



Advanced Card Systems Ltd.
Card & Reader Technologies

ACR1555U-A1

Secure Bluetooth® NFC Reader

User Manual V1.07



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1.0. Introduction

ACR1555U-A1 ACS Secure Bluetooth® NFC Reader combines the latest technology in the world of smart card readers with Bluetooth connectivity. This compact and wireless smart card reader brings together sophisticated technology with fresh design to meet different requirements in various smart card-based applications using Bluetooth-enabled devices, such as smart phones and tablets.

This document provides general procedures for installation of drivers and applications when using ACR1555U-A1 ACS Secure Bluetooth NFC Reader.

The ACR1555U supports two operation modes:

- NFC Card Reader (USB and Bluetooth)
- Bluetooth HID Keyboard Emulation

When switching to Bluetooth HID mode, pairing (bonding) will be required to connect the device. This process differs from the connection procedure used for the NFC Card Reader. Make sure to follow the appropriate steps for establishing a connection based on the selected mode.

USB Keyboard Emulation mode is not supported

Description of parts



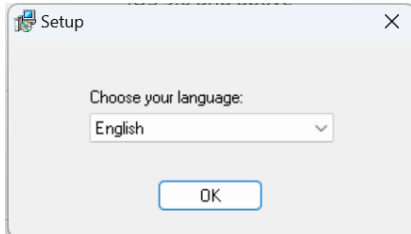


2.0. For Windows®

2.1. Installing ACS CCID PC/SC driver (USB)

To install the driver:

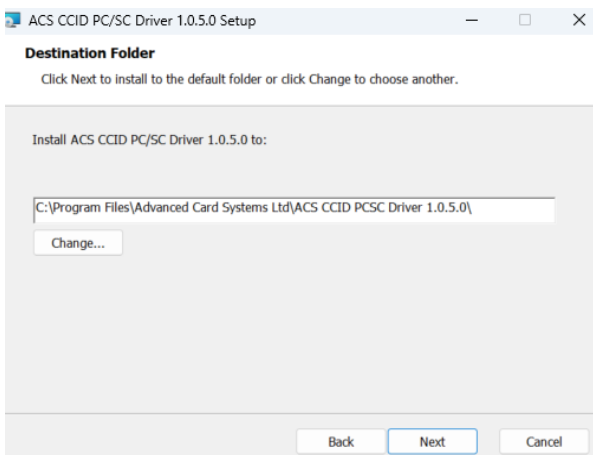
1. Run the ACS CCID PC/SC Driver Installer (USB)
2. The Setup Wizard will appear. To start the installation, click **OK**.



3. Then click **Next**.

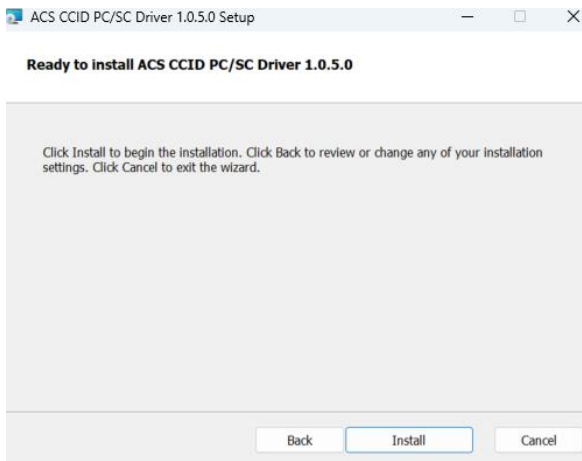


4. Click **Next** to install the driver to the default destination, located at **X:\Program Files\Advanced Card Systems Ltd\ACS CCID PCSC Driver 1.0.5.0**, with **X** being your local Windows drive.

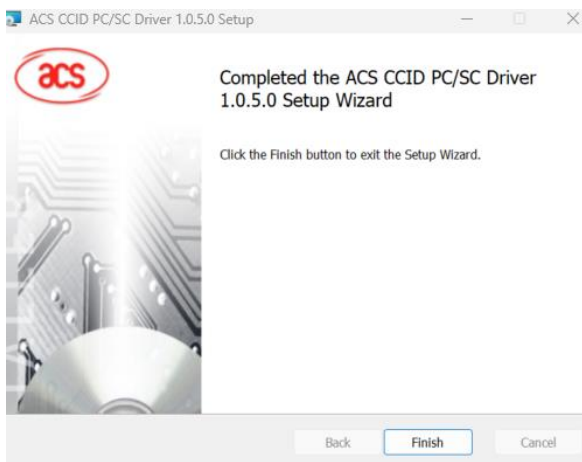




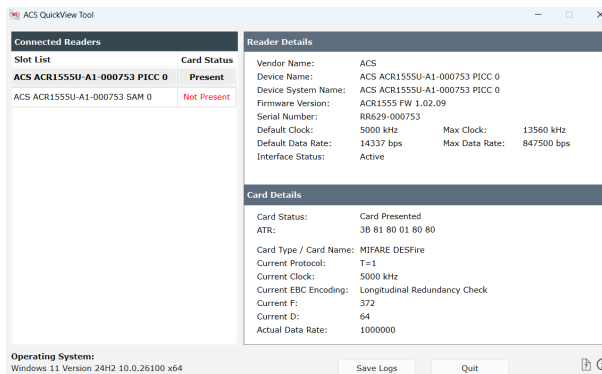
5. Click **Install**.



6. Wait while the driver installs. Once the installation is complete, click **Finish**.



7. After a successful driver installation, you can now use the ACR1555U with various smart card applications. Below is a sample of ACR1555U connected in **QuickView**



2.2. Installing ACS Bluetooth Management Tool and Driver

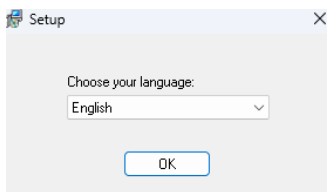
Notice:

Before installing the ACR1555U Bluetooth Windows driver, please ensure the ACR1555U is operating in CCID reader mode.

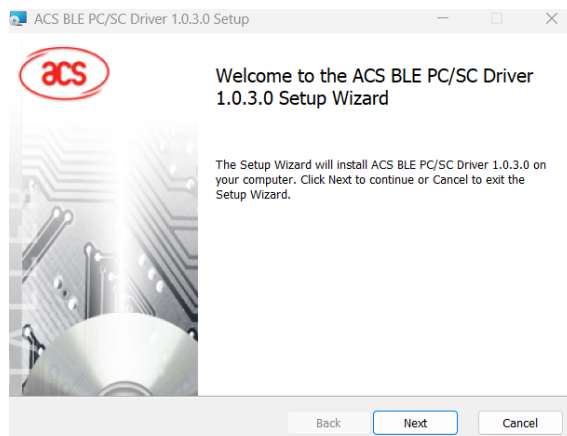
- If the device is currently connected in **HID keyboard emulation mode**, please disconnect it from your Windows system and remove it from your list of paired devices (“forget device”).
- Next, follow the instructions in Chapter 5. From the configuration menu, select **CCID reader mode**, then click **Apply** to save the setting.
- The reader will power off automatically. When powered on again, it will operate in CCID reader mode.

ACS Bluetooth Management Tool Driver Setup Instructions

1. Run the ACS Bluetooth Management Tool Driver Setup.
The Setup Wizard will appear. To start the installation, click **OK**.

