BLE Based Face Secure Setup Guide
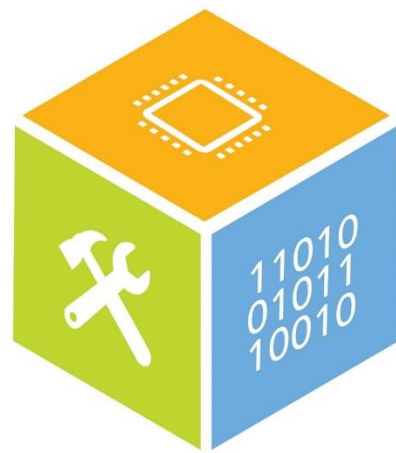
Table of Contents

Version	Author	Description
0.1	Dongsheng Zhang (dongsheng.zhang@nxp.com)	Initial version

1 Hardware Setup

1.1 RT1060 EVK Board Setup

The LPUART2 of the RT1060 was used for the communication UART port with the BLE KW41Z for the RT1060 EVK. Here is the connection between RT1060 EVK and the FRDM-KW41Z.
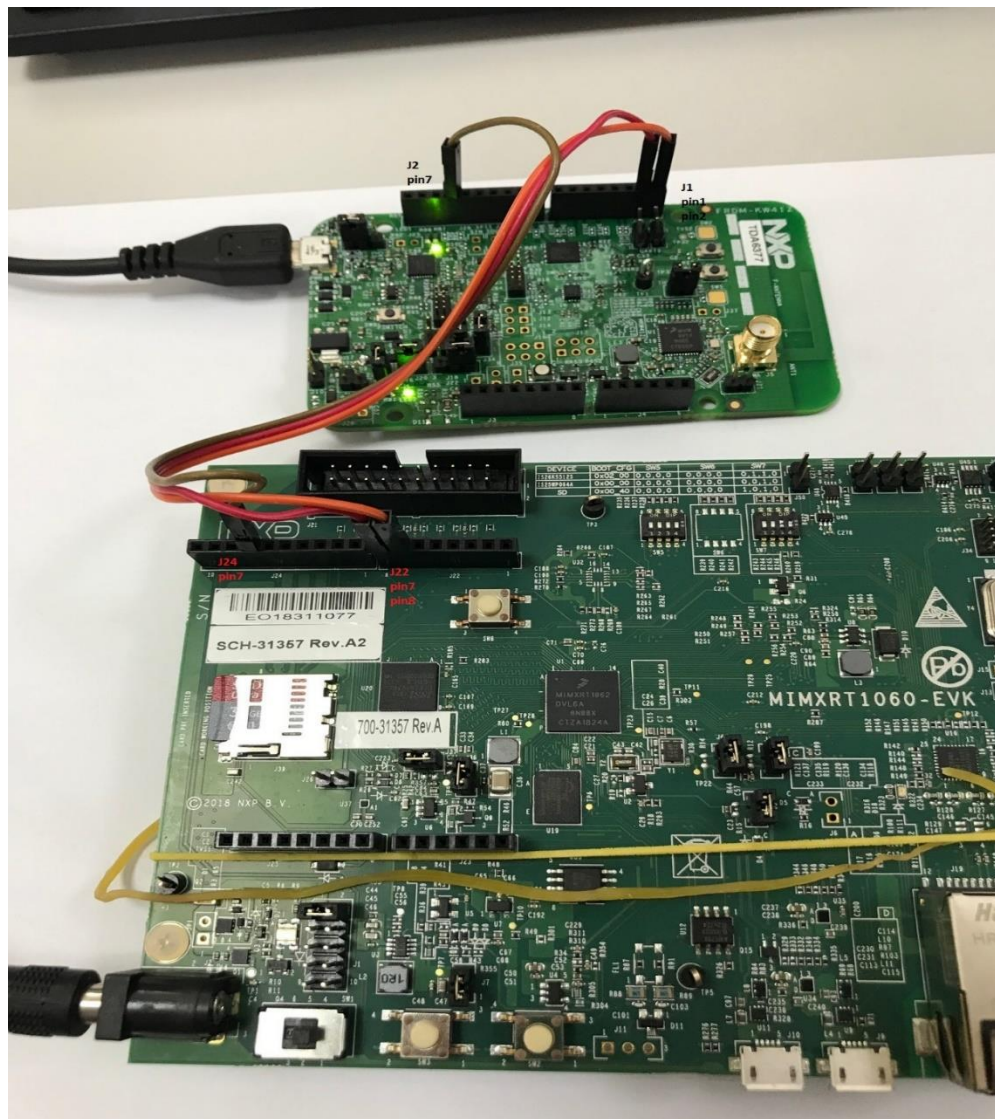
|	RT1060 EVK	FRDM-KW41Z
PIN	J22 pin7	J1 pin1
PIN	J22 pin8	J1 pin2
PIN	J24 pin7	J2 pin7

