

# ACM1255U

## User Manual

User Manual V1.00

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## 1.0. Introduction

ACM1255U NFC Bluetooth Smart Card Reader combines the latest 13.56 MHz contactless technology with Bluetooth Smart connectivity for on-the-go smart card and NFC applications.

### 1.1. NFC and Smart Card Reader

ACM1255U supports ISO 14443 Type A and B smart cards, MIFARE®, FeliCa®, and most NFC tags and devices compliant with ISO 18092 standard. This makes it the ideal device for a broad range of solutions, such as hands-free verification for physical and logical access control, and inventory tracking. ACM1255U has both Bluetooth interface for pairing with mobile devices and USB Full Speed for PC-linked operation. Additionally, it can read/write at speeds of up to 424 Kbps for contactless smart card and NFC device access.

### 1.2. Firmware Upgradeable Feature

To save valuable cost and time, the firmware of ACM1255U could conveniently be upgraded in-field to allow users to cope with the fast-changing technology for their applications in order to suit different scenarios.

### 1.3. Bluetooth® Connectivity

With Bluetooth® Low Energy (LE) 4.0 technology, ACM1255U can connect wirelessly with ease to any device running on Android™ 4.3 and above, iOS 5.0 and above, Windows®, and Mac OS X® operating systems.

## 2.0. Features

- USB 2.0 Full Speed Interface
- Bluetooth Low Energy (LE) 4.0 Interface
- Plug and Play – CCID support brings utmost mobility<sup>1</sup>
- USB Firmware Upgradeability<sup>2</sup>
- Smart Card Reader:
  - Built-in antenna for contactless tag access, with reading distance of up to 40 mm (depending on tag type)
  - Supports ISO 14443 Part 4 Type A and B cards
  - Supports MIFARE® and MIFARE DESFire®
  - Supports FeliCa®
  - Supports ISO 18092 Tags (NFC Tags)
  - Built-in anti-collision feature (only one tag is accessed at any time)
  - NFC Support:
    - Card reader/writer mode
    - Card emulation mode
  - Supports AES-128 encryption algorithm
- Application Programming Interface:
  - Supports PC/SC<sup>3</sup>
  - Supports CT-API (through wrapper on top of PC/SC)
- Supports Android™ 4.3 and above<sup>4</sup>
- Supports iOS 5.0 and above
- Built-in Peripherals:
  - Two user-controllable bi-color LEDs
  - User-controllable buzzer

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<sup>1</sup> *Applicable under PC-linked mode*

<sup>2</sup> *Same as above*

<sup>3</sup> *Same as above*

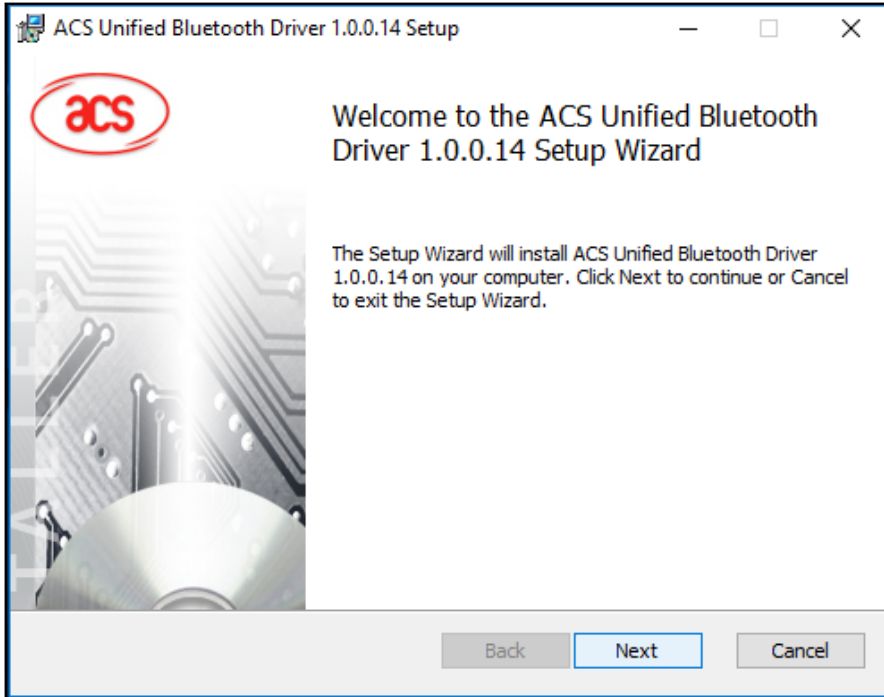
<sup>4</sup> *PC/SC and CCID support is not applicable.*

