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SUNMI RKI SDK Development Document

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## 1. Revision History

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Doc Version | Release | Changes | The appropriate SDK version |  |
| 1.0.0 | 2023/10/17 | downloadKey  queryKeyList | v1.0.1 |  |
| 1.0.2 | 2024/1/5 | add mode for downloadKey,queryKeyList api | v1.0.2 |  |
| 1.0.3 | 2024/9/5 | added RKI server error codes | v.1.0.3 |  |

## 2. Abstract

### 2.1 Introduction

SunmiRKISDK is a set of interface which is based on firmware encapsulation and is close to Java developer to call hardware. Through this SDK, developer can quickly call the corresponding firmware interface of Sunmi financial instruments and realize the development of its own business logic.

This document is the SunmiRKISDK interface documentation.

### 2.2 SDK Integration

#### 2.2.1 Quick integration

1. This document is an integrated development guide for the SUNMI’s POS. To guide the use method of SDK

|  |
| --- |
| repositories {  flatDir {  dirs 'libs'  }  }  dependencies {  ......  compile(name: 'SunmiRKILib\_xxx', ext: 'aar')  } |

Build the Project again when finished.

#### 2.2.2 Android version and IDE version supported by the SDK

SDK only support API-19(Android 4.4) or the latest version.

SDK only support Android studio、Intellij.

## 3. API

### 3.1 SunmiRKIKernel SDK Operation Object

#### 3.1.1 Get an instance of SunmiRKIKernel

|  |  |
| --- | --- |
| Prototype | SunmiRKIKernel getInstance() |
| Feature | Get kernel instance object of SDK |
| Parameter | None |
| Return | SunmiRKIKernel |
| Comment | None |

#### 3.1.2 Connect to RKISDK

|  |  |  |
| --- | --- | --- |
| Prototype | initRKISDK(Context context,ConnectRKISDKCallback connectRKISDKCallback) | |
| Feature | Initialize RKI SDK. | |
| Parameter | context[in] | Context |
| ConnectRKISDKCallback[in] | Callback of connection status. Refer to [ConnectRKISDKCallback](#ConnectCallback) |
| Return | None | |
| Comment | It is recommended to call this method in your app’s Application class, if failure to call this method, any invoking of SDK API method may throw NullPointerException. | |

#### 3.1.3 Disconnect to RKISDK

|  |  |
| --- | --- |
| Prototype | unbindRKIService() |
| Feature | Destroy the RKI SDK. |
| Parameter | None |
| Return | None |
| Comment | This method will disconnect your app to RKI SDK. After calling this method, any function module in SunmiRKIKernel will be set to **null**, and any invoke of SDK API method will throw NullPointerException. To prevent a memory leak, call this methos in Activity’s onDestroy() is best practice. |

#### 3.1.4 ConnectRKISDKCallback

##### 3.1.4.1 Connect to RKISDK callback

|  |  |
| --- | --- |
| Prototype | onConnectRKISDK () |
| Feature | Callback method, indicate connect to RKISDK success |
| Parameter | None |
| Return | None |
| Comment | Any SDK API method calls must be made after receiving this callback. After initializing the SDK, developers should RKI attention to this method. When this method called, it indicates the SDK was initialized successfully, and the SDK related API can be invoked rightly. |

##### 3.1.4.2 Disconnect to RKISDK callback

|  |  |
| --- | --- |
| Prototype | onDisconnectRKISDK () |
| Feature | Disconnect the RKISDK |
| Parameter | None |
| Return | None |
| Comment | When this method called, it indicates your app has disconnected to RKI SDK, any invoke of SDK API method may produce Exception. To use SDK API, please call method InitRKISDK() firstly. |

### 3.2 Basic operation module

#### 3.2.1 downloadKey

|  |  |  |
| --- | --- | --- |
| Prototype | void downloadKey(int mode,CommonCallback callback) | |
| Feature | downloadKey | |
| Parameter | mode | 0: Do not show UI;  1: Show UI |
| CommonCallback [in] | Check callback. Refer to[CommonCallback](#_3.3.1 CommonCallback) |
| Return | void | |
| Comment |  | |

#### 3.2.2 queryKeyList

|  |  |  |
| --- | --- | --- |
| Prototype | void queryKeyList(QueryKeyCallback callback) | |
| Feature | queryKeyList | |
| Parameter | mode | 0: Do not show UI;  1: Show UI |
| QueryKeyCallback [in] | Check callback. Refer to [QueryKeyCallback](#_3.3.2 QueryKeyCallback) |
| Return | void | |
| Comment |  | |

### 3.3 Callback module

#### 3.3.1 CommonCallback

|  |  |  |
| --- | --- | --- |
| Prototype | void onSuccess() | |
| Feature | download Key Success | |
| Parameter | None |  |
| Return | None | |
| Comment | None | |

|  |  |  |
| --- | --- | --- |
| Prototype | void onFailure(int i) | |
| Feature | download Key fail | |
| Parameter | int i | Error Code |
| Return | None | |
| Comment | None | |

