

User Guide



SIC4340 Tools APP User Guide

Rev 1.0 (July 2020)

This document describes how to use SIC4340 Tools Android and IOS application with SIC4340 Dev Kit board.

Revision History

Revision	Date	Software Version	Description
1.0	July 2020	1.0.0	1 st Release

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1. Introduction

SIC4340 is NFC tag type 2 with built-in ADC for physical sensor measurement for 3-channels selectable. These built-in ADC can drive the current from $1\mu\text{A}$ to $504\mu\text{A}$ and measure the electrical value (e.g. voltage, resistance, and capacitance). The measured value is provided with 10-bit resolution. SIC4340 Tools application is developed to help the user learn how to use SIC4340 features with many sensors such as light sensor, gas sensor or temperature sensor. In this app, the user can set the bias current for each channel and measure the result from SIC4340 IC. The voltage and resistance result will be displayed on the app after measurement.

Silicon Craft Technology PLC. (SIC) creates this document to describe how to install and use SIC4340 Tools application on both Android and IOS platform.

2. Instruments

To use this application, there are some instruments required as below.

1. NFC Mobile which can be a. or b.
 - a. Android mobile with Android operation version 4.1 (Jelly Bean) or above.
 - b. iPhone with IOS13 or above.
2. SIC4340 Dev Kit board as Figure 1

To connect with other sensors, there are 3 pins available for connecting with SIC4340's ADC: IO0, IO1, IO2

Note: To use IO0, SB1 must be disconnected.

This part is for assembly other components.

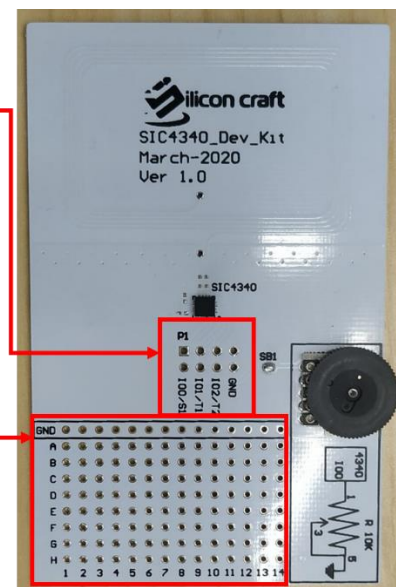


Figure 1: Detail of SIC4340 Dev kit board



3. Installation

There are SIC4340 Tools application available on both Android and IOS Platform.

3.1 Installation on Android

For SIC4340 Tools application on Android. It can be downloaded and installed from Google Store link: <https://play.google.com/store/apps/details?id=com.sic.sic4340rmeas> or search for 'SIC4340 Tools' in Google Play Store.

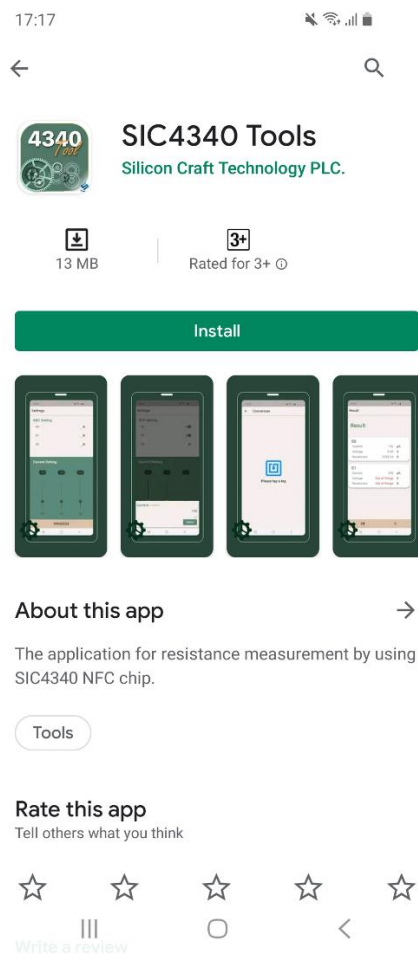


Figure 2: SIC4340 Tools APP on Google Play Store



3.2 Installation on IOS

For SIC4340 Tools application on IOS, It can be downloaded and installed from App Store link: <https://apps.apple.com/us/app/sic4340-tools/id1518973827> or search for 'SIC4340 Tools' in IOS App Store.