### 3.0. Driver installation For Windows®

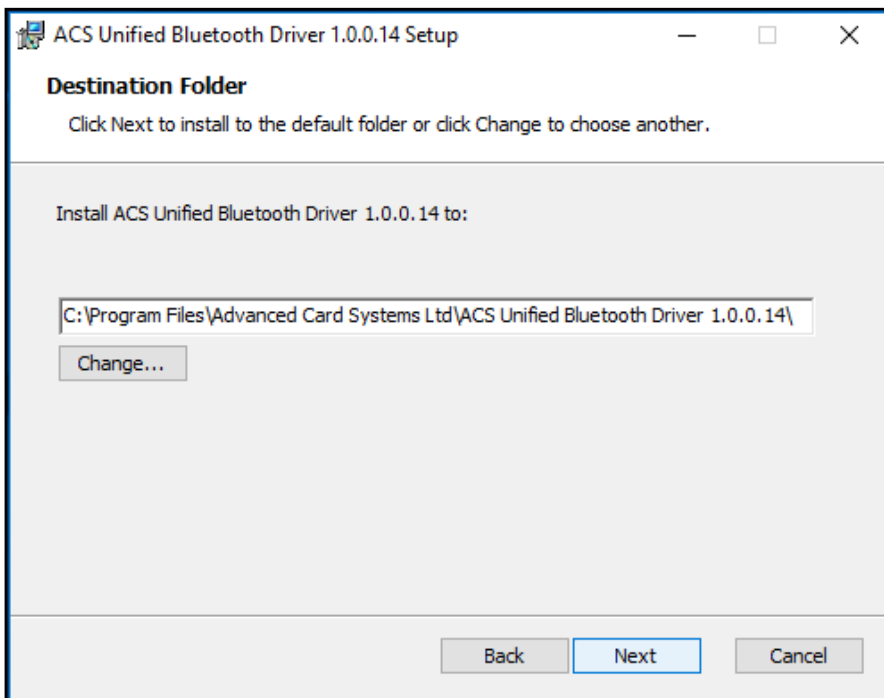
#### 3.4. Install ACS Unified Bluetooth driver

To install the driver:

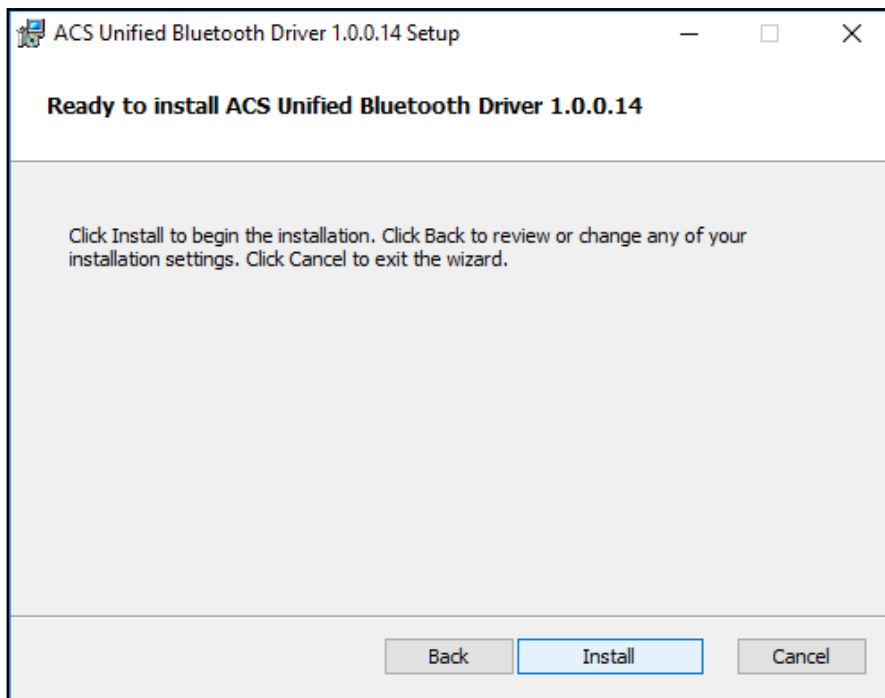
1. Run the **ACS Unified Bluetooth Driver**.
2. The Setup Wizard will show. To start the installation, click **Next**.