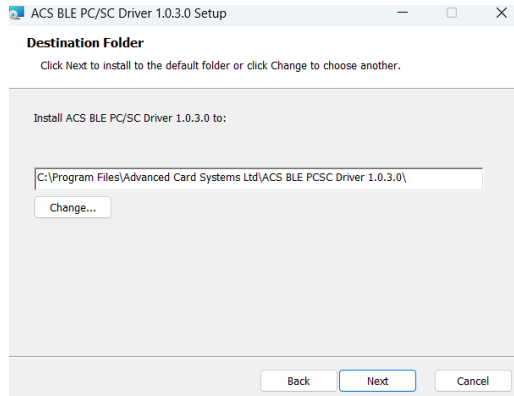


2. Then Click **Next**

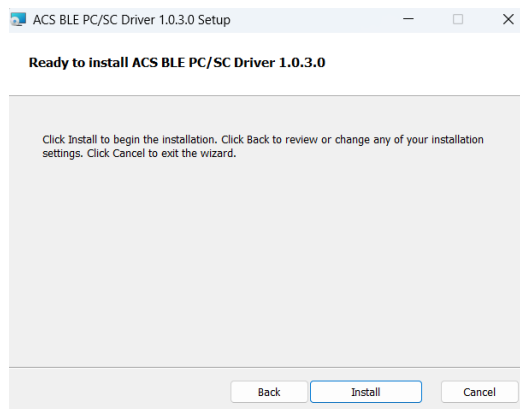




3. Click **Next** to install the driver to the default destination, located at **X:\Program Files\Advanced Card Systems Ltd\ACS BLE PCSC Driver 1.0.3.0** with **X** being your local Windows drive.

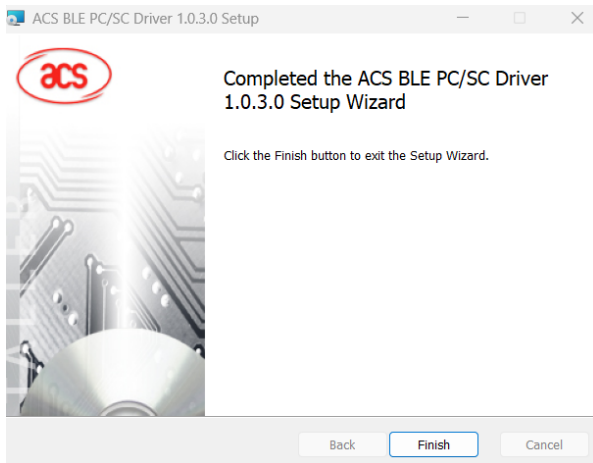


4. Click **Install**.

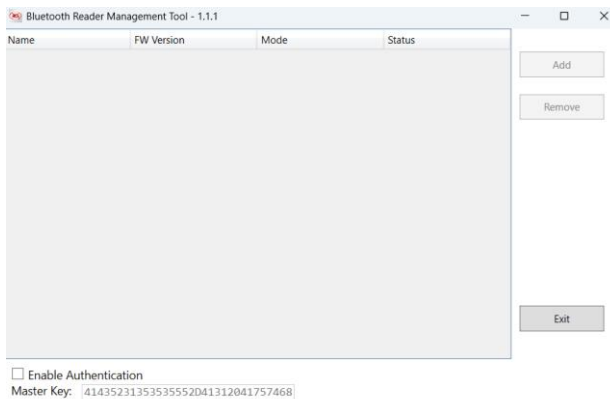




5. Wait while the driver installs. Once the installation is complete, click **Finish**.

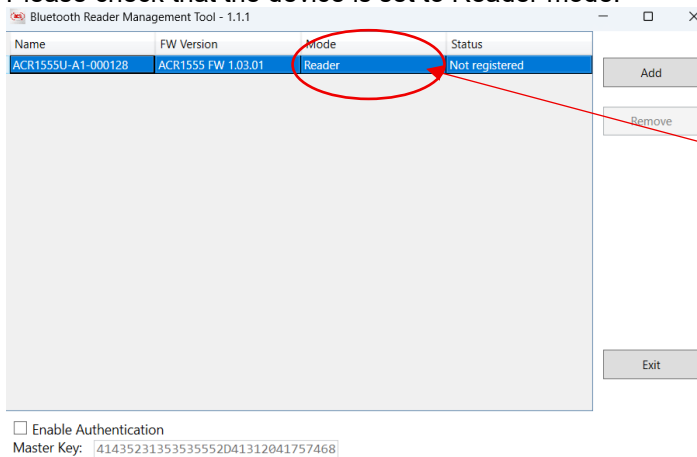


6. Run the **Bluetooth Reader Management Tool**. The tool will automatically search for available connections and display a list of devices.



7. Select the device for which you want to install the driver, then click the **Add** button.

Please check that the device is set to Reader mode.



Mode	Status
HID	Online

For HID, please refer to Chapter 5 for instructions on switching back to Reader mode.

Note:

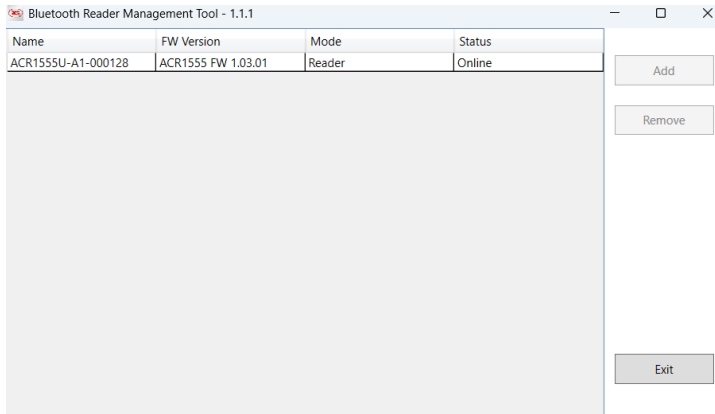
For the ACR1555U-A1, Authentication mode is **disabled by default**. Before enabling driver support for Authentication mode, please verify your device's current



settings. If Authentication mode is enabled and you have changed the Master Key, enter your custom key. Otherwise, you may use the default Master Key provided above.

Enable Authentication

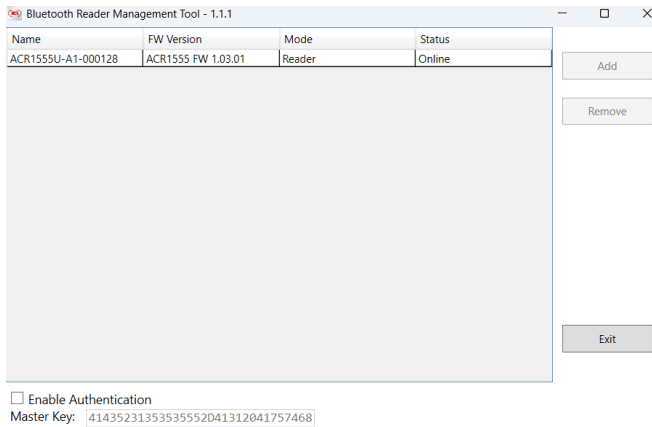
Master Key:



Enable Authentication

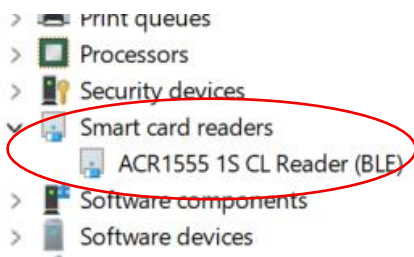
Master Key:

8. Once the device is successfully registered, you can open **Device Manager** to verify that the ACR1555U has been installed correctly.



