Advanced Card Systems Ltd.
Card & Reader Technologies

ACR1255U-J1
Bluetooth®
NFC Reader

User Manual V1.00

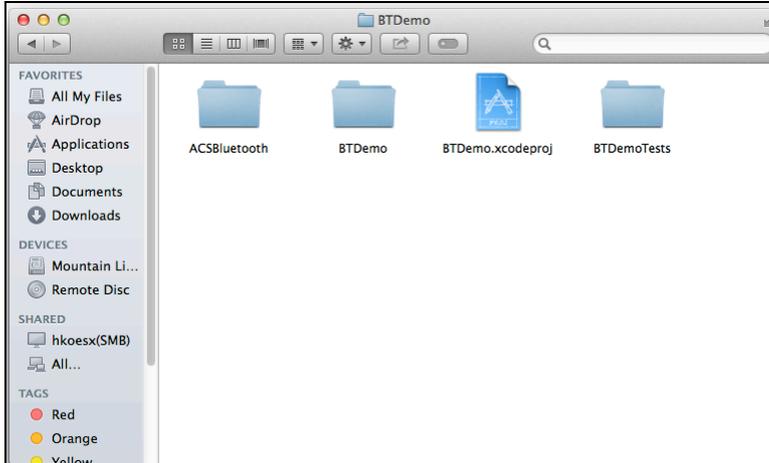# Table of Contents

1.0. Introduction

ACR1255U-J1 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 contains step-by-step procedures in installing and using the demo application included in the Android™ and iOS library of the ACR1255U-J1 Bluetooth NFC Reader.
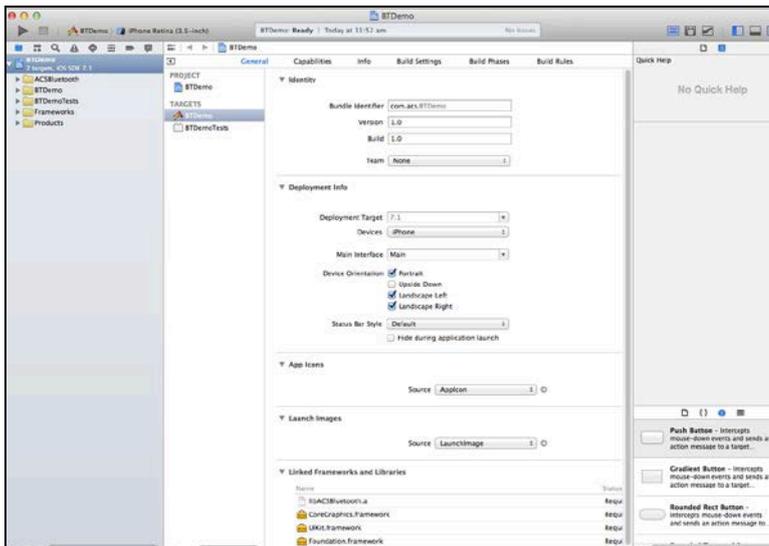
2.0. For iOS

2.1. Installing the application

1. Download the device library from ACS website under ACR1255U-J1 category.

2. Using the XCode application, open the **BTDemo.xcodeproj** file.

3. Transfer the **BTDemo.xcodeproj** to your mobile device by choosing your mobile device and then clicking the play button.

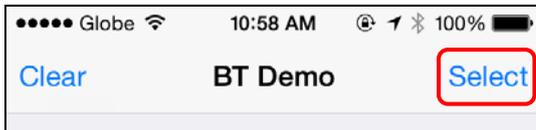   *Note: Make sure that your mobile device is connected to your computer.*
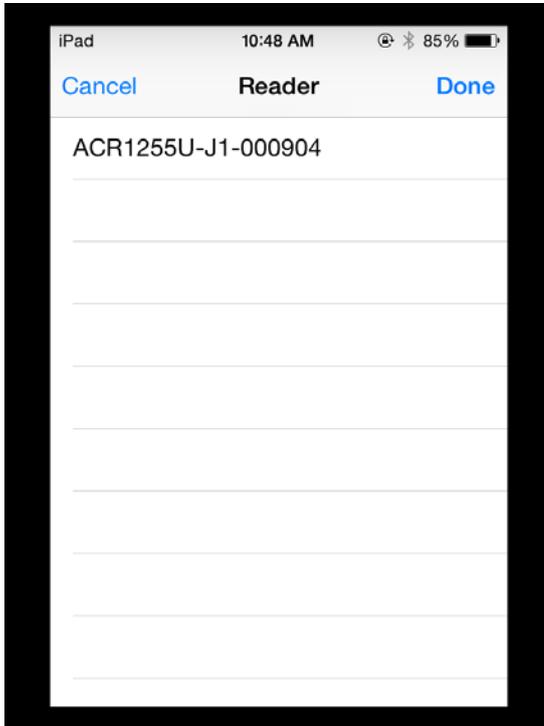
2.2. Using the application

This section provides a simple step-by-step procedure on how to use the ACR1255U-J1 Bluetooth NFC Reader using the BT Demo application.