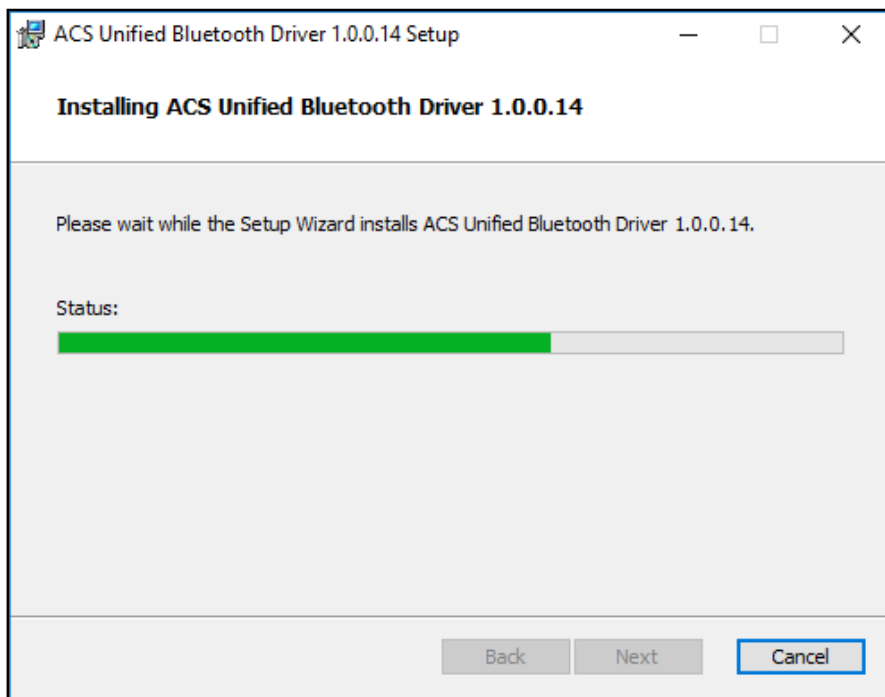
3. Click **Next** to install the driver to the default destination, located at **X:\Program Files\Advanced Card Systems Ltd\ACS Unified Bluetooth Driver 1.0.0.14\**, with X as your local Windows drive.



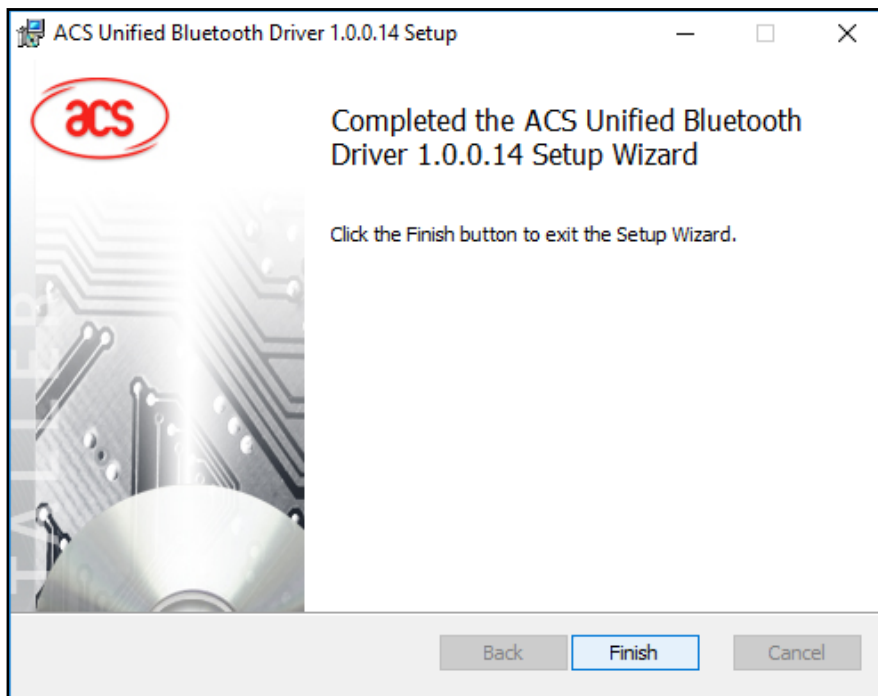
4. Click **Install**.



