

EloMcp2210Config

Elo Android Utility for MCP2210

(Breakout Module ADM00419)

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1. Purpose of the app

To demonstrate Android app development supporting MCP2210 using Android libraries provided by Microchip.

The app has basic functions to config an MCP2210 device. All nine GPIO pins can be configured.

The app v1.4 supports two Elo Status Light Kits (MCP2210).

2. Installation

Unzip the package and copy the file below to a USB stick:
EloMcp2210Config-v1.4.apk

On the Android device, please enable “Install app from unknown source” under “Device Settings”.

Connect the USB stick to Android device and install the package:

EloMcp2210Config-v1.4.apk

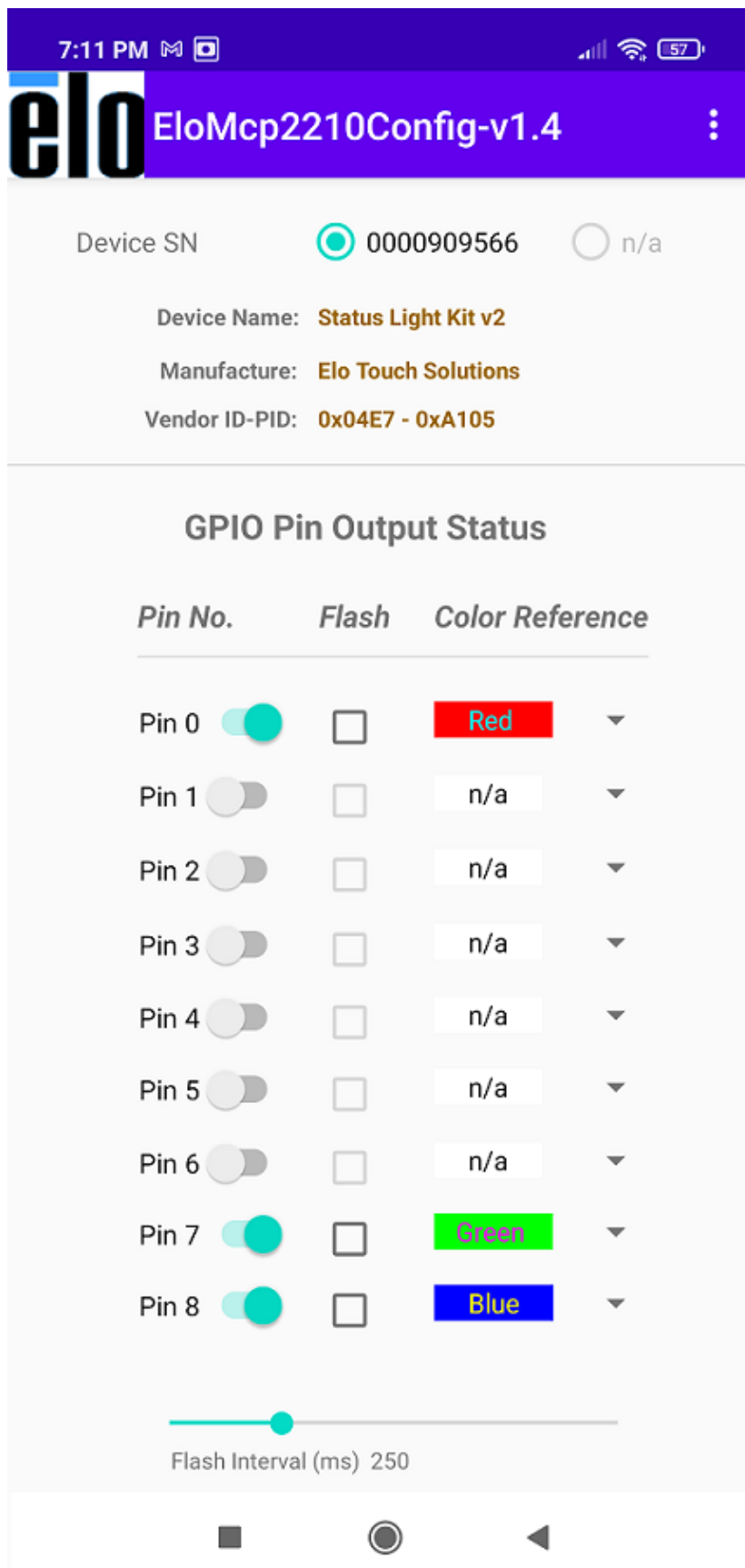
Once installed, the app's icon (titled "EloMcp2210Config") will show up as below marked by the red box:



The app needs to access USB device for normal operations so the user needs to grant USB access permission. When prompted for this permission, the user must accept and grant the permission.