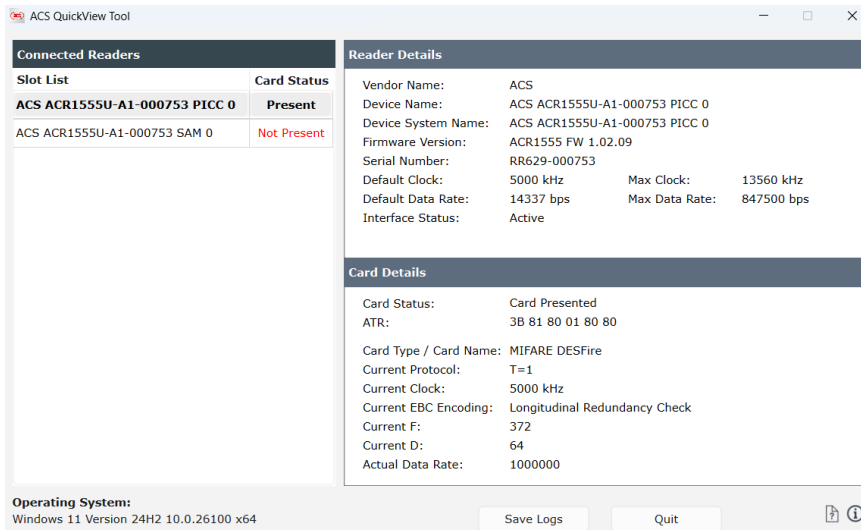
Enable Authentication

Master Key:





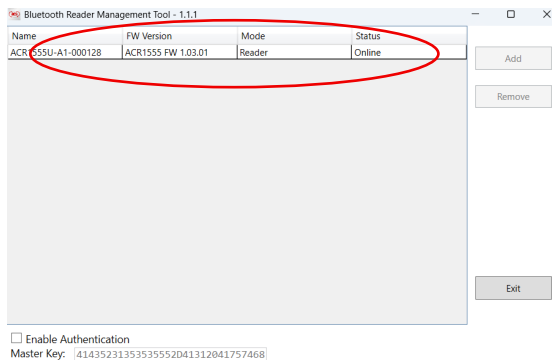
9. After a successful driver installation, you can now use the ACR1555U with various smart card applications. Below is a sample of ACR1555U connected in **QuickView**



2.3. Uninstall Bluetooth Windows Driver

Step 1: Run the **Bluetooth Reader Management Tool**. The tool will display a list of devices.

Step 2: Select the device you want to uninstall from the list. Then, click **Remove** to uninstall it.

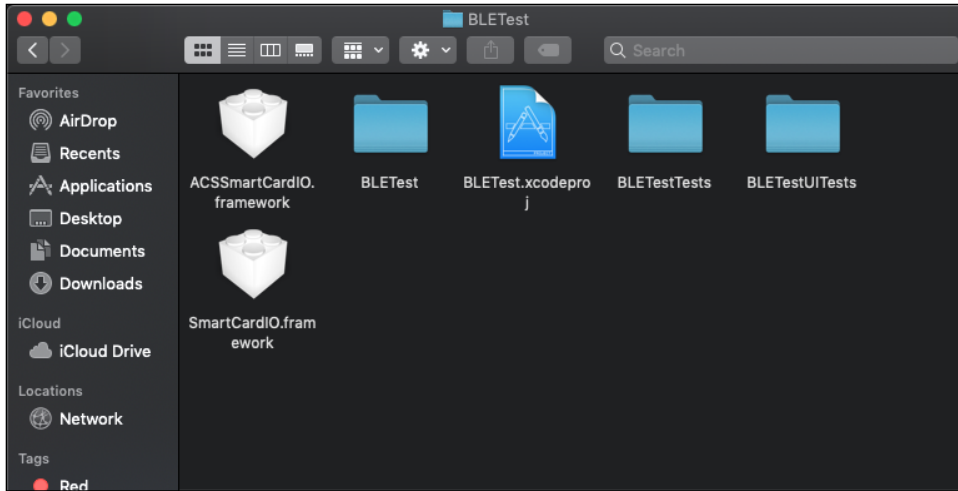


Once the device has been successfully uninstalled, you can open **Device Manager** to verify that the ACR1555U no longer appears.

3.0. For iOS (BLE Test Application)

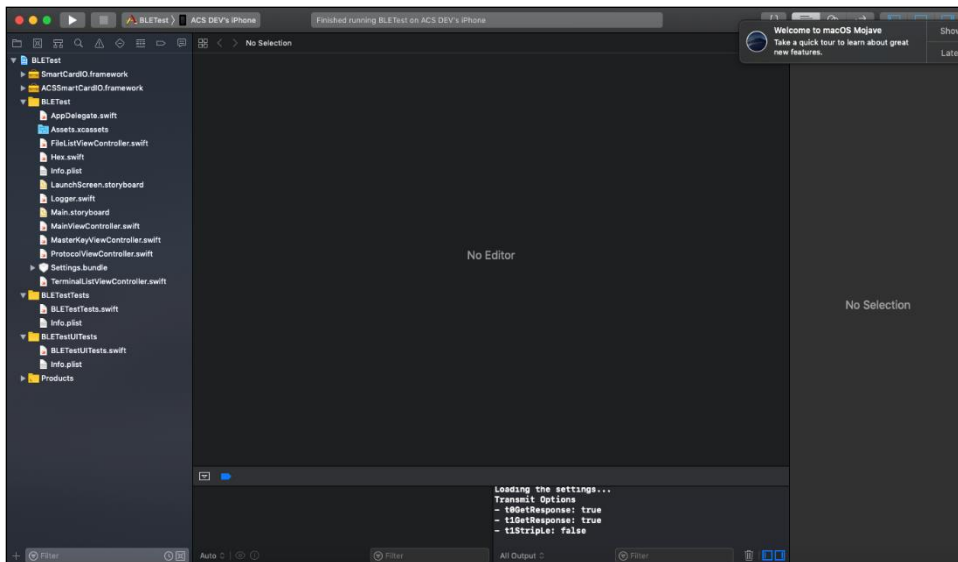
3.1. Installing the BLE Test application

1. You can access the device library when you download the **iOS BLE EVK (SmartCardIO)** from the ACS website.
2. Using XCode application, open **BLETest.xcodeproj**.



3. Transfer **BLETest.xcodeproj** to your mobile device. Choose your mobile device, and then click **Play**.

Note: Make sure that your mobile device is connected to your computer.





3.2. Using the ACS Bluetooth demo application

This section provides a simple step-by-step procedure on how to use the ACR1555U-A1 using the BLETest application.

