ATKey.card User Guide

REVISION: 1.2

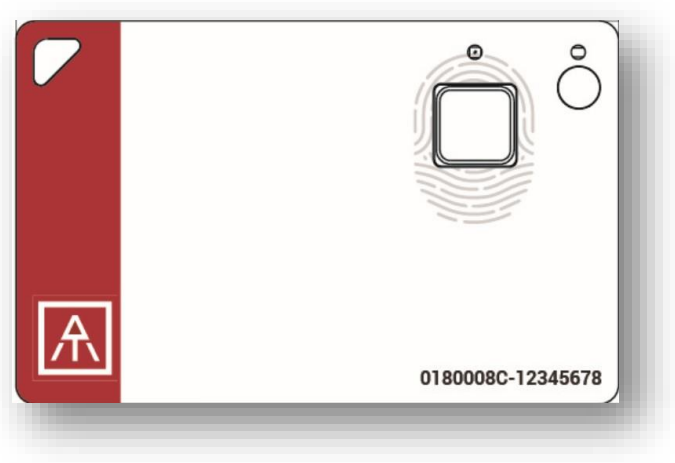


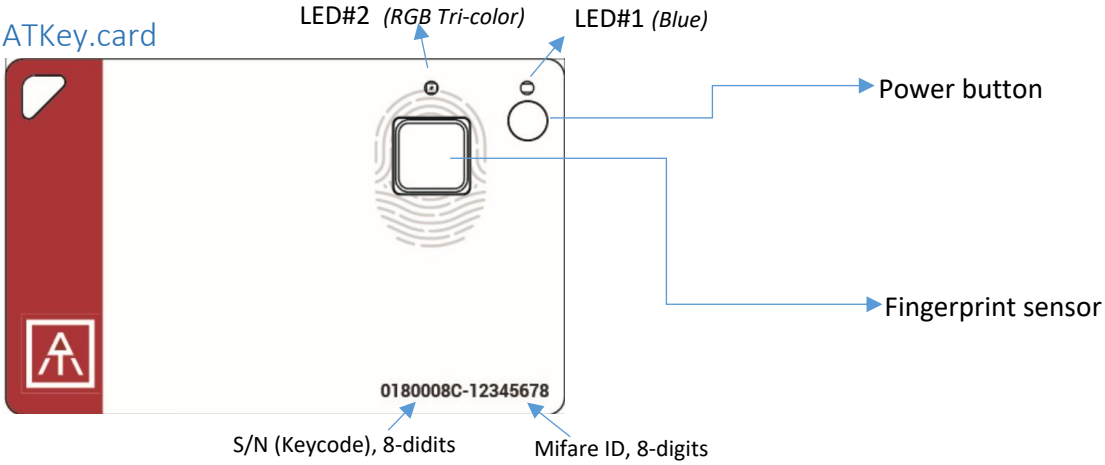
Table of Contents

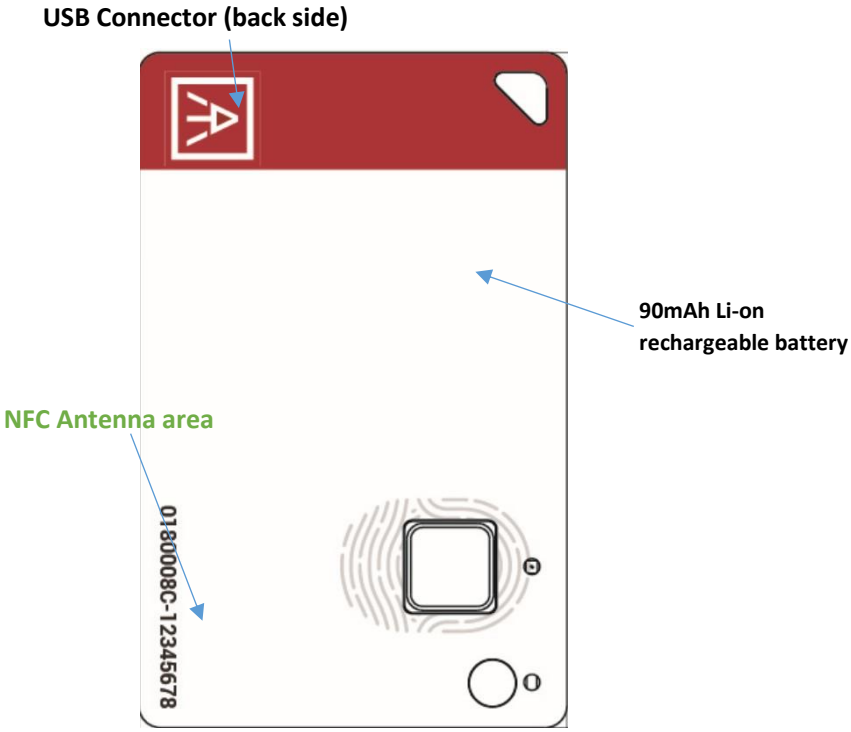
Table of Contents 1
- Preface 2
  - ATKey.card 2
  - Before Start (Enroll Fingerprint, Battery and LED) 3
  - Main Functionalities: 4
    - ATKey.card for Windows – Windows Hello 4
    - ATKey.card for Mac – Mac login 4
    - ATKey.card for FIDO U2F 4
    - ATKey.card for FIDO2 4
    - ATKey.card for NFC reader (Mifare Type A Door locker) 4
    - Extra Highlights and Troubleshooting 4

1. Enroll fingerprint into ATKey.card 5
   i) Enroll from Windows 10 (USB or BLE) 5
   ii) Enroll from Mac (BLE) 10
   iii) Enroll from iOS (Later schedule) 14
   iv) Enroll from Android (Later schedule) 14
2. ATKey.card for Windows Hello 15
3. ATKey.card for Mac Login 17
4. ATKey.card for FIDO U2F 18
   - (USB) FIDO U2F from Windows (Windows 7/8/8.1/10) and Mac OS – Chrome browser 18
   - (Bluetooth) FIDO U2F via iPhone/iPad (iOS) – app "Smart Lock" and Chrome browser 23
   - (NFC) FIDO U2F via Android phone/tablet – Chrome browser 25
5. ATKey.card for FIDO2 26
6. ATKey.card for NFC Reader 28

- Extra Highlights and Trouble Shooting 29
- FCC and NCC statement 30

- Preface
  - ATKey.card





Before Start (Enroll Fingerprint, Battery and LED)

- 1st MUST item- **Enroll your fingerprint into ATKey.card**, then it can work for below functionalities.
  - Enroll through Windows app
  - Enroll through Mac app
  - Enroll through Mobile app (we wil Fingerprint sensor
- **Battery**
  - There is a 90mAh Li-on re-chargeable battery (through USB port)
  - Please do battery charge at your 1st time usage
    - Insert card into USB port (PC or USB adapter) to start battery charging
    - It will turn LED#1 ON (Blue) – power on the card
      - If you can't see the LED#1 is ON, please wait for a while because the Li-On battery protected by PCM, if the battery is low and never charge for a long time, it needs resume time to start the battery charging – so, please wait for minutes, LED will tune on to start battery charging
    - During the charging, LED#2 shows RED flashing; if the LED#2 RED is off, it means full charged.
      - If the card inserts to PC USB port – it's USB mode, BLE is off
      - If the card inserts to USB power adapter – it's battery charging mode, BLE is still ON
  - If you find the LED#2 shows slow RED flashing, it means the card is in battery-low state, please do battery charge immediately.
- **LEDs**

STATE	LED#1 (Blue)	LED#2 (tri-color, RGB)
Power ON/OFF	• **Blue flashing, then ON**	
Waiting for fingerprint (touch)	• **Blue flashing**	• **"Any Touch fingerprint" to confirm the pairing from host (White ON)** • **Fingerprint matching success (Green ON a second) or Fail (RED ON a second)** • **NFC ON (Green ON for 15 sec)**
Bluetooth/BLE		• **LED#2: Bluetooth broadcasting (blue flashing)** • **LED#2: BLE Connected (Blue ON)**
Battery		• **Low battery (slow RED flashing)** • **Battery charging (RED flashing)**

- **Functionalities**

	Windows	Mac OS X	iOS	Android
USB HID	• Windows Hello • Fido U2F (Chrome browser) • Fido2 (Windows RS5, edge/Chrome/Firefox)	• Fido U2F (Chrome browser) • Fido2 (Chrome/Firefox)		
BLE	Windows Hello (Windows 10)	Mac Logon (Password replacement)	Fido U2F (Chrome browser, "Smart Lock" app)	
NFC				Fido U2F (Chrome browser, NFC)

- Main Functionalities:
  - ATKey.card for Windows – Windows Hello
  - ATKey.card for Mac – Mac login
  - ATKey.card for FIDO U2F
  - ATKey.card for FIDO2
  - ATKey.card for NFC reader (Mifare Type A Door locker)
  - Extra Highlights and Troubleshooting

Connect to https://www.authentrend.com/atkey-card/ for more information.

