Android SDK
Release Notes

RFID SDK
Ver. 1.24.00

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Change	Date	Description
Ver.1.04.00	2017/11/02	1st Release
Ver.1.05.00	2017/11/10	SDK v1.05.00 Release
Ver.1.09.00	2018/03/09	SDK v1.09.00 Release
Ver.1.11.00	2018/05/07	SDK v1.11.00 Release
Ver.1.13.00	2018/07/30	SDK v1.13.00 Release
Ver.1.13.01	2018/08/22	SDK v1.13.01 Release
Ver.1.13.02	2018/09/10	SDK v1.13.02 Release
Ver.1.13.03	2018/10/01	SDK v1.13.03 Release
Ver.1.14.00	2018/11/08	SDK v1.14.00 Release
Ver.1.15.00	2018/12/26	SDK v1.15.00 Release
Ver.1.15.01	2019/01/14	SDK v1.15.01 Release
Ver.1.16.00	2019/04/05	SDK v1.16.00 Release
Ver.1.16.01	2019/06/10	SDK v1.16.01 Release
Ver.1.16.02	2019/08/13	SDK v1.16.02 Release
Ver.1.16.03	2019/09/27	SDK v1.16.03 Release
Ver.1.17.00	2019/12/25	SDK v1.17.00 Release
Ver.1.17.10	2020/02/24	SDK v1.17.10 Release
Ver.1.17.11	2020/03/13	SDK v1.17.11 Release
Ver.1.18.00	2020/04/13	SDK v1.18.00 Release
Ver.1.19.00	2020/05/29	SDK v1.19.00 Release
Ver.1.20.00	2020/07/10	SDK v1.20.00 Release
Ver.1.20.01	2020/07/22	SDK v1.20.01 Release

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Ver.1.20.02	2020/08/10	SDK v1.20.02 Release
Ver.1.21.00	2021/05/05	SDK v1.21.00 Release
Ver.1.22.00	2021/06/24	SDK v1.22.00 Release
Ver.1.22.01	2021/07/05	SDK v1.22.01 Release
Ver.1.23.00	2021/09/13	SDK v1.23.00 Release
Ver.1.23.01	2021/09/15	SDK v1.23.01 Release
Ver.1.24.00	2022/01/19	SDK v1.24.00 Release

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Table of Contents

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1. Requirements

■ Supported Operating Systems

The requirements for APULSETECH Android SDK are as shown below.

① Windows 7/8/10 or newer recommended
② Ubuntu Linux 14.04 or newer recommended
③ OSX

■ Supported Hardware

① α811 Android handheld reader(local execution)
② ARM 32bit v7a and 64bit v8a architecture-based Android devices
with 5.0 or above(direct connection with **α211, α213**
and remote connection support with **α611, α711, α712** and **α811)**

■ Supported IDE Environments.

① Eclipse Neon for Android Application Developers with Android SDK
② Android Studio 4.1 or newer recommended

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2. Release History

For details about the changes in each release, please refer to the summary of version history.

■ **V1.24.00**

New Features
- Added direct connection support for a RFID reader module by serial interface.

Issue Fixes
- Fixed the abnormal disconnection issue of remote connection while connecting and disconnecting as per each function.
- Changes related to remote manager app.
  - Changed the default setting values for specific customers and devices.

■ **V1.23.01**

New Features

Issue Fixes
- Fixed the wrong packet problem of newly added write command API.
- Improved packet version handling.
- Addressed the issue that the packet version information is not retrieved properly with BLE interface when using remote scanner.

■ **V1.23.00**

New Features
- Added EPCglobal en2V2 command support .

Issue Fixes
- Improved packet compatibility to previous version.
- Applied the lower limit of timeout value to avoid connection timeout issues.
- Minor fixes and improvements.

■ **V1.22.01**

New Features

Issue Fixes
- Addressed the data packet parsing problem of access commands related to remote packet V2.
- Improved Wi-Fi P2P remote device scanning with multiple devices.
- Added sound volume configuration APIs for a remote device.
- Changes related to remote manager app.
  - Improved Wi-Fi P2P remote device scanning with multiple devices.
  - Improved continuous TTS play of device volume and RFID power control.
  - Added beep-unique-only mode support for RFID inventory.
- Minor fixes and improvements.

