



KOZEN Component  
SDK Development Documentation  
V1.9

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## ● 1. Revision History

| Version | Release    | Modify Record                                                                                                                                                                                                                                                                                                                                                                                      | Adapted SDK version   | Author    |
|---------|------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|-----------|
| 1.9     | 2026/08/31 | ✓ Set and get the system physical button response                                                                                                                                                                                                                                                                                                                                                  | ComponentService1.6.x | Luna      |
| 1.8     | 2026/07/15 | ✓ Add touch event monitoring for the secondary display.                                                                                                                                                                                                                                                                                                                                            | ComponentService1.5.x | Johnny    |
| 1.7     | 2026/06/16 | ✓ Supports custom Power button configuration.                                                                                                                                                                                                                                                                                                                                                      | ComponentService1.4.x | Johnny    |
| 1.6     | 2026/05/12 | ✓ Added online dependency support without updating the service or AAR file.                                                                                                                                                                                                                                                                                                                        | ComponentService1.3.x | Johnny    |
| 1.5     | 2026/01/29 | <ul style="list-style-type: none"> <li>✓ Add default wallpaper display on the secondary screen.</li> <li>✓ Add support for application paths for displaying images, videos, and logos.</li> <li>✓ Add support to get the secondary screen power-on status.</li> <li>✓ Add support to get the secondary screen brightness.</li> <li>✓ Save the secondary screen brightness after reboot.</li> </ul> | ComponentService1.3.x | Johnny    |
| 1.4     | 2025/09/09 | ✓ Add PCI Statement                                                                                                                                                                                                                                                                                                                                                                                | ComponentService1.2.x | Johnny    |
| 1.3     | 2025/08/12 | <ul style="list-style-type: none"> <li>✓ Add keyboard voice broadcast</li> <li>✓ Fixed documentation errors regarding CommonError issues</li> </ul>                                                                                                                                                                                                                                                | ComponentService1.2.x | Johnny    |
| 1.2     | 2025/07/03 | ✓ Secondary screen image display with GIF support                                                                                                                                                                                                                                                                                                                                                  | ComponentService1.1.x | Johnny    |
| 1.1     | 2025/04/25 | ✓ Switch to English version                                                                                                                                                                                                                                                                                                                                                                        | ComponentService1.0.x | Johnny    |
| 1.0     | 2025/04/24 | ✓ Renamed setDefaultBackground to setBootLogo                                                                                                                                                                                                                                                                                                                                                      | ComponentService1.0.x | Yanan.Zhu |
| 0.4     | 2025/04/24 | ✓ Updated key definitions in Key Module                                                                                                                                                                                                                                                                                                                                                            | ComponentService1.0.x | Yue.Cui   |
| 0.3     | 2025/04/22 | ✓ Functionality adjustments and optimizations                                                                                                                                                                                                                                                                                                                                                      | ComponentService1.0.x | Yanan.Zhu |
| 0.2     | 2025/04/21 | ✓ Add Key Module                                                                                                                                                                                                                                                                                                                                                                                   | ComponentService1.0.x | Yue.Cui   |
| 0.1     | 2025/04/15 | ✓ Added Secondary Screen Module                                                                                                                                                                                                                                                                                                                                                                    | ComponentService1.0.x | Yue.Cui   |

## ● 2. Overview

### 2.1 Introduction

KozenComponentSDK Service is a hardware-based API SDK provided by KOZEN, specifically designed for Java and Android developers. This SDK enables developers to quickly access hardware operation interfaces, facilitating efficient business logic implementation.

This document serves as the Component SDK Service API reference.

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

| System environment    | Platform       | Compile environment      |
|-----------------------|----------------|--------------------------|
| Android 6.0 and above | ARM 64, ARM 32 | Android Studio, IntelliJ |

### 2.3 Feature Introduction

#### 2.3.1 Component SDK Engine Module

- This module handles SDK initialization and provides access to various module operation classes.
- Operation class object: ComponentEngine

#### 2.3.2 SecondaryScreen Module

- This module handles functions related to the secondary screen.
- Operation class object: ISecondaryScreen
- Example to get the module operation class:

JAVA: ComponentEngine.INSTANCE.getSecondaryScreenManager()

Kotlin: ComponentEngine.secondaryScreenManager

#### 2.3.3 Keyboard Module

- This module handles functions related to the keyboard.
- Operation class object: IKeyboard
- Example to get the module operation class:

JAVA: ComponentEngine.INSTANCE.getKeyboardManager()

Kotlin: ComponentEngine.keyboardManager

## 2.4 Importing the SDK

Local Dependency:

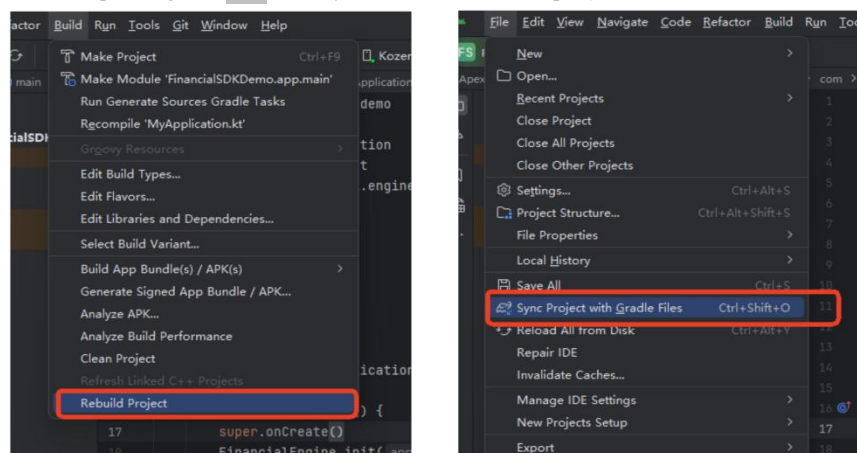
Place the `ComponentLib_xxx_release.aar` file in the libs directory of your Android Studio project.

Add the following code to the build.gradle file:

```
kotlin

dependencies {
    implementation(files("/libs/ComponentLib_0.0.2_release.aar"))
}
```

After importing the `.aar` file, sync and rebuild the project.



Online Dependency:

Add the JitPack repository to the settings.gradle file of your Android Studio project:

```
<> gradle

// settings.gradle
dependencyResolutionManagement {
    repositoriesMode.set(RepositoriesMode.FAIL_ON_PROJECT_REPOS)
    repositories {
        google()
        mavenCentral()
        maven { url 'https://jitpack.io' }
    }
}
```

Add the following dependency ComponentLib:1.x.x to the app/build.gradle file:

```
<> gradle

// app/build.gradle
dependencies {
    implementation 'com.github.KOZENTech-Repo.KozenSDK:ComponentLib:1.3.0'
}
```

After adding the dependency, click Sync Project with Gradle Files in Android Studio, then rebuild the project.

## 2.5 Initializing the SDK

Please initialize the Component SDK in your Application. Example:

```
kotlin 复制

ComponentEngine.init(this) { code, msg ->
    val message = if (code == 0) {
        "init success"
    } else {
        "init failed, $msg"
    }

    Toast.makeText(this, message, Toast.LENGTH_SHORT).show()
}
```

If initialization is successful, the callback will return `result == 0`.

If initialization fails, the callback will return `result == -1`.

After the Component SDK is successfully initialized, use `ComponentEngine` to obtain the operation objects for each module. Otherwise, an error code `-10001` (service not connected) will be thrown.

If the component service is disconnected during use, the `InitListener` will be called again with `result == -1`. Upon receiving this callback, reinitialize the Component SDK.

If an interface throws the error code `-10001` (service not connected) during use, reinitialize the Component SDK.

## ● 3. API Interface Introduction

|                                                                       |                                 |
|-----------------------------------------------------------------------|---------------------------------|
| void deInit()                                                         | Reverse Initialization SDK      |
| IKeyboard getKeyboardManager()                                        | Get the keyboard module         |
| IScreenManager getScreenManager()                                     | Get the secondary screen module |
| void init(android.content.Context application, InitListener callback) | Initialize the SDK              |

### ➤ 3.1 Component SDK initialization

#### 3.1.1 Initialize the SDK

|              |                                                                           |
|--------------|---------------------------------------------------------------------------|
| Prototype    | void init(android.content.Context application, InitListener callback)     |
| Function     | Initialize the SDK                                                        |
| Parameters   | Parameter:<br>application – context<br>callback – initialization callback |
| Return Value |                                                                           |
| Notes        | SDK initialization with the provided context and callback function.       |

#### 3.1.2 Reverse Initialization SDK

|              |                                                        |
|--------------|--------------------------------------------------------|
| Prototype    | void deInit()                                          |
| Function     | Reverse Initialization SDK                             |
| Parameters   |                                                        |
| Return Value |                                                        |
| Notes        | This method is used to reverse initialization the SDK. |