1.2 RTVISION Board Setup

The LPUART5 of the RT1060 was used for the communication UART with the BLE KW41Z for the RTVISON board. No flying wire needed for the RTVISON board.
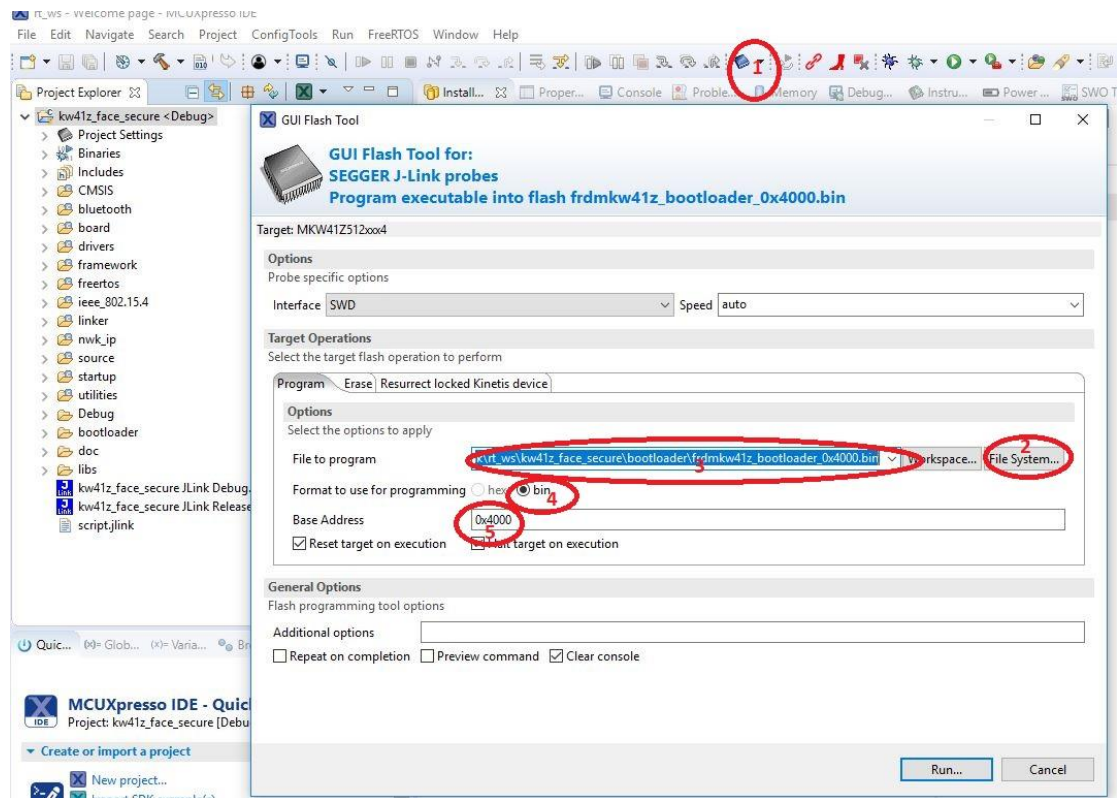
2 Software Setup

2.1 KW41Z Firmware and Bootloader flash

Need to flash the kw41z bootloader at first time both on the FRDM-KW41Z evk and the RTVISION board which included the KW41Z.