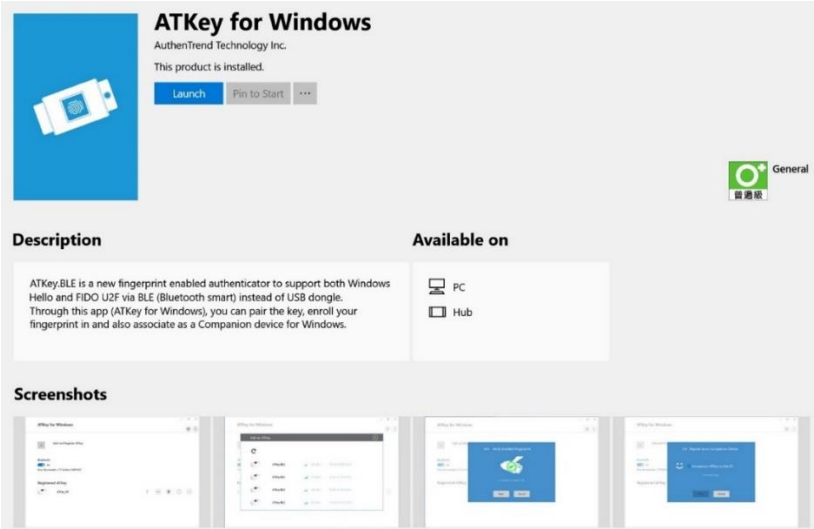
Visit https://fidoalliance.org/ for more FIDO information.

or mail to contact@authentrend.com to contact.

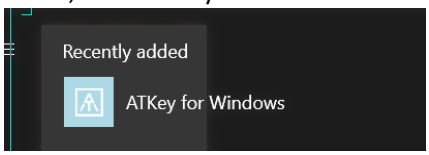
1. Enroll fingerprint into ATKey.card

i) Enroll from Windows 10 (USB or BLE)

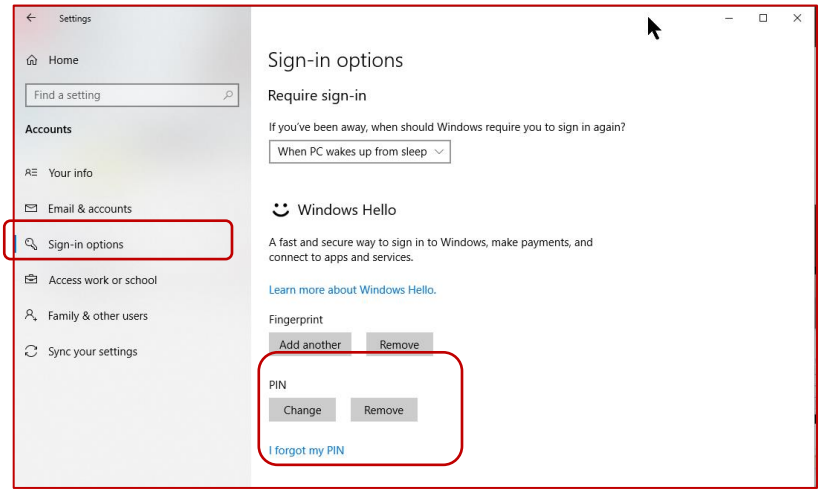
- This will also do "Companion" with Windows via CDF (Companion Device Framework) for Windows Hello
- Download app from Microsoft Store
  - Search by keyword (ATKey) or download from https://www.microsoft.com/store/productId/9P7GR8W9SJD3



- After installed, find "ATKey for Windows" icon

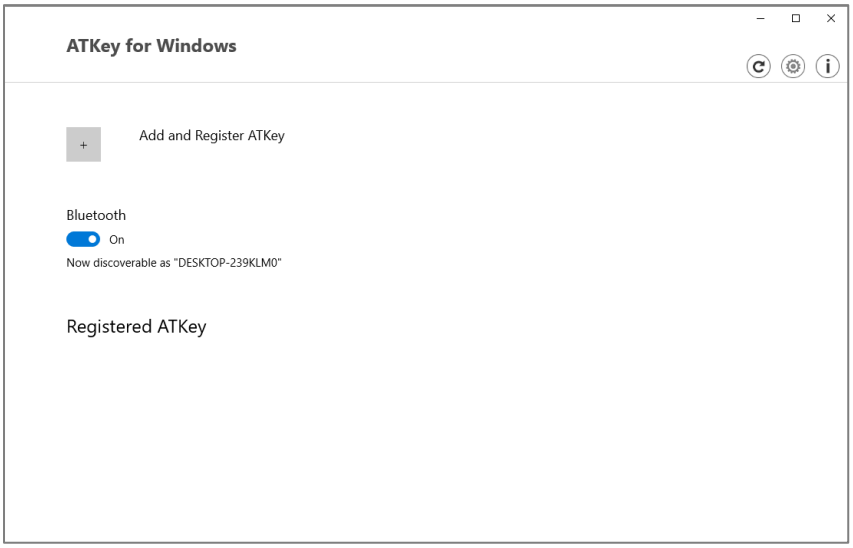


  - Before setup ATKey.card, please Enable PIN code for Windows Hello
    - Windows Settings => Accounts => Sign-in Option => Setup PIN

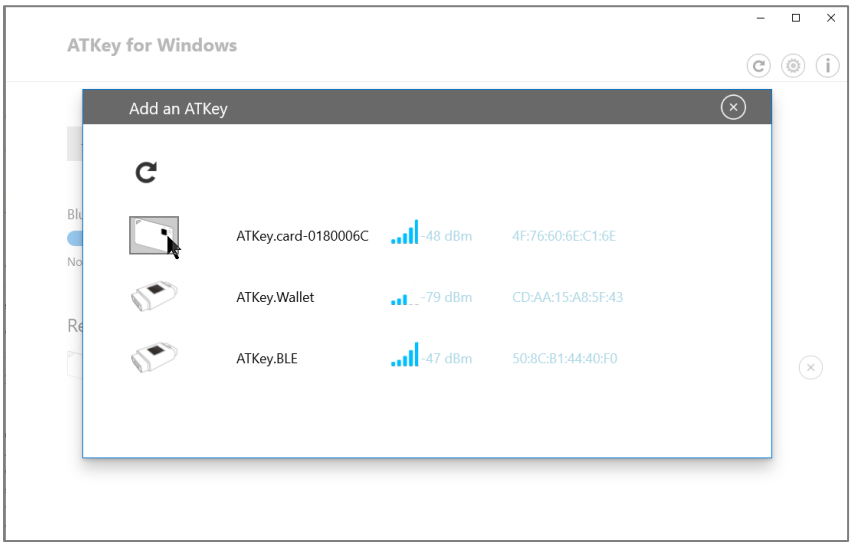


- Launch "ATKey for Windows" app

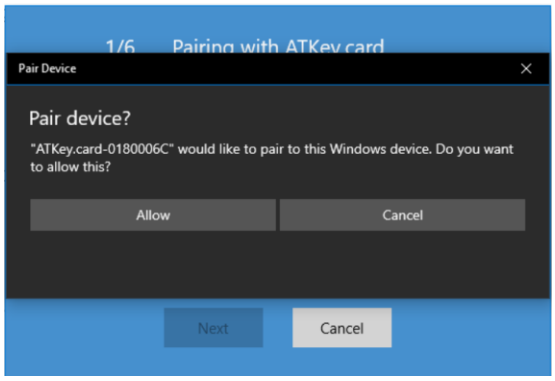
- Click “Add and Register ATKey”

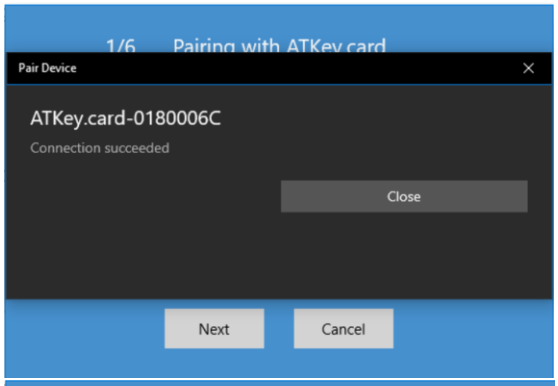


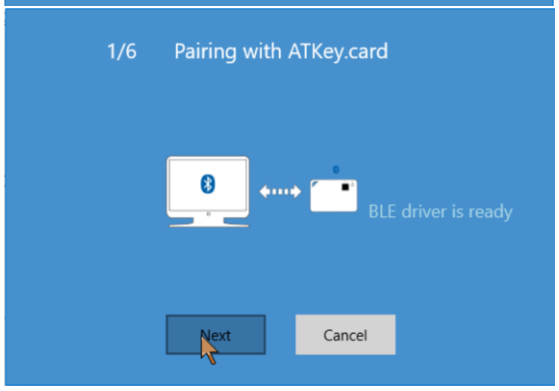
- (Bluetooth mode) Pick and click the specific ATKey.card to connect: check the 8-digits S/N (Keycode) on card



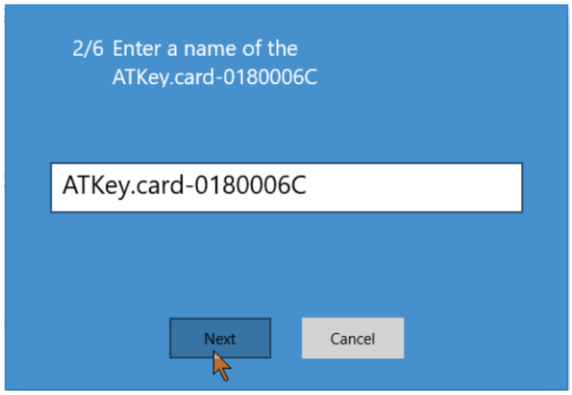
- (Bluetooth mode: 1/6) pair Windows and ATKey.card – “Allow” from app and also touch Fingerprint on card to confirm the pairing (LED#2 of card is WHITE flashing)