#### 3.1.3 Get the secondary screen module

|              |                                                            |
|--------------|------------------------------------------------------------|
| Prototype    | IScreenManager getScreenManager()                          |
| Function     | Get the secondary screen module                            |
| Parameters   |                                                            |
| Return Value | Return:<br>IScreenManager                                  |
| Notes        | This method retrieves the secondary screen manager module. |

#### 3.1.4 Get the keyboard module

|           |                                |
|-----------|--------------------------------|
| Prototype | IKeyboard getKeyboardManager() |
|-----------|--------------------------------|

|              |                                                    |
|--------------|----------------------------------------------------|
| Function     | Get the keyboard module                            |
| Parameters   |                                                    |
| Return Value | Return:<br>IKeyboard                               |
| Notes        | This method retrieves the keyboard manager module. |

-- ComponentService instance callback - InitListener --

|                                            |                        |
|--------------------------------------------|------------------------|
| void onResult(int result, String errorMsg) | Initialization results |
|--------------------------------------------|------------------------|

### 3.1.5 Initialization results

|              |                                                                                                                                                 |
|--------------|-------------------------------------------------------------------------------------------------------------------------------------------------|
| Prototype    | void onResult(int result, String errorMsg)                                                                                                      |
| Function     | Initialization result                                                                                                                           |
| Parameters   | Parameters:<br>result – Initialization result. 0: success; other values: failure<br>errorMsg – Detailed error information, refer to CommonError |
| Return Value |                                                                                                                                                 |
| Notes        | This method handles the initialization result, providing success or failure along with an error message.                                        |

## ➤ 3.2 Keyboard Operation module

### Keyboard Interface Declaration

The keyboard is designed solely for general input and interaction purposes. It functions as a non-secure module and is not connected via a secure chip, thus it does not have the capability to process or display sensitive information.

To ensure user data security and comply with information security standards and regulatory requirements, it is strictly prohibited to use the keyboard to input any cardholder information, transaction PINs, or other sensitive content, in order to prevent unauthorized interception, tampering, or misuse of such data.

-- Get keyboard operation module - getKeyboardManager --

|                                                   |                                                           |
|---------------------------------------------------|-----------------------------------------------------------|
| int startPhysicalKeyboard(InputCallback callback) | Start listening to physical key presses, return key value |
| int stopPhysicalKeyboard()                        | Stop listening to physical key presses                    |
| int isKeyButtonVoiceEnable()                      | Check if the physical key press sound is enabled          |
| int switchKeyButtonVoiceEnable(boolean enable)    | Enable or disable physical key press sound                |
| int customizePowerOn(boolean isOpen)              | Enable or disable customization of the power button       |
| int getPowerOnCustomizeStatus()                   | Get the customization status of the power button          |
| int customizeSysResponse(boolean isOpen)          | Set the switch status of system physical key response     |
| int getSysResponseCustomizeStatus()               | Get whether the system responds to physical buttons       |

### 3.2.1 Start listening to physical keys and return key values

|              |                                                                                                                                         |
|--------------|-----------------------------------------------------------------------------------------------------------------------------------------|
| Prototype    | int startPhysicalKeyboard(InputCallback callback)                                                                                       |
| Function     | Start listening to physical keys and return key values                                                                                  |
| Parameters   | Parameters:<br>callback – Callback triggered by physical key events                                                                     |
| Return Value | Return:<br>0 – Operation succeeded;<br>Others – Operation failed.<br>Specific error codes can be found in CommonError and KeyboardError |
| Notes        | This method starts the listener for physical key events and returns the key values.                                                     |

### 3.2.2 Stop listening to physical keys

|              |                                                                                                                                         |
|--------------|-----------------------------------------------------------------------------------------------------------------------------------------|
| Prototype    | int stopPhysicalKeyboard()                                                                                                              |
| Function     | Stop listening to physical keys                                                                                                         |
| Parameters   |                                                                                                                                         |
| Return Value | Return:<br>0 – Operation succeeded;<br>Others – Operation failed.<br>Specific error codes can be found in CommonError and KeyboardError |
| Notes        | This method stops the listener for physical key events.                                                                                 |

### 3.2.3 Enable or disable physical key press sound

|              |                                                                                                                    |
|--------------|--------------------------------------------------------------------------------------------------------------------|
| Prototype    | int switchKeyButtonVoiceEnable(boolean enable)                                                                     |
| Function     | Enable or disable physical key press sound                                                                         |
| Parameters   | Parameters:<br>enable – true: Enable sound; false: Disable sound                                                   |
| Return Value | Return:<br>0 – Operation succeeded;<br>Others – Operation failed.<br>See CommonError and KeyboardError for details |
| Notes        | Controls whether the device plays a sound when a physical key is pressed.                                          |