3. UI descriptions:

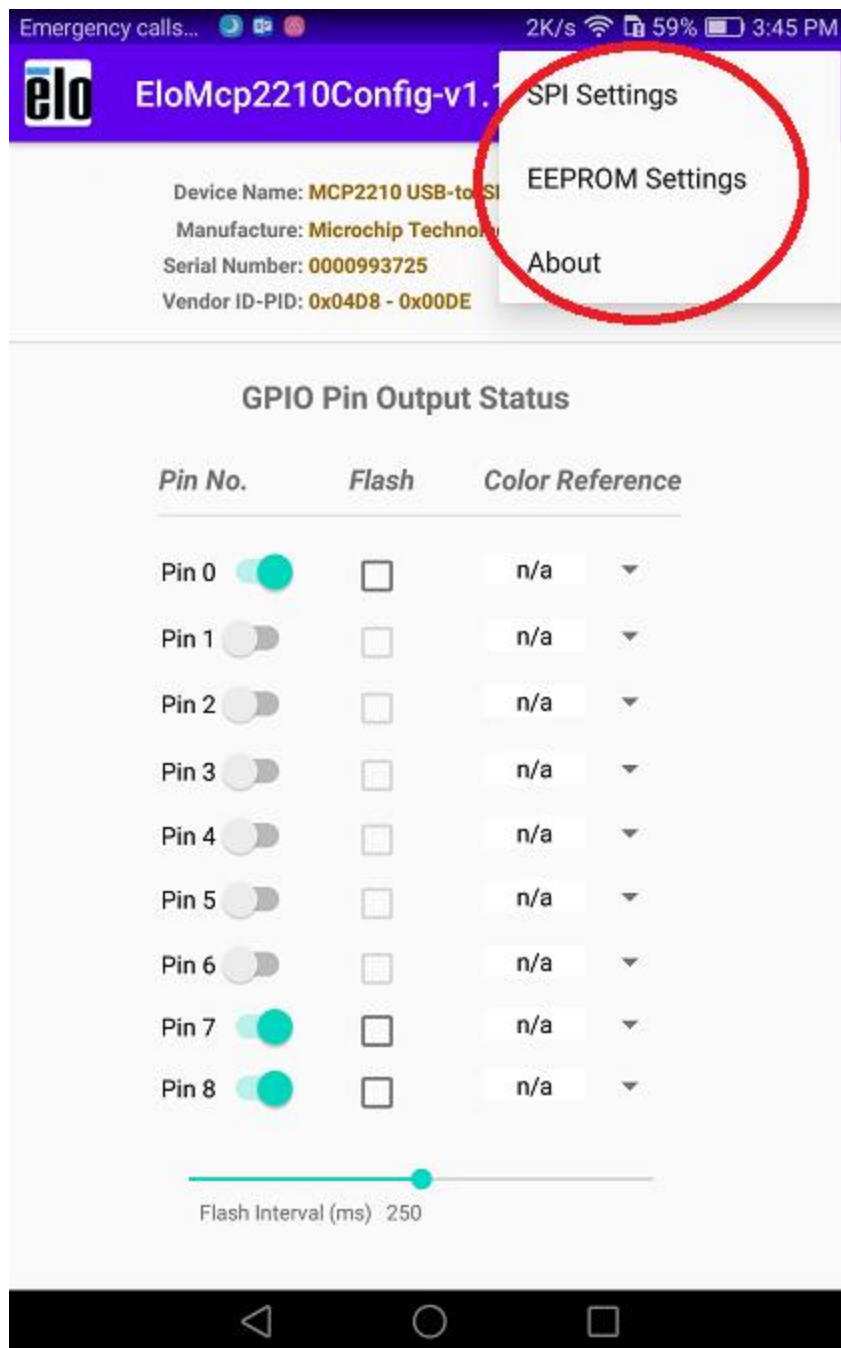
The app has 2 pages; the main page is shown below:



This is the main page of the app. Below is list of functions:

- 3.1.1 Device information: name, manufacture, serial number, vid-pid.
- 3.2 Switches to toggle 9 GPIO pins output values.
- 3.3 Options to flash LED light.
- 3.4 Option to set color reference for a particular GPIO pin.
- 3.5 Config the device (the “DEVICE CONFIGURATION” button).
- 3.6 LED flashing interval (from 0 to 500 milliseconds).