2.2.1. Connecting the reader

1. Turn on the Bluetooth of your iOS device by going to **Settings | Bluetooth**.

2. Turn on the Bluetooth of the ACR1255U-J1 reader by switching the toggle on top to Bluetooth mode.

3. Open the **BT Demo application**.
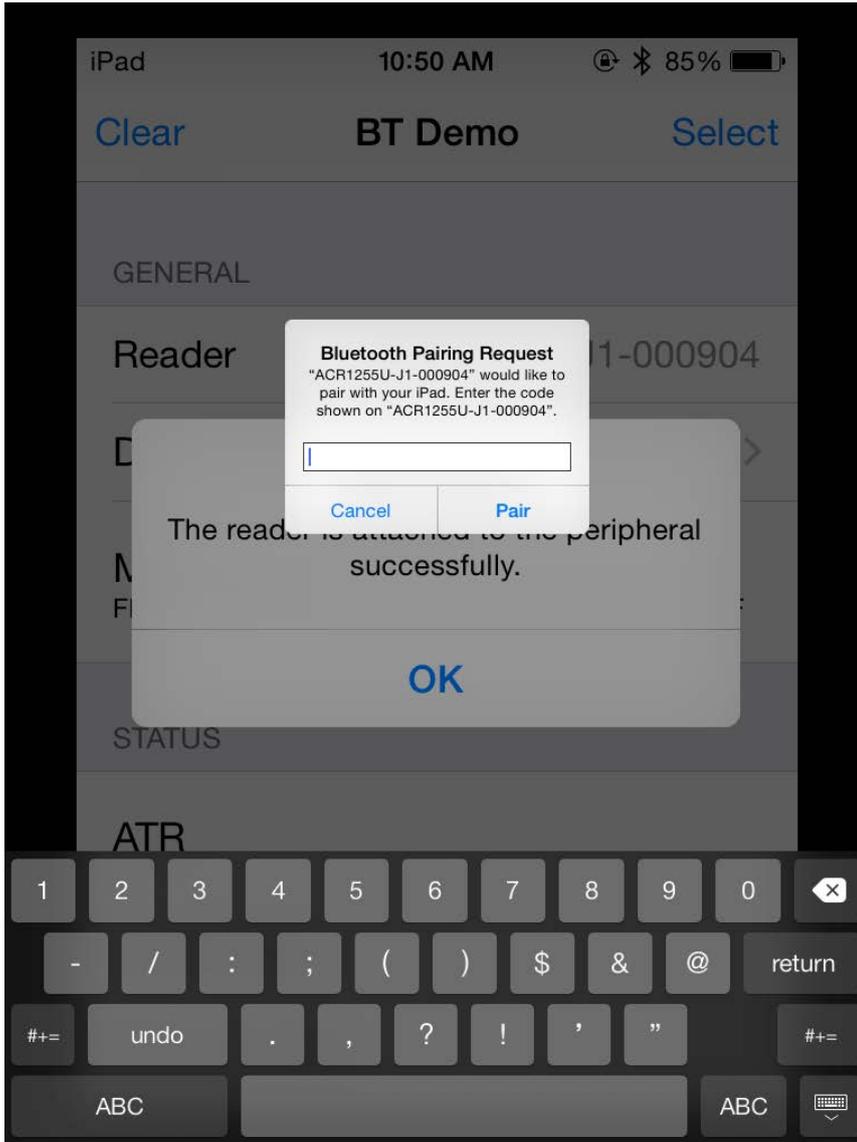
4. Tap **Select**.

5. To pair your iOS device with the ACR1225U-J1 reader, tap the ACR1255U-J1 reader, and then tap **Done**.
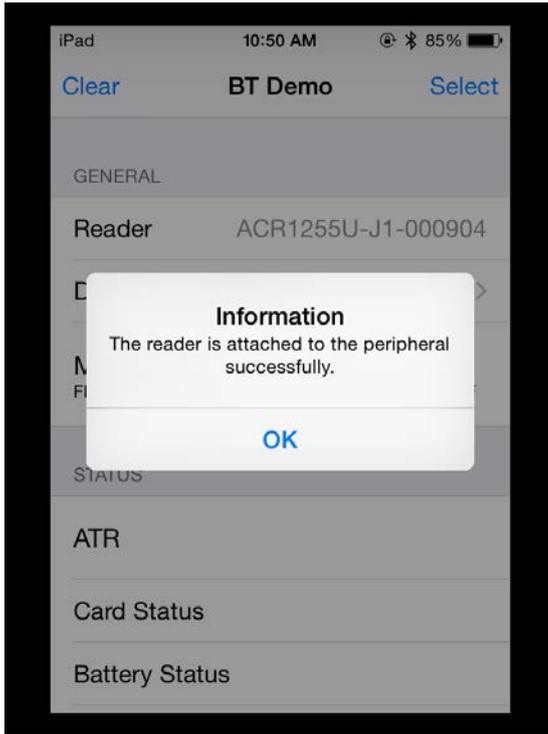
6. A bluetooth pairing request message will be displayed. Type in *000000*, and then tap **Pair** to continue.

7. You will be prompted that the pairing was successful. Tap **OK**.

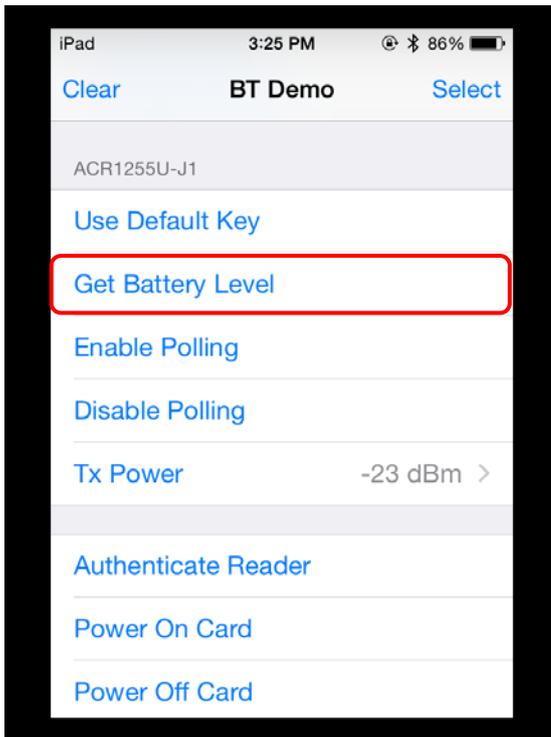### 2.2.2. Getting the device information

To get the reader's information, tap **Device Information**.
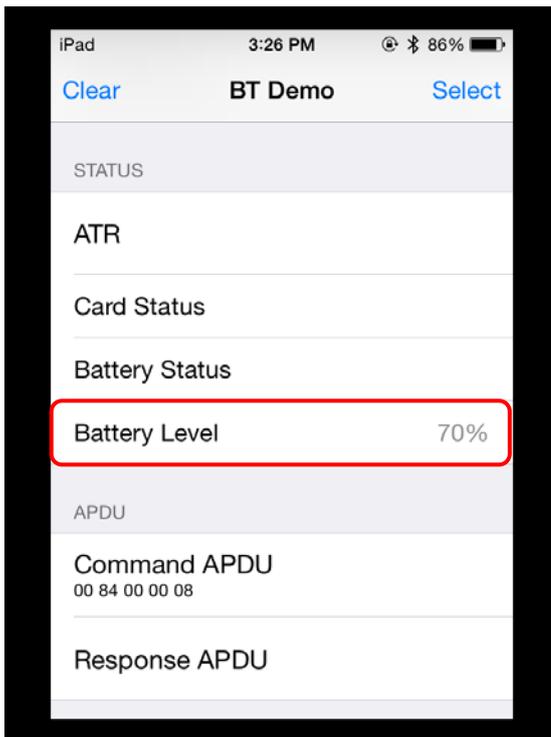
2.2.3.   Getting the battery level

To get the battery level:

1. Tap **Get Battery Level**.

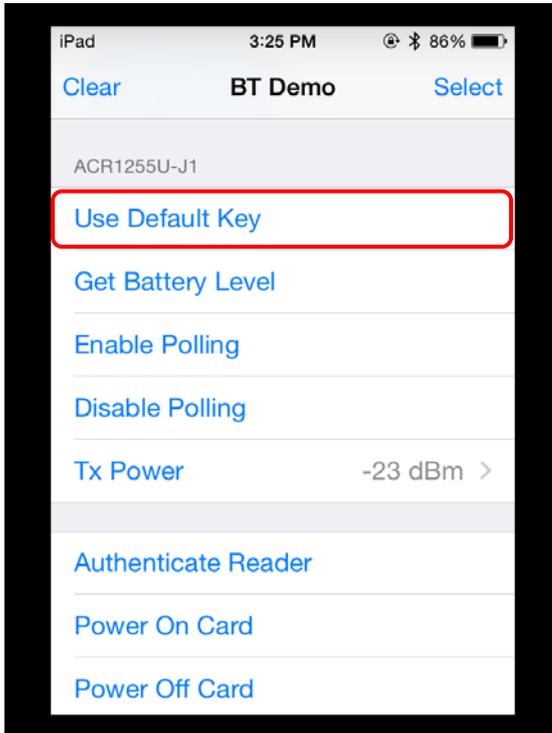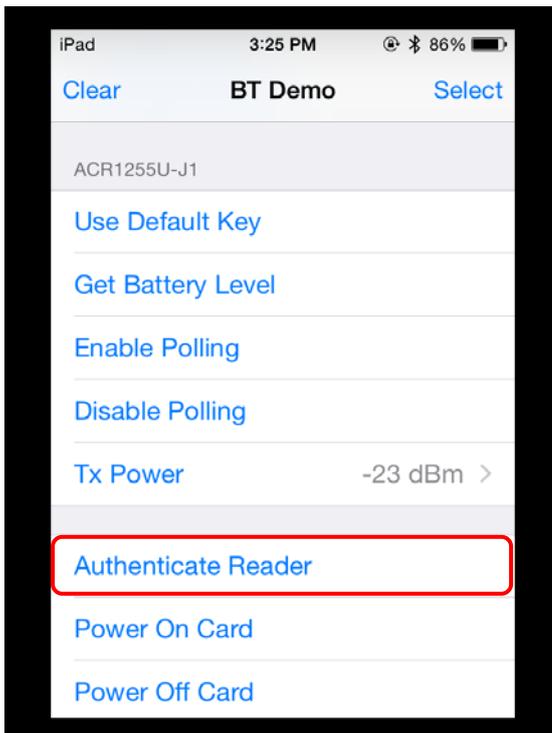2. The battery level will be displayed.