### 3.2.4 Get physical key press sound status

|              |                                                                                                                                   |
|--------------|-----------------------------------------------------------------------------------------------------------------------------------|
| Prototype    | int isKeyButtonVoiceEnable()                                                                                                      |
| Function     | Get physical key press sound status                                                                                               |
| Parameters   |                                                                                                                                   |
| Return Value | Return:<br>0 – Sound enabled<br>1 – Sound disabled<br>Others – Operation failed.<br>See CommonError and KeyboardError for details |
| Notes        | Queries whether the physical key press sound is currently enabled.                                                                |

### 3.2.5 Enable or disable power key customization

|              |                                                                                                                                                                                                                                                                                                                                                                                                              |
|--------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Prototype    | int customizePowerOn(boolean isOpen)                                                                                                                                                                                                                                                                                                                                                                         |
| Function     | Enable or disable power key customization                                                                                                                                                                                                                                                                                                                                                                    |
| Parameters   | Parameters:<br>isOpen –<br>true: The power key can be customized. When customized, short press actions are blocked, but the device can still be awakened from sleep by pressing the power key. Long press actions are not blocked, and power key events can still be monitored. The setting is restored after reboot.<br>false: Power key customization is disabled and the default system behavior is used. |
| Return Value | Return:<br>0 – Operation succeeded<br>Others – Operation failed                                                                                                                                                                                                                                                                                                                                              |
| Notes        |                                                                                                                                                                                                                                                                                                                                                                                                              |

### 3.2.6 Get physical key press sound status

|              |                                                                           |
|--------------|---------------------------------------------------------------------------|
| Prototype    | int getPowerOnCustomizeStatus()                                           |
| Function     | Get the customization status of the power key                             |
| Parameters   |                                                                           |
| Return Value | Return:<br>0 – Power key is customized<br>1 – Power key is not customized |
| Notes        |                                                                           |

-- Keyboard callback - InputCallback--

|                                                                                    |                                |
|------------------------------------------------------------------------------------|--------------------------------|
| void onKey(KeyboardConstant.KeyCode keyCode,<br>KeyboardConstant.KeyAction action) | Callback for physical keyboard |
|------------------------------------------------------------------------------------|--------------------------------|

### 3.2.7 Initialization results

|              |                                                                                                                                  |
|--------------|----------------------------------------------------------------------------------------------------------------------------------|
| Prototype    | void onKey(KeyboardConstant.KeyCode keyCode,<br>KeyboardConstant.KeyAction action)                                               |
| Function     | Physical key callback                                                                                                            |
| Parameters   | Parameters:<br>keyCode – Key value from the KeyCode enum<br>action – Key action from the KeyAction enum. 0: Pressed, 1: Released |
| Return Value |                                                                                                                                  |
| Notes        | This method handles the callback for physical key events based on the key code and action.                                       |

### 3.2.8 Set the switch status of system physical key response

|           |                                          |
|-----------|------------------------------------------|
| Prototype | int customizeSysResponse(boolean isOpen) |
|-----------|------------------------------------------|

|              |                                                                                                       |
|--------------|-------------------------------------------------------------------------------------------------------|
| Function     | Configure the switch status of physical key functions                                                 |
| Parameters   | Parameters:<br>isOpen –<br>true: enable physical key response<br>false: disable physical key response |
| Return Value | Return:<br>0 – Operation succeeded<br>Others – Operation failed                                       |
| Notes        | Physical key response is disabled by default.                                                         |

### 3.2.9 Get whether the system responds to physical buttons

|              |                                                                                                        |
|--------------|--------------------------------------------------------------------------------------------------------|
| Prototype    | int getSysResponseCustomizeStatus()                                                                    |
| Function     | Get whether the system responds to physical buttons                                                    |
| Parameters   |                                                                                                        |
| Return Value | Return:<br>0: The system responds to physical keys;<br>1: The system does not respond to physical keys |
| Notes        |                                                                                                        |

## ➤ 3.3 Secondary Screen Operation module

### Secondary Display Interface Declaration

The secondary display is designed solely for the presentation and interaction of non-critical data. Its interface is a non-secure module and is not connected via a secure chip, thus it does not have the capability to process or display sensitive information.

To ensure user data security and comply with information security standards and regulatory requirements, it is strictly prohibited to display any cardholder information, transaction data, or other sensitive content on the secondary display, in order to prevent unauthorized interception, tampering, or misuse of such data.

