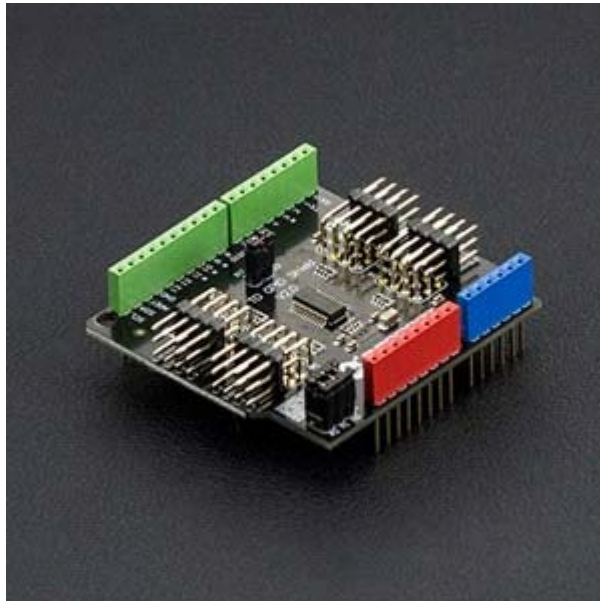


## IIC to GPIO Shield V2.0 SKU: DFR0013



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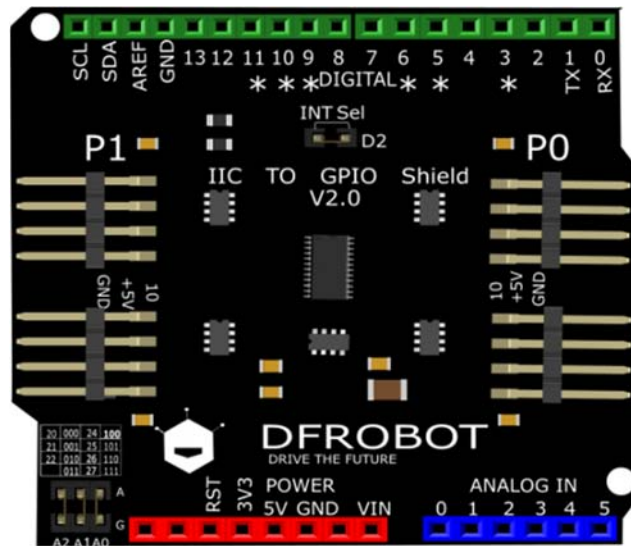
### Introduction

Having troubles with inadequate digital I/O when using Arduino with robots or interactive media? This IIC to GPIO shield helps you solve the problem, Arduino has only two data lines (SCL-Analog PIN5, SDA-Analog PIN4) and IIC can transfer I / O module communication, to convert the 16 digital IO ports, read-write. 8 simultaneous parallel modules, each module can be set to address.

## Specification

- Module power supply: +5 V
- 16 Digital I/O port comes with internal pull-up
- Can be set to eight addresses (address range of 0x20 ~ 0x27)
- 8 modules simultaneously in parallel (IIC bus need to pull together)
- Module Size: 56x53mm (2.21x2.08 in)