3.2.1. Connecting a device

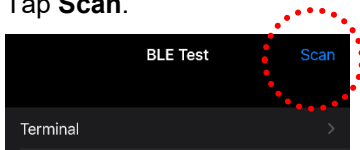
1. Turn on the ACR1555U-A1 and enter Bluetooth mode for make it discoverable. To do this, press and hold the power button for 3sec. The Green LED will be On and Blue LED will be start Blinking. (if Green LED is on, but Blue LED is not Blinking), Follow the instruction at **step 2**



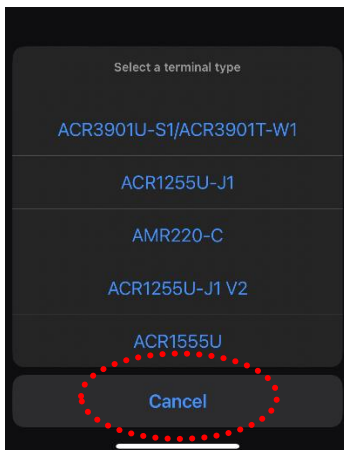
2. Turn on the Bluetooth mode of ACR1555U-A1 and make it discoverable. To do this, press the mode button 3 sec for enter Bluetooth mode.



3. Turn on your device's Bluetooth by going to **Settings > Bluetooth**.
4. Open **BLE Test** application.
5. Tap **Scan**.

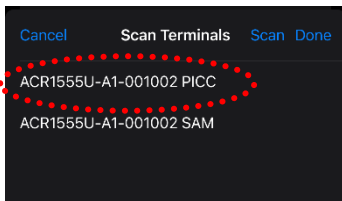


6. Select the terminal type **ACR1555U-A1**

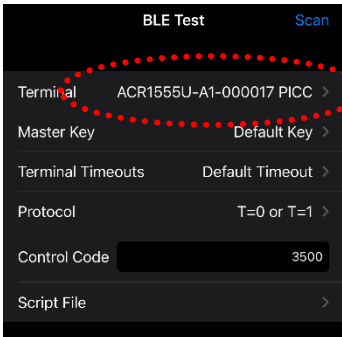




7. Choose the reader to pair your iOS device with, then tap **Done**.

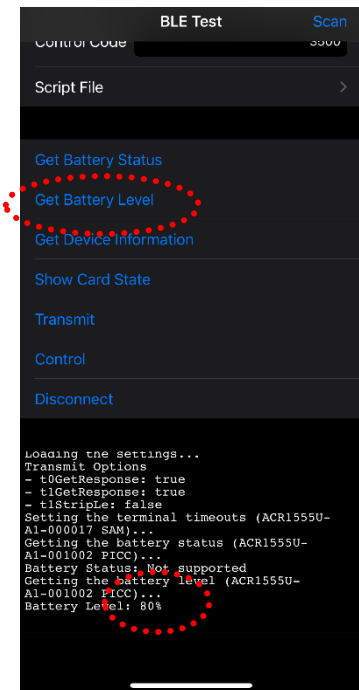


8. When the pairing is successful, the main page will be displayed.



3.2.2. Getting the battery level

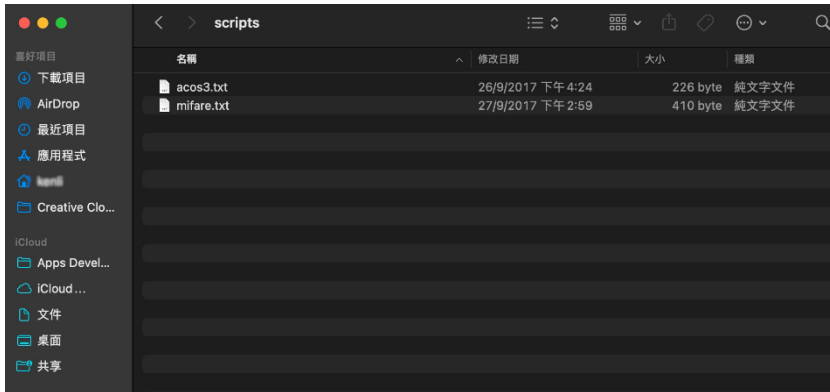
To get the battery status, tap **Get Battery Level**. The status should be displayed as part of the logs.



3.2.3. Transmitting an APDU command

To transmit APDU command:

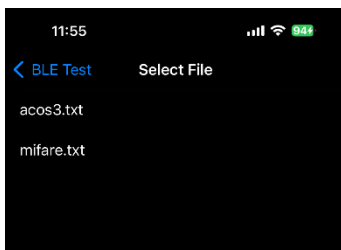
1. Connect the mobile device to mac and locate the App folder “BLETest” in finder.



2. Drag and drop the **acos3.txt** and **mifare.txt** from script folder into “BLETest” folder

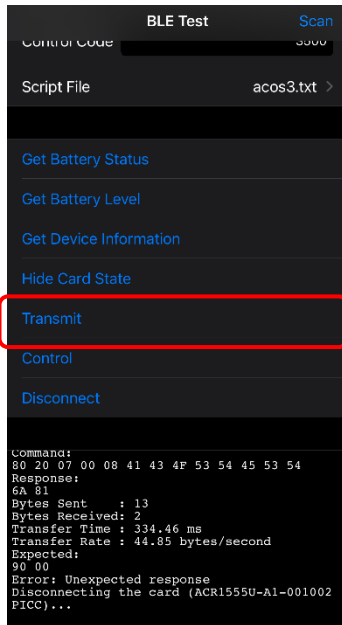


3. Under Apps section, click on **BLETest app** and add a text file (.txt) containing the APDU commands.
4. Tap a contactless smart card on the ACR1555U-A1 reader
5. In the demo application on the mobile device, tap **Script File**, and then locate the .txt file to run.





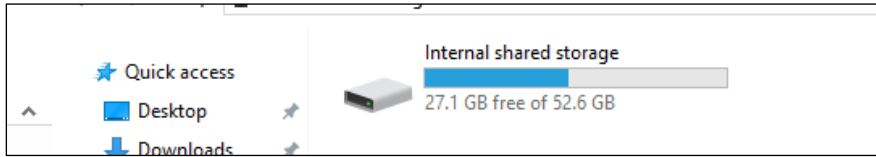
- Go back to the main page then Tap **Transmit** button. The Response APDU will be displayed as part of the logs.



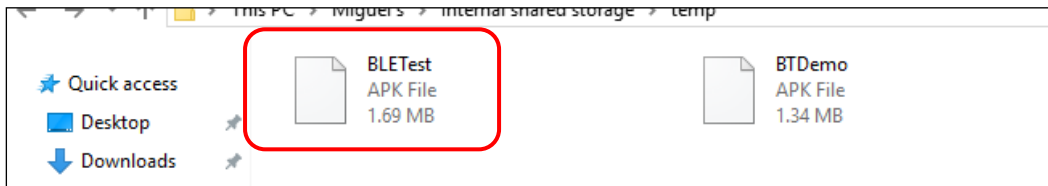
4.0. For Android (BLE Test Application)

4.1. Installing the BLE Test application

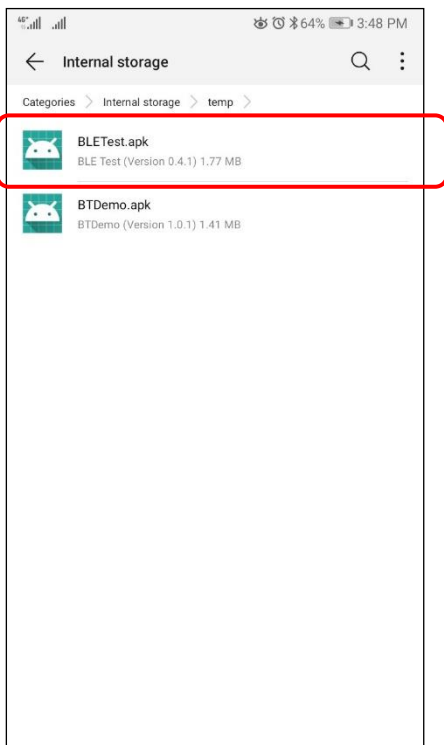
1. Connect your mobile device to the computer.