2.2.4. Getting the ATR (Answer to reset)
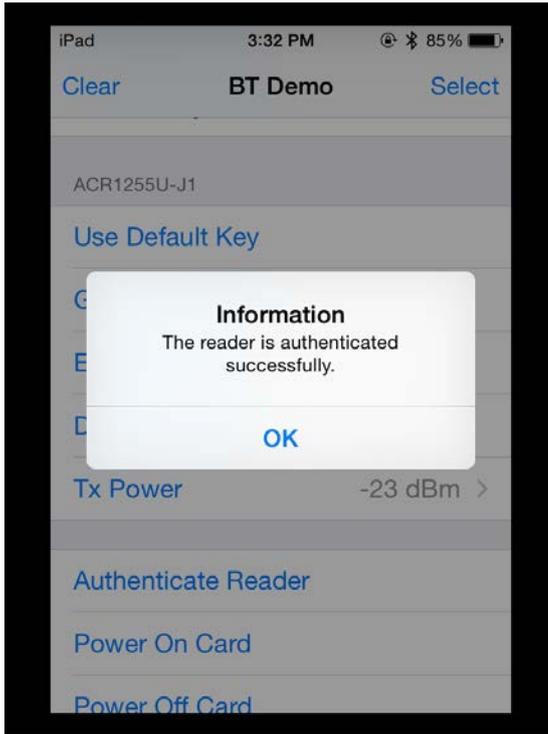
To get the ATR of the card:

1. Place the contactless smart card on to the ACR1255U-J1 reader.

2. Tap **Use Default Key** to load the default keys of the device to the application.
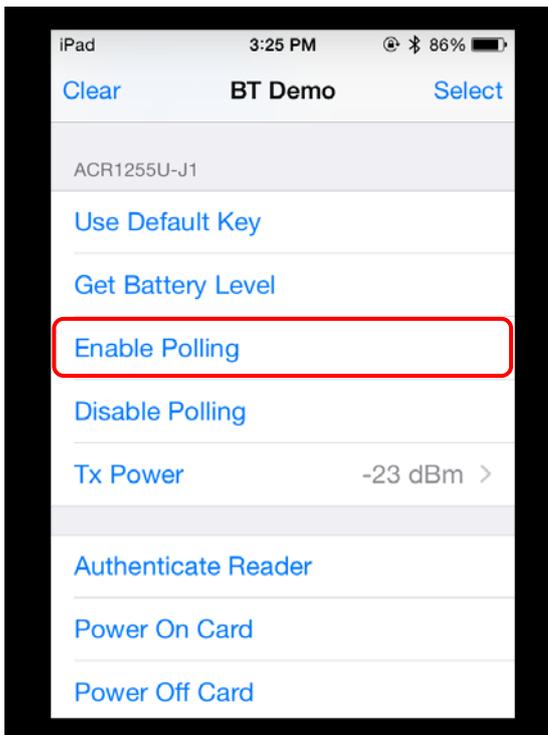

3. Tap **Authenticate Reader** to validate device.

4. You will be prompted that the authentication was successful. Tap **OK**.
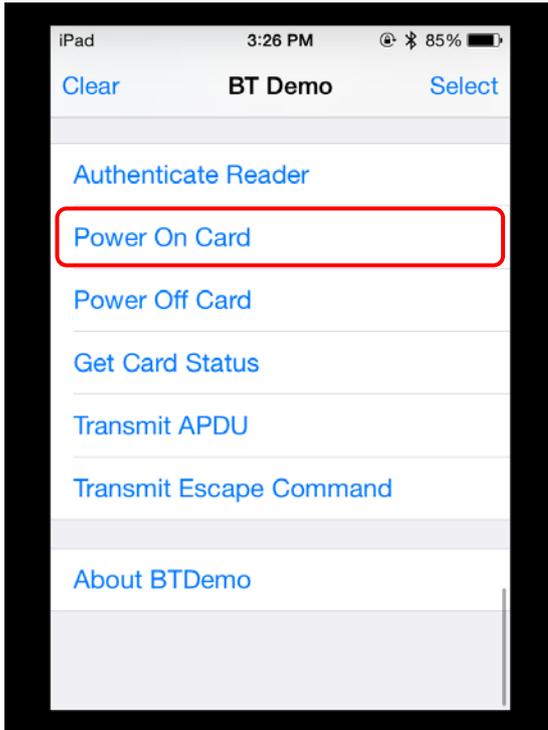

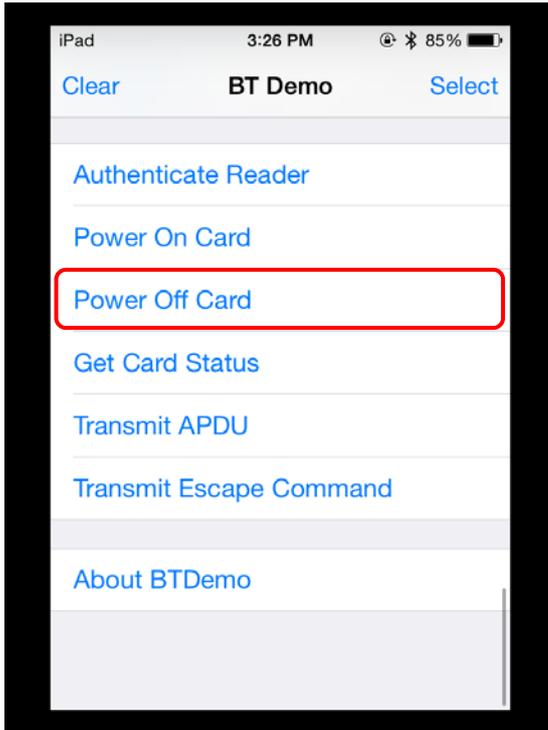5. Tap **Enable Polling** to start polling for the contactless card.
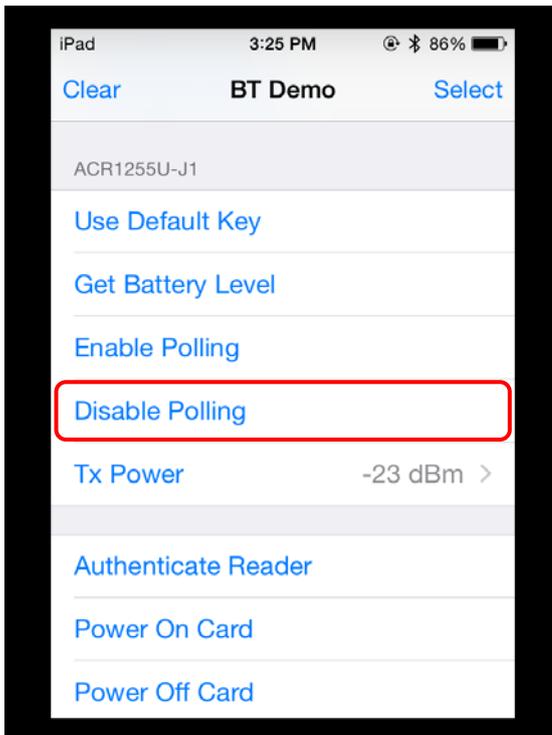
6. Tap **Power On Card**.

