RGB And Dimmable Lighting Demo

# Hardware Environment

1. MIMXRT1050-EVKB
2. DR1175 1V2 Light Module
3. Cypress WiFi Module – J1’s pin 2 and 3 should be short connected with a jumper, leave other pins opened.

# Software Environment

1. SDK – [linkit\_demo](https://github.com/junexunxp/linkit_demo_cypress).
2. IDE – IAR Embedded Workbench for ARM – v8.32.4.
3. Android App for ALI platform:



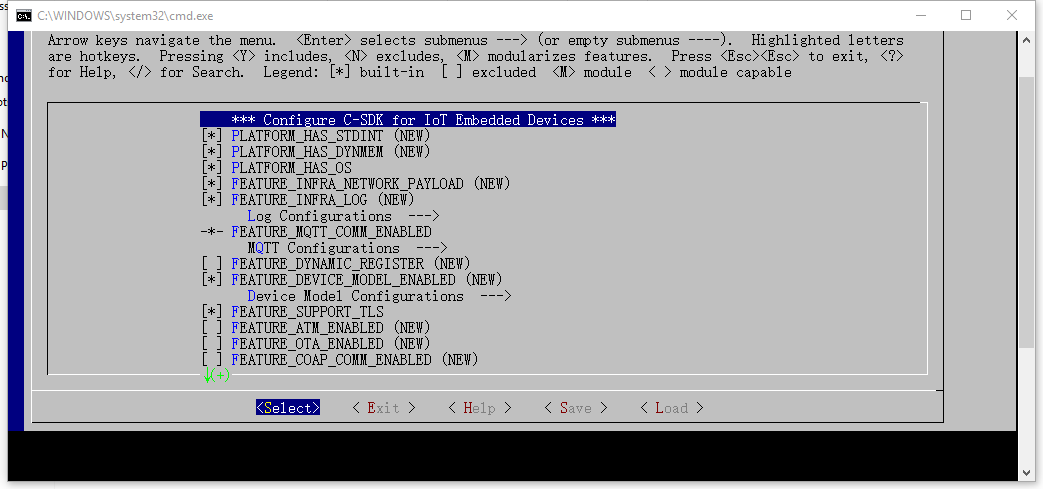
# SDK Porting Settings

This step already done, there is no need to do the porting work unless you want to do the porting work again.

* SDK Settings
  + Turn off the data co-processor (DCP) feature by change settings of MIMXRT1052\_features.h:

#define FSL\_FEATURE\_SOC\_DCP\_COUNT (0)

* + MBEDTLS\_CONFIG\_FILE="ksdk\_mbedtls\_config.h"
  + PRINTF\_ADVANCED\_ENABLE=1
  + PRINTF\_FLOAT\_ENABLE=1
* CSDK Extract Settings



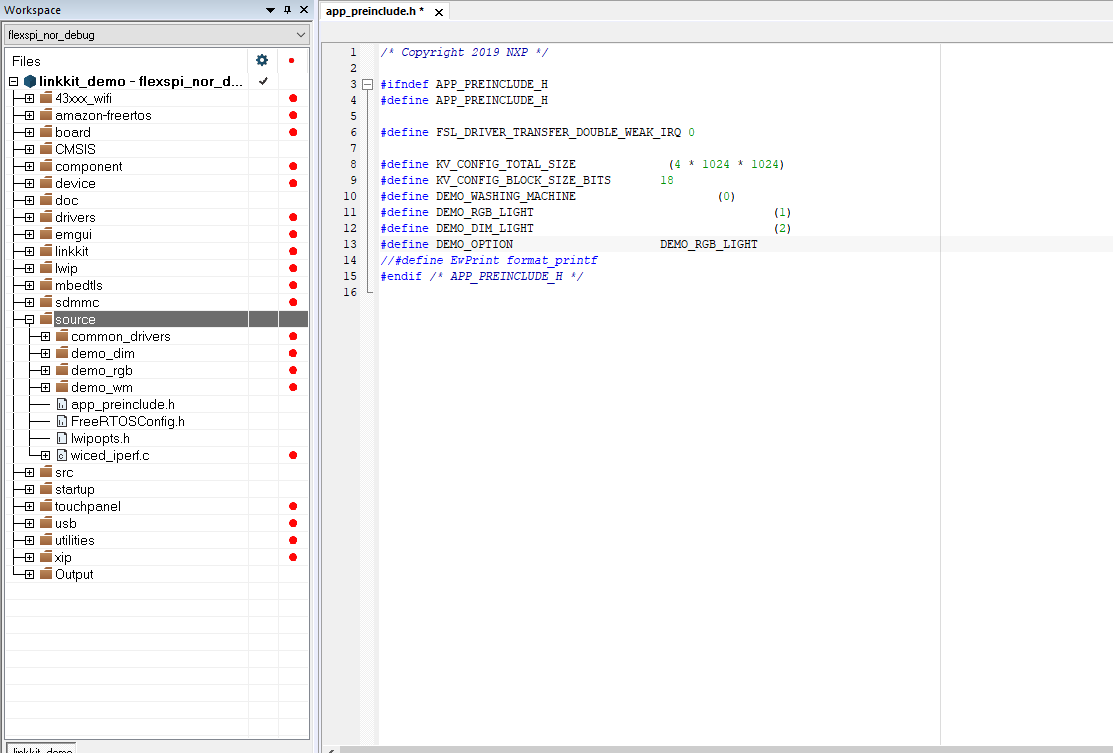
* + PLATFORM\_HAS\_STDINT
  + PLATFORM\_HAS\_DYNMEM
  + PLATFORM\_HAS\_OS enabled to use Free-RTOS
  + FEATURE\_INFRA\_NETWORK\_PAYLOAD
  + FEATURE\_INFRA\_LOG
  + FEATURE\_MQTT\_COMM\_ENABLED
    - FEATURE\_MQTT\_DEFAULT\_IMPL
    - FEATURE\_MQTT\_DIRECT
  + DEVICE\_MODEL\_ENABLED
    - DEVICE\_MODEL\_SHADOW
  + SUPPORT\_TLS enabled to use mbedtls to secure the communication
  + DEV\_BIND\_ENABLED enabled to let app bind with device through CoAP messages.