#### 3.3.2 QueryKeyCallback

|  |  |  |
| --- | --- | --- |
| Prototype | void onResponse(List<KeyPropertyRspEntity> list) | |
| Feature | Query Key List | |
| Parameter | KeyPropertyRspEntity | Refer to KeyPropertyRspEntity |
| Return | None | |
| Comment | None | |

|  |  |  |
| --- | --- | --- |
| Prototype | void onFailure(int i) | |
| Feature | Query Key List error | |
| Parameter | int i | Error Code |
| Return | None | |
| Comment | None | |

## 4. KeyPropertyRspEntity class

**Class member variable declaration:**

|  |
| --- |
| //key check value  private String kcv;  //Key Algorithm Type  private String keyAlgType;  //Key Index  private String keyIndex;  //key system  private String keySystem;  //Key Type  private String keyType;  //The name of the package that uses the key  private String packageName; |

## 5. Error Code

## **5.1 Terminal Error Code**

|  |
| --- |
| NETWORK\_ERROR = -1000;  DEVICE\_CERT\_INVALID\_BIND = -1001;  SERVER\_CERT\_INVALID\_BIND = -1002;  SERVER\_CERT\_SIGN\_VERIFY\_FAILED\_BIND = -1003;  CRL\_INVALID\_BIND = -1004;  CRL\_SIGN\_VERIFY\_FAILED\_BIND = -1005;  SERVER\_CERT\_CRL\_BIND = -1006;  SERVER\_CERT\_INVALID\_SYNC = -1007;  SERVER\_SIGN\_VERIFY\_FAILED\_SYNC = -1008;  DELETE\_KEY\_FAILED = -1009;  SAVE\_KEY\_FAILED = -1010;  DOWNLOAD\_CANCEL = -1011;  DOWNLOAD\_CANCEL\_AUTO = -1012;  SAVE\_KEY\_FAILED\_SITUATION = -1013;  KEY\_NEGOTIATE\_FAILED = -1014;  SERVER\_SIGN\_FAILED\_DOWN = -1015;  REBIND\_CHECK\_FAILED = -1016;  DEVICE\_CERT\_INVALID\_UNBIND = -1017;  SERVER\_CERT\_INVALID\_UNBIND = -1018;  DEVICE\_TOKEN\_ERROR\_UNBIND = -1019;  SERVER\_CERT\_SIGN\_VERIFY\_FAILED\_UNBIND = -1020;  SERVER\_SIGN\_VERIFY\_FAILED\_UNBIND = -1021;  CRL\_INVALID\_UNBIND = -1022;  CRL\_SIGN\_VERIFY\_FAILED\_UNBIND = -1023;  DEVICE\_TOKEN\_ERROR\_VALID = -1024;  SERVER\_SIGN\_FAILED\_VALID = -1025;  SERVER\_CERT\_INVALID\_VALID = -1026;  SERVER\_CERT\_SIGN\_FAILED\_VALID = -1027;  CRL\_INVALID\_VALID = -1028;  CRL\_SIGN\_VERIFY\_FAILED\_VALID = -1029;  DOWNLOAD\_KEY\_FAILED = -1030;  KEY\_NOT\_EXIST = -1031;  KEY\_INDEX\_INCORRECT = -1032;  KEY\_NOT\_ASSIGNED = -1033;  DEV\_CERT\_ERROR = -1034;  CONNECT\_L1\_FAILED = -1035;  DEVICE\_CERT\_VERIFY\_INVALID = -1036;  CONNECT\_TMC\_FAILED = -1037;  SDK\_VERSION\_LOW = -1038; |
|  |

## **5.2 RKI Service Error Code**

|  |
| --- |
| SERVER NOT FOUND = 10103  DEVICE CERT CHAIN INVALID = 10104  SAVE DEVICE CERTS FAIL = 10105  UNBIND FAIL = 10106  DEVICE ALREADY BOUND = 10108  DEVICE NOT BIND = 10109  LICENSE RECORD NOT FOUND = 10123  BIND FAIL = 10199  SYSTEM IS BUSY NOW = 10201  SIGNATURE PARAMS INVALID = 10205  SIGNATURE ERROR = 10206  ATH NOT MATCH = 10207  BINDING KEY NOT FOUND = 10208  REQUEST INVALID = 10210  NO AVAILABLE LICENSE = 10212  LICENSE DOWNLOAD TIMES NOT ENOUGH = 10213  ORG NOT MATCH = 10215  LACK PARAM IIN = 10216  INVALID PARAM = 10991  TASK NOT FOUND = 11106  DEVICE ORGANIZATION NOT MATCH = 11206  DEVICE LOCKED = 11208  DEVICE NOT FOUND = 11202  INTERNAL SYSTEM ERROR = 50001 |
|  |