■ **V1.22.00**

New Features

● Added remote packet V2(partial packet compression) support.

Issue Fixes

● Changes related to remote manager app.
  - Improved multi connection management of Bluetooth BLE.
  - Added remote packet V2(partial packet compression) support.
  - Minor fixes and improvements.
● Minor fixes and improvements.
● Support additional remote connection interfaces.
  - Supported interfaces for remote connection, refer to the below table.

		Remote Manager	Client OS		
			Android	Windows	iOS
Serial		O	X	O	X
USB to Serial		O	O[1]	O	X
USB	Remote	O	O	O	TBD
	HID	O	O	O	O
Bluetooth	BLE	O	O	To be supported[2]	O
	SPP(Socket)	O	O	O	X
WiFi	Socket	O	O	O	O
	P2P(Direct) + Socket	O	O	O	X

∗ Remark
  1. Supported cables refer to the below table.
  2. Compatibility problem of BLE connection control between Android and Windows.

■ **V1.21.00**

New Features

● Added multi-port antenna support.
● Added time zone and time sync. Support.

Issue Fixes

● Improved data handling reliability.
● Added dynamic module mapping support for common function key.
● Added custom authorities support for contents provider.
● Improved APIs and demos for states and function sync of a remote device.
● Changes related to remote manager app.
  - Changed BLE descriptors and improved connection handling for iOS.
  - Added WiFi and BT MAC addresses to remote device information.
  - Improved connection slot management for multiple remote devices.
  - Improved response time to the RFID inventory stop command from a remote device.
  - Added support and debugging modules for iOS USB connection.
  - Added dynamic trigger key support according to the activated function among the barcode scanner and the RFID reader.
  - Improved the reliability of data transfer in HID mode(1200ms idle time before transfer and transfer availablility check).
  - Fixed the data loss issue in RFID single inventory.
  - Added a211, a212 RFID module support.

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- Revised I/O switch handling.
● Improved and fixed misc. things.

■ **V1.20.02**
New Features
● Added history list support for remote devices.

Issue Fixes
● Fixed the connection hang or fail issue if try to connect a searched remote device before device searching finishes completely.
● Changes related to remote manager app.
  - Added OS update function.
  - Disabled TTS notifications for interface connection.
  - Blocked WPS key if WiFi interface is disabled or interface mode is not WiFi mode(supported devices only including α711).
  - Added function key option support for H/W option extension(supported devices only including α711).
  - Added USB HID remote interface option support for H/W option extension.
  - Improved enabled modes and default mode configuration handling depends on the changes of remote interface options in H/W option extension.
  - Added device wake up support from sleep mode when connecting barcode scanner or RFID reader with Bluetooth interface.

■ **V1.20.01**
New Features

Issue Fixes
● Fixed the Null Exception issue of handling Application class name in LocalDBStatusHelper.
● Changed remote manager app not to set system volume with own volume in the standalone device including α811 and etc. (CLI issue).

■ **V1.20.00**
New Features
● Added remote setting event support.
  - Barcode: Currently n/a. Scan mode will be supported in the future if needed.
  - RFID: Currently inventory mode and RF power are supported.
● Applied the changes of α711 I/O switch (Remote Manager).

Issue Fixes
● Fixed the index range problem of the blockWrite API.
● Fixed the inventory fail issue in the RFID demo function if the inventory button is pressed repeatedly.
● Improved effect sound volume (not system volume) control and now it's controlled separately. → Only available in administrator mode.
● Improved the error handling of remote commands.

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■ V1.19.00
New Features
- Added remote device key event support.
- Added sound and vibration support while barcode scan and RFID inventory (Remote Manager).
- Added device name changing support (Remote Manager).