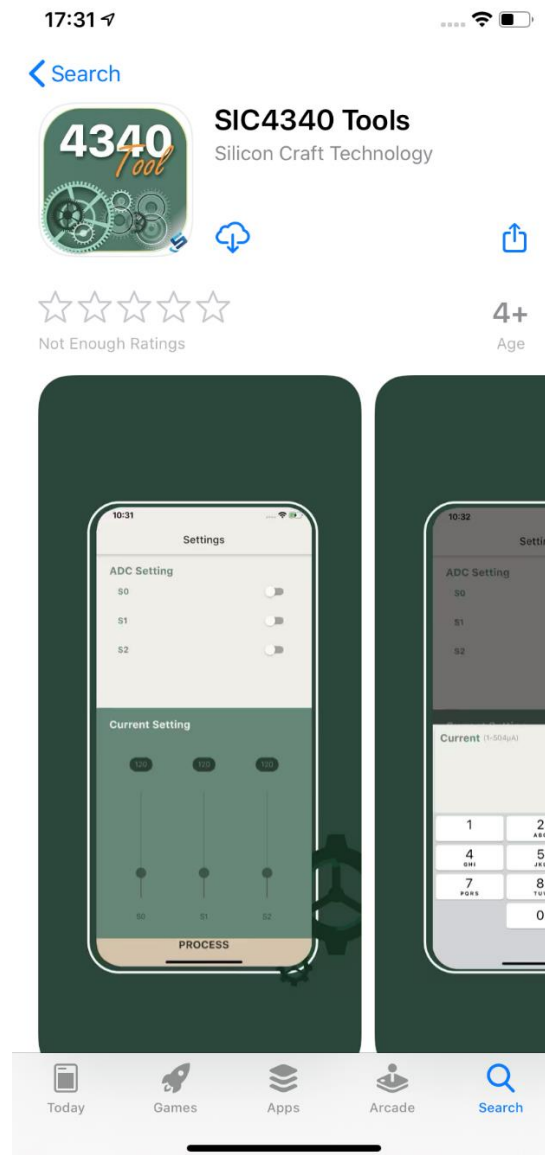


Figure 3: SIC4340 Tools APP on IOS App Store



4. Application Demonstration

This part demonstrates how to use SIC4340 Dev Kit with SIC4340 Tools application. The content in this part includes setting, NFC communication and result display.

4.1 Setting

In the setting page of SIC4340 Tools, user can enable or disable each pin and set the bias current separately for each pin as shown in Figure 4.

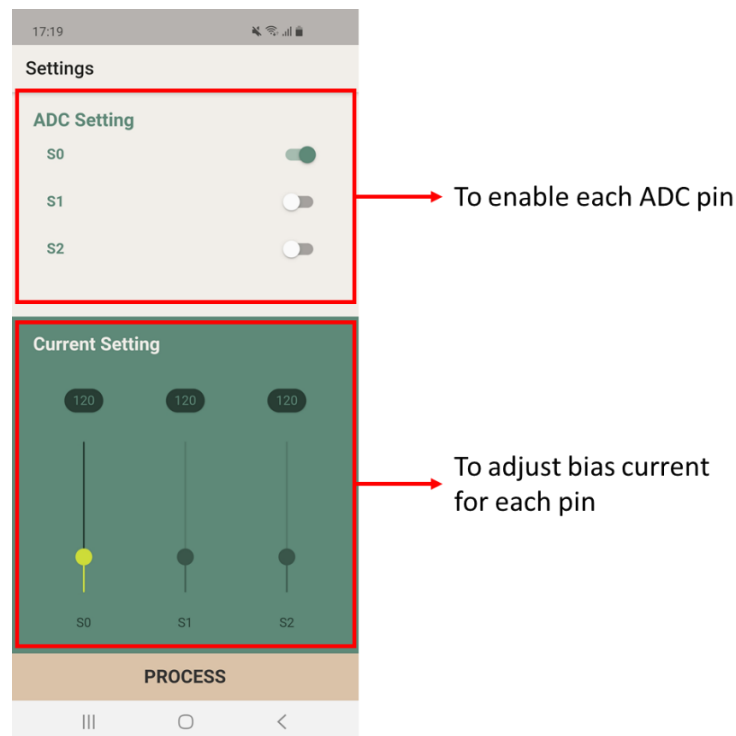


Figure 4: Setting in SIC4340 Tools



The bias current can be set from slider bar or click the value on the top of slider bar to directly type the value as shown in Figure 5.