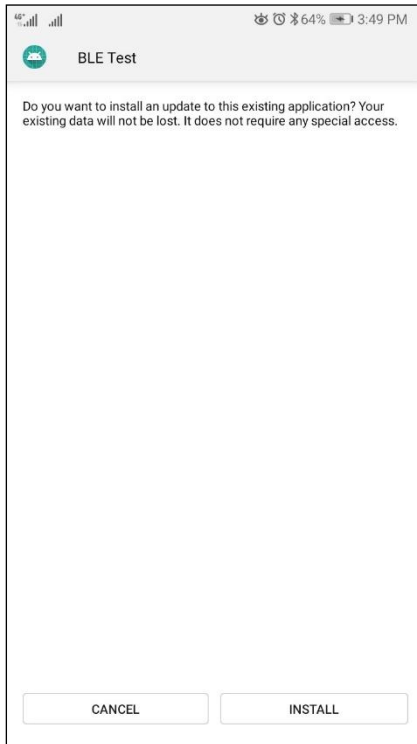
2. In the internal storage of your device, create a folder where the ACR1555U-A1 BLETest will be placed.
3. You can access the device library by downloading the **Android BLE EVK (SmartCardIO)** from the ACS website.
4. In the Android library, copy the **BLETest-0.6.0.apk** and the **test scripts(.txt)** files to the previously created folder.



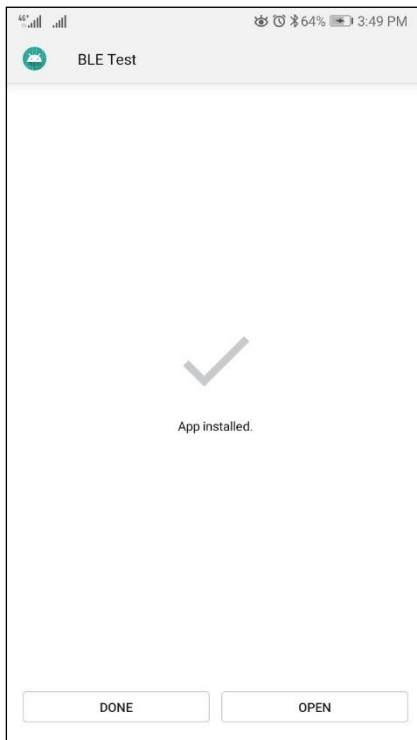
5. Disconnect your mobile device from the computer. Locate the **BLETest-0.6.0.apk** using a file manager application.
6. To start the installation, tap the **BLETest-0.6.0.apk** file.



7. Complete the action using **Package Installer**.



8. A prompt will ask for hardware control access. Tap **Install** to proceed.
9. Once the installation is complete, you can now open the BLE Test application.





4.2. Using the ACS Bluetooth demo application

4.2.1. Connecting a device

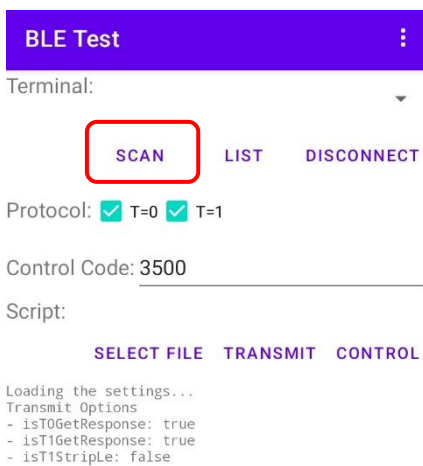
1. Turn on the ACR1555U-A1 and enter Bluetooth mode for make it discoverable. To do this, press and hold the power button for 3sec. The Green LED will be On and Blue LED will be start Blinking. (if Green LED is on, but Blue LED is not Blinking) , Follow the instruction at **step 2**



2. Turn on the Bluetooth mode of ACR1555U-A1 and make it discoverable. To do this, press the mode button 3 sec for enter Bluetooth mode.

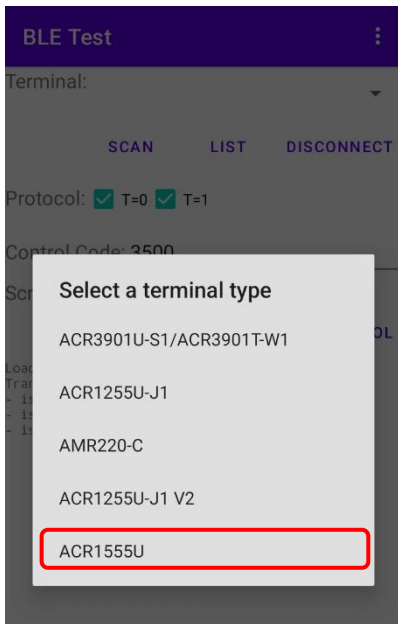


3. Turn on your device's Bluetooth by going to **Settings | Bluetooth**.
4. Open **BLE Test** application.
5. Tap **Scan**.

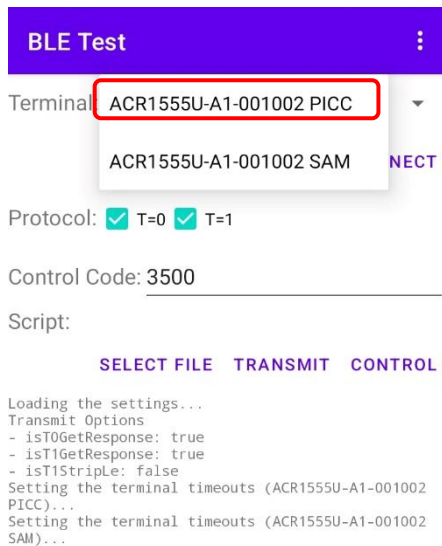
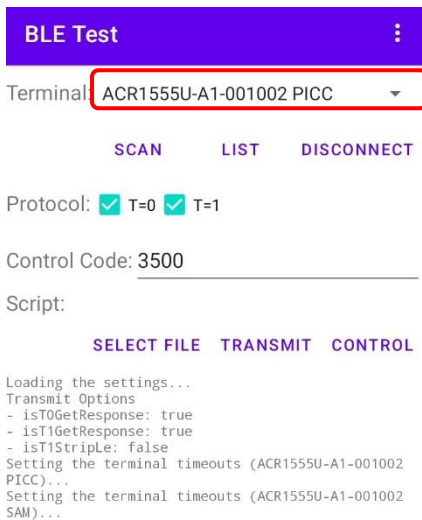