1. Flash the kw41z bootloader on FRDM-KW41Z evk with the Jlink OpenSDA (the USB port)
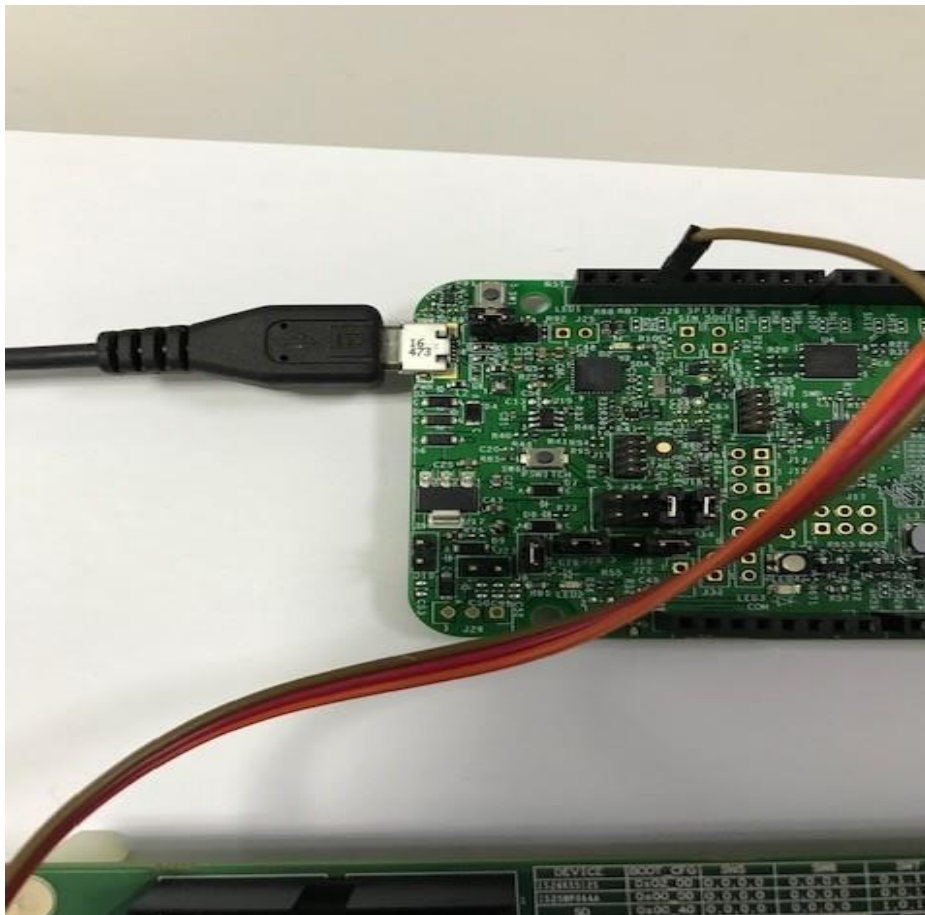
- Open the kw41z_face_secure project with the MCU Expresso and click 1 in above screenshot to select the SEGGA JLink Probe, then the GUI flash Tool dialog will pop out like above screen shot.
- Click 2 in above screenshot to select the bootloader file frdmkw41z_bootloader_0x4000.bin
- Select the bin format like 4 in above screenshot.
- Set the Base Address to 0x4000 like 5 in above screenshot.
- Then click "run" to start the flash.

2. Flash the kw41z bootloader on RTVISION board with the Jlink Ultra+(J5 on the core board)

- Open the kw41z_face_secure project with the MCU Expresso and click 1 in above screenshot to select the SEGGA JLink Probe, then the GUI flash Tool dialog will pop out like above screen shot.
- Click 2 in above screenshot to select the bootloader file frdmkw41z_bootloader_0x4000.bin
- Select the bin format like 4 in above screenshot.
- Set the Base Address to 0x4000 like 5 in above screenshot.
- Then click "run" to start the flash.

2.2 RTVISON/EVK 1060 Firmware Flash

1. Flash the released bin firmware with the JLink
   J-Link>loadbin mcu_face_ffi_rtvision.bin 0x60000000   // for RTVISION board

   J-Link>loadbin mcu_face_ffi_evk.bin 0x60000000   // for EVK board

2. Open the EVK/RTVISON MCU Expresso project and select the "Flash" build configuration, then build and debug, the firmware will be flashed into the board.
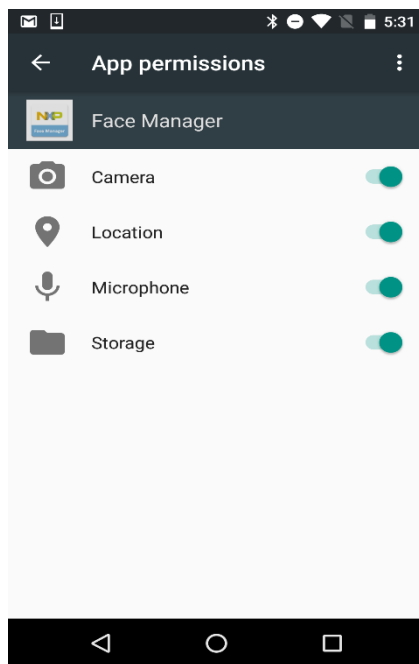
2.3 Android Face Manager Installation

Adb install the Face Manager apk on your Android phone.

