

# Android SDK

## Release Notes

***RFID SDK***  
***Ver. 1.17.00***



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## Revision History

| Change      | Date       | Description             |
|-------------|------------|-------------------------|
| Ver.1.04.00 | 2017/11/02 | 1 <sup>st</sup> 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    |

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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(remote connection support with α711 and α811)

## ■ Supported IDE Environments.

- ① Eclipse Neon for Android Application Developers with Android SDK
- ② Android Studio 3.5 or newer recommended

## 2. Release History

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

### ■ 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 <sup>1</sup>                                  | O                            | X               |
| USB           | Remote               | O              | O   | To be supported <sup>3</sup> | TBD             |
|               | HID                  | O              | O   | To be supported <sup>2</sup> | TBD             |
| Bluetooth     | BLE                  | O              | O   | To be supported <sup>2</sup> | To be supported |
|               | SPP(Socket)          | O              | O   | O                            | X               |
| WiFi          | Socket               | O              | O   | O                            | To be supported |
|               | P2P(Direct) + Socket | O              | △<br>Search only.<br>Connection to be supported | O                            | X               |

\* Remark

1. Supported cables refer to the below table.
2. Compatibility problem of BLE connection control between Android and Windows.
3. 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.

## ■ 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 <sup>1</sup>                                  | O                            | X               |
| USB           | Remote               | To be supported <sup>3</sup> | To be supported <sup>3</sup>                    | To be supported <sup>3</sup> | X               |
|               | HID                  | To be supported <sup>4</sup> | To be supported <sup>4</sup>                    | To be supported <sup>4</sup> | X               |
| Bluetooth     | BLE                  | O                            | O   | To be supported <sup>2</sup> | To be supported |
|               | SPP(Socket)          | O                            | O   | O                            | X               |
| WiFi          | Socket               | O                            | O   | O                            | To be supported |
|               | P2P(Direct) + Socket | O                            | △<br>Search only.<br>Connection to be supported | O                            | X               |

\* Remark

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

- Multiple connection support for device scan and query<sup>1</sup>.

|               |             | Multiple clients → Device | Multiple devices → Client |
|---------------|-------------|---------------------------|---------------------------|
| Serial        |             | X <sup>2</sup>            | X <sup>2</sup>            |
| USB to Serial |             | X <sup>2</sup>            | X <sup>2</sup>            |
| Native USB    |             | X <sup>2</sup>            | X <sup>2</sup>            |
| Bluetooth     | BLE         | O                         | O                         |
|               | SPP(Socket) | O                         | O                         |
| WiFi          | Socket      | O                         | O                         |



|  |                      |   |   |
|--|----------------------|---|---|
|  | 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 <sup>1</sup>                                  | O               | X               |
| Bluetooth     | BLE                  | O               | O   | To be supported | To be supported |
|               | SPP(Socket)          | O               | O   | To be supported | X               |
|               | Socket               | O               | O   | To be supported | To be supported |
| WiFi          | P2P(Direct) + Socket | O               | △<br>Search only.<br>Connection to be supported | To be supported | X               |

\* Remark

1. Supported cables refer to the below table.

- multiple connection support for device scan and query<sup>1</sup>.

|               |                      | Multiple clients → Device               | Multiple devices → Client                        |
|---------------|----------------------|---|--|
| Serial        |                      | X <sup>2</sup>                          | X <sup>2</sup>                                   |
| USB to Serial |                      | X <sup>2</sup>                          | X <sup>2</sup>                                   |
| Bluetooth     | BLE                  | Δ<br>Supported. But needs improvements. | O  |
|               | SPP(Socket)          | To be supported                         | O  |
| WiFi          | Socket               | To be supported                         | O  |
|               | P2P(Direct) + Socket | X                                       | Δ<br>Search only.<br>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(), getInventorySel

- `ectionTarget()`, `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  | CHINA = 3      |
| BANGLADESH = 4 | BANGLADESH = 4 |
| BRAZIL = 5     | BRAZIL = 5     |
| BRUNEI = 6     | BRUNEI = 6     |
| CHINA = 7      | AUSTRALIA = 7  |
| HONGKONG = 8   | JAPAN_1 = 8    |
| INDIA = 9      | JAPAN_2 = 9    |
| INDONESIA = 10 | HONGKONG = 10  |
| IRAN = 11      | INDIA = 11     |
| ISRAEL = 12    | INDONESIA = 12 |
| JAPAN_1 = 13   | IRAN = 13      |
| JAPAN_2 = 14   | 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 APULSETECH products.