5. Wait while the driver installs.



6. Once the installation is complete, click **Finish**.

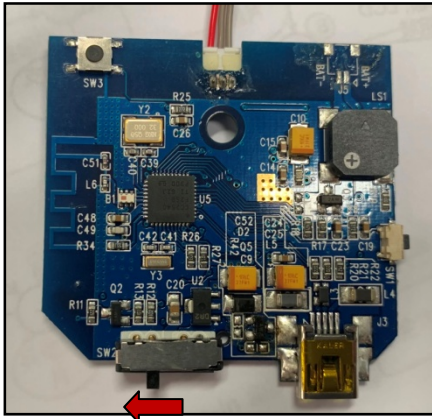


### 3.5. Set up device pairing with built-in Bluetooth adapter

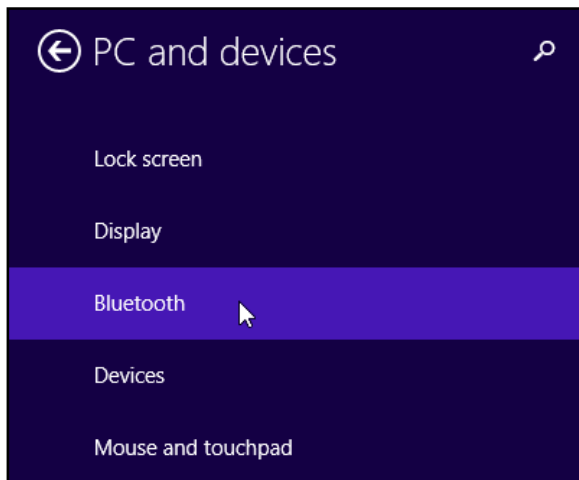
**Note:** This procedure only applies to Windows 8 and later. Windows 7 does not support devices using Bluetooth 4.0/Bluetooth Low Energy interface.

To pair using this setup:

1. Turn on the Bluetooth mode of ACM1255U to make it discoverable. To do this, slide the toggle switch to the left.



2. Go to **PC Settings** , choose **PC and devices**, and then click **Bluetooth**.

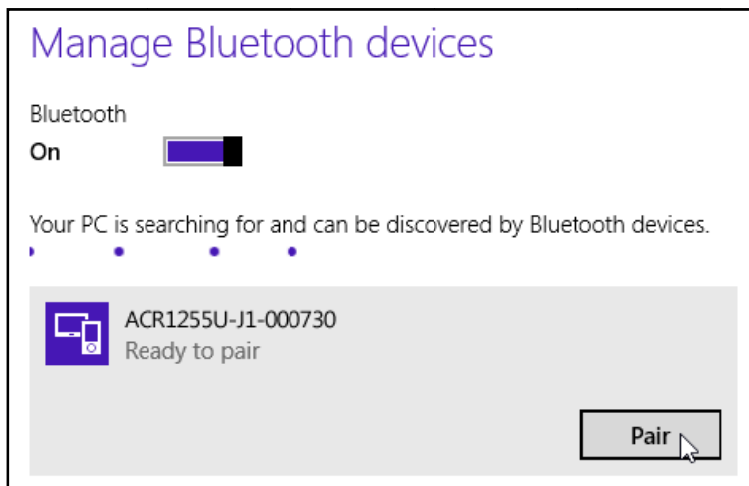


3. Turn on **Bluetooth**.

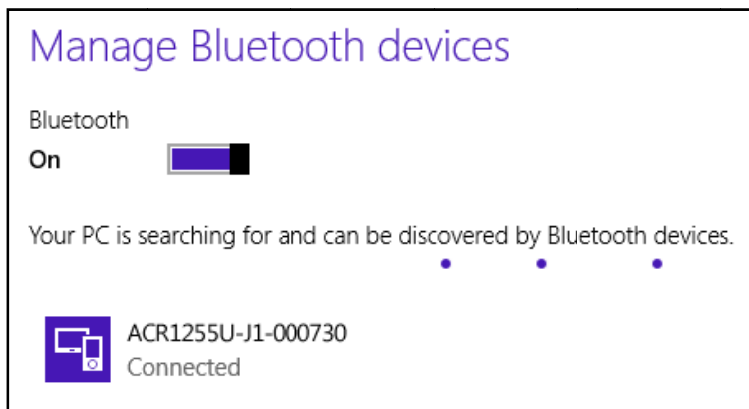




4. Select ACM1255U, and then click **Pair**.



5. The pairing is complete when you see ACM1255U is connected.



6. To complete the installation of the Bluetooth card reader, go to [Using the ACS Bluetooth Device Management Tool](#).

### 3.6. Using the ACS Bluetooth Device Management Tool

ACS Bluetooth Device Management Tool is an application that enables you to easily manage device pairings between ACS Bluetooth card readers and computers.

