENDED_CARD_REGISTER” to enable extended Card-Registry parameters.
120_004	Moved declarations of internal RUL-API functions to newly introduced Header-file “ptx_RUL_Int.h”
120_005	Unified look & usage of C preprocessor defines (e.g. indentation)
120_006	Fixed an issue in T2T NDEF module where Terminator-byte was not correctly written if NDEF-message ended in Block 4.
120_007	Option "ptx_RUL_InfoType_Chip_Device_Type" removed from "ptx_RUL_InfoTypes_t" (used by "ptx_RUL_GetInfo"). - Returned the same information as “ptx_RUL_InfoType_HW_Version” in previous version. - “ptx_RUL_InfoType_HW_Version” shall be used instead.
120_008	Option "ptx_RUL_InfoType_Platform_Revision" added to "ptx_RUL_InfoTypes_t" (used by "ptx_RUL_GetInfo"). - Contains the Git-Hash of code base for internal reference.
120_009	RF Configuration Layout changed to version v41.0
120_010	Implemented prevention for Tx-ESD events for WLC Poller Applications. - Requires one-time calibration via newly introduced RUL-API function “ptx_RUL_CalibrateTxEsdPreventionThreshold”

5.1.2 Known Issues of 1.2.0

An active list of known issues is maintained online:

https://lpccs-docs.renesas.com/PTX2xxX-RUL-SDK-kll-docs/index.html

5.1.3 Known Limitations of 1.2.0

An active list of known limitations is maintained online:

https://lpccs-docs.renesas.com/PTX2xxX-RUL-SDK-kll-docs/index.html

6 Release History

6.1 Version 1.1.1

This is a FULL (GA) release of the RUL SDK for the PTX2xxR/W device supporting all the features listed in section 5.1.1 and – unless otherwise stated – all features from previous SDK releases.

The SDK deliverable itself may also contain (source code) modules which are intended to be released in a future SDK version and are marked either as “Partially” and / or “Not fully verified yet”. Such modules should not be considered for final application development using the current SDK version.

6.1.1 Features of 1.1.1

Table 3: 1.1.1 Features

Feature Number	Description
111_001	Improved DoxyGen Documentation
111_002	Improved RUL User Manual Documentation
111_003	Minor FW-Updates => see https://lpccs-docs.renesas.com/PTX2xxX-RUL-SDK-kll-docs/index.html

6.1.2 Known Issues of 1.1.1

An active list of known issues is maintained online:

https://lpccs-docs.renesas.com/PTX2xxX-RUL-SDK-kll-docs/index.html

6.1.3 Known Limitations of 1.1.1

An active list of known limitations is maintained online:

https://lpccs-docs.renesas.com/PTX2xxX-RUL-SDK-kll-docs/index.html

6.2 Version 1.1.0

This is an ENGINEERING release of the RUL SDK for the PTX2xxR/W device supporting all the features listed in section 6.2.1.

The SDK deliverable itself may also contain (source code) modules which are intended to be released in a future SDK version and are marked either as “Partially” and / or “Not fully verified yet”. Such modules should not be considered for final application development using the current SDK version.

6.2.1 Features of 1.1.0

Table 4: 1.1.0 Features

Feature Number	Description
110_001	Supported Add-On APIs: - NFC Forum Logical Link Control Protocol (LLCP) Target API - NFC Forum Simple NDEF Exchange Protocol (SNEP) Target API - NFC Forum Wireless Charging Poller API o Incl. Support for Multi-Poller Instantiation (Sequential Processing) - Apple ECP “Enhanced Contactless Polling” o Feature only available for customers with Apple formal authorization
110_002	Supported NFC Forum Poll Mode Technologies: - P2P-ACM
110_003	Supported NFC Forum Listen Mode Technologies: - A, B, F, P2P-ACM
110_004	Supported NFC Forum Listen Mode Protocols: - T3T, T4T (ISO-DEP), NFC-DEP
110_005	Supported EMV PCD 3.2 Poll Mode Technologies: - A / B / F (optional)
110_006	Supported EMV PCD 3.2 Poll Mode Protocols: - T4T / ISO-DEP
110_007	Supported EMV PICC 3.1 Listen Mode Technologies: - A / B
110_008	Supported EMV PICC 3.1 Listen Mode Protocols: - T4T / ISO-DEP
110_009	Additionally supported ISO PCD Poll Mode Technologies: - A / B
110_010	Additionally supported ISO PCD Poll Mode Protocols: - T4T / ISO-DEP
110_011	Additionally supported ISO PICC Listen Mode Technologies: - A / B
110_012	Additionally supported ISO PICC Listen Mode Protocols: - T4T / ISO-DEP
110_013	Additionally supported System Features: - Improved LPCD (Low Power Card Detection) Current Consumption - External Clock-Request

6.2.2 Known Issues of 1.1.0

An active list of known issues is maintained online:

https://lpccs-docs.renesas.com/PTX2xxX-RUL-SDK-kll-docs/index.html

6.2.3 Known Limitations of 1.1.0

An active list of known limitations is maintained online:

https://lpccs-docs.renesas.com/PTX2xxX-RUL-SDK-kll-docs/index.html

6.3 Version 1.0.0

This is a FULL (LA) release of the RUL SDK for the PTX2xxR/W device supporting all the features listed in section 6.3.1

The SDK deliverable itself may also contain (source code) modules which are intended to be released in a future SDK version and are marked either as “Partially” and / or “Not fully verified yet”. Such modules should not be considered for final application development using the current SDK version.