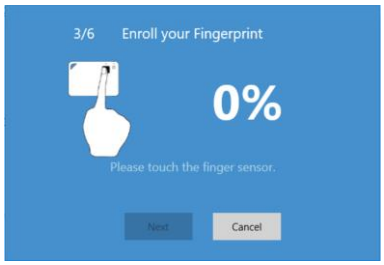


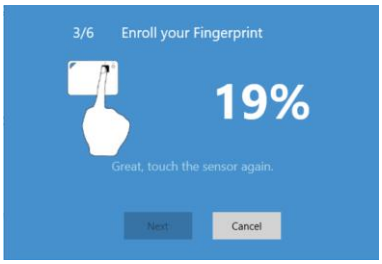


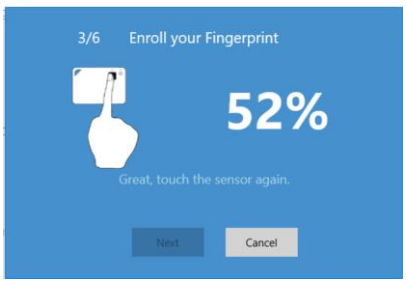
- (Bluetooth mode: 2/6) enter a name of the card – you can have your own name, or just keep the original unique name with S/N (Keycode)

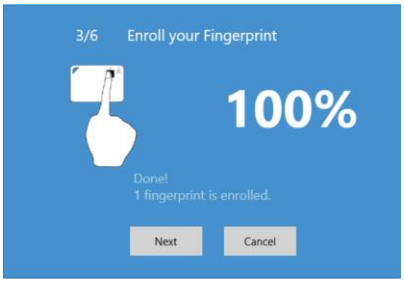


- (Bluetooth mode: 3/6) Enroll your fingerprint into card – touch and lift by the specific finger base on same angel, but slightly moving fingerprint to enroll wide fingerprint area, it needs around 16 times enrollments.

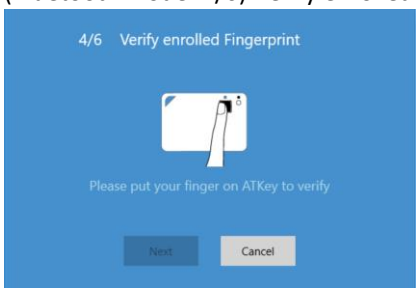


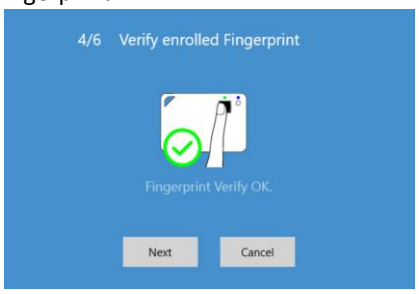




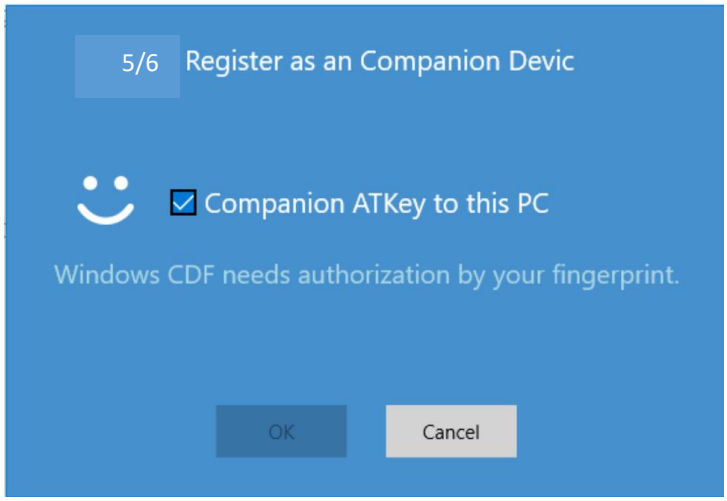


- (Bluetooth mode: 4/6) Verify enrolled fingerprint

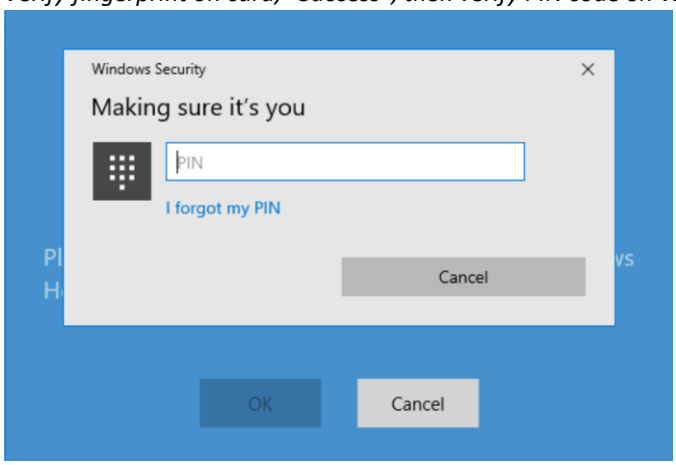


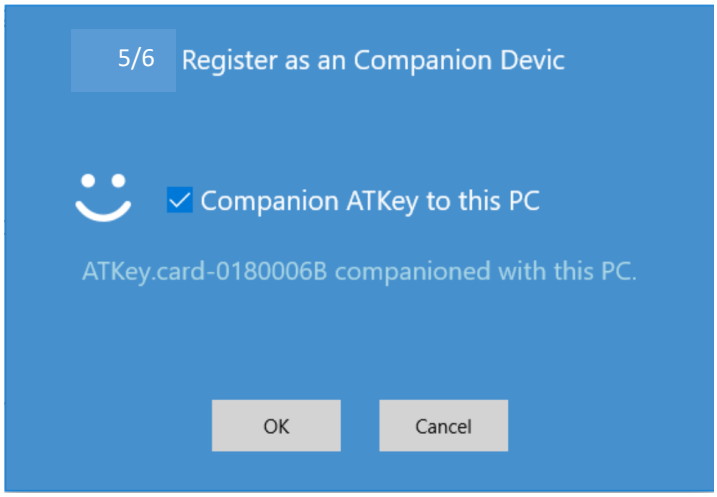


- (Bluetooth mode: 5/6) Register Card as Windows 10 Companion device for Windows Hello



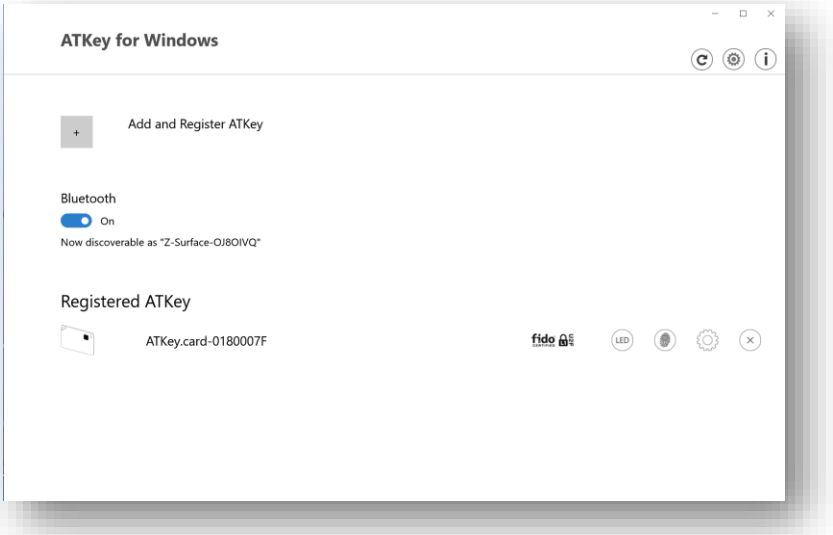
- *Verify fingerprint on card, "Success", then verify PIN code on Windows*





- (Bluetooth mode: 6/6) enable "Dynamic Lock" – **please ignore this one now (un-check)** since it seems Windows 10 may only enable this feature with Smart Phone.

- Now, your ATKey.card is ready there

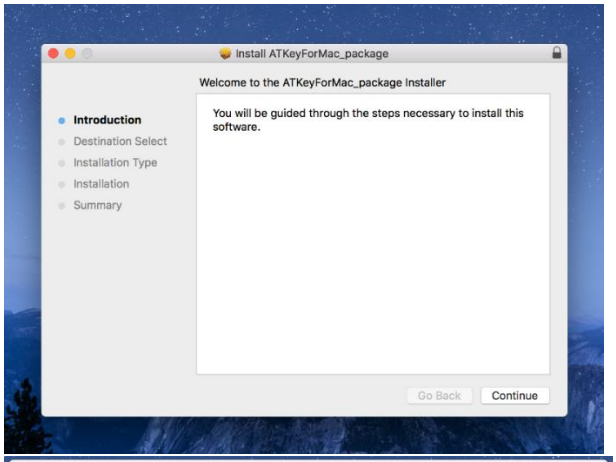


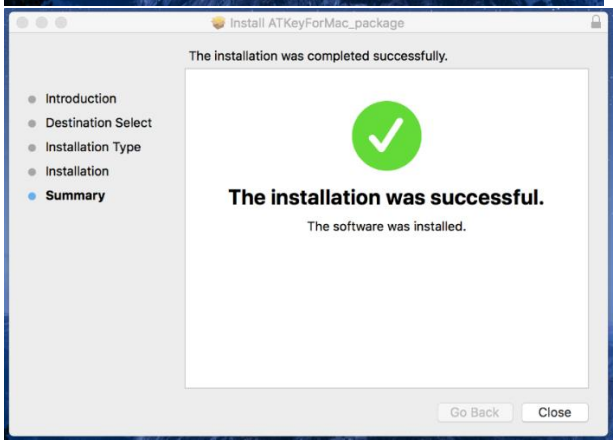
  - *You can add/delete fingerprints (max. is 10)*
  - *You can check ATKey.card configurations (firmware version, Battery, Bluetooth information, rename the card)*
  - *You can remove the card from Windows*

- Now, your ATKey.card is ready with fingerprint and also companioned with this Windows
  - USB is also ready now, since it's HID device, no extra driver needs, just insert into USB port, Windows will detect and recognize ATKey.card as a HID device.