Setup Step

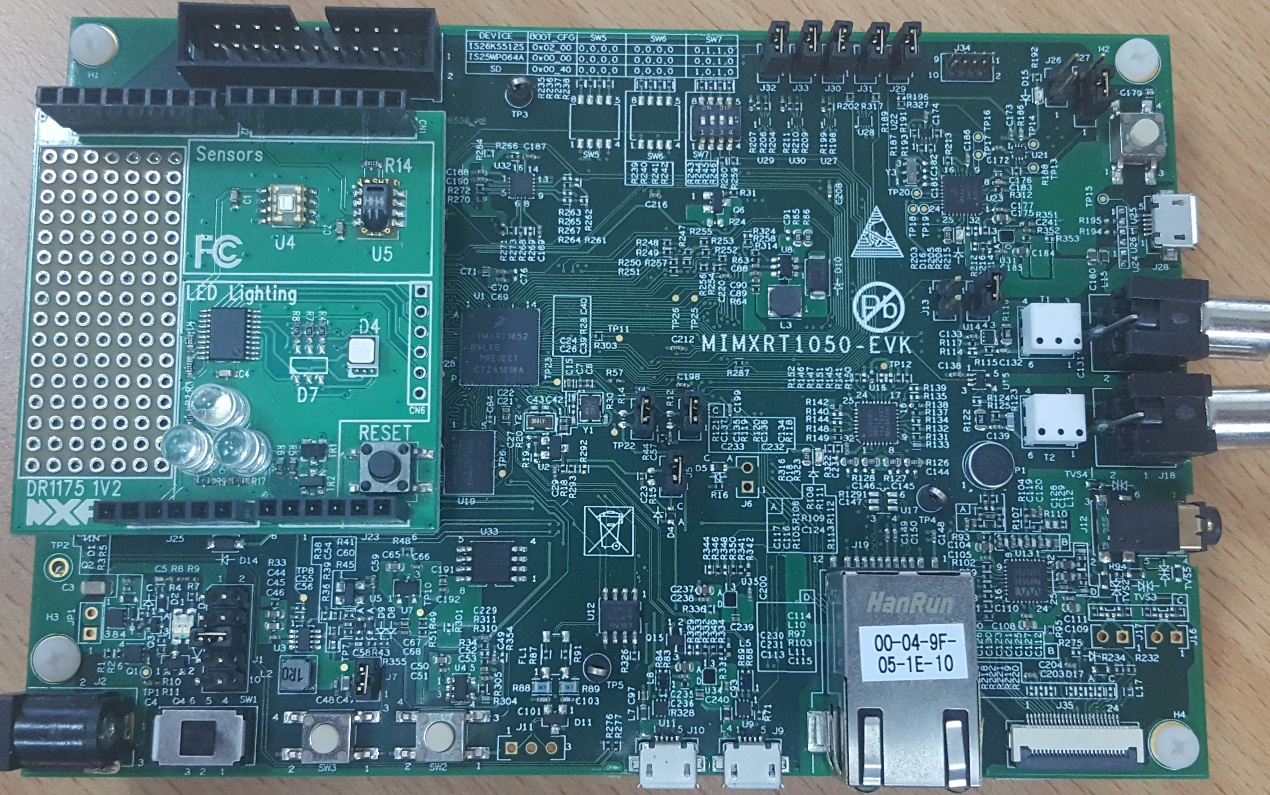
1. Download the linkit demo SDK from below link:

<https://github.com/junexunxp/linkit_demo_cypress>

1. Open file ../ linkit\_demo\_cypress/linkit\_demo.eww, the SDK file structures listed as below:



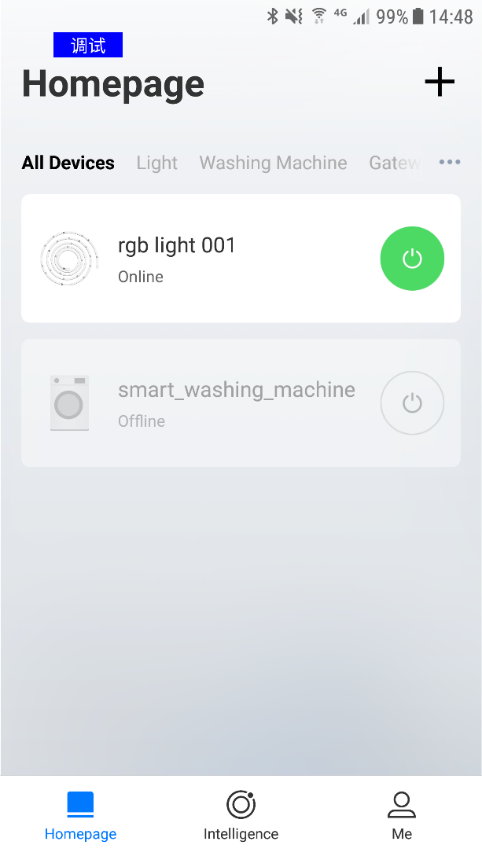
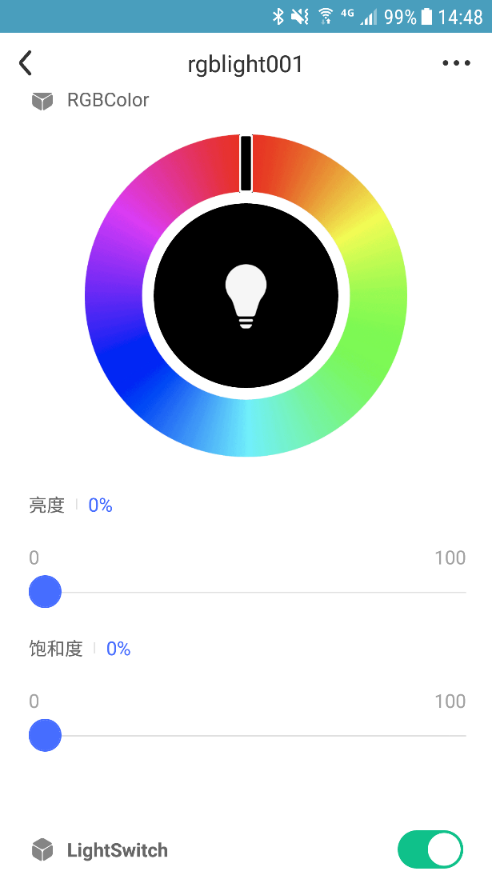
1. Open file source/app\_preinclude.h, change the macro definition DEMO\_OPTION to DEMO\_DIM\_LIGHT to run the dimmable light demo, or change DEMO\_OPTION to DEMO\_RGB\_LIGHT to run the RGB light demo.
2. From IAR’s left top corner select compile option “flexspi\_nor\_debug”, then make the project.
3. Light module DR1175 connected to IMXRT1050 EVKB by using the Arduino interface as below:



1. Download compiled image to the EVKB and reset the board.
2. Connect IMXRT1050 EVKB’s J9 micro USB port to PC, and open a serial port communication tool, e.g.“putty”, use the shell command to configure the WiFi security materials to 1050 EVKB, the command use: **“iwconfig wlan0 ssid iPhone key 12345678”.**

It will connect to AP “iPhone” with key “12345678”.

1. Connect your Android phone to the same AP as step 7, open Ali Cloud App, press the “+” button on the right top corner, now you can see the device and add it.

1. The demo results as below.