6. Select the terminal type **ACR1555U**



7. Available devices will be displayed. Tap the drop down button to show the complete list of available devices

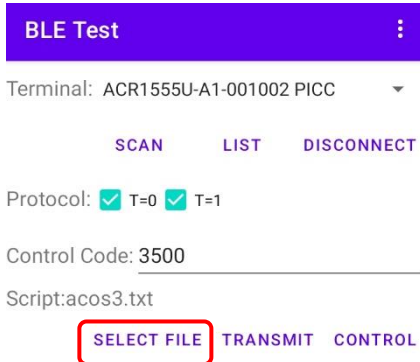




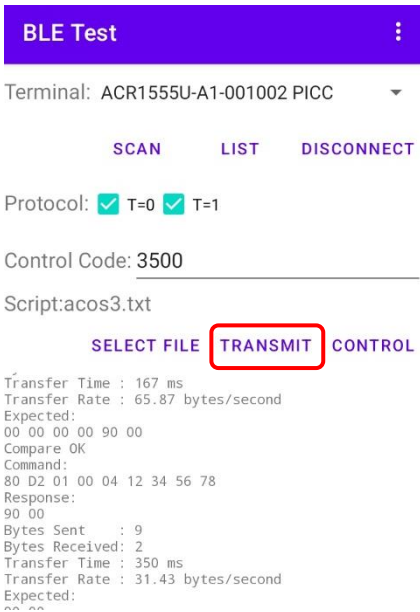
4.2.2. Transmitting an APDU command

To transmit APDU commands:

1. Tap a contactless smart card on the ACR1555U-A1 reader
2. In the demo application on the mobile device, tap **Select File**, and then locate the .txt file to run.



3. Go back to the main page then tap **Transmit**.



The Response APDU will be displayed as part of the logs.

Note: The application is designed to get the ATR of the card before sending the APDU commands.

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The *Bluetooth*® word, mark and logos are registered trademarks owned by Bluetooth SIG, Inc. and any use of such marks by Advanced Card Systems Ltd. is under license.
Windows is a registered trademark of Microsoft Corporation in the United States and/or other countries.



5.0. Bluetooth HID Keyboard Emulation

What is Bluetooth HID Keyboard Emulation?

Bluetooth HID Keyboard emulation is a feature of the ACR1555U card reader that allows it to function as a keyboard input device for reading Card UID.

In this mode, the card reader can read the UID from smart cards and automatically input this information into any editable text field, just like a regular keyboard. This simplifies the process of entering card data, making it quick and efficient for users.

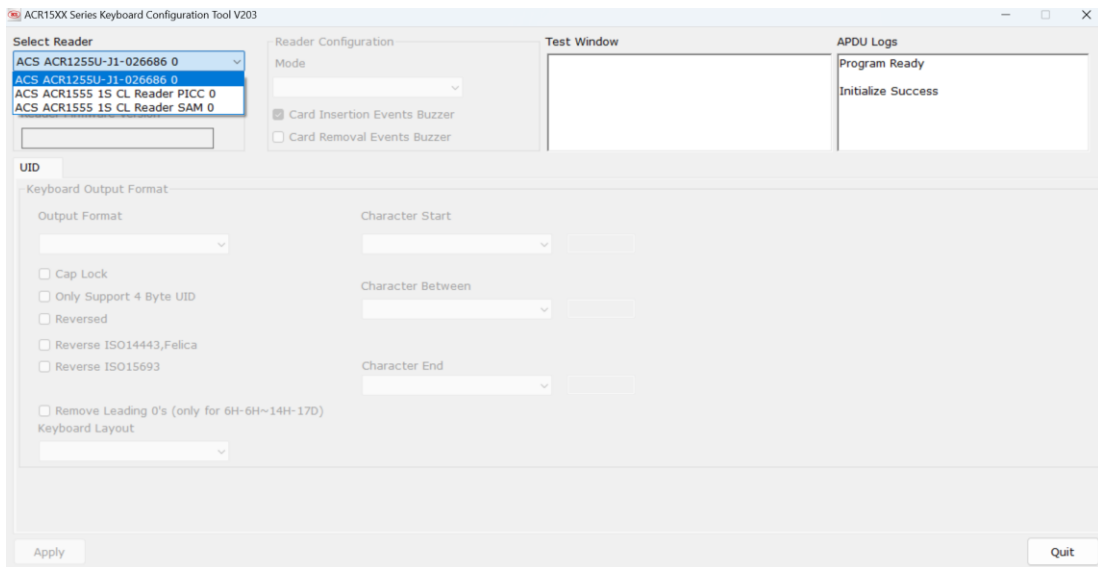
Notice: Before switching the ACR1555U to Bluetooth HID keyboard emulation mode, please **uninstall the Bluetooth Windows driver**. please follow the instructions in **Chapter 2.3**.

5.1. Configuring ACR1555U for Bluetooth HID Keyboard emulation

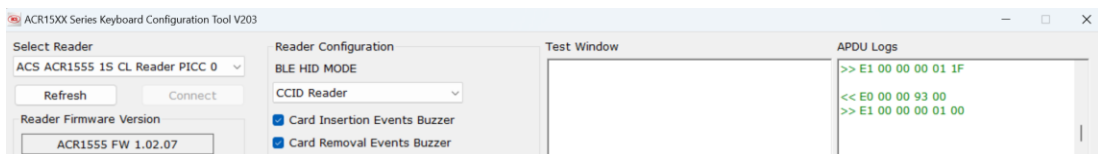
Download Link for the tools required: <https://www.acs.com.hk/en/utility-tools/>

1. Download Software: Get the ACS ACR15XX Keyboard Configuration Tool.
2. Connect Device: Use a **USB** cable to connect the ACR1555U to your computer.
3. Open Tool: Launch the ACR15XX Keyboard Configuration Tool.

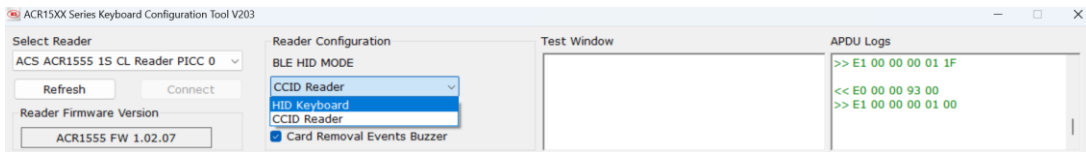
This tool allows you to customize keyboard settings, including layout, language, and card UID reading patterns. (Please maintain the default settings.)



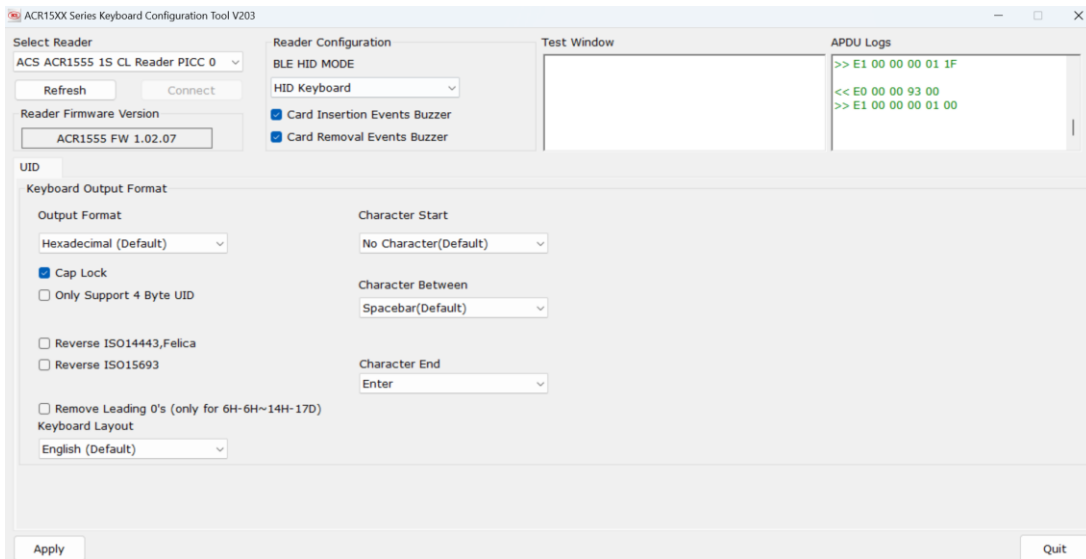
4. Select Device: Choose the ACR1555U from the list and click "Connect" to read the firmware version and current settings.