7. The card's ATR will be displayed.
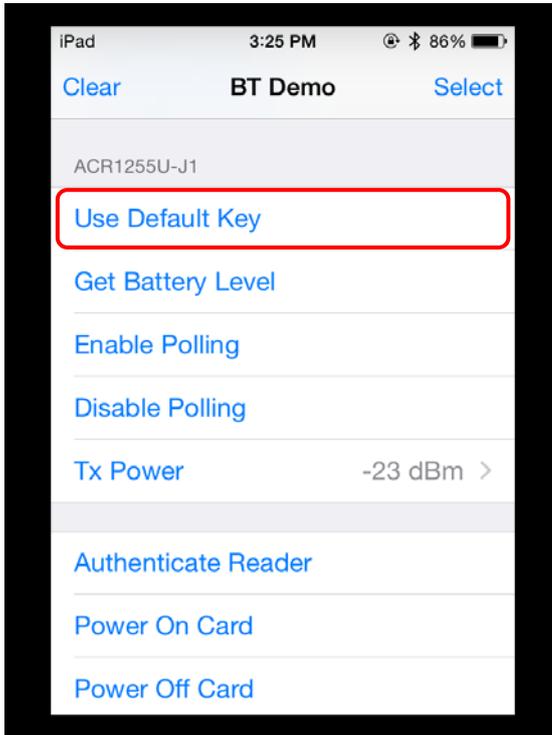
8. Tap **Power Off Card**.

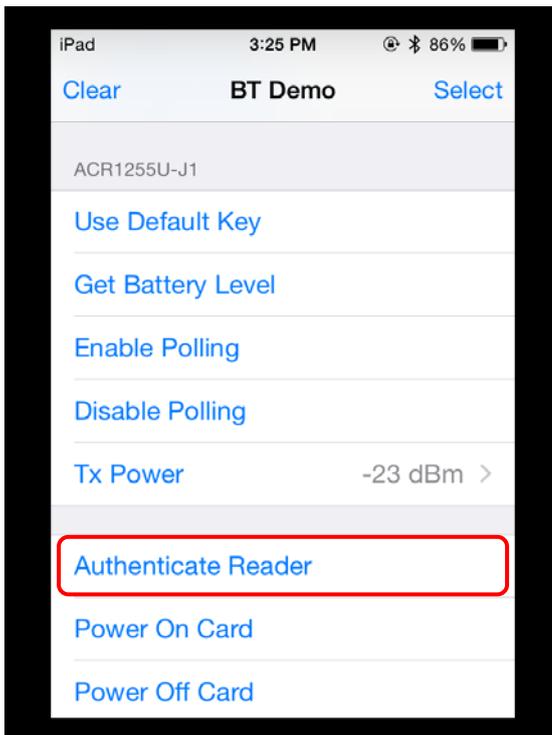9. Tap **Disable Polling** to end polling for the contactless card.

2.2.5. Transmitting APDU commands

To transmit APDU command:

1. Insert the smart card into the contact card slot of the ACR1255U-J1 reader.

2. Tap **Use Default Key** to load the default keys of the device to the application.
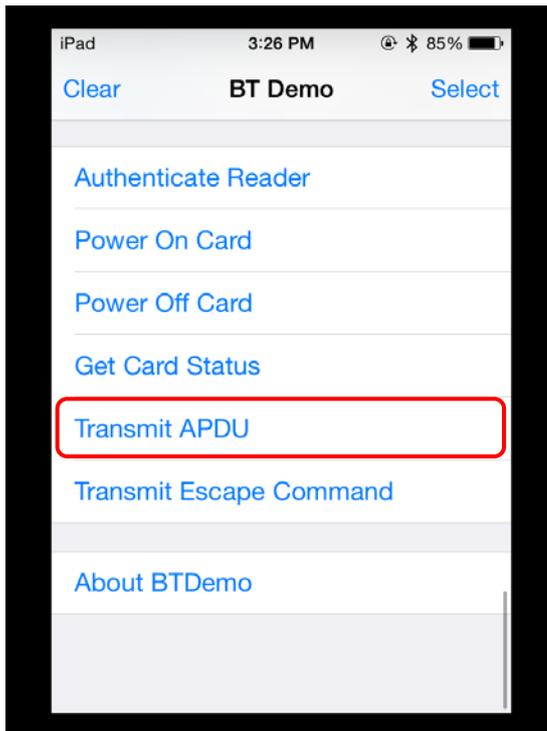

3. Tap **Authenticate Reader** to validate device.

4. Tap **Transmit APDU**.

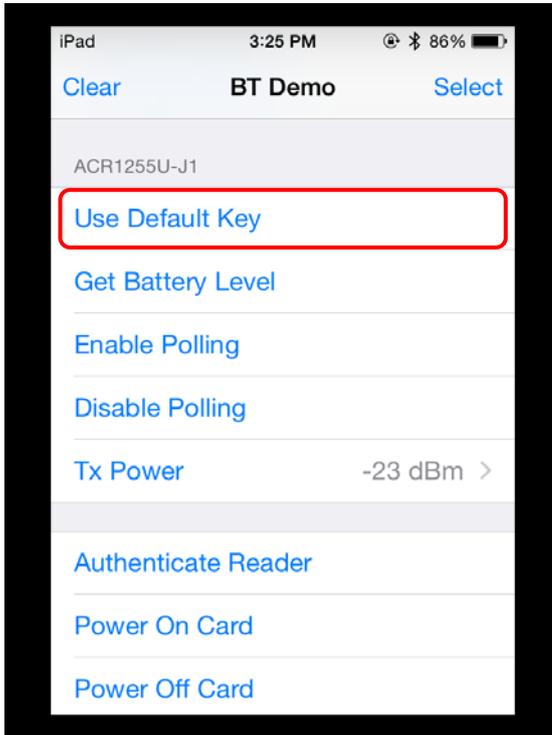5. The Response APDU will be displayed.

Note: You can edit the APDU command by tapping **Command APDU**.
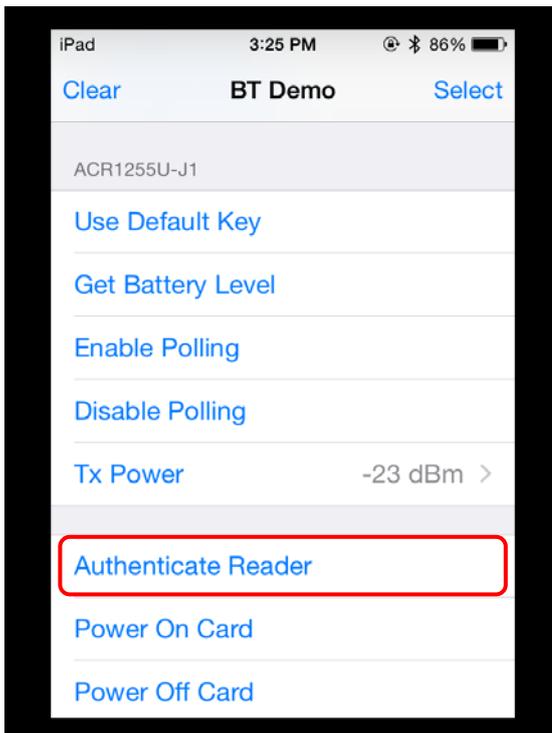
2.2.6. Executing escape command

To execute an escape command:

1. Insert the smart card into the contact card slot of the ACR1255U-J1 reader.

2. Tap **Use Default Key** to load the default keys of the device to the application.
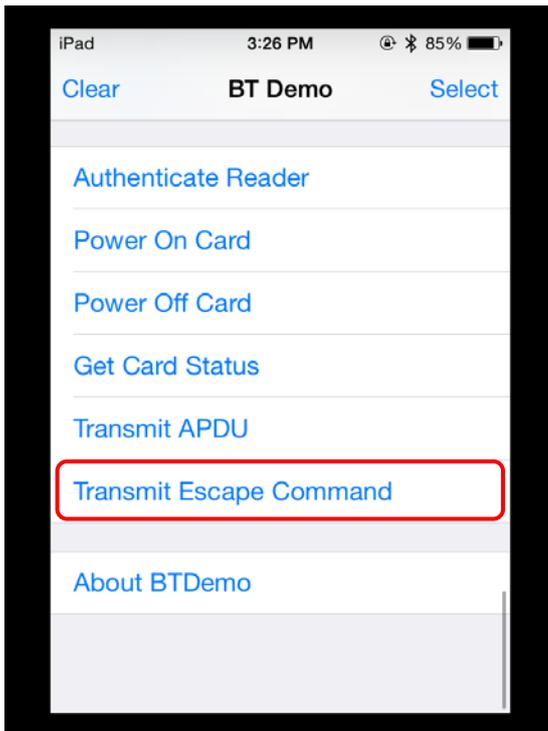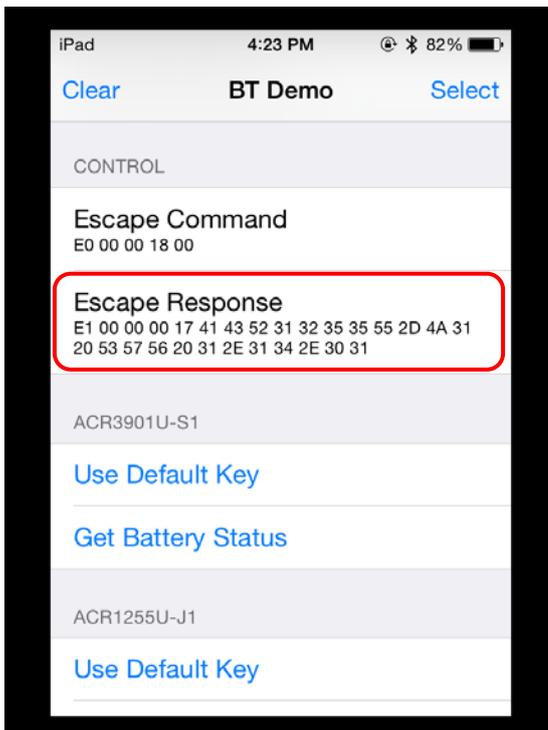