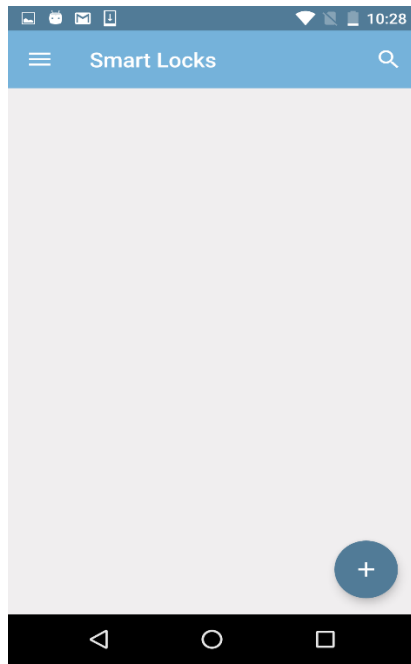# 3 Face Registration by Face Manager APK

3.1 Grant Permissions

Usually the setting is from: "Setting->App->Face Manager->Permissions" and enable all the permissions.
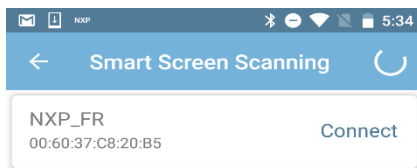

3.2 Scan

After launch the Face Manager, it will show the splash screen then go into "Smart Lock" screen, just click the "+" button to scan the Smart Lock
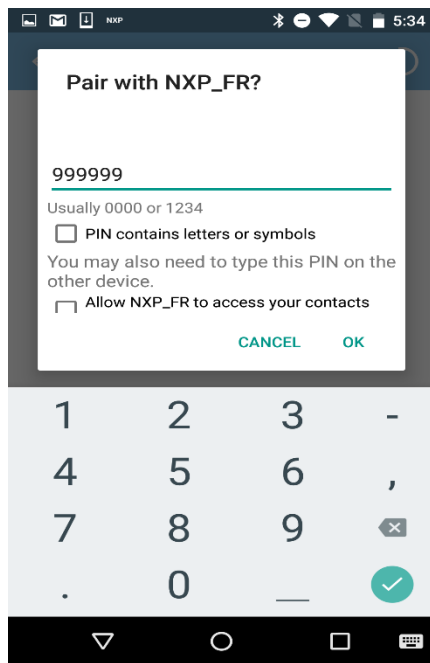
3.3 Pair

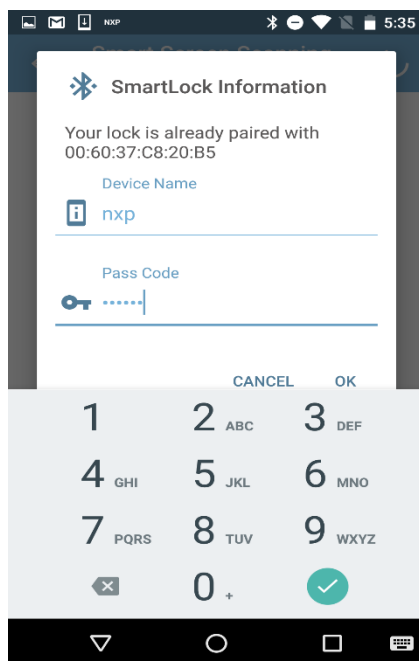The "Nxp_FR" device will be shown if the scan if finished.
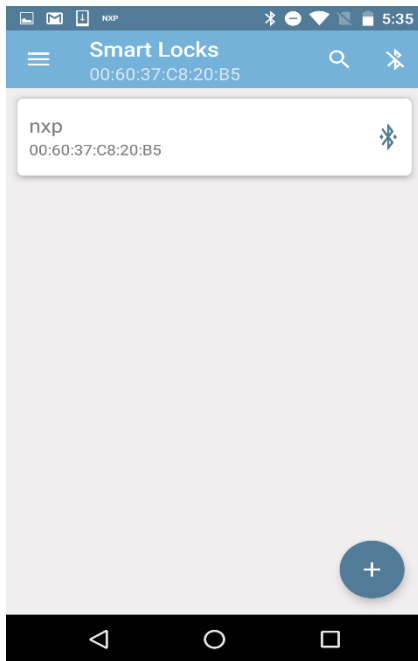