Issue Fixes
- Fixed the operation issues of PermaLock.
- Fixed the overflow issues related to remote packet parameters.
- Improved USB connection handling.
- Improved the display of remote device name.
- Added API annotations.
- Improved the query for local app run state with multiple active local apps (Remote Manager).

■ V1.18.00
New Features
- Added USB charging support for the attached client device by USB interface(supported devices only including α711).
- Fixed the malfunction issue of barcode and RFID when the operation mode is switched from USB mode to USB HID mode after a remote client is connected and disconnected once(supported devices only including α711).
- RFID power control up/down keys act as volume up/down keys while RFID is not activated(supported devices only including α711).

Issue Fixes
- Fixed the mishandling of channel #0 in Korea region.
- Improved barcode scanner and RFID reader connection switching control between local and remote.
- Improved remote packet handling.

■ V1.17.11
New Features

Issue Fixes
- Applied different permission for a contentProvider as per each demo and customer app.

■ V1.17.10
New Features
- Added EM Microelectronics sensor tag support.
- Added barcode scanner and RFID reader connection switching support between local and remote.
- Added contentProvider support to query the execution state of barcode scanner and RFID reader in local and remote.

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Issue Fixes
- Resolved the overflow issue of starting pointer value of the read command in the remote connection (sensor reading issue of Farsense tag).
- Minor issue fixes.

■ V1.17.00
New Features
- Added 2 bytes block write support (NXP tag).
- Added the inventory start event for a remote device.
- Added USB bulk connection (accessory mode) support.
- Added USB HID mode support.

Issue Fixes
- Fixed some structural errors of remote packets.
- Changed the file path of Excel export. /sdcard/TagData/TagList_YYMMDDhhmmss.xls.
- Resolved the Bluetooth device scan issue after waking up from sleep.
- Fixed minor errors and improved performance.
- Support additional remote connection interfaces.
  - Supported interfaces for remote connection, refer to the below table.

		Remote Manager	Client OS		
			Android	Windows	iOS
Serial		O	X	O	X
USB to Serial		O	O[1]	O	X
USB	Remote	O	O	To be supported[3]	TBD
	HID	O	O	To be supported[2]	TBD
Bluetooth	BLE	O	O	To be supported[2]	To be supported
	SPP(Socket)	O	O	O	X
WiFi	Socket	O	O	O	To be supported
	P2P(Direct) + Socket	O	△ Search only. Connection to be supported	O	X

∗ Remark
3. Supported cables refer to the below table.
4. Compatibility problem of BLE connection control between Android and Windows.
5. To be supported by Windows SDK.

■ V1.16.03
New Features
- Added LED tag (N1EDL chip base) support.
- Added tag trace function support to the demo app.
- Added tag block access function support to the demo app.
- Added DRM (Dense Reader Mode) setting support.
- Added tag selection support to Fujitsu APIs.

Issue Fixes
[RFID]

- Fixed the packet parameter error for some remote commands.

■ V1.16.02
New Features
- Added α711 remote connection support.

Issue Fixes
- Fixed the calculation overflow issue related to a few functions.
- Added extra mac error codes for error reporting.

■ V1.16.01
New Features
- Added sensor data to excel export support in the demo app.

Issue Fixes
- Changed the file path of excel export in the demo app.
- Updated SDK documents.

■ V1.16.00
New Features
- Added Farsense sensor tag support.
  - Supported model list

Model	Functions	Tested
Stellar-R	EPC + PTL LED indicator	X
Kineo-RM	EPC + Orientation + PTL LED indicator	X
RMeter-RM	EPC + Resistance + PTL LED indicator	X
Fenix-Vortex-RM	EPC + Temperature + Pressure + PTL LED indicator	X
Fenix-RM	EPC + Temperature + PTL LED indicator	X
Hygro-Fenix-RM	EPC + Humidity + Temperature + PTL LED indicator	X
X5R	EPC + Switch State	X
Titan-R	EPC + Relay State	X
Magneto-RM	EPC + Magnetic + PTL LED indicator	X
CMeter-RM	EPC + Charge + PTL LED indicator	X
Cyclon-RM	EPC + Temperature + Pressure + PTL LED indicator	O

- Added 'Energizing Carrier' option in the demo's read/write function.