4. Popup Menu (the 3-Dots)



Clicking the 3-Dots (popup menu), users should see a pop up menu with 3 menu options:


- 4.1 SPI Settings
- 4.2 EEPROM Settings

4.3 About box

5. Device Configuration page

Click the inflator (3-dots) at upper-right corner and click “Settings” to invoke the Device Configuration page:

Emergency calls... 76B/s 92% 3:55 PM

 **EloMcp2210Config - Settings**

Device Configuration

Set For Phase

☒ Current ☐ PowerUp

SPI Mode

0 (Low-Falling) ▼

SPI CS Active Values

000000000

SPI CS Idle Values

111111111

GPIO Pin Designations

000000000

GPIO Pin Directions

000000000


GPIO Pin Output Values

110000001

Note: User's bit array input, for example "111111111", corresponds to GPIO pin 8,7,6,5,4,3,2,1,0. "Write Settings" ignores a section (Mode|CS|Pin) if input fields for a section are all left blank.

READ SETTINGS

WRITE SETTINGS



This page allows users to read/write device parameters.

When user touch the input field, the onscreen keyboard will automatically pop up to take user input.

The screenshot shows the 'EloMcp2210Config - Settings' application. At the top, the status bar displays 'Emergency calls...', signal strength, speed '186.4K/s', Wi-Fi, battery '93%', and time '8:39 PM'. The app title bar is purple with the 'elo' logo and the text 'EloMcp2210Config - Settings'. Below this is a section titled 'Device Configuration'. Inside this section, there are several settings:

- 'Set For Phase' with two radio buttons: 'Current' (selected) and 'PowerUp'.
- 'SPI Mode' set to '3 (High-Rising)' with a dropdown arrow.
- 'SPI CS Active Values' set to '000000000'.
- 'SPI CS Idle Values' set to '111111111'.
- 'GPIO Pin Designations' set to '000000000'.
- 'GPIO Pin Directions' set to '000000000'.

At the bottom of the screen, an onscreen numeric keypad is visible, featuring digits 1-9, 0, a comma, a period, a minus sign, an equals sign, a backspace key, and a blue arrow key.

5.1 Device Parameter Descriptions:

5.1.1 Phase which SPI settings apply to: Current, Power-up.

5.1.2 SPI modes: 0 to 3

4.1.3 SPI CS active values: 9 binary bits, pin[8] to pin[0].

4.1.4 SPI CS idle values: same as above.

4.1.5 GPIO pin designation: 9 digits, each is 0, 1 or 2.

4.1.6 GPIO pin directions: 9 binary bits, pin[8] to pin[0]

4.1.7 GPIO pin output values: same as above.

5.2 “READ SETTINGS” Button

Retrieve either current setting or power-up settings of the device.

5.3 “WRITE SETTINGS” Button

Save current input values. The settings apply to both power-up and current settings.

