

Descriptions:

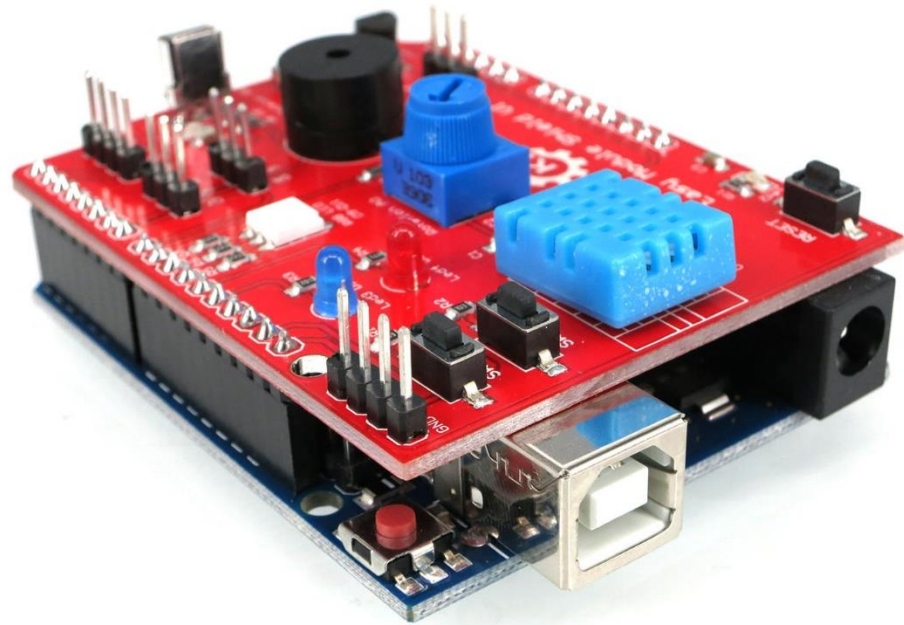
KEYES Multi-purpose Shield V1 is a learning board based on Arduino. No need for soldering and connection. Download directly the program to complete experiment. Reserved extended ports on the shield to help you to complete other experiment.

Specifications:

- Able to combine the shield with main controller on the market, such as Arduino UNO R3, MEGA2560, Duemilanove, Leonardo and MEGA2560
- Two 3mm LED indicator light to show the working condition of program for modulating program conveniently (D12= red, D13= blue)
- 2-channel button switch to realize external interrupter experiment (sw1=D2, sw2=D3)
- One Reset button
- DHT11 temperature and humidity sensor module detecting temperature and humidity (data=D4) (use dht11.h library)
- One rotational potentiometer, works as analog input (A0 analog pin)
- One Passive buzzer module to alarm and make sound (D5 pin)
- One Full-color RGB LED (PWM pins: D9, D10, D11)
- Photo resistance to detect the intensity of light (A1 analog pin)
- LM35D temperature sensor to measure temperature (A2 analog pin)
- Infrared receiver VS1838 to detect the function of IR receiving with rx monitor Led1 (data in=D6) (use IRremote.h library)
- 2-channel 3 pin digital generic I/O ports (D7, Vcc, GND / D8, Vcc, GND)
- 1-channel 3 pin generic analog port (A3, Vcc, GND)
- One IIC interface port (GND, Vcc, SDA, SCL)
- One TTL serial port (TXD, RXD, Vcc, GND)

Example of Connection:

- Multi-Purpose Shield V1 + Uno R3



Shipping Content:

1 x Multi-purpose Shield V1 Learning Module

Test Steps:

1. Plug to charger ->
 - power indicator D1 on,
 - TX on Arduino flashing
 - LED13 indicator on
2. Push SW1 -> LED & buzzer on
3. Serial port open,
 - Without push SW2 -> IR receive function on
 - push SW2 -> DHT11, Analog input, Photosensitive, LM35 test and serial print function

If retest needed, please close serial port and push reset button then repeat the steps.

Arduino Code

```
#include <IRremote.h>
#include <dht11.h>
dht11 DHT;
#define DHT11_PIN 4
//buzzer
int buzzer = 5;
//button
int KEY2 = 2;
int KEY3 = 3;
//LED
int led5 = 13;
int led4 = 12;
int led3 = 11;
int led2 = 10;
int led1 = 9;
int RECV_PIN = 6; //define input pin on Arduino
IRrecv irrecv(RECV_PIN);
decode_results results;
char i=0,flag=2;
void setup ()
{
  Serial.begin(9600);
  irrecv.enableIRIn(); // Start the receiver
  attachInterrupt(0, falling0, FALLING);
  attachInterrupt(1, falling1, FALLING);
  pinMode(buzzer,OUTPUT);
  digitalWrite(buzzer,HIGH);
  pinMode(led1,OUTPUT);
  pinMode(led2,OUTPUT);
  pinMode(led3,OUTPUT);
  pinMode(led4,OUTPUT);
```

```

pinMode(led5,OUTPUT);
for(char i=9;i<14;i++)
digitalWrite(i,LOW);
}
void loop()
{
if(flag==0)
{
buzzer_(); //buzzer test
led_display(); //LED test
}
if(flag==1)
{
Serial.println("status, Hum(%), Tem(C) analog_val light_val lm35_val");
DHT11();
Serial.print(" ");
analog(); //analog input test
Serial.print(" ");
Light();
Serial.print(" ");
LM35();
Serial.println(" ");
delay(800);
}
if(flag!=0 & flag!=1)
{
if (irrecv.decode(&results))
{
Serial.println(results.value, HEX);
irrecv.resume(); // Receive the next value
}
}
}
void DHT11()
{
int chk;
chk = DHT.read(DHT11_PIN); // READ DATA
switch (chk)
{
case DHTLIB_OK:
Serial.print("OK ");
Serial.print(DHT.humidity,1);
Serial.print(" ");
Serial.print(DHT.temperature,1);

```

```
break;
case DHTLIB_ERROR_CHECKSUM:
Serial.print("Checksum error ");
break;
case DHTLIB_ERROR_TIMEOUT:
Serial.print("Time out error ");
break;
default:
Serial.print("Unknown error ");
break;
}
}
void buzzer_(void)
{
char i;
for(i=0;i<80;i++)// output a frequency sound
{
digitalWrite(buzzer,LOW);// sound
delay(1);//delay1ms
digitalWrite(buzzer,HIGH);//not sound
delay(1);//ms delay
}
for(i=0;i<100;i++)// output a frequency sound
{
digitalWrite(buzzer,LOW);// sound
digitalWrite(buzzer,HIGH);//not sound
delay(2);//2ms delay
}
}
void led_display()
{
digitalWrite(led1,HIGH);
delay(500);
digitalWrite(led1,LOW);
digitalWrite(led2,HIGH);
delay(500);
digitalWrite(led2,LOW);
digitalWrite(led3,HIGH);
delay(500);
digitalWrite(led3,LOW);
digitalWrite(led4,HIGH);
delay(500);
digitalWrite(led4,LOW);
digitalWrite(led5,HIGH);
```

```
delay(500);
digitalWrite(led5,LOW);
}
void analog()
{
int val;
val=analogRead(A0);
Serial.print(val);
}
void Light()
{
int val;
val=analogRead(A1);
Serial.print(val);
}
void LM35()
{
int val;
val=analogRead(A2);
Serial.print(val);
}
void falling0()
{
flag=0;
}
void falling1()
{
flag=1;
}
```