3. Tap **Authenticate Reader** to validate device.

4. Tap **Transmit Escape Command**.

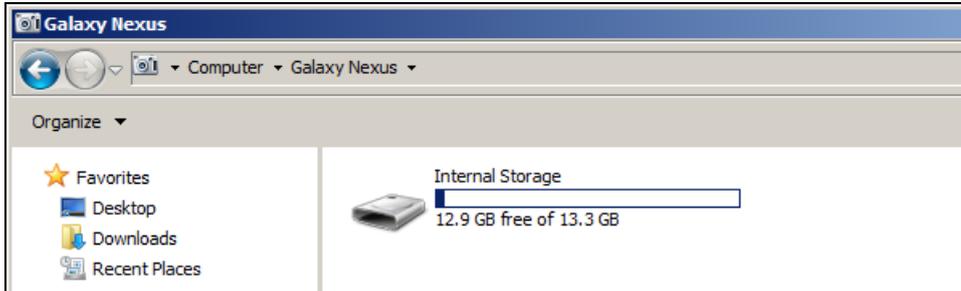5. The Escape Response will be displayed.

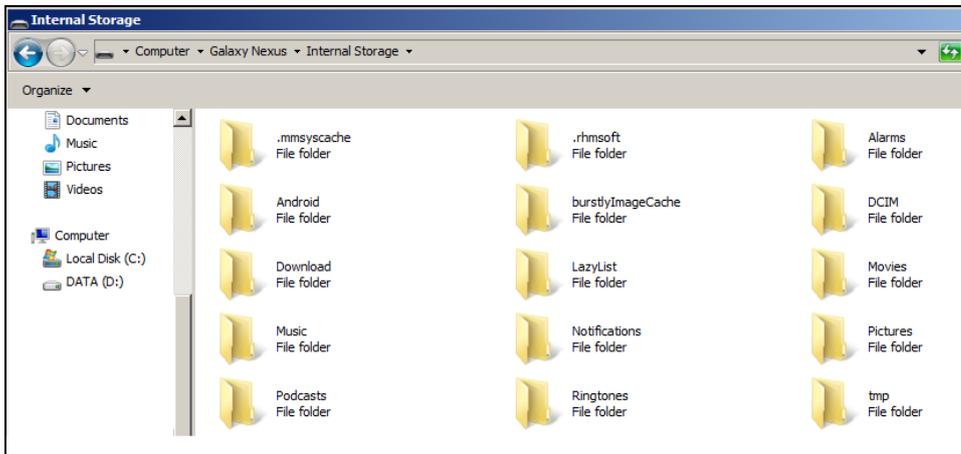**Note:** *You can edit the Escape command by tapping **Escape APDU**.*

3.0. For Android

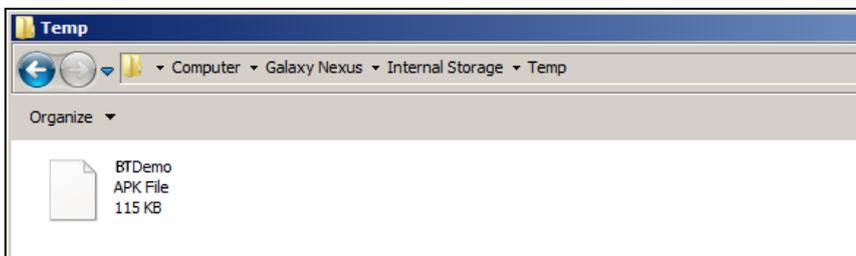## 3.1. Installing the application

1. Connect your mobile device to the computer.

2. In the internal storage of your device, create a folder where the ACR1255U-J1 BTdemo will be placed.

3. Download the device library from ACS website under ACR1255U-J1 category.

4. Copy the **BTDemo.apk** file from the downloaded ACR1255U-J1 Android library into the previously created folder.
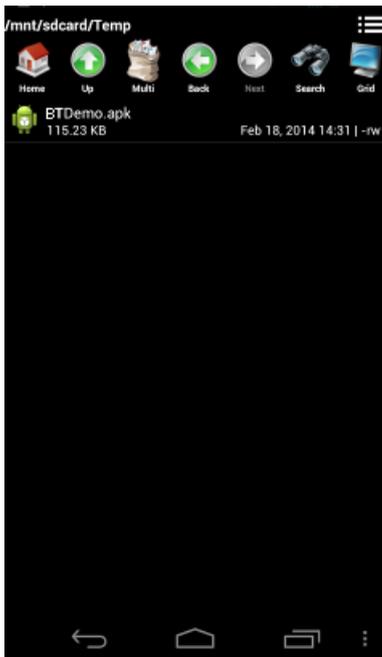
5. Disconnect your mobile device from the computer, and then locate the **BTDemo.apk** using a file manager application.
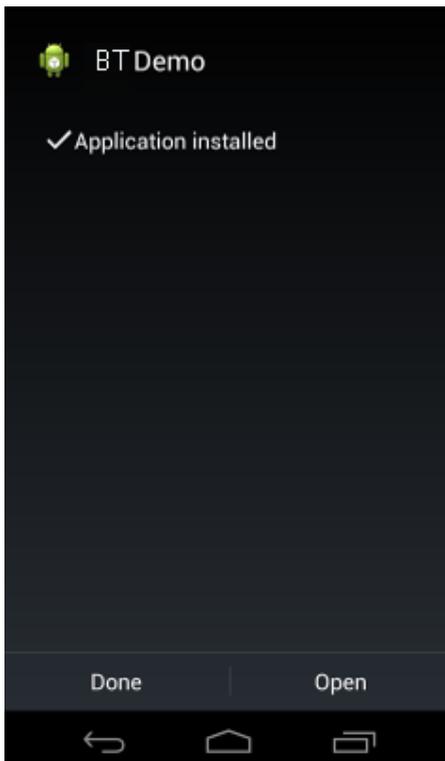

6. Tap the **BTDemo.apk** file to start the installation process.

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

8. You will be prompted for hardware control access. Tap **Install** to proceed.
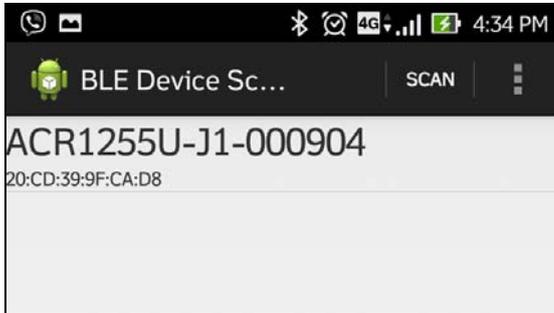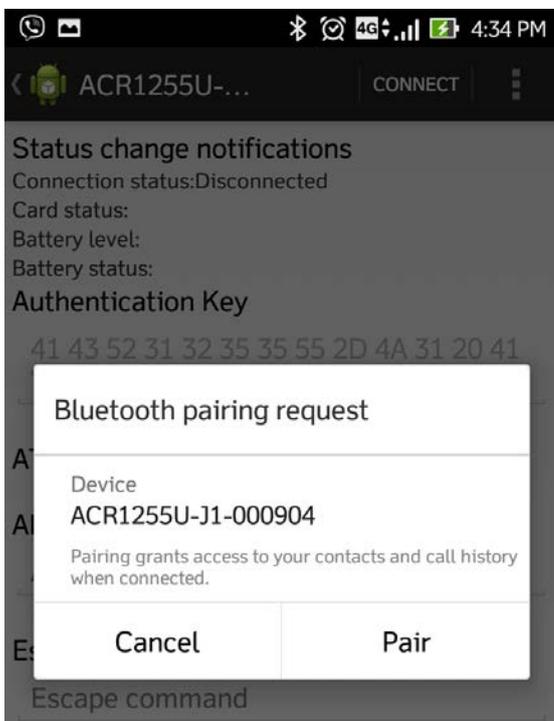9. Once the installation is complete, open the BT Demo application.