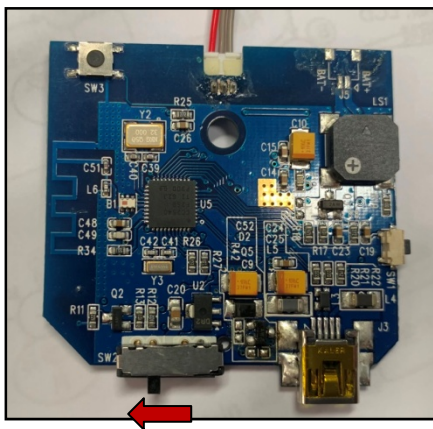
#### 3.6.1. Install a device

To establish full connection, you must install the Bluetooth card reader in the ACS Bluetooth Device Management Tool.

**Note:** The TI USB dongle can only work on a one-to-one connection with an installed ACS Bluetooth card reader. If there is a previously installed Bluetooth card reader in the tool, uninstall it first

To begin:

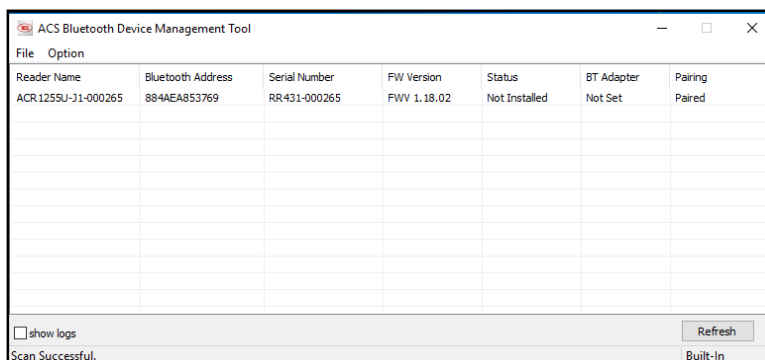
1. Turn on the Bluetooth mode of ACM1255U and make it discoverable. To do this, slide the toggle switch to the left.



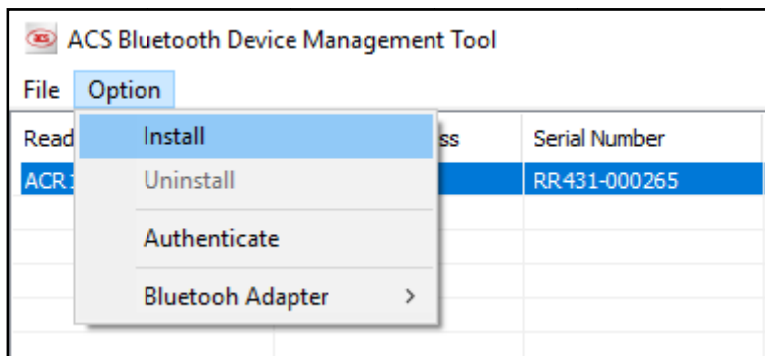
2. Run the **ACS Bluetooth Device Management Tool**.
3. Wait while the tool scans for Bluetooth devices within range.

**Note:** If the device is not immediately discovered, click **Refresh**.

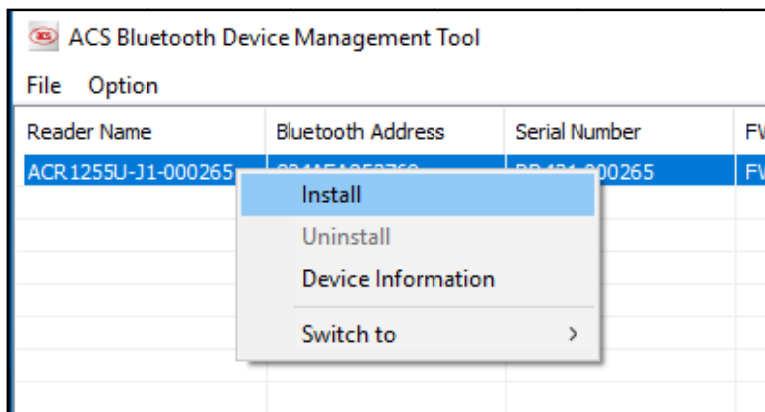
4. Once the tool discovers ACM1255U, it will show in the list.



