

## INTRODUCTION

LOKII-CE boards are development boards for Maker/Student to build up their own electronics prototype/product.

Please read all instructions and warnings on this sheet prior to using. Keep this instruction sheet as it contains important information for future reference.

## PRODUCT SPECIFICATIONS

SMART_SHIELD	ARM9 Multimedia Processor ~380 MB flash storage 320x240 LCD display 720P Camera module 802.11 a/b/g 2.4GHz WIFI module Bluetooth 5.0 module USB port
SMART_POWER	DC input: 6-9V @5A power source You can plug in a 6V – 9V DC voltage to provide up to 40W power to drive external components.
SMART_IO_V2	12 Digital Input/Output 4 Analog Input
SMART_ARDUINO	Arduino /Circuitpython compatible board with BLE connectivity
SMART_RC	A SMART_DEVICE board which can drive 4 RC servo motor

Remark: Depend on your board order configuration, SMART\_IO\_V2 or SMART\_ARDUINO may be bundled in the box.

# SUPPORT

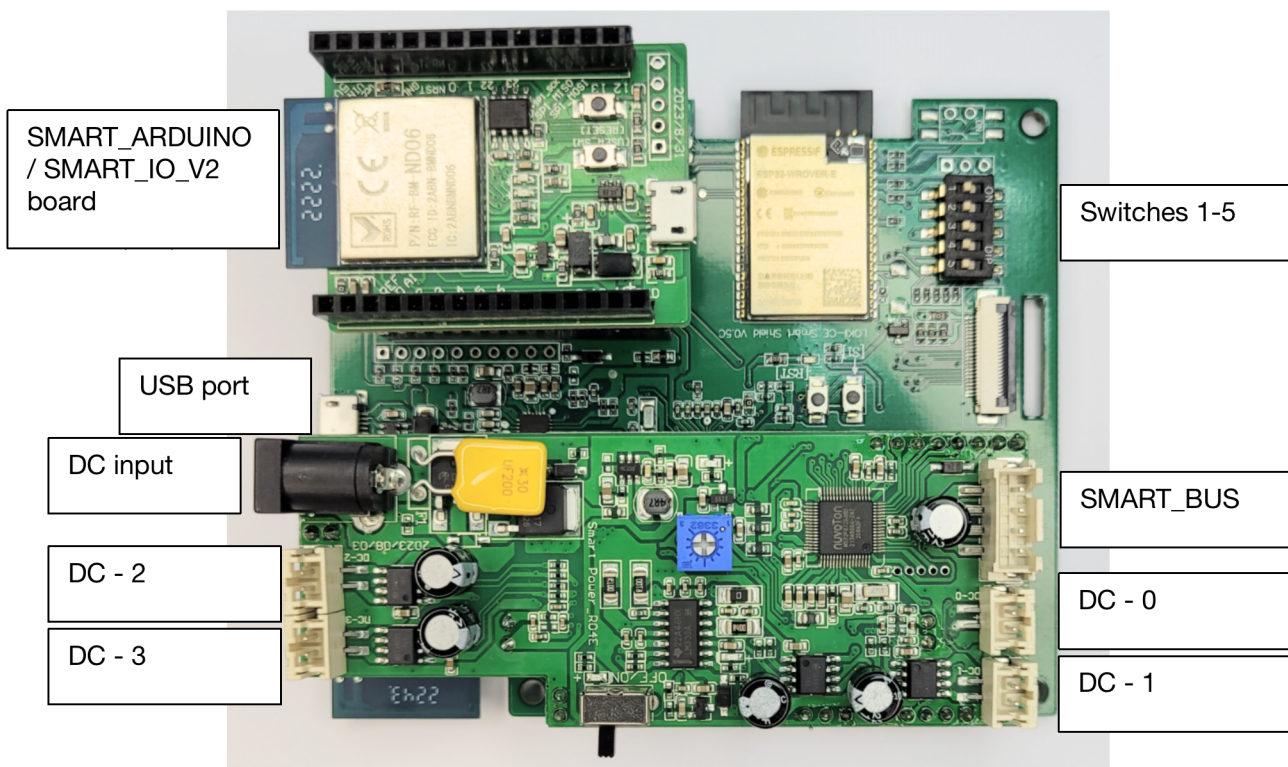
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## BOARD CONFIGURATION

SMART\_SHIELD, SMART\_IO. SMART\_POWER can be stacked together to provide complete function for Blockly programming. If user want to program in Arduino/Circuitpython, user can purchase a separate SMART\_ARDUINO to replace the SMART\_IO\_V2.