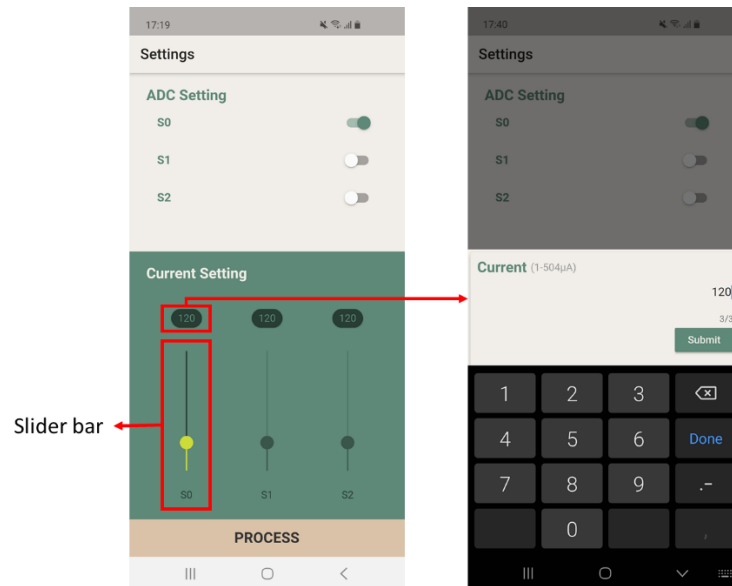


Figure 5: Bias current setting

4.2 NFC Communication

After finished the setting, push 'PROCESS' button to start the NFC session as shown in Figure 6.

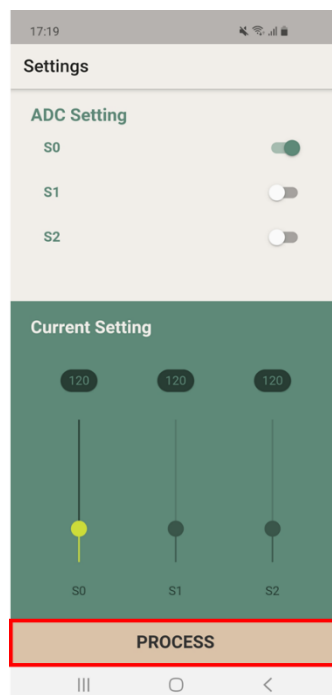


Figure 6: Start NFC Session



After the NFC session has started, the NFC dialog will show the status as in Figure 7 (a) for Android and Figure 7 (b) for iPhone.