3.2. Using the application
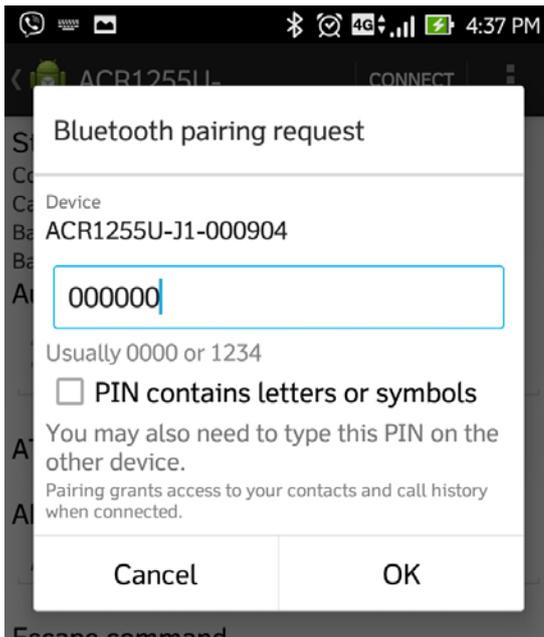
3.2.1. Connecting the reader

1. Turn on the Bluetooth of your Android device by going to **Settings | Bluetooth**.

2. Turn on the Bluetooth of the ACR1255U-J1 reader by switching the toggle on top to Bluetooth mode.

3. Open the **ACS BT Demo application**.

4. To pair your Android device with the ACR1255U-J1, tap the ACR1255U-J1 reader.

5. The application will automatically try to connect with the ACR1255U-J1. A Bluetooth pairing request will appear. Tap **Pair**.
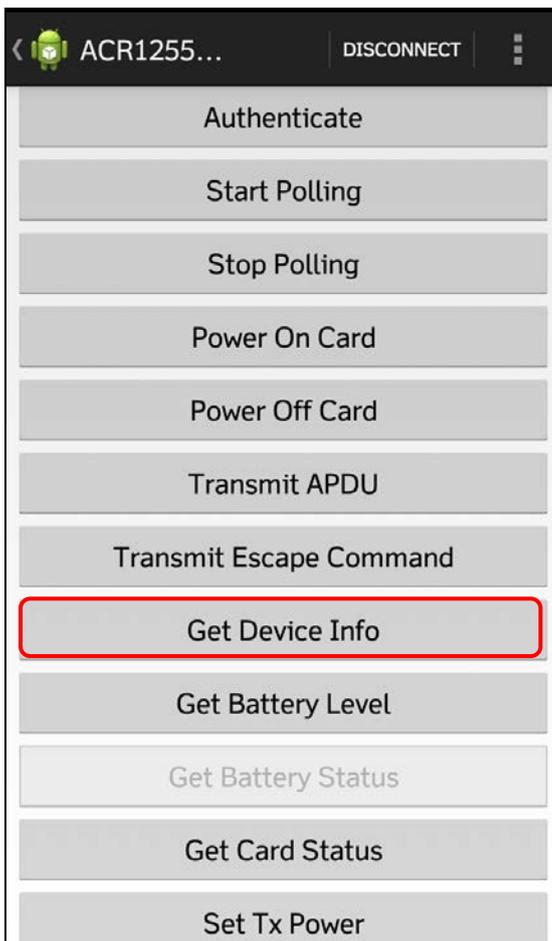
6. You will be prompted for a pairing code. Type in *000000* and then tap **OK**.
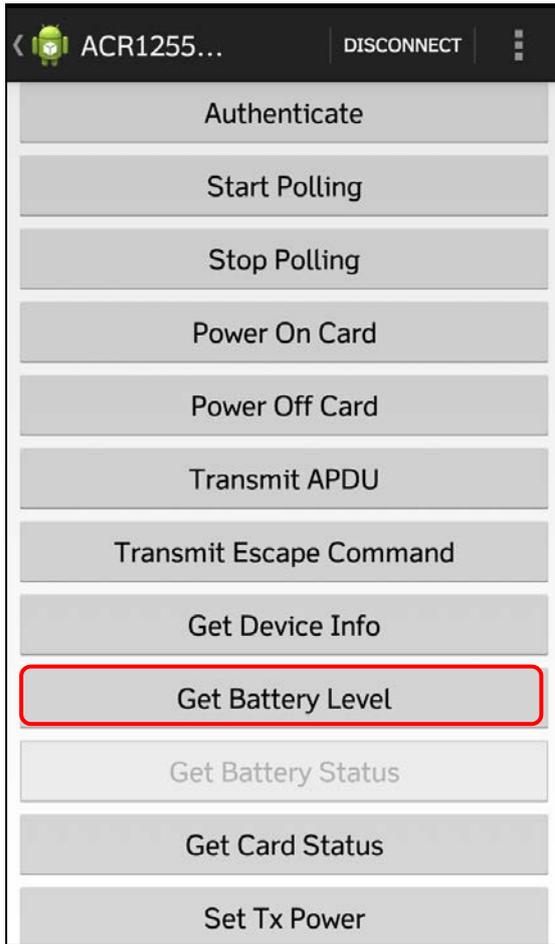

3.2.2. Getting the device information

To get the reader's information, scroll down and then tap **Get Device Info**. Scroll up again to view the Device information displayed.
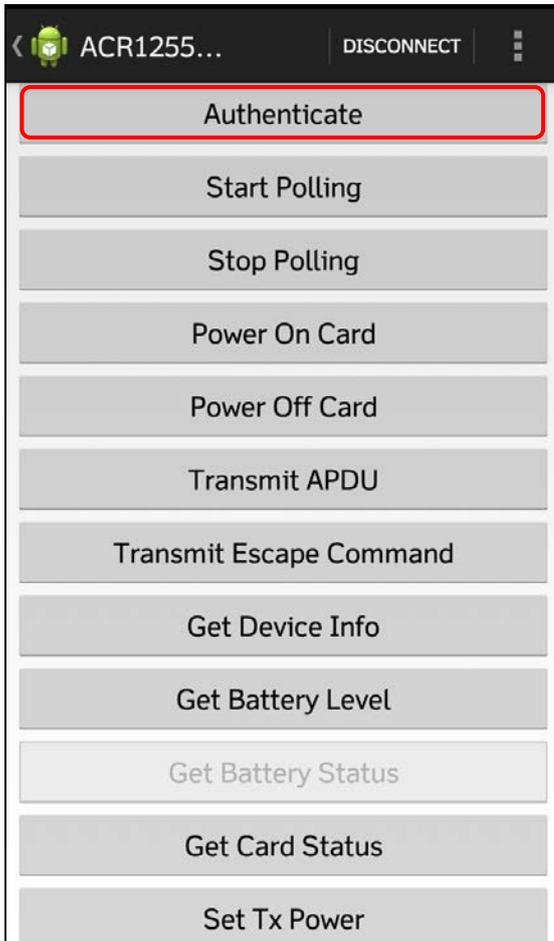
3.2.3. Getting the battery level

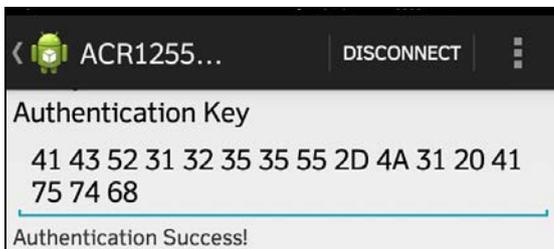To get the battery status, tap **Get Battery Level**. Scroll up again to view the battery level.