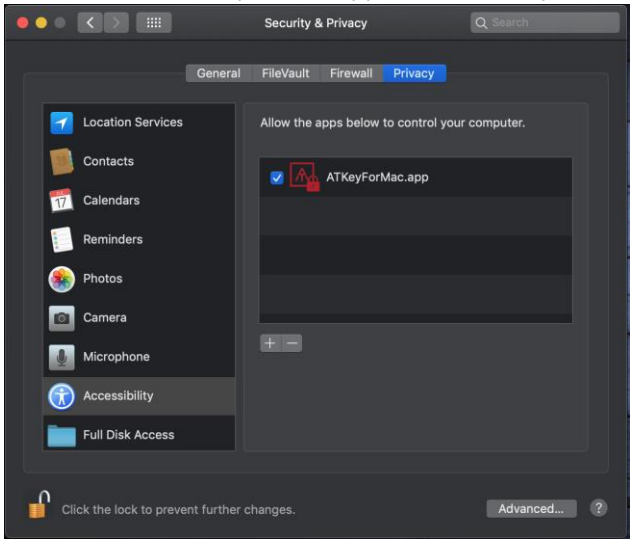
ii) Enroll from Mac (BLE)

- This will also do “Companion” with Mac via Bluetooth as password replacement
- Download app from: https://authentrend.com/download/ATKeyForMac.zip
  - Please make sure your app is v1.1.6 or later versions, or you can upgrade version from “Check for updates” from app
- Install app “ATKey for Mac”

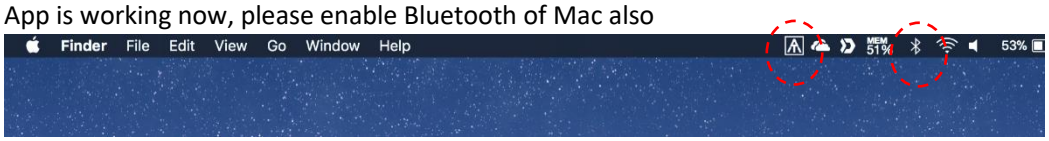




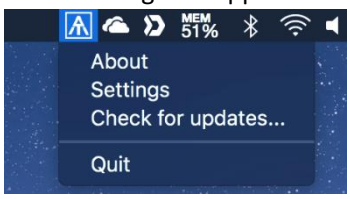
- Please unlock “ATKeyforMac.app” from Security & Privacy



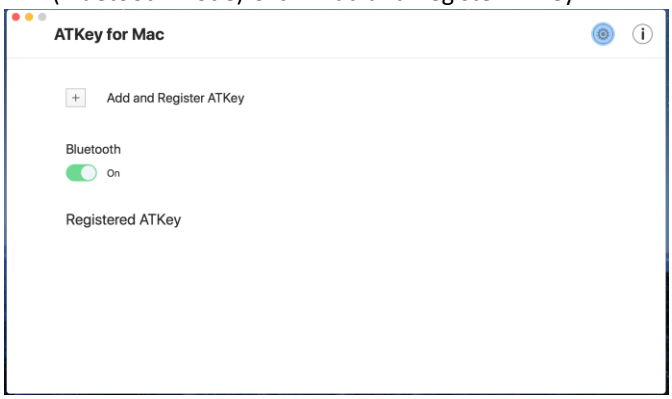
- App is working now, please enable Bluetooth of Mac also



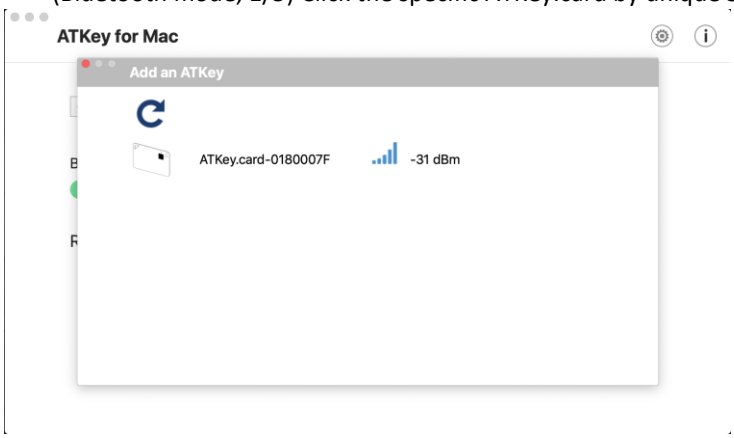
- Click “Settings” to app



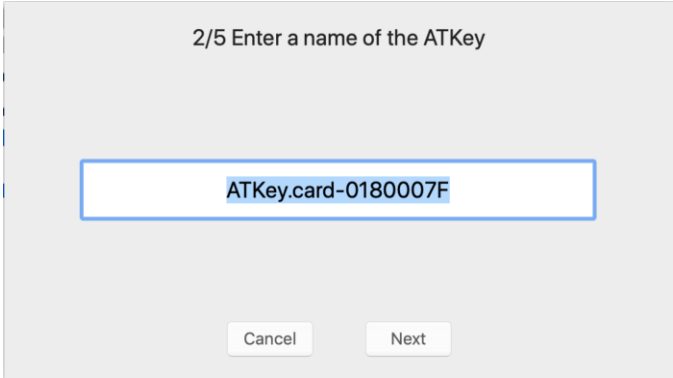
- (Bluetooth mode) Click “Add and Register ATKey”



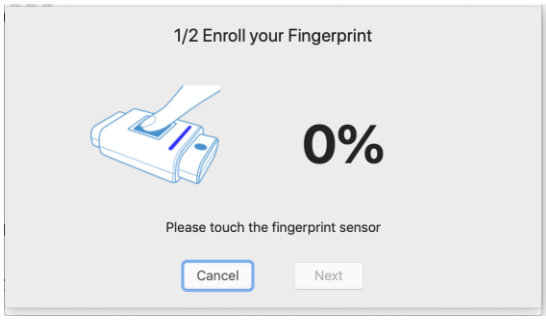
- (Bluetooth mode, 1/5) Click the specific ATKey.card by unique S/N (Keycode) on card to pair

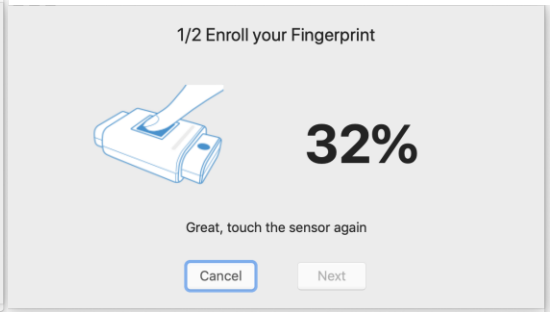


- (Bluetooth mode, 2/5) Click the specific ATKey.card by unique S/N (Keycode) on card to pair and also have name for the card - default name is base on S/N (Keycode).

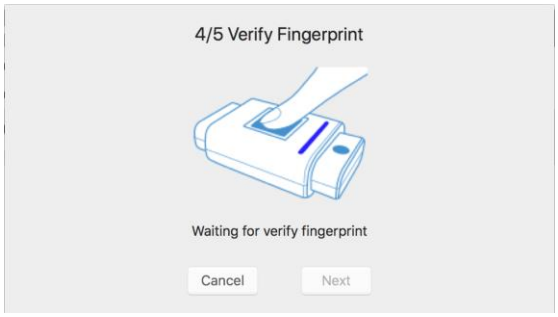


- (Bluetooth mode, 3/5) Enroll your fingerprint into card – touch and lift by the specific finger base on same angel, but slightly moving fingerprint to enroll wide fingerprint area, it needs around 16 times enrollments till 100%



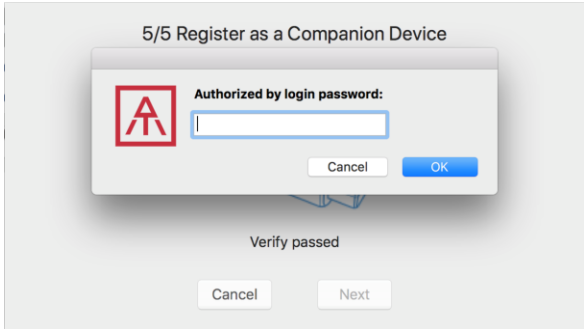


- (Bluetooth mode: 4/5) Verify enrolled fingerprint

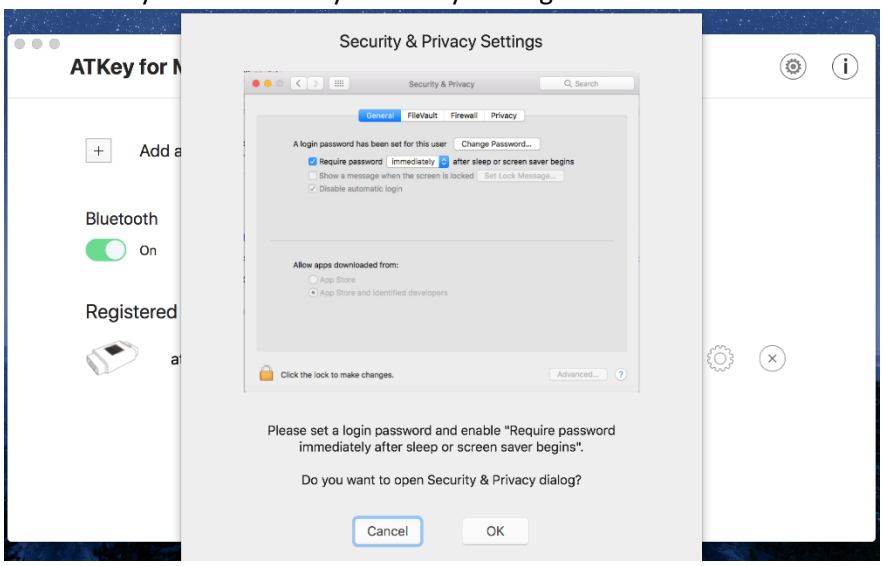


- (Bluetooth mode: 5/5) Register as a Companion Device (to unlock/lock Mac)