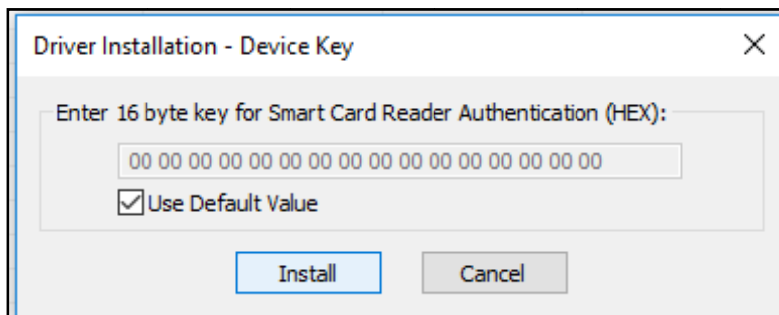
- In the **Option** menu, click **Install**.



An alternative way to do this is to right-click on the device, and then click **Install**.

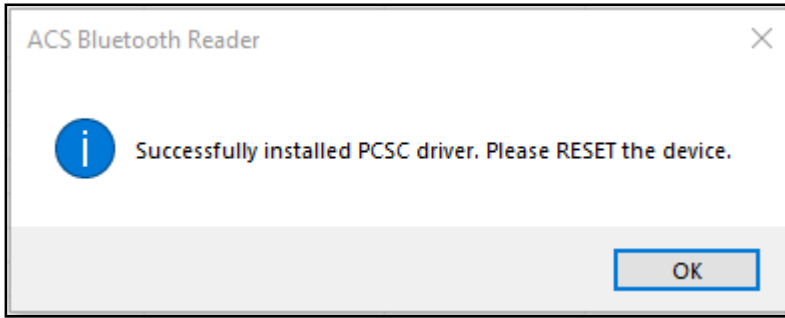


- Type in a 16-byte hexadecimal key for authentication, or use the default value. Click **Install**.

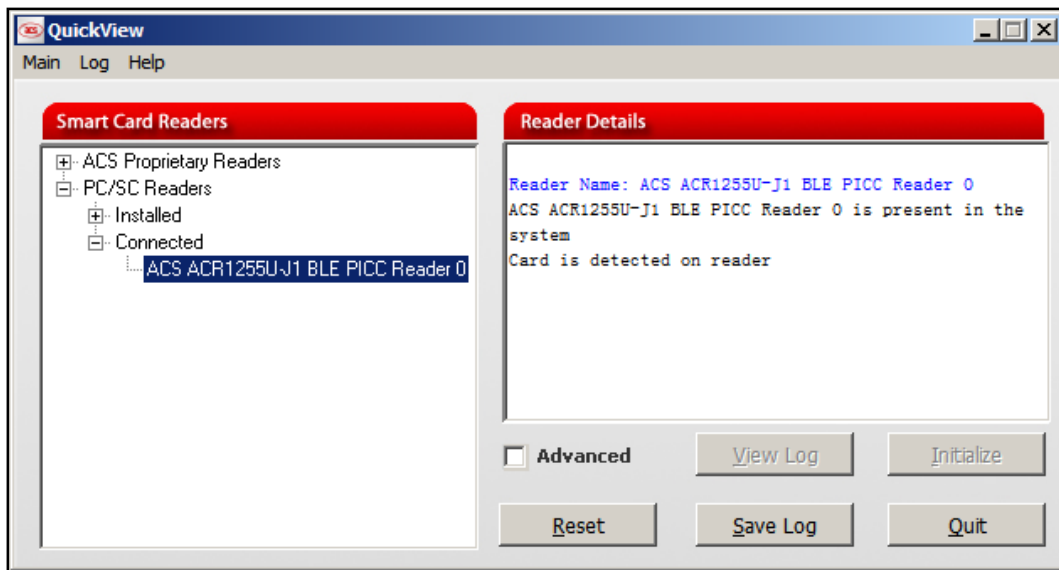


**Note:** The default authentication key is 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00.

- Wait while the application installs the driver.
- A message will appear confirming a successful installation. Click **OK**, and then reset your device.



9. After a successful driver installation, you can now use ACM1255U with various smart card applications. Below is a sample of ACM1255U connected in **QuickView**.



**FCC Warning:**

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

- (1) This device may not cause harmful interference, and
- (2) this device must accept any interference received, including interference that may cause undesired operation.

Any Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

When the module is installed in the host device, the FCC ID label must be visible through a window on the final device or it must be visible when an access panel, door or cover is easily re-moved. If not, a second label must be placed on the outside of the final device that contains the following text: —Contains FCC ID: 2AQSJACM1255

This module complies with FCC radiation exposure limits set forth for an uncontrolled environment .