Issue Fixes
- Replaced audio effect resources.

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■ V1.15.01
New Features

Issue Fixes
- Improved multi-connection handling of BLE remote connection.
- Improved error handling of remote connection.
- Improved touch control of expanding and collapse for operation setting regions in the demo app.

■ V1.15.00
New Features
- Added heartbeat packet ping and timeout handling for remote connection.
- Added excel export for barcode and tag data.
- Added multi language support for demo apps.
    - Currently supported languages
      English, Korean, Chinese, Japanese.
    - The remaining resources of barcode symbology configuration will be translated in the future release.
- Support additional remote connection interfaces.
    - Supported interfaces for remote connection, refer to the below table.

		Remote Manager	Client OS		
			Android	Windows	iOS
Serial		O	X	O	X
USB to Serial		O	O[1]	O	X
USB	Remote	To be supported[3]	To be supported[3]	To be supported[3]	X
	HID	To be supported[4]	To be supported[4]	To be supported[4]	X
Bluetooth	BLE	O	O	To be supported[2]	To be supported
	SPP(Socket)	O	O	O	X
WiFi	Socket	O	O	O	To be supported
	P2P(Direct) + Socket	O	△ Search only. Connection to be supported	O	X

＊ Remark
6. Supported cables refer to the below table.
7. Compatibility problem of BLE connection control between Android and Windows.
8. Available after the device driver is supported.

- Multiple connection support for device scan and query[1].

		Multiple clients → Device	Multiple devices → Client
Serial		X^2	X^2
USB to Serial		X^2	X^2
Native USB		X^2	X^2
Bluetooth	BLE	O	O
	SPP(Socket)	O	O
WiFi	Socket	O	O

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	P2P(Direct) + Socket	O	O

∗ Remark
1. Multiple connections are only available for device scan and query.
   The multiple connections to function modules including barcode and RFID are not allowed.
2. The single connection only due to its H/W interface limitation.

- Supported baud rates for USB to Serial interface, refer to the below table.

	Supported chip	Supported bps
FTDI	FT231X series	TBD
	FT232R	TBD
Silicon Labs	CP210X series	TBD
Prolific	PL2303	115200, 230400, 460800, 921600
QinHeng	CH340	TBD

Issue Fixes
- Improved error control of the remote connection.
- Changed the default timeout value of remote connection to 40s the same as a heartbeat.
  → In remote scanner settings, select and test proper timeout value.
- Improved big data processing performance of demo apps.
- Applied miscellaneous bug fixes and improvements.

■ V1.14.00
New Features
- Added Fujitsu tag support.
- Support extra inventory information including phase, channel and Monza M4 FastID.
- Support library level filtering for inventory data.
- Support remaining data loading from a remote device.
- Demo app can display extra inventory information including phase, channel and Monza M4 FastID.
- Added sound volume control support.
- Added loading screen for initialization in the demo app.
- The setting region can be hidden or shown by demand in the demo app.
- Added data sort support in the demo app.
- HID demo also supports remote connection with clipboard copy/paste.
- Added HID clipboard demo app.
- Support additional remote connection interfaces.
  - Supported interfaces for remote connection, refer to the below table.

		Remote Manager	Client OS		
			Android	Windows	iOS
Serial		O	X	O	X
USB to Serial		To be supported	O[1]	O	X
Bluetooth	BLE	O	O	To be supported	To be supported
	SPP(Socket)	O	O	To be supported	X
WiFi	Socket	O	O	To be supported	To be supported
	P2P(Direct) + Socket	O	△ Search only. Connection to be supported	To be supported	X

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- multiple connection support for device scan and query[1].

		Multiple clients → Device	Multiple devices → Client
Serial		X^2	X^2
USB to Serial		X^2	X^2
Bluetooth	BLE	△ Supported. But needs improvements.	O
	SPP(Socket)	To be supported	O
WiFi	Socket	To be supported	O
	P2P(Direct) + Socket	X	△ Search only. Connection to be supported.