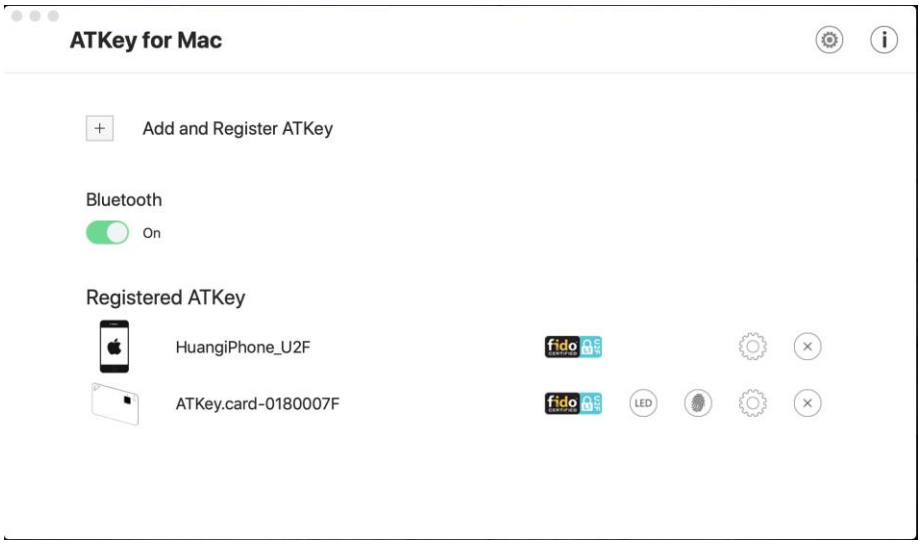
- Next to confirm your Mac login password – Same as app install, we need your password to authorize it; in addition, we will leverage this password at every login (when fingerprint verify passed!); so if you change your login password, please remember to change it inside app



- Then, we will guide you to the setting as reminding – enable “Require password: immediately” from “Security & Privacy Settings”



- Paired and Companioned ATKey to your Mac, and the ATKey listed in app



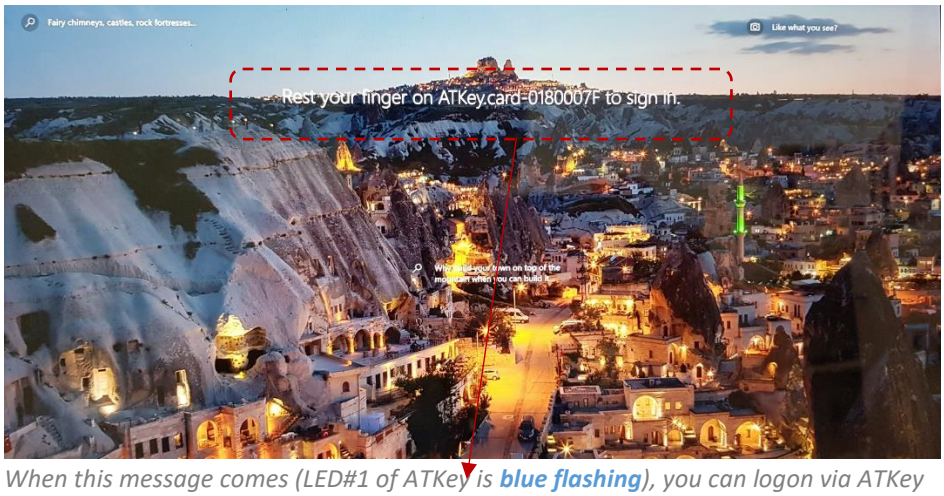
- Buttons of the "ATKey for Mac":
  - "LED": click it, BLUE LED of the ATKey will enable, and flashing for 5 sec. - this is helpful to identify the registered ATKeys if you have a lot of ATKeys there.
  - Fingerprint(s): add (up to 10), delete (delete all), Calibration (re-calibrate fingerprint sensor if you found FRR getting worse or slow response)
  - "Configure":
    - Key information
    - BLE information
    - Rename
    - **<u>Re-Companion with Mac</u>: if you change Mac login password, please re-companion and type in new password here.**
  - "Remove": Remove this ATKey from this Mac

iii) Enroll from iOS (Later schedule)

iv) Enroll from Android (Later schedule)

2. ATKey.card for Windows Hello

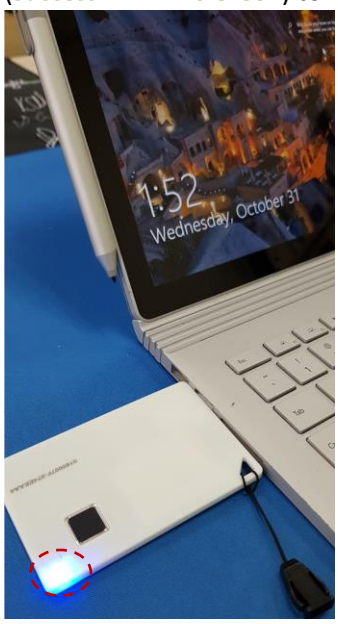
- Windows Hello (Windows 10, USB or BLE)
  - ATKey can work for multiple Windows if they were companioned; but one Windows can just allow one ATKey.
    - Please check here for the detail to companion ATKey and Windows
  - Windows Logon (Windows Hello)
    - Message on Windows logon screen



*When this message comes (LED#1 of ATKey is **blue flashing**), you can logon via ATKey fingerprint matching;*

If the message is not showing, you may need to hit "Space bar" sometimes to push Windows checks Companion Device to show.

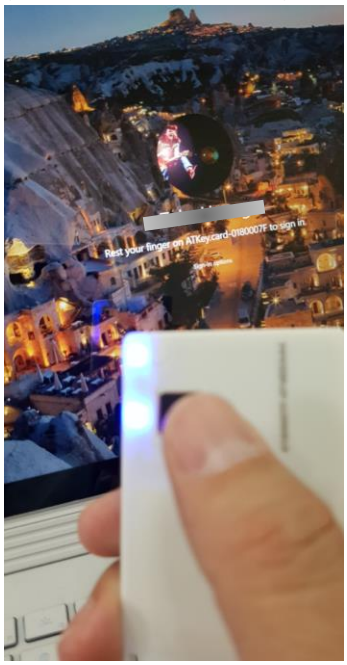
- Via USB – when LED#1 is blue flashing, touch your enrolled fingerprint to verify (*Success: LED#2 is Green*) to login



- *ATKey is doing battery charging at the same time:*
  - *LED#2 is RED flashing;*
  - *LED#2 is off at full charging;*
- *ATKey Bluetooth is off when it is in USB data mode.*

- Via BLE – Press Power button of ATKey, it will ON with BLE broadcasting (LED#2 is blue flashing) to all paired devices to connect, ideally it will connect the near one

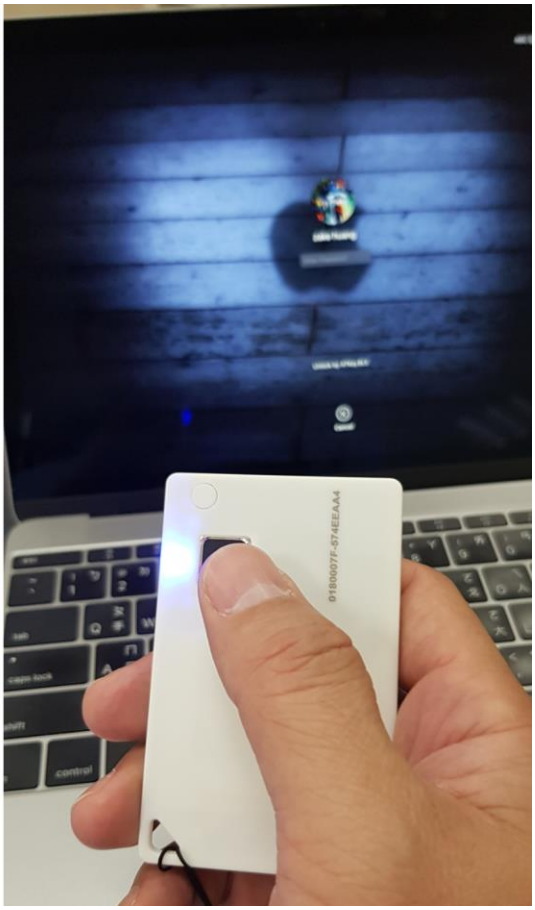
since it's base on RSSI; when the ATKey connected to the target Windows (LED#2 is blue ON), then LED#1 is blue flashing, touch your enrolled fingerprint to verify (*Success: LED#2 is Green*) to login



- *ATKey will be off automatically if there is no "operations" or "interactions" for 60 seconds.*