6.3.1 Features of 1.0.0

Table 5: 1.0.0 Features

Feature Number	Description
100_001	Initial version of RUL API (= Main Application API)
100_002	Supported Add-On APIs: - Native Tag API (T2T, T3T, T4T, T5T) - NDEF Operation API (T2T, T3T, T4T, T5T) - NDEF Record / Message Helper API - Mifare Classic Compatibility Mode (MFCC) API - NFC Forum Logical Link Control Protocol (LLCP) Initiator API - NFC Forum Simple NDEF Exchange Protocol (SNEP) Initiator API - RF-Test API - Transparent Mode API - EMV / POS DTE API - NFC Forum DTA API - FeliCa DTE API
100_003	Supported RF-Discover (Polling Loop) Schemes: - NFC Forum, EMVCo, ISO
100_004	Supported NFC Forum Poll Mode Technologies: - A / B / F / V
100_005	Supported NFC Forum Poll Mode Protocols: - T2T, T3T, T4T (ISO-DEP), T5T, NFC-DEP
100_006	Supported EMV PCD 3.1a Poll Mode Technologies: - A / B / F (optional)
100_007	Supported EMV PCD 3.1a Poll Mode Protocols: - T4T / ISO-DEP
100_008	Supported ISO PCD Poll Mode Technologies: - A / B
100_009	Supported ISO PCD Poll Mode Protocols: - T4T / ISO-DEP
100_010	Supported System Features: - LPCD (Low Power Card Detection) - DDPC (Dynamic Digital Power Control) - RSSI (Received Signal Strength Indication) - Stand-by Mode + Wake-up Sources: Timer, Host Interface - Over-Temperature Protection - Over-Current Protection
100_011	Supported HAL Reference Implementations:

Feature Number	Description
	- Renesas RA4M2 MCU: SPI, UART, I2C - Linux (Native, Raspberry-Pi): SPI, UART, I2C - Windows (Native, FTDI): SPI, UART, I2C
100_012	Supported LOG Reference Implementation: - Serial / UART - File - Console
100_013	Partially / Not fully verified yet: - NFC Forum Listen Mode Technologies: A / B F / Active Mode (ACM) - EMV PICC Technologies 3.1a: A / B - ISO PICC Technologies: A / B - Logical Link Control Protocol (LLCP) Target API - Simple NDEF Exchange Protocol (SNEP) Target API - NFC Forum Wireless Charging Poller

6.3.2 Known Issues of 1.0.0

An active list of known issues is maintained online:

https://lpccs-docs.renesas.com/PTX2xxX-RUL-SDK-kll-docs/index.html

6.3.3 Known Limitations of 1.0.0

An active list of known limitations is maintained online:

https://lpccs-docs.renesas.com/PTX2xxX-RUL-SDK-kll-docs/index.html

Appendix A Software Versioning Rules

This describes the software version numbers and does not apply to documentation version numbers (as found in the footer of this document).

Each software version number string consists of four numbers: MAJOR. BRANCH. MINOR. and BUILD.

#MAJOR: It is increased (by one only) if the project undergoes a major modification, for example, major ROM changes. It usually changes only when the project sources undergo major restructuring affecting most of the repository. It is initialized at 1.

#BRANCH: Used in the case of concurrent projects that for special reasons need to be spun off the major repository. It corresponds to different versions of the repository code that have to be supported concurrently. In this case, each branch number corresponds to a different GIT branch. The basic project has BRANCH id 0.

#MINOR: Odd numbers indicate Engineering (or Patch or Binary) versions, and even numbers indicate Full release versions or Release Candidates of Full versions. Each Full release increases this number by one. After the Full release, the number is increased by one again. Therefore, Project releases correspond to release numbers like 2.0.1.xxx, 2.0.2.xxx, and so forth. The #MINOR number is initialized at 1.

#BUILD: The # BUILD number increases by one at every repository update and thus indicates the total number of changes since repository initialization. The BUILD number is initialized at 1.

Document Revision History

This section summarizes the changes made to this document and not to the Software that this document describes.

Revision	Date	Description
1.1.1	27-Jun-2025	Added SDK Release Version 1.1.1
1.1.0	05-Jun-2025	Added SDK Release Version 1.1.0
1.0.0	13-Dec-2024	Initial Release
This is the first release of this document.		

Status Definitions

Status	Definition
DRAFT	The content of this document is under review and subject to formal approval, which may result in modifications or additions.
APPROVED or unmarked	The content of this document has been approved for publication.

RoHS Compliance

Renesas' suppliers certify that its products are in compliance with the requirements of Directive 2011/65/EU of the European Parliament on the restriction of the use of certain hazardous substances in electrical and electronic equipment. RoHS certificates from our suppliers are available on request.

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