5. Change Mode: In the dropdown menu, select BLE HID MODE to switch to Bluetooth HID. You can revert to CCID mode using this tool as well.



6. Apply Settings: Click "Apply" to save the changes, or "Quit" to exit without saving.



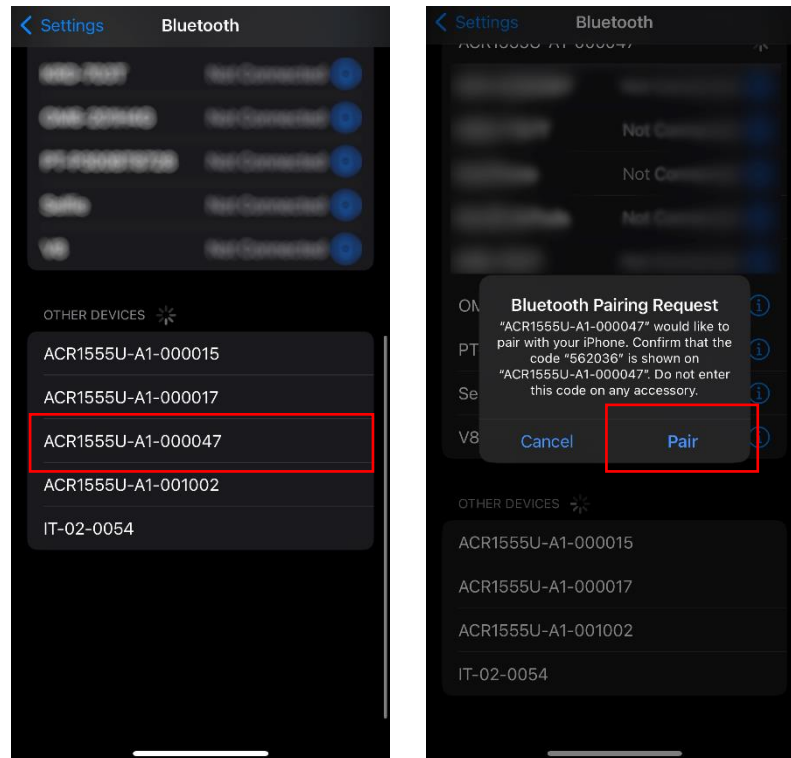
7. Restart ACR1555U Device to activate Bluetooth HID keyboard emulation mode. Once you switch the reader mode and HID mode. The mode button will be restart the ACR1555 when you press

Notes: To switch back to NFC card reader mode, follow the instructions to clear (pairing) bonding records (Chapter 4.2), or repeat the configuration steps to select the CCID reader (Chapter 4.2).

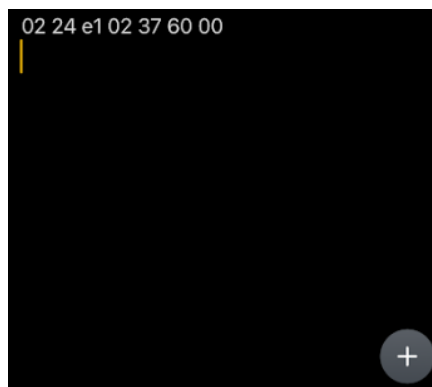
5.2. Connecting ACR1555U via Bluetooth HID keyboard Emulation Mode

For Mobile

1. Open the mobile system settings and navigate to Bluetooth.
2. Turn on your Bluetooth card reader and locate "ACR1555U-A1-XXXXXXX" in the device list.



3. Select the card reader and click "Pair" in the Bluetooth pairing request dialog.
4. Confirm the connection by pressing the mode button on the left side.
5. Then, open a notepad app to read the UID from the card.



For Computer

Connecting ACR1555U to Windows via Bluetooth HID Keyboard Mode

Note: This procedure only applies to Windows 8 and later. Windows 7 does not support devices using Bluetooth 5.2 Bluetooth Low Energy interface.

To pair using this setup:

1. Turn on the ACR1555U-A1 and enter Bluetooth mode for make it discoverable. To do this, press and hold the power button for 3sec. The Green LED will be On and Blue LED will be start Blinking. (if Green LED is on, but Blue LED is not Blinking), Follow the instruction at **step 2**




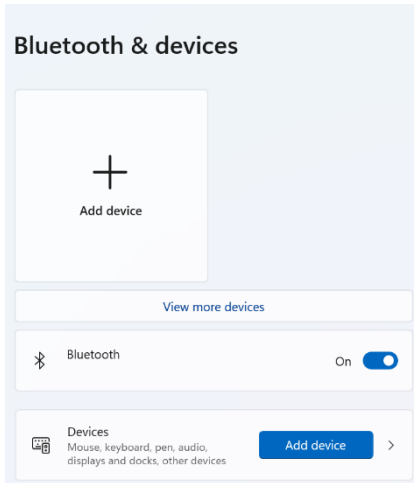
Fig 1 Power Button

2. Turn on the Bluetooth mode of ACR1555U-A1 and make it discoverable. To do this, press the mode button 3 sec for enter Bluetooth mode.



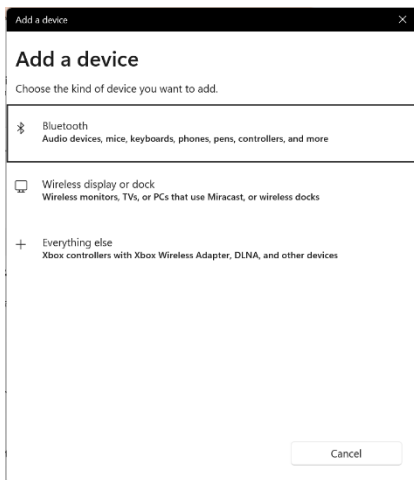
Fig 2 Mode Button

3. Go to **Settings**  choose **Bluetooth & devices**,
4. Turn on **Bluetooth**.
5. Click **Add device**



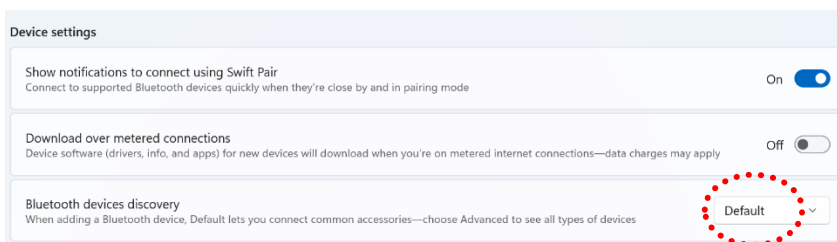
6. In the **"Add a device"** pane, click on **"Bluetooth"** and select an **ACR1555U-A1** reader for pairing.