### LOKII-CE Boards

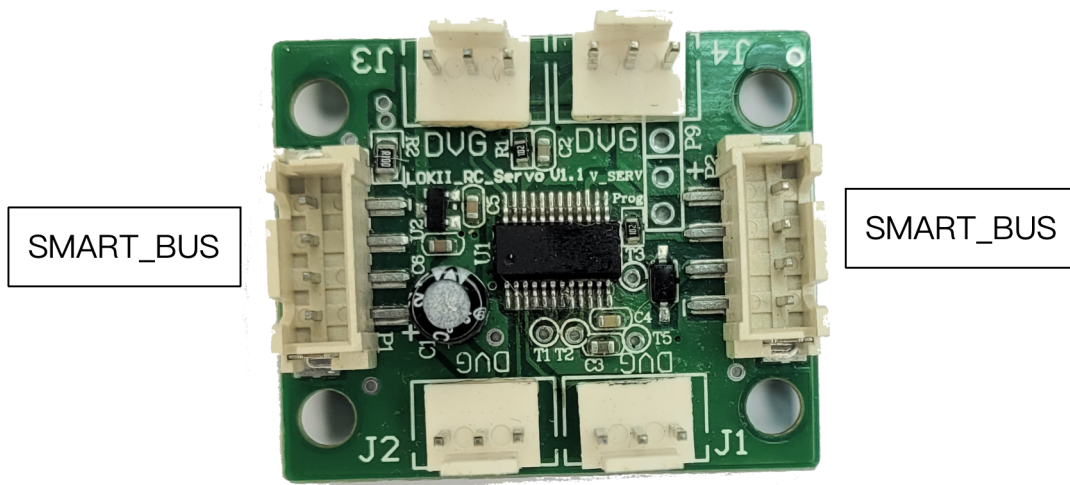


Switches 1 –5 controls LOKII-CE board boot up behaviors:

Switch 1 ON	LOKII-CE board enter USB mass storage mode when connect with a PC through USB cable. This allow user to change the wifi setting or copy file from mass storage.
Switch 2 ON	LOKII-CE enter SMART_ARDUINO board control mode. (This mode works if SMART_ARDUINIO is inserted before power up)
Switch 3 ON	Run Blockly script 1 once
Switch 4 ON	Run Blockly script 2 once
Switch 5 ON	Run Blockly script 3 once

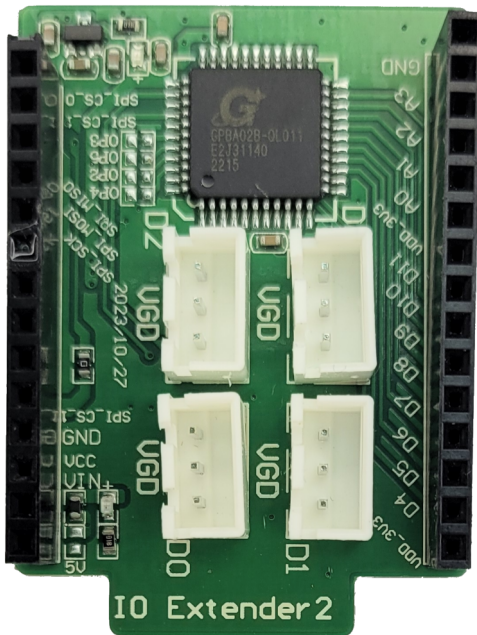
SMART\_POWER board can control up to 4 DC motors. The default SMART\_IDs for these DC port are 0,1,2,3 and cannot be changed in the program. The initial SMART\_ID (id =8) can be configured in program.