3.2.4. Getting the ATR (Answer to reset)

To get the ATR of the card:

1. Insert the smart card into the contact card slot of the ACR1255U-J1 reader.

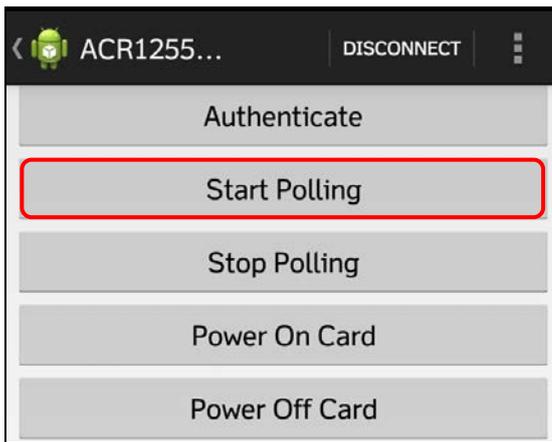2. Tap **Authenticate** to validate device.

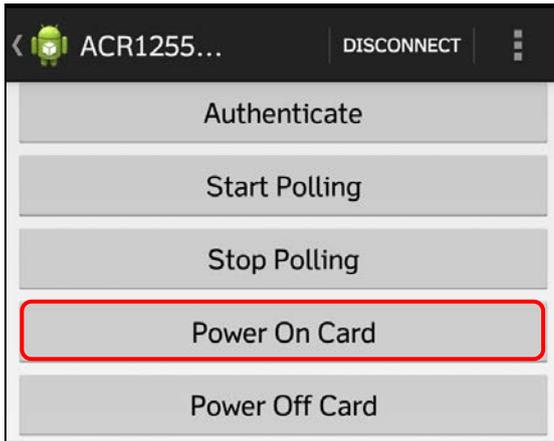3. Scroll up to see the **Authentication Success** message.
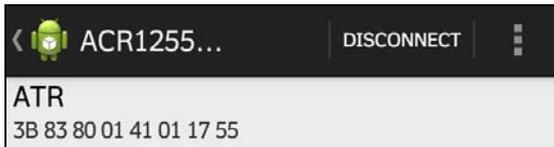
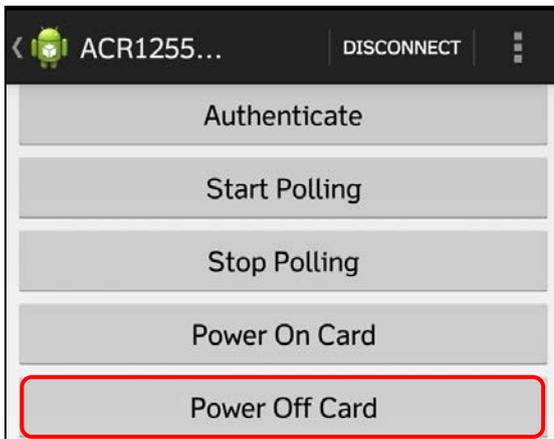4. Tap **Start Polling.**

5. Tap **Power On Card**.

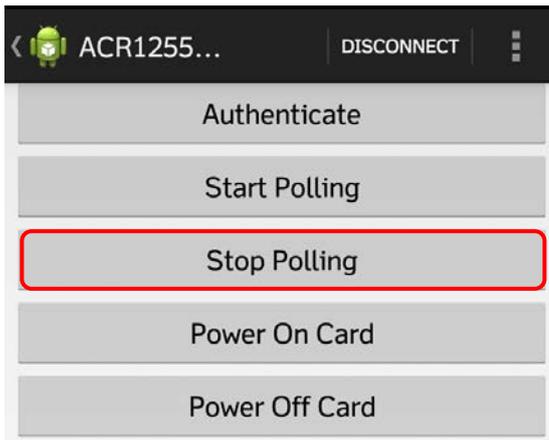6. Scroll up to see the ATR of the contactless card.
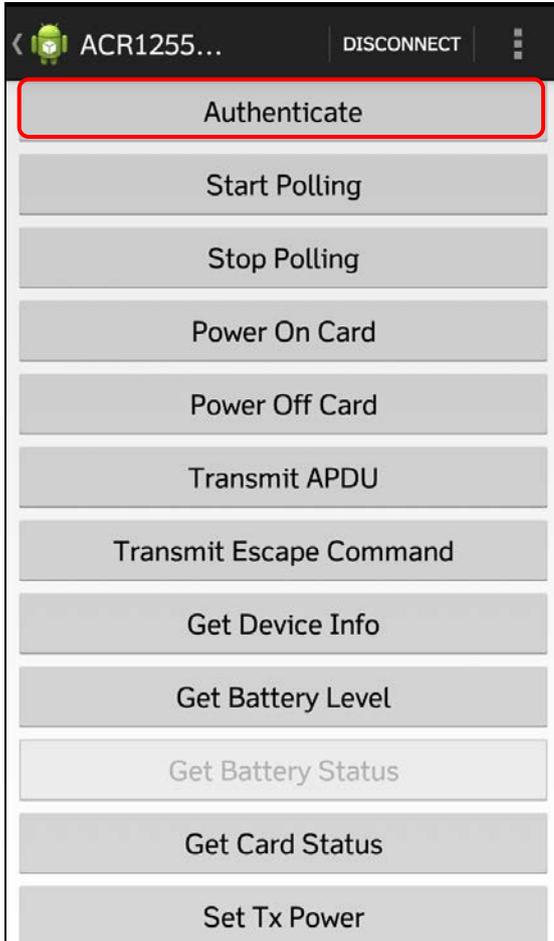

7. Tap **Power Off Card.**
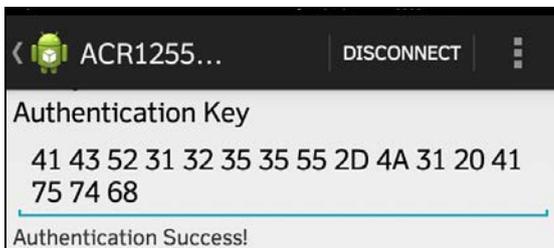
8. Tap on **Stop Polling.**

3.2.5. Transmitting APDU commands
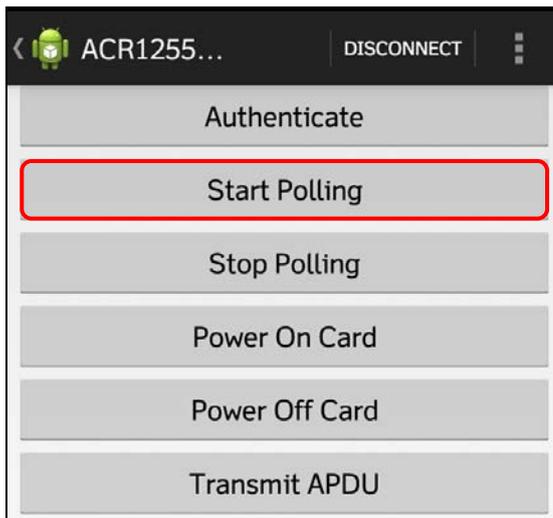
To transmit APDU command:

1. Tap the contactless smart card on the ACR1255U-J1 reader.

2. Tap **Authenticate** to validate device.

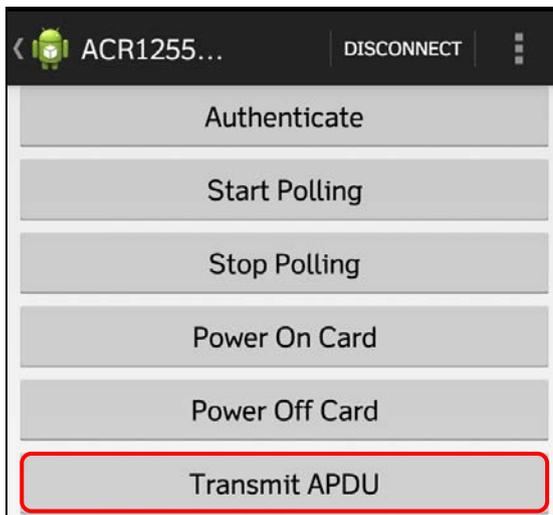3. Scroll up to see the **Authentication Success** message.