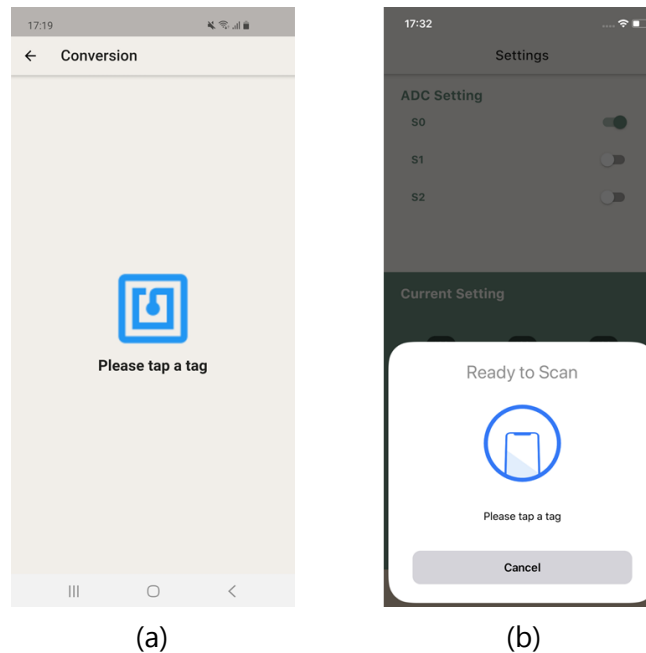


Figure 7: Please tap a tag status

After the status has shown as in Figure 7, user have to tap and hold the mobile on the antenna of SIC4340 Dev Kit board until the status changed to success as in Figure 8 (a) for Android and Figure 8 (b) for iPhone

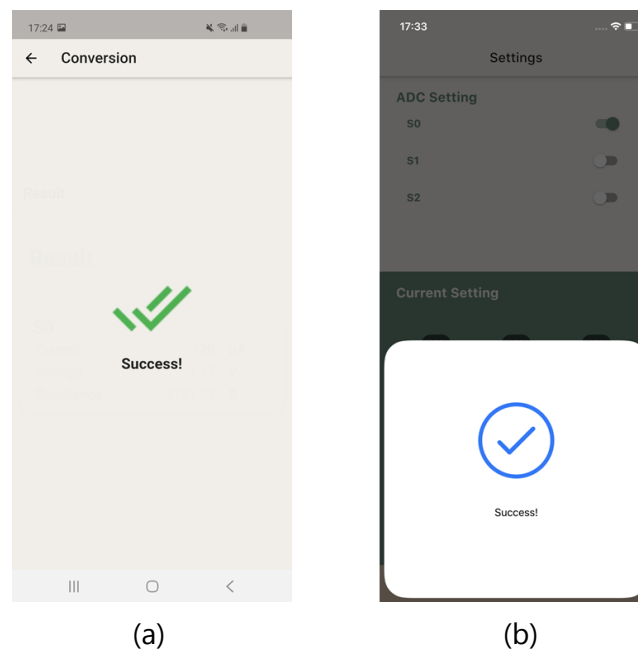


Figure 8: Success Status



If something went wrong before finished an NFC communication, the error status will be shown as in Figure 9 (a) for Android and Figure 9 (b) for iPhone. If this error status has shown, user can tap mobile on the board again.

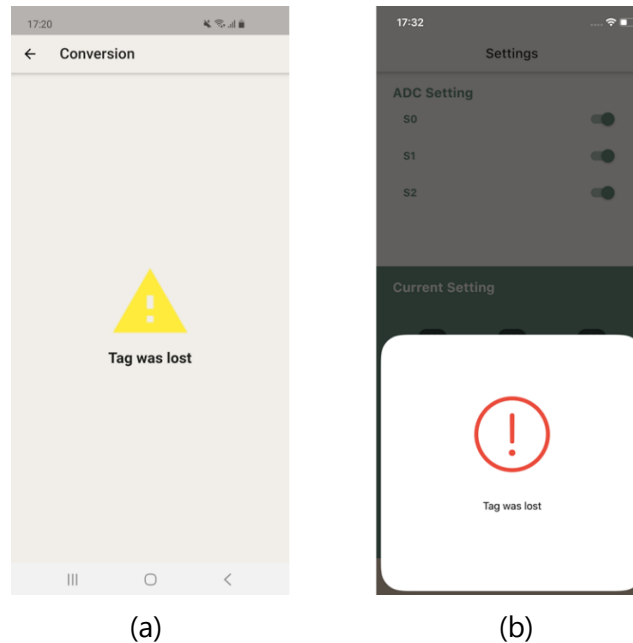


Figure 9: Error status

4.3 Result Display

After finished an NFC communication and status shown 'Success' as Figure 8, the page in application will be automatically change to result page.