## Board Overview



Plug = 0  
Unplug = 1

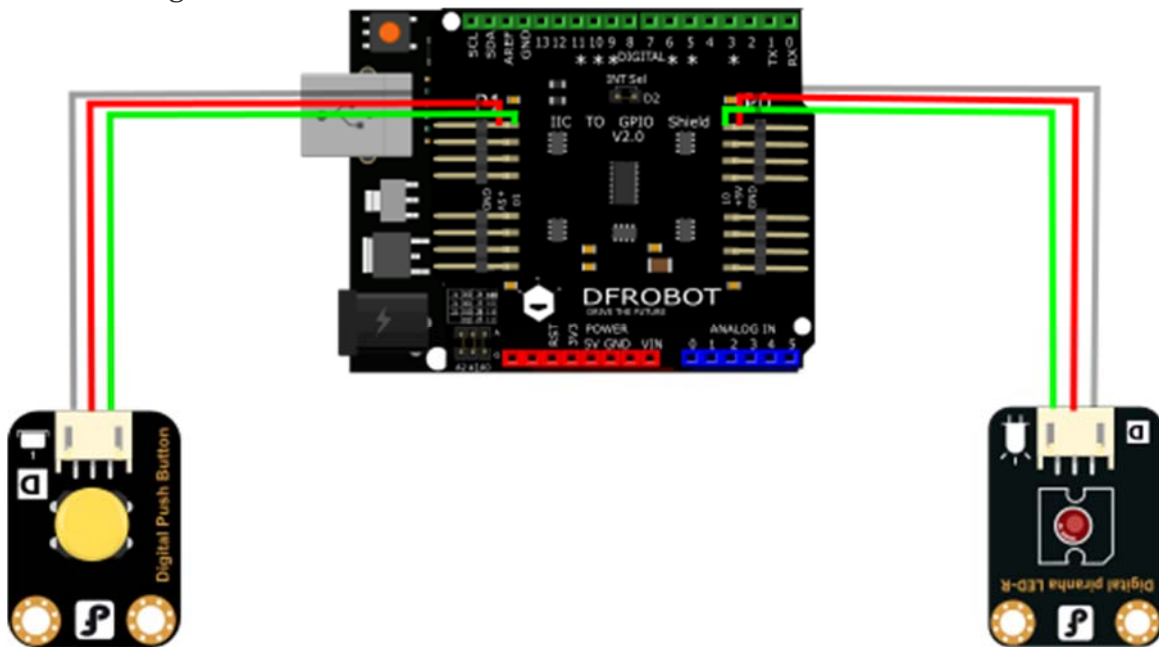
A2	A1	A0	IIC Address
0	0	0	0x20 (Default)
0	0	1	0x21
0	1	0	0x22
0	1	1	0x23
1	0	0	0x24
1	0	1	0x25
1	1	1	0x26
1	1	1	0x27

## Tutorial

### Requirements

- **Hardware**
  - DFRduino UNO x1
  - IIC to GPIO Shield V2.0 x1
  - Button module
  - LED module
- **Software**
  - Arduino IDE V1.6.5 [Click to Download Arduino IDE from Arduino®](#)

### Connection Diagram



### Sample Code

In this section, we will use an Arduino library written by nicoverduin [Github Library](#). [About Library installation](#).

```
1 #if defined(ARDUINO) && ARDUINO >= 100
2 #include "Arduino.h"
3 #else
4
```

```

4 #include "WProgram.h"
5 #endif
6
7 #include "clsPCA9555.h"
8 #include "Wire.h"
9
10
11 PCA9555 ioport(0x20);
12
13 void setup()
14 {
15   ioport.pinMode(7, OUTPUT); //Set GPIOs pinMode LED
16   ioport.pinMode(8, INPUT); //Button
17 }
18
19 void loop()
20 {
21   if (ioport.digitalRead(ED8) == LOW) {
22     ioport.digitalWrite(7, LOW);           //Turn off Led
23   }
24
25   if (ioport.digitalRead(ED8) == HIGH) {
26     ioport.digitalWrite(7, HIGH);         //Turn on Led
27   }
28
29 }

```

## Library Explanation

### Library Functions

- **pinMode()** same as standard Arduino
- **digitalRead()** same as Arduino
- **digitalWrite()** same as Arduino

## Pin map

P0.0~P0.7 map to GPIO 0 ~ 7 or ED0 - ED7  
P1.0~P1.7 map to GPIO 8 ~ 15 or ED8 - ED15

## FAQ

There are no questions about this product yet. If you have any problems or suggestions, you are welcome to email us or post on the [DFRobot forum](#)!

For any questions/advice/cool ideas to share, please visit the [DFRobot Forum](#).