-- Get secondary screen operation module - getSecondaryScreenManager--

|                                                                      |                                            |
|----------------------------------------------------------------------|--------------------------------------------|
| int[] getScreenResolution()                                          | Get the resolution of the secondary screen |
| int power(boolean on)                                                | Power on/off the screen                    |
| int setBrightness(int value)                                         | Set the screen brightness                  |
| int setBootLogo(String filePath)                                     | Set the boot logo image                    |
| void show(android.view.View view,<br>IResultCallback resultCallback) | Display a custom View                      |
| int showPic(String picPath)                                          | Display a single image                     |
| int showPic(ArrayList<String> picPathList,<br>int intervalSeconds)   | Image slideshow                            |

|                                                                                                                              |                                                                        |
|------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------|
| <code>int showVideo(String videoPath)</code>                                                                                 | Display a video                                                        |
| <code>void show(android.view.View view,<br/>ArrayList&lt;PicData&gt; picDataList,<br/>IResultCallback resultCallback)</code> | Display a custom View with support for both static and animated images |
| <code>int showWallpaper()</code>                                                                                             | Display the default wallpaper                                          |
| <code>int getPowerOnStatus()</code>                                                                                          | Get power-on status of the secondary screen                            |
| <code>int getBrightness()</code>                                                                                             | Get brightness level of the secondary screen                           |
| <code>int registerSubScreenTouchListener(<br/>ISubScreenTouchListener listener)</code>                                       | Register a listener for secondary screen touch events.                 |
| <code>int unregisterSubScreenTouchListener()</code>                                                                          | Unregister the secondary screen touch event listener                   |

### 3.3.1 Display a single image

|              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|--------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Prototype    | <code>int showPic(String picPath)</code>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Function     | Display a single image                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Parameters   | <p>Parameters:</p> <p>picPath – The image path. Supported image types are bmp, png, jpeg, jpg, gif. Supports APP resources or TF card.</p> <ol style="list-style-type: none"> <li>1. APP resources</li> </ol> <p>Supports drawable and mipmap directories.</p> <p>GIF format images must be placed in the drawable directory.</p> <p>Before using this API, you need to manually place the image into the APP project directory res/drawable or res/mipmap, and pass it as a parameter according to the specified path format.</p> <p>Path format examples: res://drawable/xxx.png, res://mipmap/xxx.png, res://drawable/xxx.gif</p> <ol style="list-style-type: none"> <li>2. TF card</li> </ol> <p>Before using this API, you need to manually place the image into the TF card, and then pass the absolute path of the resource as the parameter, for example: sdcard/xxx/xxx.png</p> |
| Return Value | <p>Return:</p> <p>0 – Operation succeeded;</p> <p>Others – Operation failed.</p> <p>Specific error codes can be found in SecondaryScreenError and CommonError</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Notes        | This method displays a single image on the screen.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |

### 3.3.2 Image slideshow

|            |                                                                                                                                                                                                                            |
|------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Prototype  | <code>int showPic(ArrayList&lt;String&gt; picPathList,<br/>int intervalSeconds)</code>                                                                                                                                     |
| Function   | Image slideshow                                                                                                                                                                                                            |
| Parameters | <p>Parameters:</p> <p>picPathList – An array of image paths. Supported image types are bmp, png, jpeg, jpg, gif. Supports APP resources or TF card.</p> <ol style="list-style-type: none"> <li>1. APP resources</li> </ol> |

|              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|--------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|              | <p>Supports drawable and mipmap directories.</p> <p>GIF format images must be placed in the drawable directory.</p> <p>Before using this API, you need to manually place the images into the APP project directory res/drawable or res/mipmap, and pass them as parameters according to the specified path format.</p> <p>Path format examples: res://drawable/xxx.png, res://mipmap/xxx.png, res://drawable/xxx.gif</p> <p>2. TF card</p> <p>Before using this API, you need to manually place the images into the TF card, and then pass the absolute paths of the resources as parameters.</p> <p>intervalSeconds – Interval in seconds between image transitions</p> |
| Return Value | <p>Return:</p> <p>0 – Operation succeeded (only if all image types are valid);</p> <p>Others – Operation failed.</p> <p>Specific error codes can be found in SecondaryScreenError and CommonError</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Notes        | This method starts an image slideshow with the given list of images and interval.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |

### 3.3.3 Display a video

|              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|--------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Prototype    | int showVideo(String videoPath)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Function     | Display a video                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Parameters   | <p>Parameters:</p> <p>videoPath – The video path. The supported video type is mp4. Supports APP resources or TF card.</p> <p>1. APP resources</p> <p>Supports the raw directory.</p> <p>Video resources must be placed in the raw directory.</p> <p>Before using this API, you need to manually place the video resource into the APP project directory res/raw, and pass it as a parameter according to the specified path format.</p> <p>Path format example: res://raw/xxx.mp4</p> <p>2. TF card</p> <p>Before using this API, you need to manually place the video resource into the TF card, and then pass the absolute path of the resource as the parameter</p> |
| Return Value | <p>Return:</p> <p>0 – Operation succeeded;</p> <p>Others – Operation failed.</p> <p>Specific error codes can be found in SecondaryScreenError and CommonError</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Notes        | This method plays a video on the screen.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |

### 3.3.4 Power on/off the screen

|            |                                                                 |
|------------|-----------------------------------------------------------------|
| Prototype  | int power(boolean on)                                           |
| Function   | Power on/off the screen                                         |
| Parameters | <p>Parameters:</p> <p>on – true: Power on; false: Power off</p> |

|              |                                                                                                                                                                          |
|--------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Return Value | Return:<br>0 – Operation succeeded;<br>Others – Operation failed.<br>Specific error codes can be found in <code>SecondaryScreenError</code> and <code>CommonError</code> |
| Notes        | This method controls the power state of the screen.                                                                                                                      |

### 3.3.5 Set the screen brightness

|              |                                                                                                                                                                          |
|--------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Prototype    | <code>int setBrightness(int value)</code>                                                                                                                                |
| Function     | Set the screen brightness                                                                                                                                                |
| Parameters   | Parameters:<br>value – Integer value between 0 and 100                                                                                                                   |
| Return Value | Return:<br>0 – Operation succeeded;<br>Others – Operation failed.<br>Specific error codes can be found in <code>SecondaryScreenError</code> and <code>CommonError</code> |
| Notes        | This method adjusts the brightness of the screen.                                                                                                                        |

### 3.3.6 Set the boot logo image

|              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|--------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Prototype    | <code>int setBootLogo(String filePath)</code>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Function     | Set the boot logo image                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Parameters   | Parameters:<br>filePath – The path of the replaced image. Supported image types are bmp, png, jpeg, jpg. Supports APP resources or TF card.<br>1. APP resources<br>Supports drawable and mipmap directories.<br>Before using this API, you need to manually place the image into the APP project directory <code>res/drawable</code> or <code>res/mipmap</code> , and pass it as a parameter according to the specified path format.<br>Path format examples: <code>res://drawable/xxx.png</code> , <code>res://mipmap/xxx.png</code><br>2. TF card<br>Before using this API, you need to manually place the image into the TF card, and then pass the absolute path of the resource as the parameter. |
| Return Value | Return:<br>0 – Operation succeeded;<br>Others – Operation failed.<br>Specific error codes can be found in <code>SecondaryScreenError</code> and <code>CommonError</code>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Notes        | This method sets the default background image on the screen.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |

### 3.3.7 Get the screen resolution of the secondary screen

|            |                                                   |
|------------|---------------------------------------------------|
| Prototype  | <code>int[] getScreenResolution()</code>          |
| Function   | Get the screen resolution of the secondary screen |
| Parameters |                                                   |

|              |                                                                                          |
|--------------|------------------------------------------------------------------------------------------|
| Return Value | Return:<br>int[0] – Horizontal resolution (width); int[1] – Vertical resolution (height) |
| Notes        | This method returns the screen resolution of the secondary screen.                       |

### 3.3.8 Display a custom view

|              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|--------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Prototype    | void show(android.view.View view,<br>IResultCallback resultCallback)                                                                                                                                                                                                                                                                                                                                                                                           |
| Function     | Display a custom view                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Parameters   | Parameters:<br>view – Custom view<br>resultCallback – Callback for the result of showing the custom view                                                                                                                                                                                                                                                                                                                                                       |
| Return Value |                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Notes        | <ol style="list-style-type: none"> <li>1. The view size must match the secondary screen resolution, otherwise, the view may display incorrectly and touch events may fail.</li> <li>2. Scrolling layouts are not supported.</li> <li>3. On models with touch, only click events are supported; long press, double-click, or other gesture events are not supported</li> <li>4. After modifying the view, the API needs to be called again to avoid.</li> </ol> |