(If you are unable to find the ACR1555 in **Windows 11**, proceed to step 6.)

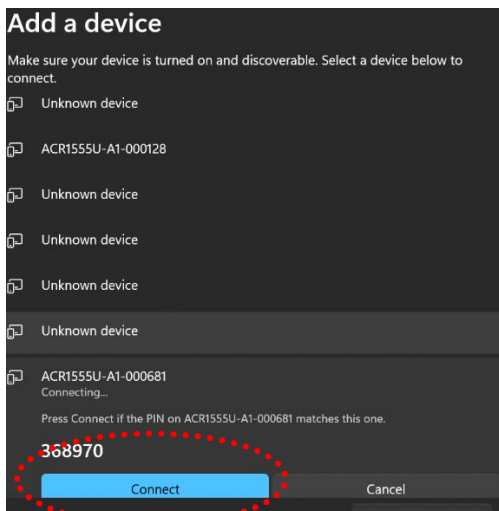


7. For **Windows 11** or if you are unable to see the Bluetooth device displayed
(if you can see ACR1555U, simply skip this step and proceed to Step 8)

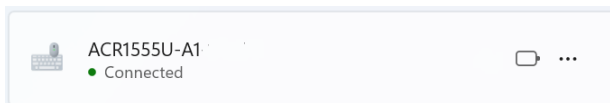
By default, Windows 11 is set to not show uncommon devices. Therefore, you need to switch the "Bluetooth devices discovery" to **advanced**. The Bluetooth device discovery option can be found in the Settings menu under **"Bluetooth & devices" > "Devices"**



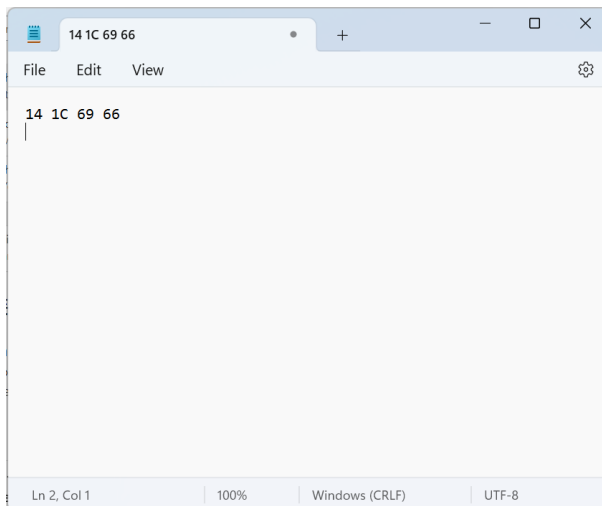
8. When the PIN window appears, please click the "Connect" button. Then, press the Mode button to complete the Bluetooth bonding process.



9. The bonding process is complete when you see that the ACR1555U-A1 is connected. The Blue LED on ACR1555U-A1 will be go steady when the device is well connected.



10. The ACR1555U-A1 will start with HID mode when bonding process complete. Please open the notepad for reading card UID.





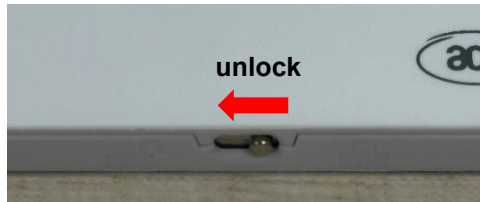
Notes: To config the ACR1555U as HID Keyboard Emulation mode, you will need the **ACS script tools** or **ACS ACR15XX keyboard configuration tool**. Please see the instruction on Chapter 5

Appendix A. SAM Card Installation and Removal

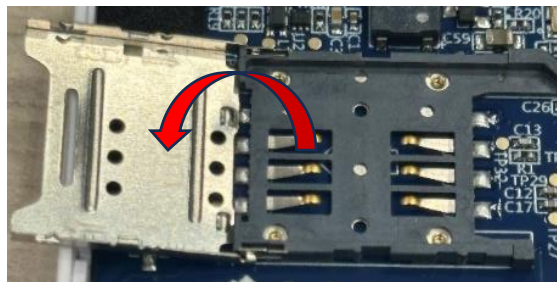
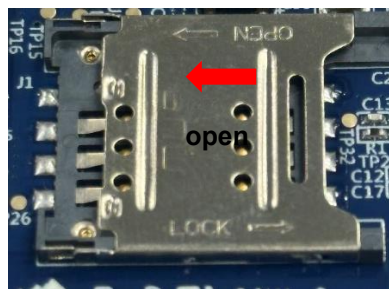
SAM Card Installation Steps

1. Remove the Back Cover

- Use the bottom metal lock to unlock and remove the back cover of the device.



- Once the back cover is removed, you will see the steel SAM slot.
- Slide the metal SAM cover to the left and Pull it up gently.



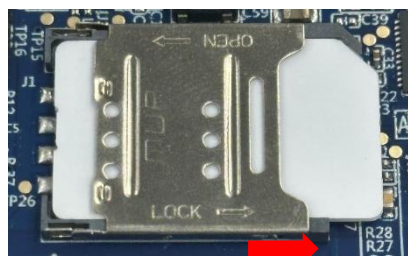
2. Insert the SAM Card

- insert your SAM card into the slot. Ensure the card is positioned correctly.



3. Secure the SAM Card

- Push the metal SAM cover back down and slide it to the right to secure the SAM card in place.



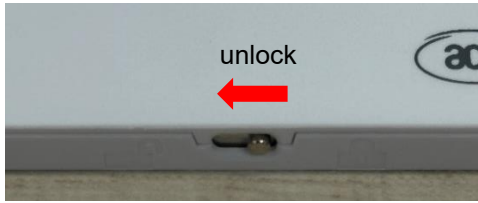
4. Reattach the Back Cover

- Place the plastic back cover back onto the device.
- Turn the lock to the right to secure the back cover.

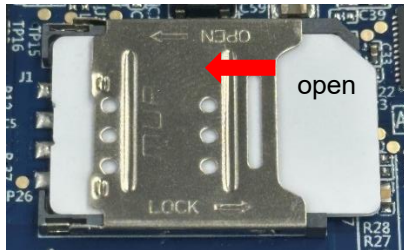
Removal SAM Card Steps

1. Remove the Back Cover

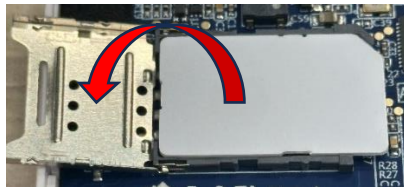
- Use the bottom metal lock to unlock and remove the back cover of the device.



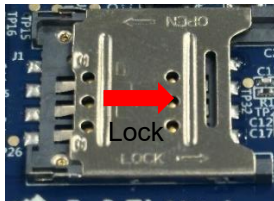
- Once the back cover is removed, you will see the steel SAM slot.
- Slide the metal SAM cover to the left to release it.



2. Remove the SAM Card



- Pull it up gently and take out your SAM card.
- Push the metal SAM cover back down and slide it to lock position.



3. Reattach the Back Cover

- Place the plastic back cover back onto the device. Turn the lock to the right to secure the back cover.