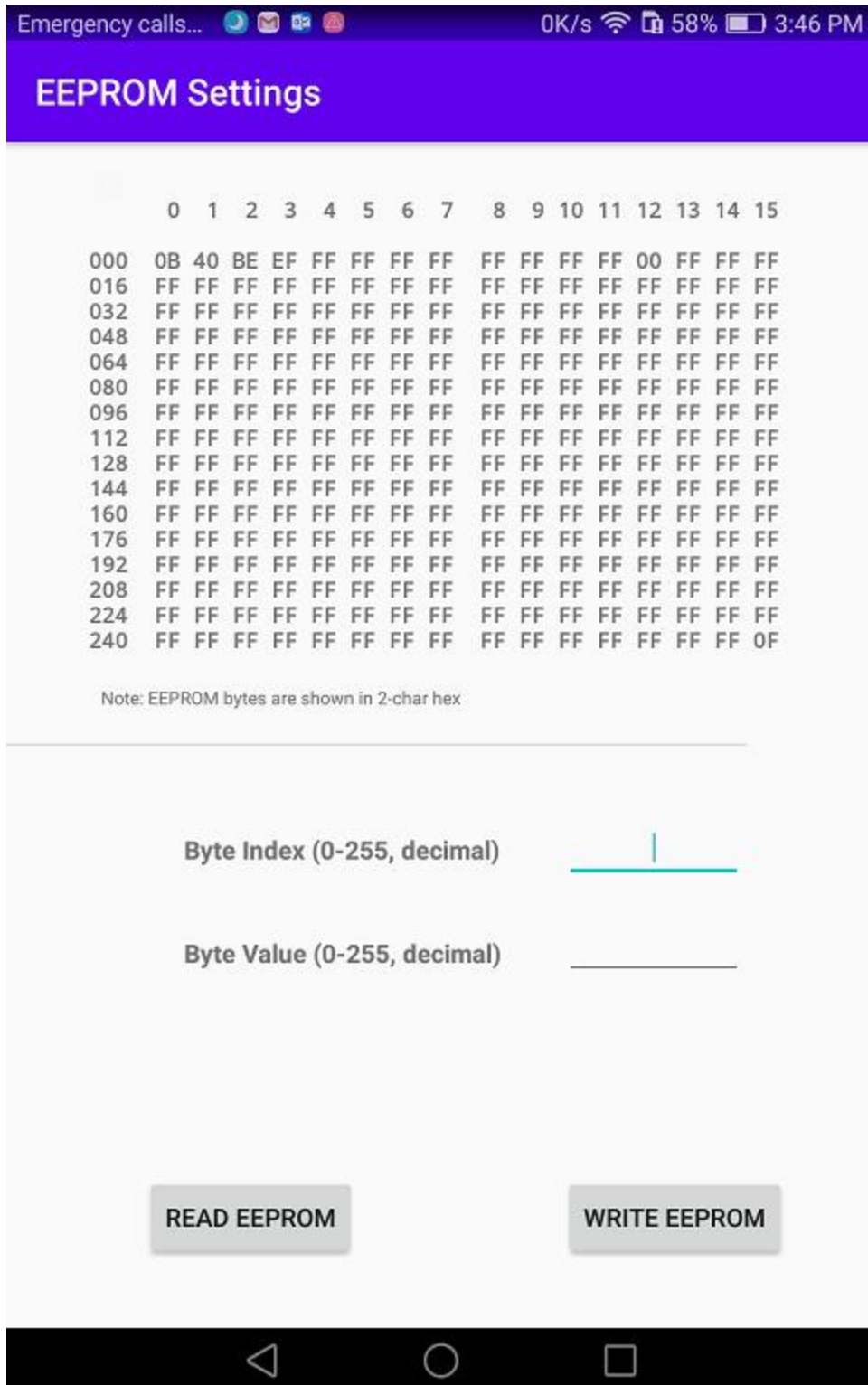
Within each of the 3 input sections (groups) divided by the horizontal dividers, if all input fields are blank with in a section, the settings will not be written to the device.

For example, if both “SPI CS active values” and “SPI CS idle values” are blank, these two parameters will be ignored when user click the “WRITE SETTINGS” button.

Another example, if the user wants to set the mode only, he/she can leave all other fields blank and only enter the desired mode value. In this case, only the SPI mode is set not any other device properties.

The app will validate input values and prompt the user if invalid input has been detected.

6. EEPROM Settings



The upper portion of the screen shows the full 256-byte EEPROM contents, it is for display only, not editable.