### 3.3.9 Display a custom view with optional image slideshow support

|              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|--------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Prototype    | void show(android.view.View view,<br>ArrayList<PicData> picDataList,<br>IResultCallback resultCallback)                                                                                                                                                                                                                                                                                                                                                        |
| Function     | Display a custom View with optional image slideshow support                                                                                                                                                                                                                                                                                                                                                                                                    |
| Parameters   | Parameters:<br>view – Custom view to be displayed<br>picDataList – List of images for slideshow (supports PNG, JPEG, or GIF; one at a time)<br>resultCallback – Callback for view display result                                                                                                                                                                                                                                                               |
| Return Value |                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Notes        | <ol style="list-style-type: none"> <li>1. The view size must match the secondary screen resolution, otherwise, the view may display incorrectly and touch events may fail.</li> <li>2. Scrolling layouts are not supported.</li> <li>3. On models with touch, only click events are supported; long press, double-click, or other gesture events are not supported</li> <li>4. After modifying the view, the API needs to be called again to avoid.</li> </ol> |

### 3.3.10 Display the default wallpaper

|              |                               |
|--------------|-------------------------------|
| Prototype    | int showWallpaper()           |
| Function     | Display the default wallpaper |
| Parameters   |                               |
| Return Value | Return:                       |

|       |                                                                                                                                        |
|-------|----------------------------------------------------------------------------------------------------------------------------------------|
|       | 0 – Operation succeeded<br>Others – Operation failed<br>See <code>SecondaryScreenError</code> and <code>CommonError</code> for details |
| Notes | This method displays the default wallpaper on the secondary screen.                                                                    |

#### 3.3.11 Get power-on status of the secondary screen

|              |                                                                                                                                                           |
|--------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|
| Prototype    | <code>int getPowerOnStatus()</code>                                                                                                                       |
| Function     | Get the power-on status of the secondary screen                                                                                                           |
| Parameters   |                                                                                                                                                           |
| Return Value | Return:<br>0 – Powered on<br>1 – Powered off<br>Others – Operation failed. See <code>SecondaryScreenError</code> and <code>CommonError</code> for details |
| Notes        | This method checks whether the secondary screen is currently powered on or off.                                                                           |

#### 3.3.12 Display the default wallpaper

|              |                                                                                                                                                                  |
|--------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Prototype    | <code>int getBrightness()</code>                                                                                                                                 |
| Function     | Get the brightness level of the secondary screen                                                                                                                 |
| Parameters   |                                                                                                                                                                  |
| Return Value | Return:<br>Brightness value (0 – 100) if successful<br>Others – Operation failed. See <code>SecondaryScreenError</code> and <code>CommonError</code> for details |
| Notes        | This method retrieves the current brightness setting of the secondary screen                                                                                     |

#### 3.3.13 Register a touch event listener for the secondary screen

|              |                                                                                                                                       |
|--------------|---------------------------------------------------------------------------------------------------------------------------------------|
| Prototype    | <code>int registerSubScreenTouchListener(ISubScreenTouchListener listener)</code>                                                     |
| Function     | Register a touch event listener for the secondary screen                                                                              |
| Parameters   | Parameters:<br>listener – Touch event callback                                                                                        |
| Return Value | Return:<br>0 – Operation succeeded<br>Others – Operation failed (see <code>SecondaryScreenError</code> and <code>CommonError</code> ) |
| Notes        | Calling this method multiple times replaces the previously registered listener.                                                       |

#### 3.3.14 Unregister the touch event listener for the secondary screen

|           |                                                              |
|-----------|--------------------------------------------------------------|
| Prototype | <code>int unregisterSubScreenTouchListener()</code>          |
| Function  | Unregister the touch event listener for the secondary screen |

|              |                                                                                                            |
|--------------|------------------------------------------------------------------------------------------------------------|
| Parameters   |                                                                                                            |
| Return Value | Return:<br>0 - Operation succeeded<br>Others - Operation failed (see SecondaryScreenError and CommonError) |
| Notes        |                                                                                                            |

-- Secondary screen listener - IResultCallback --

|                                              |                        |
|----------------------------------------------|------------------------|
| void onFailure(int errorCode,<br>String msg) | View display failed    |
| void onSuccess()                             | View display succeeded |

### 3.3.15 View display success

|              |                                                                |
|--------------|----------------------------------------------------------------|
| Prototype    | void onSuccess()                                               |
| Function     | View display success                                           |
| Parameters   |                                                                |
| Return Value |                                                                |
| Notes        | This method is called when the view is successfully displayed. |

### 3.3.16 View display failure

|              |                                                                                                          |
|--------------|----------------------------------------------------------------------------------------------------------|
| Prototype    | void onFailure(int errorCode,<br>String msg)                                                             |
| Function     | View display failure                                                                                     |
| Parameters   | Parameters:<br>errorCode - Error code, refer to SecondaryScreenError for meanings<br>msg - Error details |
| Return Value |                                                                                                          |
| Notes        | This method is called when the view fails to display, providing error code and details.                  |