In the Result page bias current, voltage and resistance for each enabled pin will be displayed. The bottom bar contains 2 buttons, one for go back to setting page and one for measuring again with the same setting as shown in Figure 10

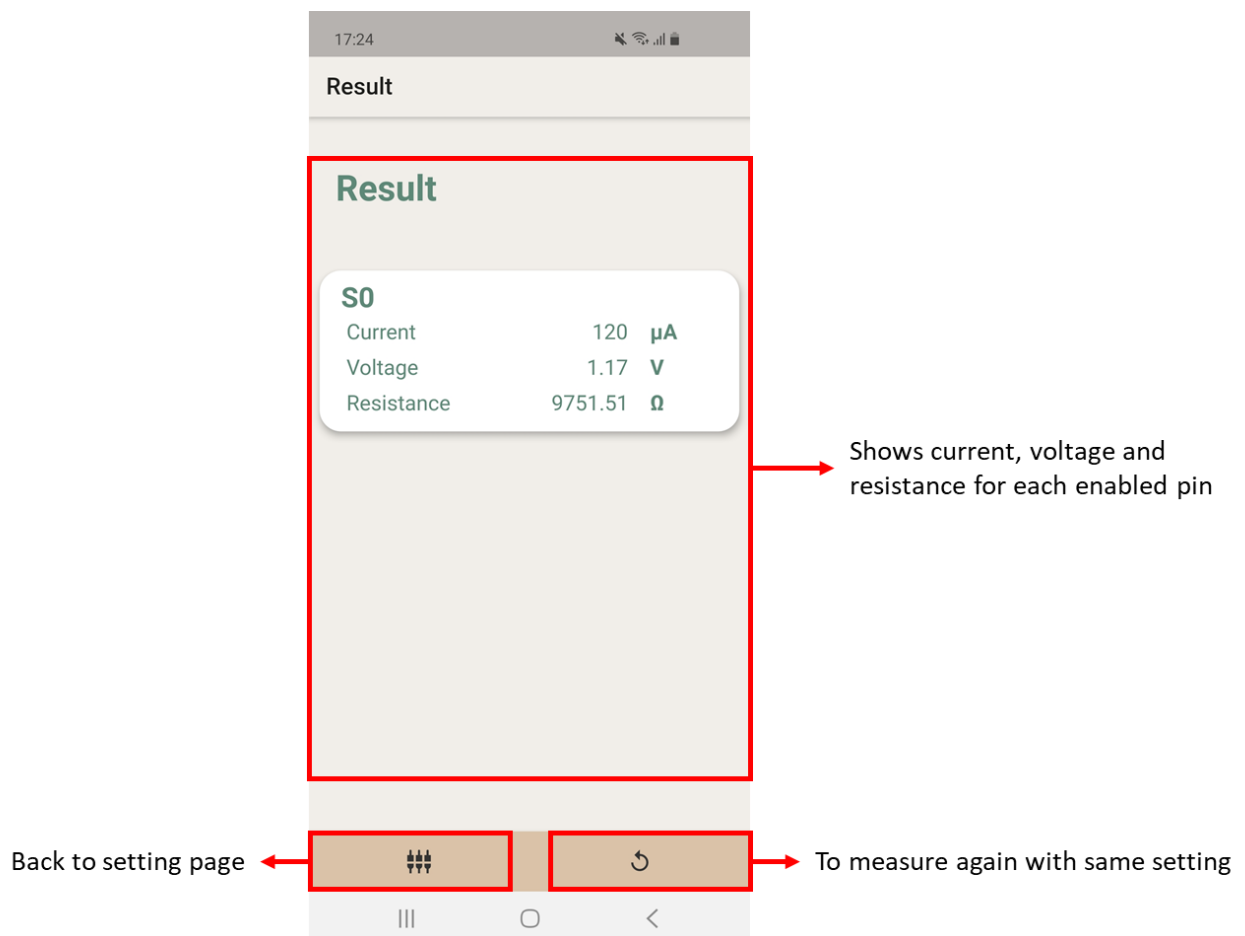


Figure 10: Result page



5. Legal Information

5.1 Disclaimer

- The information described herein is subject to change without notice.
- Although the IC contains a static electricity protection circuit, static electricity or voltage that exceeds the limit of the protection circuit should not be applied.
- SIC assumes no responsibility for how this IC is used in products created using this IC or for the specifications of that product, nor does SIC. Assume any responsibility for any infringement of patents or copyrights by-products that include this IC either in Thailand or in other countries.
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