Click the "NXP_FR" to pair with it, the code is "999999" by default
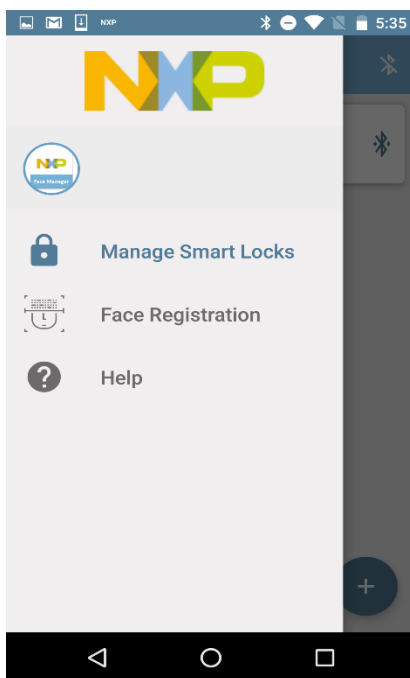
3.4 Connect

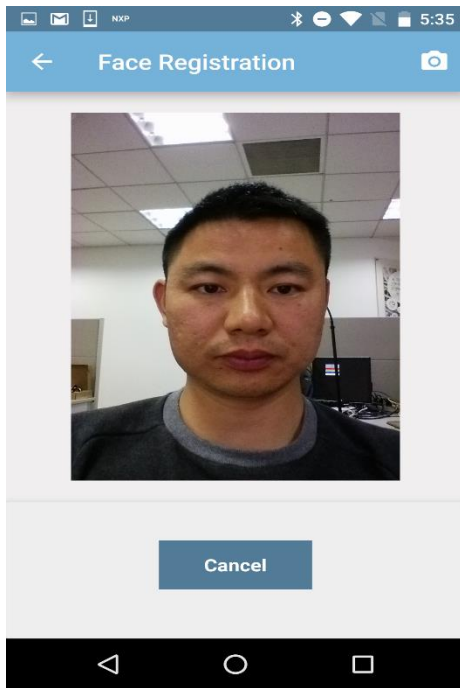Assign the Device name and Pass code for the device
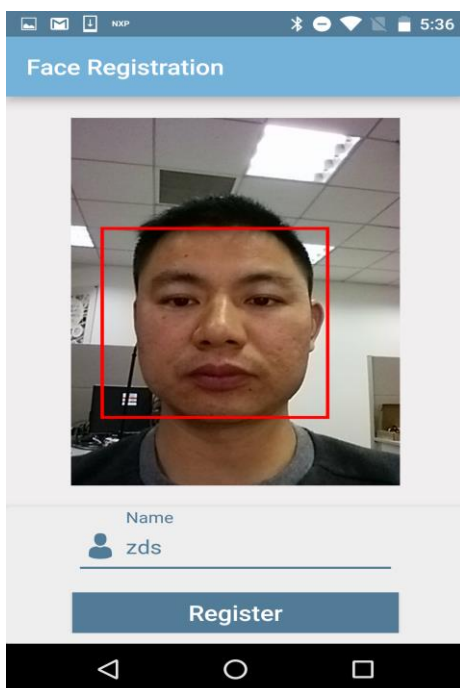
3.5 Face Register

Click the side toolbar and select the Face Registration if the connection is setup

Click the "Camera" button to take a picture

Input your name and press the "Register" button to finish the registration.

4 Face Recognition by Face Secure device

4.1 Power on the RTVISON/EVK

4.2 Un-authorized User (Locked)

if the people is not registered, it will show the Red box of the face with the "Lock" status

4.3 Authorized User (Unlocked)

After registration, the face will be recognized and the name and the Unlock status will show.

5 Source Code Management

All source code are managed by collabnet, please check with Jianfeng.qin@nxp for the code access.

5.1 Project List

Project	Description	Comments
Android_face_manager	Android face manager apk source code	
Mcu_face_secure	Emwin based ui face secure firmware for RT1060EVK	
Mcu_face_ffi_evk	FFI based ui face secure for RT1060EVK	
Mcu_face_ffi_rtvision	FFI based ui face secure for rtvision board	
Kw41z_face_secure	Kw41z BLE face secure	