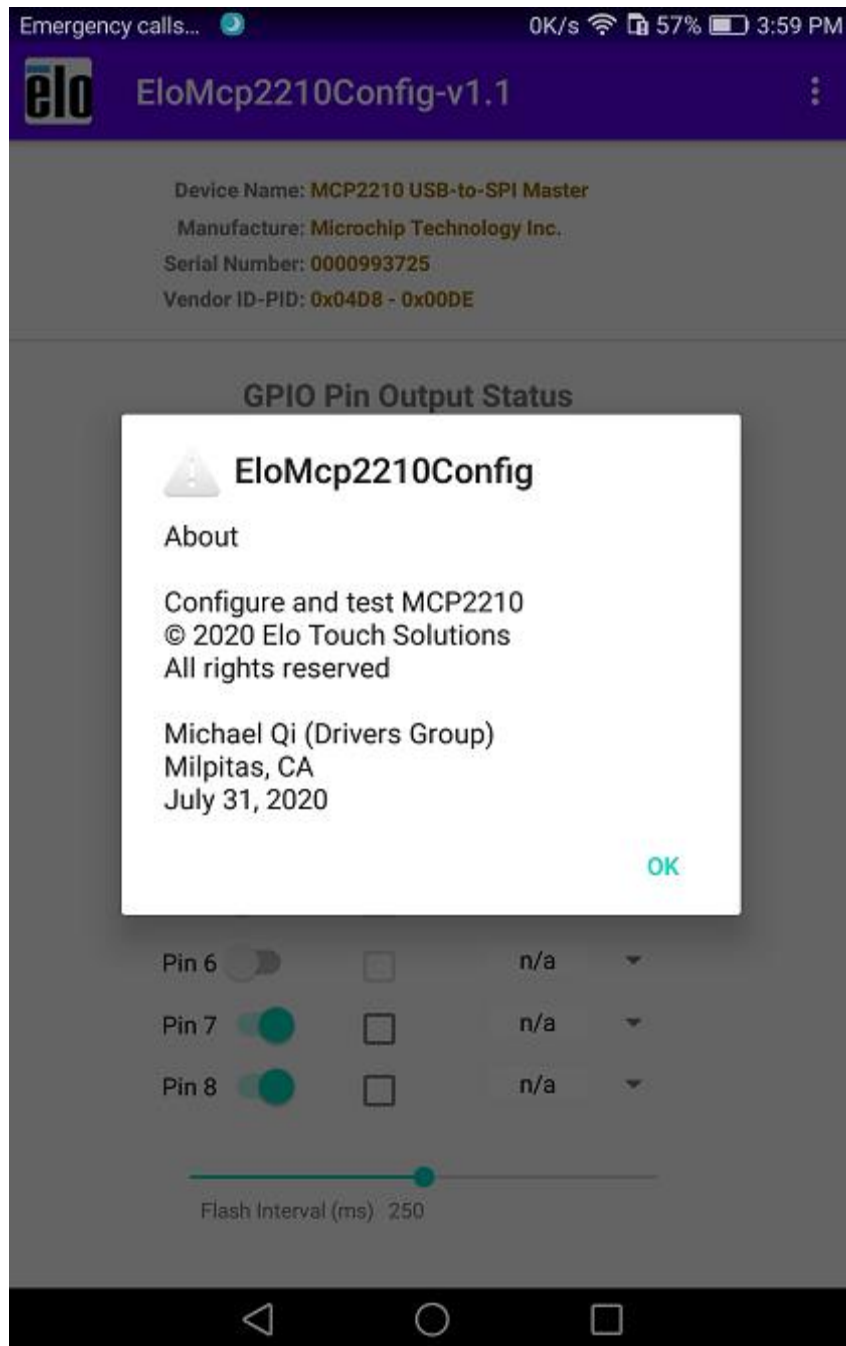
6.1 Read EEPROM

Read out all contents (256-bytes) of EEPROM and display it.

6.2 Write EEPROM

Write a byte into EEPROM with specified byte index and the actual byte value.

7. AboutBox



8. Localization

As for now, the app has been localized to Chinese (simplified) only. If phone's language setting is Simplified Chinese, app's UI will change and show accordingly. See screen shot below:



仅限紧急呼叫

3.6K/s 97% 下午3:04

elo

EloMcp2210Config-v1.0 - Settings

模块设置

设定阶段

☒ 现时

☐ 启动

SPI 模式

0 (低 - 下降)

SPI CS 有效值

000000000

SPI CS 怠值

111111111

GPIO 引脚功能

000000000

GPIO 引脚方向

000000000

GPIO 引脚输出值

100000000

注释：GPIO引脚号8到0匹配二进制数组[8]到[0] (MSB - LSB)。在以上三个部分中，若将所有输入留为空白将绕过“写入设置”的操作。

读出设置

写入设置

--- END OF DOC ---