∗ Remark
  1. Multiple connections are only available for device scan and query.
     The multiple connections to function modules including barcode and RFID are not allowed.
  2. The single connection only due to its H/W interface limitation.

- Supported baud rates for USB to Serial interface, refer to the below table.

	Supported chip	Supported bps
FTDI	FT231X series	TBD
	FT232R	TBD
Silicon Labs	CP210X series	TBD
Prolific	PL2303	115200, 230400, 460800, 921600
QinHeng	CH340	TBD

Issue Fixes
- Resolved the sensor data refresh issue in the sensor tag inventory screen.
- Improved error control of the remote connection.
- Improved search and connection stability of the remote device.
- Fixed binding leaks of HID services.
- Revised sensor data display for RFMicron Magunus S1 and S2 sensor tags.
- Applied miscellaneous bug fixes and improvements.

■ V1.13.03
New Features
- Added RFMicron sensor tag support.
- Added RFMicron sensor tag support in the demo app.

Issue Fixes
- Fixed packet parsing errors.

■ V1.13.02
New Features

Issue Fixes
- Added force reset before connecting the RFID module.

- Adjusted max RF power from 33dBm to 30dBm.
- Added high baudrate support for module serial connection (**OS v1.03 or higher**).
  Before: 115200, 230400
  Current: 115200, 230400, **460800, 921600**
- Removed regulatory region information from the main screen of the demo app.
- Resolved the button link mismatch issue on firmware update dialog.
- Updated audio resources for demo apps.

■ V1.13.01
New Features

Issue Fixes
- Revised BlockPermalock() API.
- Updated Remote Manager app.

■ V1.13.00
New Features
- Added trigger control option to demo app.
- Added multi-event listener support.

Issue Fixes
- Improved tab widget UI for easy visibility.
- Fixed NULL channel information issue.
- Revised application parameter condition of selection criteria.
- Added and removed some APIs.
  - Added: isOperationRunning(), stopOperation()
  - Removed: isInventorying(), stopInventory()
- Adjusted response timeout and improved operation abort control
- Revised settings not to be allowed to change while the operation is running
- Fixed some crash issues of the demo app.
- Resolved a remote response parsing error.

■ V1.11.00
New Features
- Added remote device connection support through serial, BLE and WiFi for RFID reader.

Issue Fixes
- Fixed serial reconnection fail issue while changing baudrate.
- Improved handling of some UI widget controls in demo apps.
- Added extra improvements and fixes.

■ V1.09.00
New Features
- Added some new APIs.
  isInventorying(), getAccessTimeout(), setAccessTimeout(), getRegulatoryRegion(), getInventorySelectionTarget(), setInventorySelectionTarget(), getBaudrate(), setBaudrate()
- Added InvSelectionTarget, Selection constants.

- Renewed demo apps.

Issue Fixes
- Resolved wrong regulatory region display issue.
- Resolved some operating issues related to execution time.
- Renamed some APIs

■ V1.05.00
New Features

Issue Fixes
- Changed some RFID global index order as shown below.

Before	After
... AUSTRALIA = 3 BANGLADESH = 4 BRAZIL = 5 BRUNEI = 6 CHINA = 7 HONGKONG = 8 INDIA = 9 INDONESIA = 10 IRAN = 11 ISRAEL = 12 JAPAN_1 = 13 JAPAN_2 = 14 ...	... CHINA = 3 BANGLADESH = 4 BRAZIL = 5 BRUNEI = 6 AUSTRALIA = 7 JAPAN_1 = 8 JAPAN_2 = 9 HONGKONG = 10 INDIA = 11 INDONESIA = 12 IRAN = 13 ISRAEL = 14 ...

■ V1.04.00
New Features
- First release.

Issue Fixes

3. Customer Support

1) Technical Support

Please visit the APULSETECH website for technical support. You can report your issues and get their answers. Also, you can get all the latest information and updates for products and software.

2) Feedback

Please send us your feedback about APULESTECH products.

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