4. Tap on **Start Polling.**
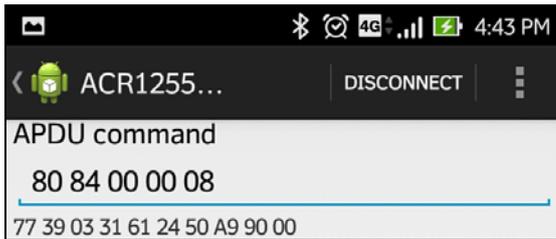

5. Tap **Power On Card**.

6. Tap **Transmit APDU.**
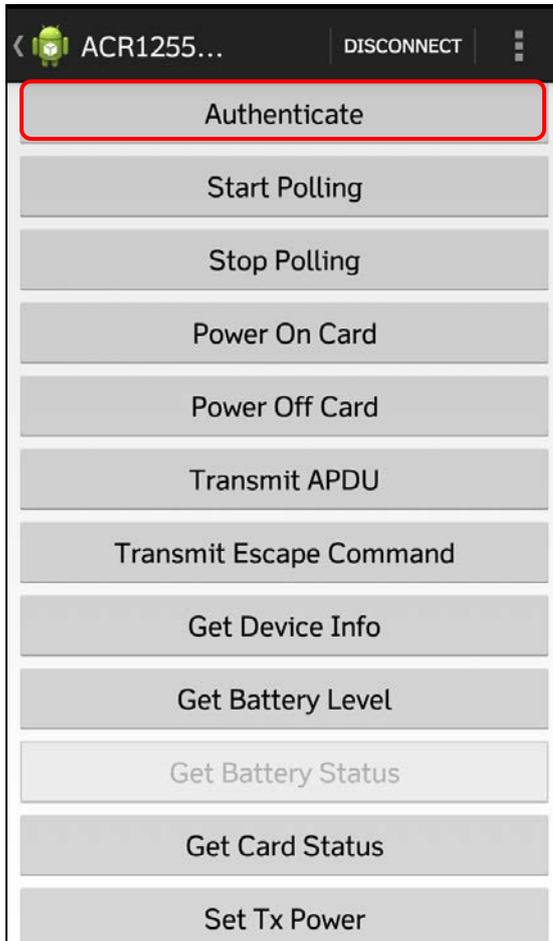
7. The Response APDU will be displayed.

Note: You can edit the APDU command by tapping below the **APDU command**.
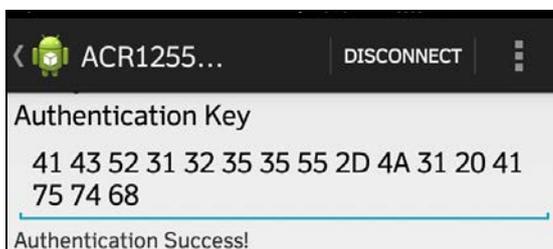
3.2.6. Executing escape command

To execute an escape command:

1. Insert the smart card into the contact card slot of the ACR1255U-J1 reader.

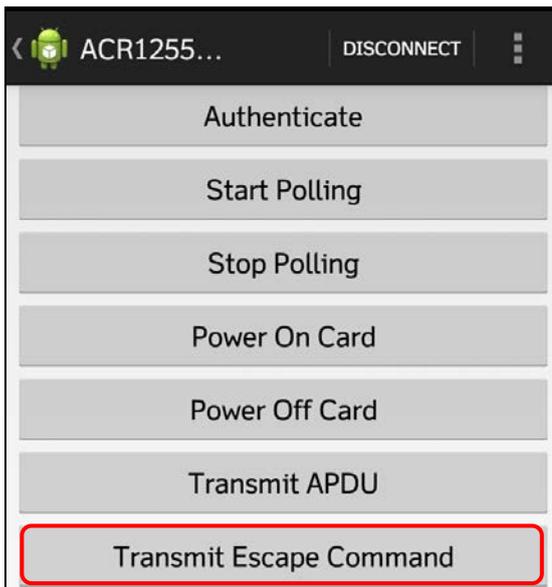2. Tap **Authenticate** to validate device.

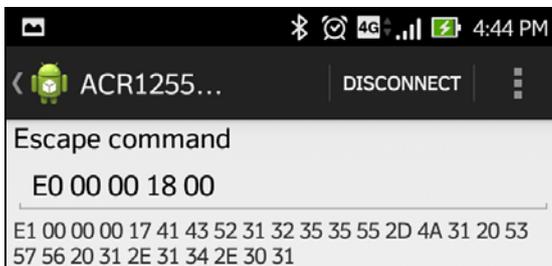3. Scroll up to see the **Authentication Success** message.
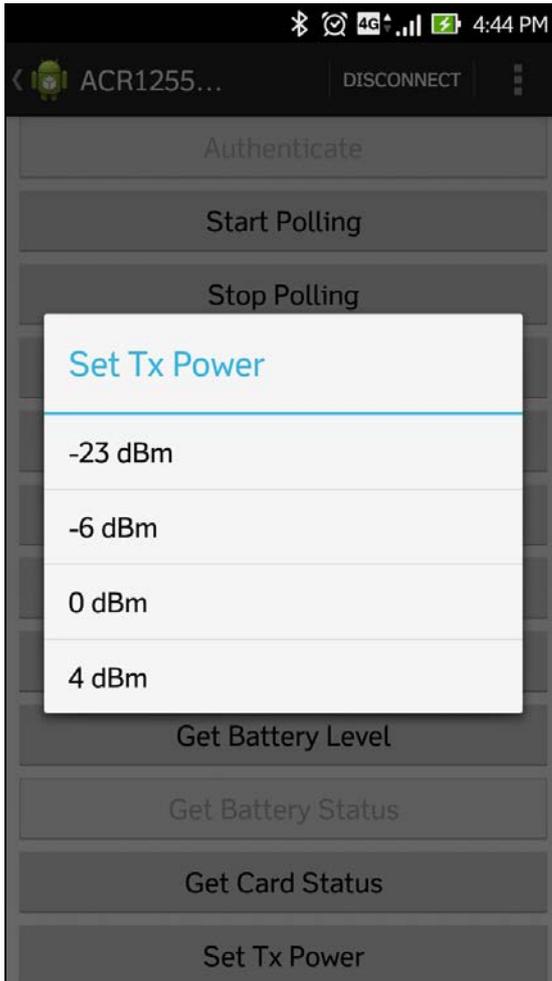
4. Tap **Transmit Escape Command**.

5. The Escape Response will be displayed.

Note: *You can edit the Escape command by tapping below the* **Escape command***.*

3.2.7. Changing the Bluetooth Transmission Power

Tap **Set Tx Power**. Choose from the four available transmissions power for ACR1255U-J1.

The following are the range of operating distances for the modes above:

- -23 dBm: 3m – 5m

- -6 dBm: 7m – 9m

- 0 dBm: 10m –15m

- 4 dBm: 30m – 40m

Note: *The operating distance could be shorter when there is interference such as, metal, door, wall, or other radio emitting devices.*

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