3. ATKey.card for Mac Login

- Companion ATKey.card and Mac
  - Check here for the detail to enroll fingerprint and also companion ATKey with Mac
  - *Only for warm boot (sleep, hibernate), we can't support login at cold boot (restart, shutdown)*
- Via BLE – Press Power button of ATKey, it will ON with BLE broadcasting (LED#2 is blue flashing) to all paired devices to connect, ideally it will connect the near one since it's base on RSSI; when the ATKey connected to the target Mac (LED#2 is blue ON), then LED#1 is blue flashing, touch your enrolled fingerprint to verify (*Success: LED#2 is Green*) to login



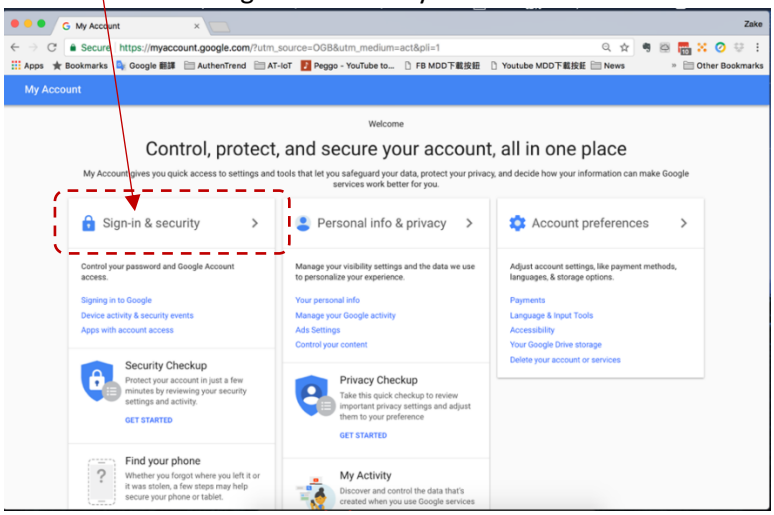
- *If your Mac starts from "cold boot" and "Restart", it did not allow ATKey as authenticator to login*
- *"ATKeyforMac app" must be alive*
- *ATKey will be off automatically if there is no "operations" or "interactions" for 60 seconds.*
- *We did not support USB mode to login Mac yet.*

4. ATKey.card for FIDO U2F

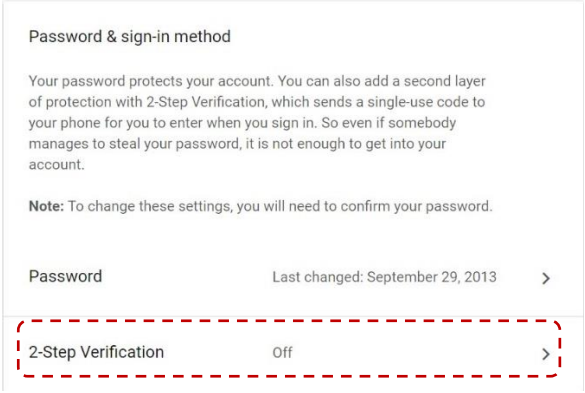
- Browser base but Chrome only - One Card for Windows, Mac, iOS and Android
- Here are FIDO U2F ready services:

Or you can search and find available FIDO U2F certified server here:
https://fidoalliance.org/certification/fido-certified-products/?appSession=8YT7Z25V0DOH6M41OQG26WI22N0F6D5MF9W19F58545OZWKJPBOH5XMB874A6596S8432G491GGF12B5Y7PIAM6PKR09S5G9Z3Q9T0FLK91C5445079DO1NWZFP8714Q

- ## (USB) FIDO U2F from Windows (Windows 7/8/8.1/10) and Mac OS – Chrome browser
  - Take Google as example:
    - Login your Google account
    - Enable 2FA from "Sign-in & Security"

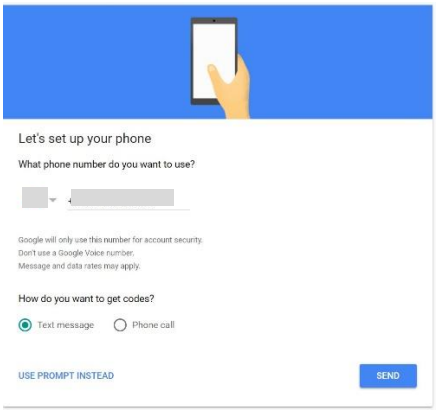


- Turn 2-step Verification ON

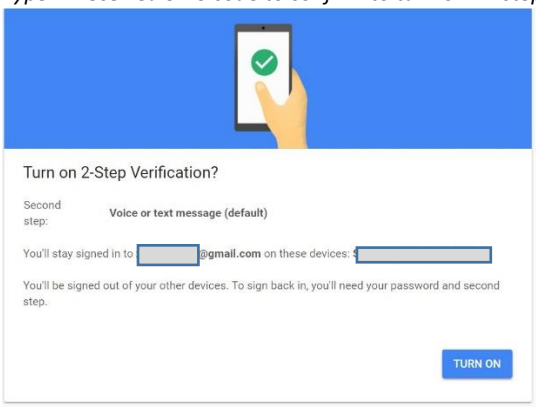


- Following Google steps

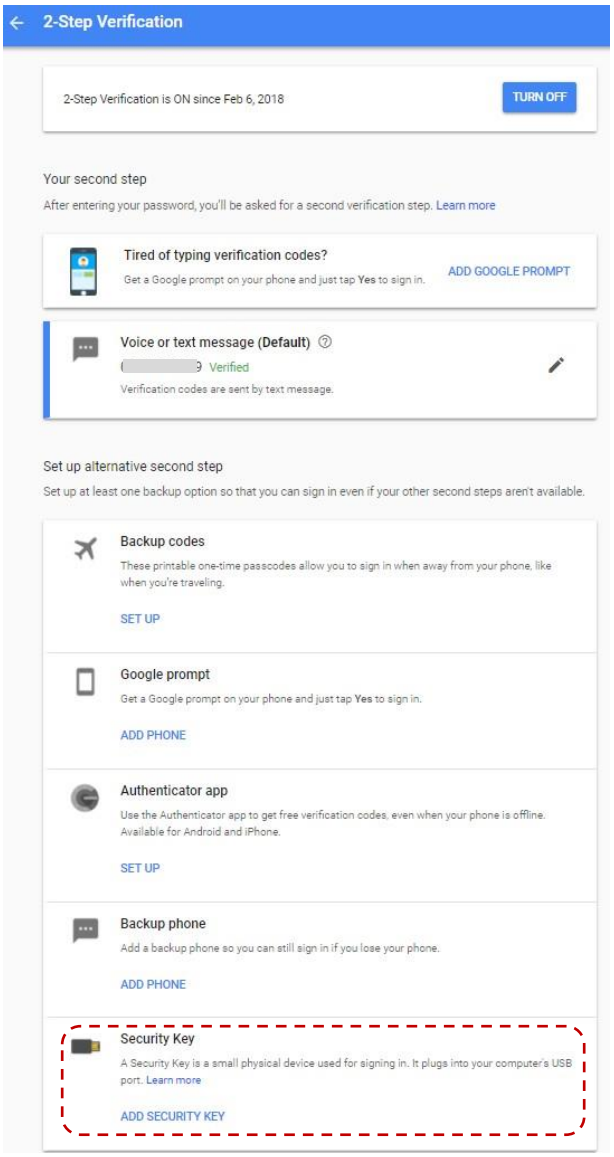
- *login again by ID/Password*
- *Add your mobile phone in and select "Text message"*



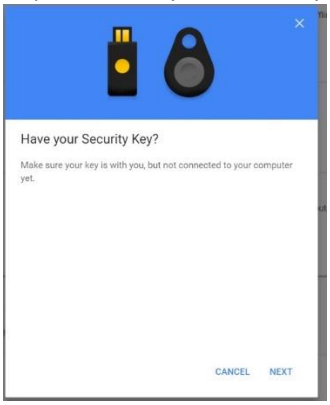
- *Type-in received SMS code to confirm to turn on "2-step verification"*



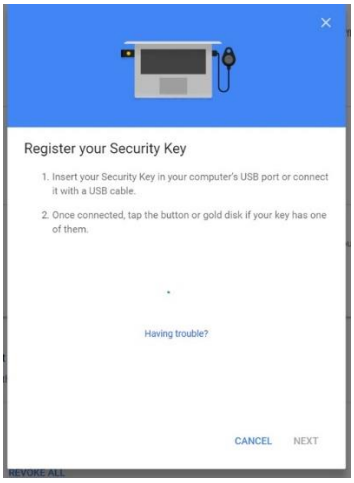
- *Page down to find "Security Key" and "ADD SECURITY KEY"*



- *Prepare the ATKey – insert ATKey.card to USB port, click "NEXT" to register the key*