-- Secondary screen listener - ISubScreenTouchListener--

### 3.3.17 Secondary screen touch event callback

|              |                                                         |
|--------------|---------------------------------------------------------|
| Prototype    | void onTouchEvent(android.view.MotionEvent motionEvent) |
| Function     | Secondary screen touch event callback                   |
| Parameters   | Parameters:<br>motionEvent - Touch event                |
| Return Value |                                                         |
| Note         |                                                         |

## ● 4. Error Code Definition

### 4.1 CommonError

| Error Code           | Error Description                                                | Error Value |
|----------------------|------------------------------------------------------------------|-------------|
| FEATURE_NOPERMISSION | Feature no-permission                                            | -10011      |
| DEVICE_BUSY          | Device is busy                                                   | -10005      |
| FEATURE_UNSUPPORTED  | Feature unsupported                                              | -10003      |
| PARAMETERS_INVALID   | Parameters invalid                                               | -10002      |
| SERVICE_DISCONNECT   | Services are not connected, please initialize financial services | -10001      |
| VERSION_NOT_MATCH    | Version mismatch                                                 | -10004      |

### 4.2 KeyboardError

| Error Code        | Error Description | Error Value |
|-------------------|-------------------|-------------|
| KEYBOARD_UNKNOWN  | Unknown error     | -30001      |
| KEYCODE_UNDEFINED | Key not defined   | -30002      |

### 4.5 SecondaryScreenError

| Error Code                | Error Description      | Error Value |
|---------------------------|------------------------|-------------|
| VICE_SCREEN_CANCELED      | Operation terminated   | -20005      |
| VICE_SCREEN_DECODE_FAILED | Decoding failed        | -20003      |
| VICE_SCREEN_INVALID_DATA  | Invalid data           | -20002      |
| VICE_SCREEN_TIMEOUT       | Interface call timeout | -20001      |
| VICE_SCREEN_UNKNOWN       | Unknown error          | -20004      |

## ● 5. Entity Class Definition

### 5.1 KeyboardConstant.KeyCode

| Constant Name | Description  | Type | HexValue |
|---------------|--------------|------|----------|
| BUTTON_0      | Number key 0 | ENUM | 0x30     |
| BUTTON_1      | Number key 1 | ENUM | 0x31     |
| BUTTON_2      | Number key 2 | ENUM | 0x32     |
| BUTTON_3      | Number key 3 | ENUM | 0x33     |
| BUTTON_4      | Number key 4 | ENUM | 0x34     |
| BUTTON_5      | Number key 5 | ENUM | 0x35     |
| BUTTON_6      | Number key 6 | ENUM | 0x36     |
| BUTTON_7      | Number key 7 | ENUM | 0x37     |
| BUTTON_8      | Number key 8 | ENUM | 0x38     |

|                     |                                                   |      |      |
|---------------------|---------------------------------------------------|------|------|
| BUTTON_9            | Number key 9                                      | ENUM | 0x39 |
| BUTTON_ASTERISK     | Asterisk key (*) or Multiply key (x)              | ENUM | 0x2A |
| BUTTON_PLUS         | Plus key (+)                                      | ENUM | 0x2B |
| BUTTON_MINUS        | Minus key (-)                                     | ENUM | 0x2D |
| BUTTON_DIVIDE       | Divide key (/)                                    | ENUM | 0x2F |
| BUTTON_POUND        | Pound key (#)                                     | ENUM | 0x23 |
| BUTTON_DOT          | Dot key (.)                                       | ENUM | 0x2E |
| BUTTON_ENTER        | Enter key                                         | ENUM | 0x0D |
| BUTTON_BACKSPACE    | Backspace key                                     | ENUM | 0x08 |
| BUTTON_ESC          | ESC key                                           | ENUM | 0x1B |
| BUTTON_FN           | FN key (keyboard extension)                       | ENUM | 0xE0 |
| BUTTON_HORN         | Horn key (for communication)                      | ENUM | 0x98 |
| BUTTON_PAGEDOWN     | Page Down key                                     | ENUM | 0x22 |
| BUTTON_PAGEUP       | Page Up key                                       | ENUM | 0x21 |
| BUTTON_USER_DEFINED | User-defined key (custom key value, Kozen button) | ENUM | 0x99 |
| BUTTON_POWERON      | Power key                                         | ENUM | 0x1A |

## 5.2 com.kozen.component.constant.KeyboardConstant.KeyAction

| Constant Name | Description    | Type | Value |
|---------------|----------------|------|-------|
| ACTION_DOWN   | Key press down | int  | 0     |
| ACTION_UP     | Key release    | int  | 1     |