Project 54: IR Remote Control RGB

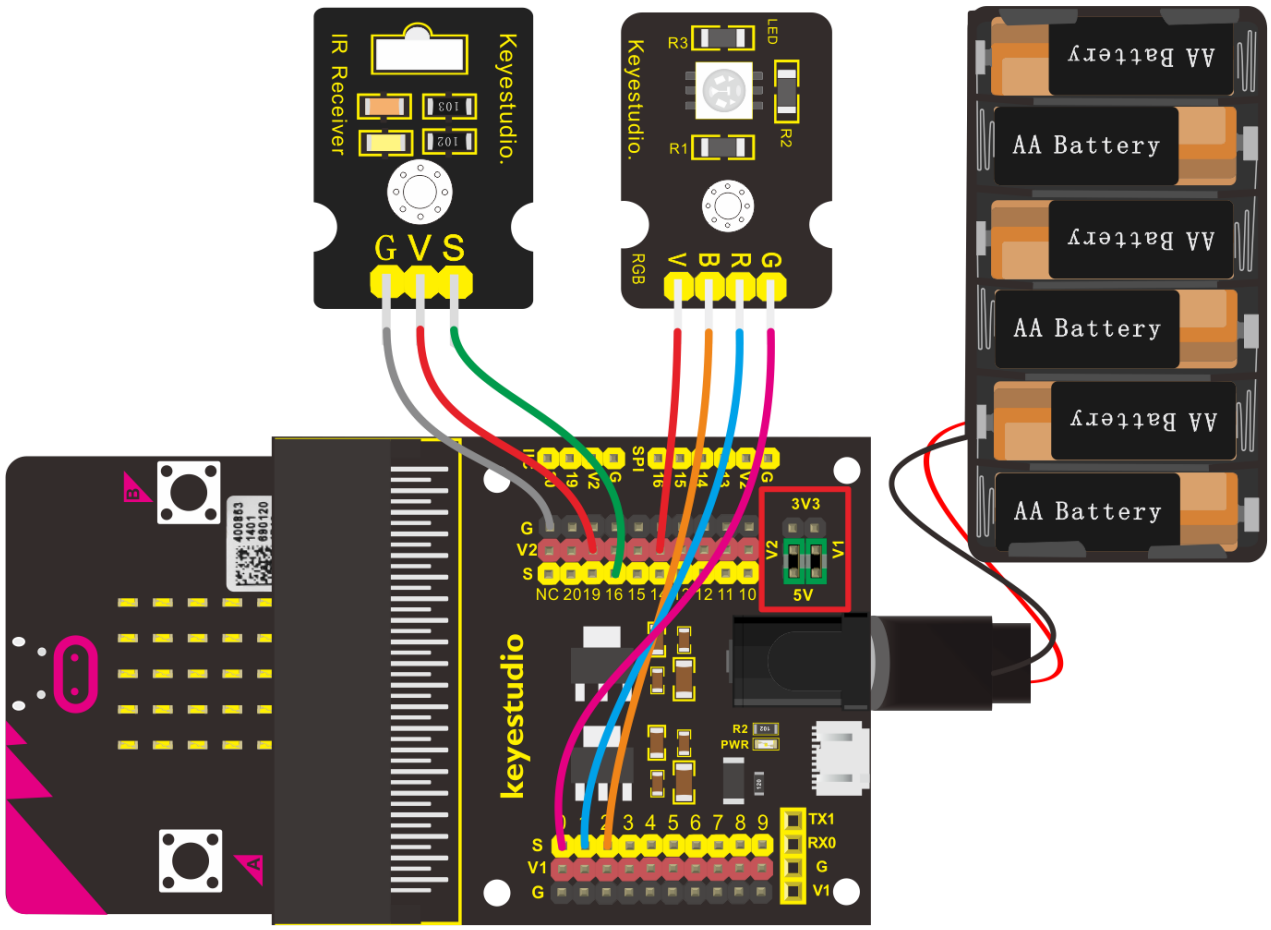
Overview

In the previous experiment, we used an infrared receiver module and a micro: bit control board to decode the infrared remote control. After decoding, we got the corresponding values of each key on infrared remote control. Thus, we can control other external sensors / modules based on these data. In this experiment, we add an SMD RGB module and control LED of RGB module to display the corresponding color by infrared remote.

Components Needed:

- Micro: bit motherboard * 1
- Keyestudio Micro bit sensor V2 expansion board * 1
- USB cable * 1
- Keyestudio Digital IR Receiver Module * 1
- keyestudio RGB LED Module * 1
- Keyestudio infrared remote control * 1
- Dupont jumper wire*7
- Premium Battery Holder 6-cell AA*1
- 1.5V AA Battery*6

Connection Diagram



Test Code

Need to add library file, please refer to the previous lesson.

"on start" : command block only runs once to start program.
Turn off LED dot matrix on micro:bit
Connect IR receiver to P16
Set val to 0
Set val2 to 0
Subfunction RGB LED red green blue
Set the analog value of P1 to 1023-red
Set the analog value of P0 to 1023-green
Set the analog value of P2 to 1023-blue
The program under the block "forever" runs cyclically.
Set val to IR button
If val≠0, the program under then block will be executed
Set val2 to val
If val2=70, the program under then block will be executed
Call the subfunction RGB LED 1023 0 0 to turn on red LED
When val2=68, the program under then block will be executed
Call function RGB LED 0 1023 0 to turn on green LED
If val2=67, the program under then block will be executed
Call function RGB LED 0 0 1023 to turn on blue LED

Notes:

Some infrared remote controls don’ t come with a battery and need to be configured by yourself. The battery model is CR2025.

Before testing, make sure that the infrared remote control is OK. There is a tip for you: open the camera of the mobile phone to point at the signal light of infrared remote control, then press the button of remote control. If

you see a purple light flashing via the cellphone, which means that the IR remote control is OK.

Test Results

Wire according to connection diagram, plug in external power and upload code to micro:bit , Point IR remote control at IR receiving head of expansion board, press the button. Press  button, LED of RGB displays red color; press  button, LED is green color; tap  button, LED shows blue color; press 

button, LED is purple color; when the other buttons are pressed, LED is white.