**SMART-RC (SMART\_DEVICE board)**



RC\_Servo board can control up to 4 RC servo. The default SMART\_IDs for these RC port are 8,9,10,11. The initial SMART\_ID (id =8) can be configured in program.

## SMART\_IO\_V2



## SMART\_ARDUINO



SMART\_IO\_V2 provides 12 digital I/O + 4 Analog input ports for external sensors or output in 3.3 V

## SMART\_ARDUINO

### First time setup

LOKII-CE boards support two WIFI configuration method:

- Soft-AP mode
- Station mode



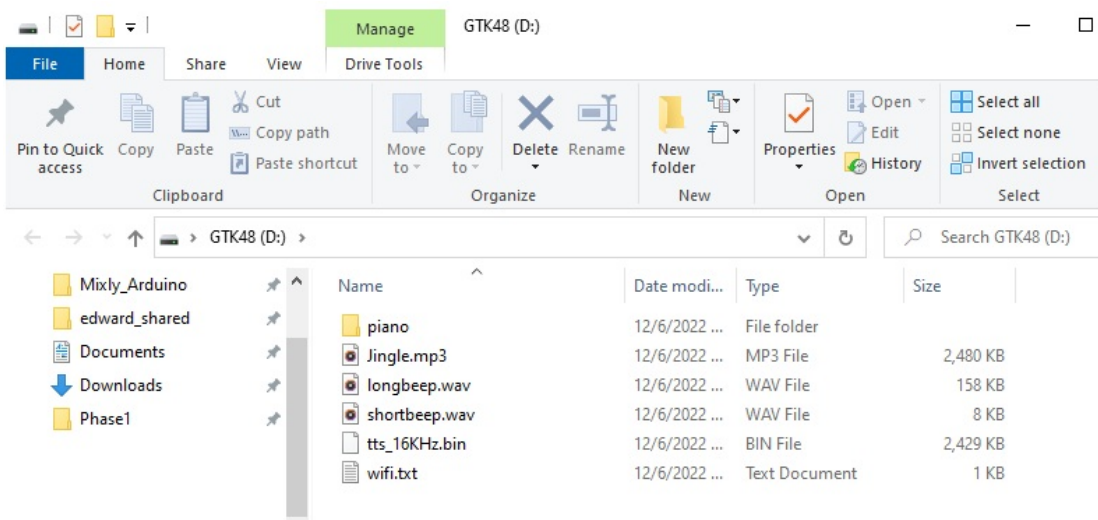
## Soft-AP mode

When there is no “wifi.txt” file configured inside SMART\_SHIELD USB mass storage and power up the board, LOKII\_CE boards will enter Soft-AP mode. In this mode, LOKII-CE boards will emulate as a Soft-AP router (No internet connection) and user can connect this WIFI access point by joining the network name called: “LOKII\_XXXXXX”. After joining the network, user can use a computer device (Window/Mac/iPhone/Android) to enter “192.168.4.1” in an internet browser and enter LOKII-CE Graphical IDE.

## Station mode

User can configure SMART\_SHILED to join the same 2.4GHz WIFI router. (Not 5GHz WIFI network) In this case, user can keep the internet connection when using a computer to enter LOKII-CE Graphical IDE.

To configure Station mode, user press and hold the “USB mode button” of SMART\_SHIELD ,and then connect the USB cable to a Window computer, SMART\_SHIELD will emulate a USB mass storage device.



Under the USB mass storage drive, create a “wifi.txt” file by notepad and enter the WIFI SSID and password of the network router with following format (Make sure these keywords are in lower case) :

```
ssid=XXXXXXXX
```

```
password=XXXXXXXX
```

After reset the boards power (Unplug and plug in the USB power cable), LOKII-CE should show the connected IP address.

## LOKII-CE Graphical IDE

When LOKII-CE boards (without SMART\_ARDUINIO) power up and display the IP address, user can enter the IP address in the internet browser to start the Blockly programming.