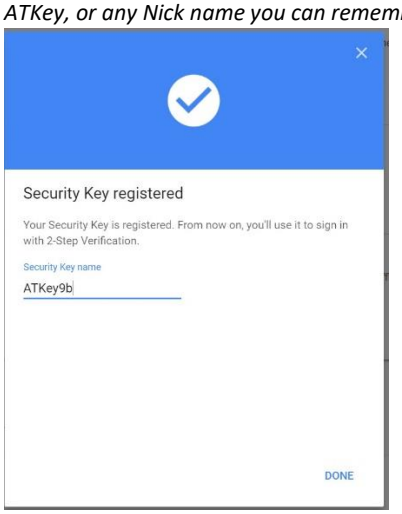


- *Register ATKey here*

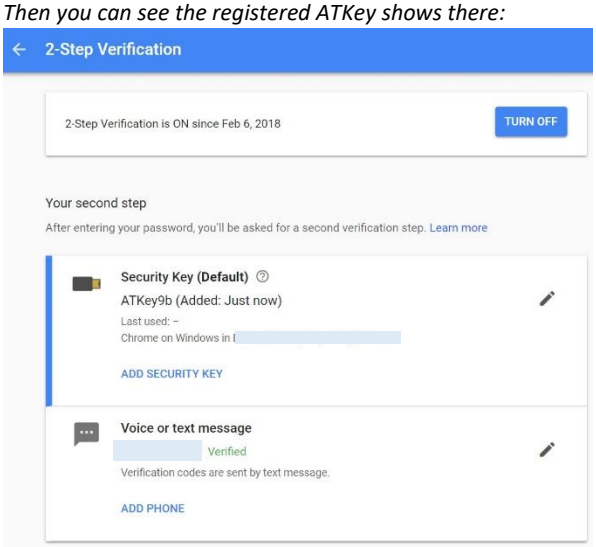


- LED#1 of ATKey.card is flashing, touch by your registered finger, when Green LED is ON, it means fingerprint verified and register this ATKey to Google U2F server; if Red LED is on, it means fingerprint failed, wait and verify again

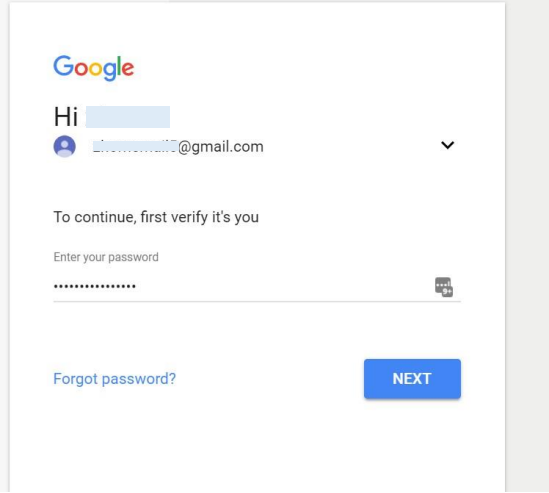
- *Register ATKey done, type-in the name of the key (you can use the name of your ATKey, or any Nick name you can remember which key is)*

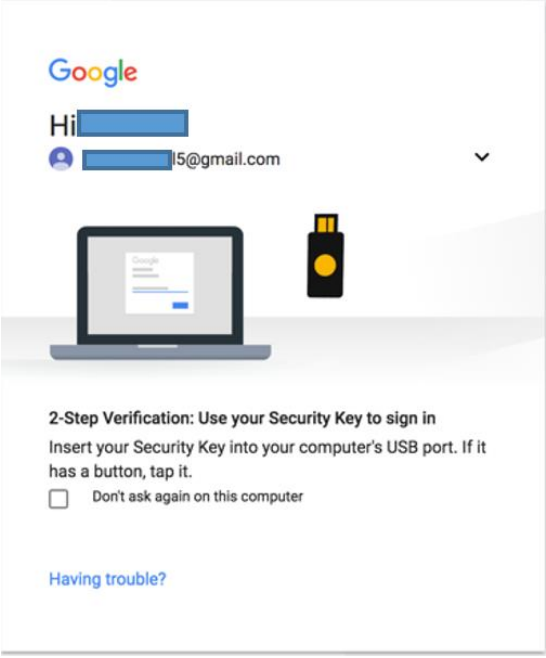


- *Then you can see the registered ATKey shows there:*



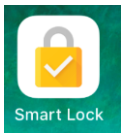
- *You can re-login the google account, ID/Password first, then it will request 2nd factor – LED#1 is blue flashing, touch to verify your fingerprint to login*



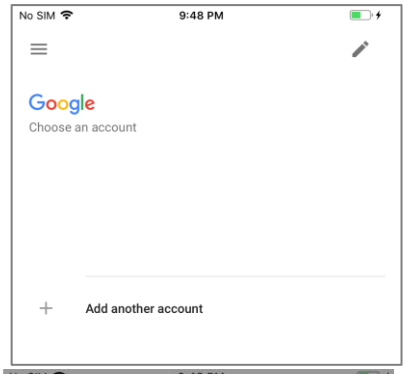


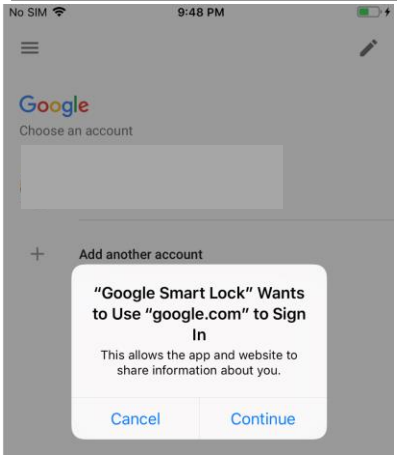
- *For other U2F enabled service:*
  - Dropbox: https://www.dropbox.com/help/security/enable-two-step-verification
  - Facebook: https://www.facebook.com/notes/facebook-security/security-key-for-safer-logins-with-a-touch/10154125089265766/
  - Github: https://help.github.com/articles/configuring-two-factor-authentication-via-fido-u2f/
  - Salesforce: https://help.salesforce.com/articleView?id=security_u2f_enable.htm&type=5

- (Bluetooth) FIDO U2F via iPhone/iPad (iOS) – app “Smart Lock” and Chrome browser
  - Smart Lock (download from app store)

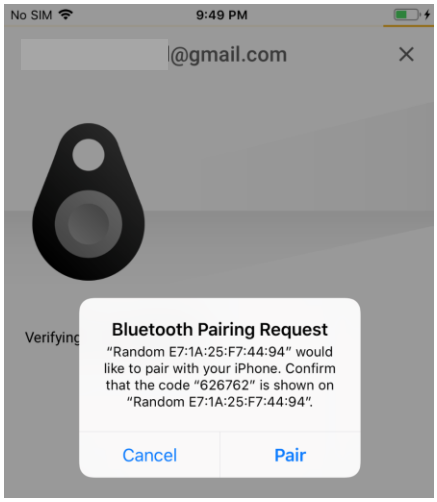


    - Add your Google account in

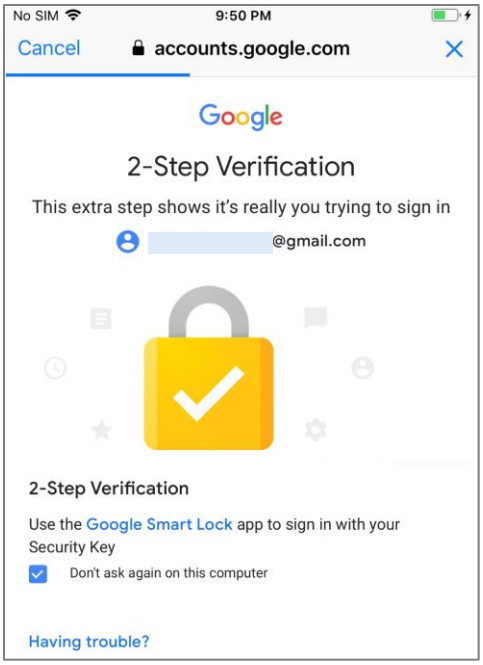


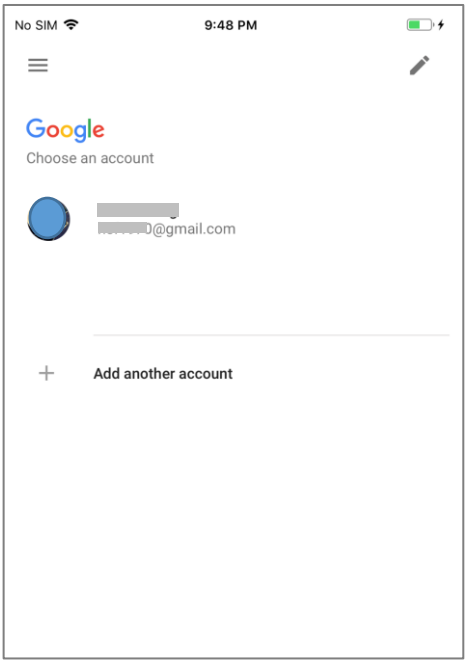


    - Pair your Security Key (ATKey)

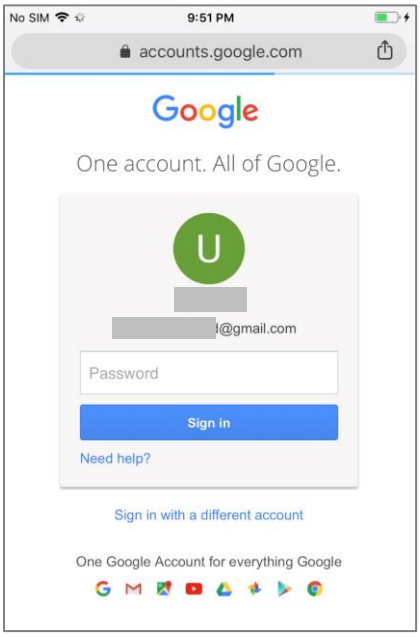


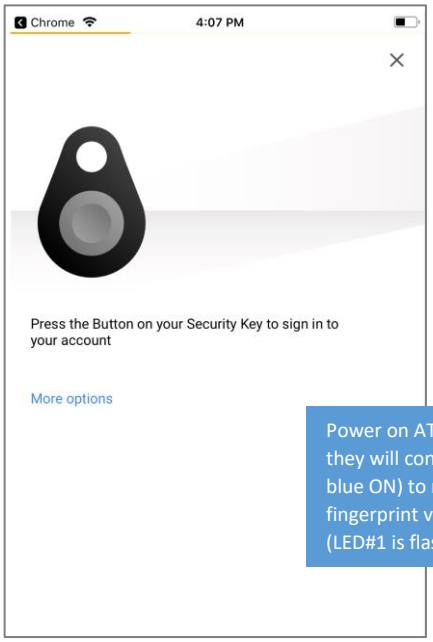
- Pair ATKey.card and iPhone
  - ATKey.card: LED#2 is WHITE ON, touch fingerprint to confirm the pairing
  - iPhone: click “Pair” to continue
- when it’s done, showing the google account in “Smart Lock” as below screenshots





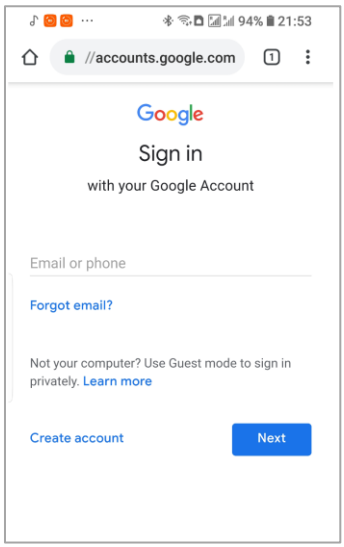
- Chrome Browser – login your google account by U2F
  - Login by ID/Password first, then need to power on ATKey.card …, to verify fingerprint to login



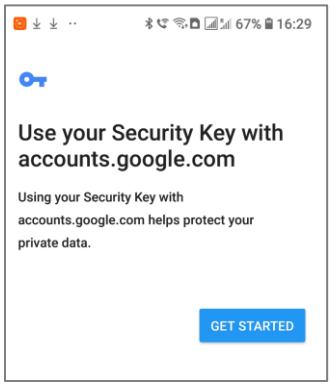


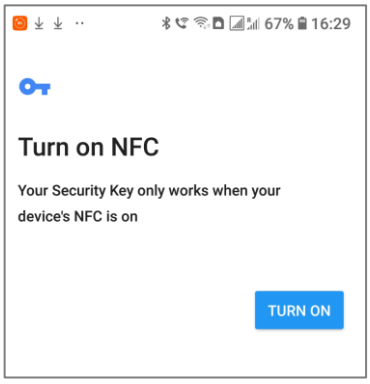
Power on ATKey.card now, they will connect (LED#2 is blue ON) to request fingerprint verification (LED#1 is flashing)

- (NFC) FIDO U2F via Android phone/tablet – Chrome browser
  - Sign in Google account via Chrome browser
    - ID/Password first



    - Request Security Key and turn on NFC





    - Authenticate via ATKey through NFC

- Power on ATKey.card
- LED#1 is flashing, just touch fingerprint to verify to enable NFC (for 15 sec.)
- ATKey.card contacts Android Phone (back side) to send U2F token via NFC (JavaApplet) to Phone to server for authentication

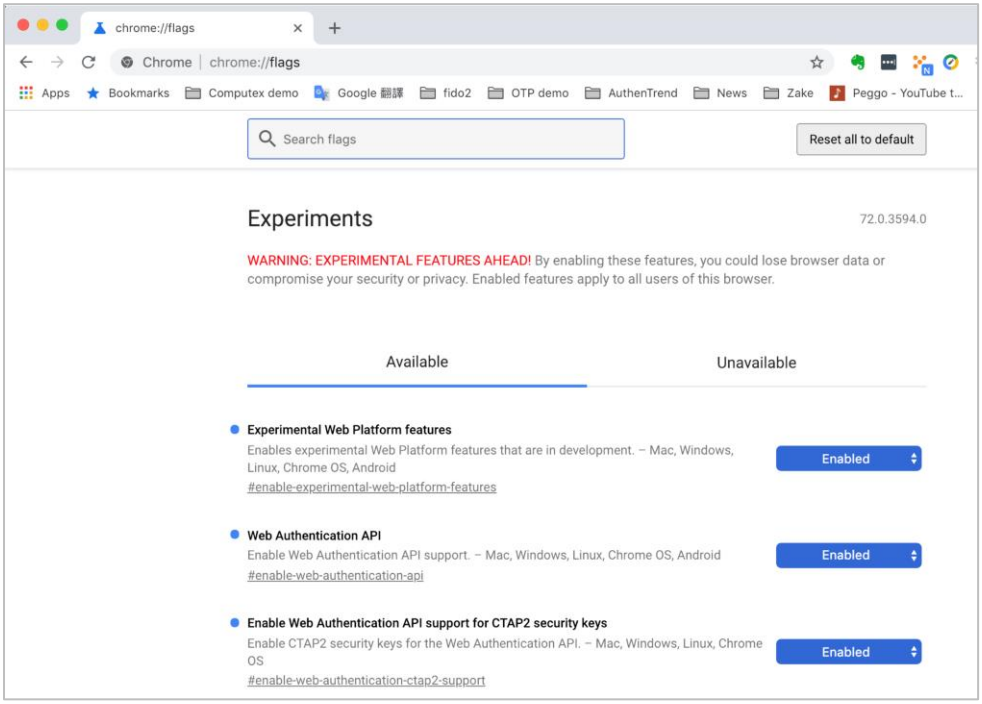
5. ATKey.card for FIDO2

- Please check https://fidoalliance.org/fido2/ for more ideas about FIDO2
- ATKey.card is FIDO2 certified

Link of the certified products:

(https://fidoalliance.org/certification/fido-certified-products/?appSession=276TI9VOA93161HHGNKF95CK9973MQT6H7HW96L3C707U348CS8TDF7GLM6YZ3TT333P4XNQ4G35ZOXO66JV16382X3H96SC91X20J5U4929JH452SNN6BW98QKD2L1B)

- Browser base (WebAUTHN – Edge, Chrome) for Windows and Mac via USB only
  - Windows 10 RS5, Edge browser must be v44.17738.1000.0 or later version
  - Chrome Canary browser v70.0.3528.0 or later version; and please follow below screenshot to enable flags.



- FIDO2 server
  - Please check below certified FIDO2 server to try with ATKey.card (USB only)
    https://fidoalliance.org/certification/fido-certified-products/?appSession=735HXT4BHP6S5B453PCZH40LZB8J07Y1PJH7C6Z5PNHR57GTRVEV492OWX3E8RYS335G6IU935S92W99707J73Q1KS1385CC6Y2AY15T5197JR1K5C212T703WTBY31Z

6. ATKey.card for NFC Reader

- ATKey.card is a NFC tag type for ISO14443 & Mifare Type A NFC reader
  - Mifare ID is resident and unique ID inside SE/NFC chip
  - For NFC door locker
    - If there is a “Mifare ID table” in the backend of NFC card reader (Door NFC reader), just need to copy Mifare ID of those specific cards
    - Or register ATKey.card to Mifare Type A NFC door locker

Extra Highlights and Trouble Shooting

- Pending mechanism for security
  - Security level is high: Fingerprint FAR < 1/50000, FRR < 2%
  - For even higher security, we support "lock" mechanism to avoid trying by fake fingerprint continuously
    - Allow 5 times fingerprint verifications, if it fails 5 times continuously:
    - 1st time: lock card for 1 hour
    - 2nd time or later: lock card for 12 hours

- Battery
  - From factory finish good, it is 3.8V (~50%)
  - Battery low is 3.67V (~35%), please do battery charge
  - If the battery is lower than 3.4V, ATKey.card can not boot
    - You need doing battery charge for a while (ATKey.card is no response at beginning), then ATKey.card can boot again
  - If the battery is lower than 3.0V, battery protects by Hardware (PCM)
    - You need doing battery charge for a while (no response from ATKey.card for a while).

- Bluetooth
  - We are BLE mode (Bluetooth smart), it's low power consumption (comparing with Bluetooth mode)
  - ATKey.card is USB data mode (insert PC or ..), we will stop BLE mode; but if ATKey.card is USB battery charging (using USB power adapter), BLE is still ON.

- Demo Video
  - https://youtu.be/zfGS9shUiMs (Setup ATKey.card)
  - https://youtu.be/3budV7ji250 (ATKey.card for NFC door, PC)
  - https://youtu.be/MAomJowMuzc (ATKey.card for Mac)
  - https://youtu.be/fiAaX7PsNvk (ATKey.card for FIDO U2F: PC)
  - https://youtu.be/IzewBCCXyvA (ATKey.card for FIDO U2F: Android)
  - https://youtu.be/6SwYWws07IA (ATKey.card for NFC door)

- FCC and NCC statement

FCC Label Compliance Statement:

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.

To assure continued FCC compliance:
Any changes or modifications not expressly approved by the grantee of this device could void the user‘s authority to operate the equipment.

Exposure to Radio Frequency Radiation:
This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

NCC警語:

本產品符合低功率電波輻射性電機管理辦法 第十二條、第十四條等條文規定
1. 經型式認證合格之低功率射頻電機，非經許可，公司、商號或使用者均不得擅自變更頻率、加大功率或變更原設計之特性及功能。
2. 低功率射頻電機之使用不得影響飛航安全及干擾合法通信；經發現有干擾現象時，應立即停用，並改善至無干擾時方得繼續使用。
前項合法通信，指依電信法規定作業之無線電通信。低功率射頻電機須忍受合法通信或工業、科學及醫療用電波輻射性電機設備之干擾。