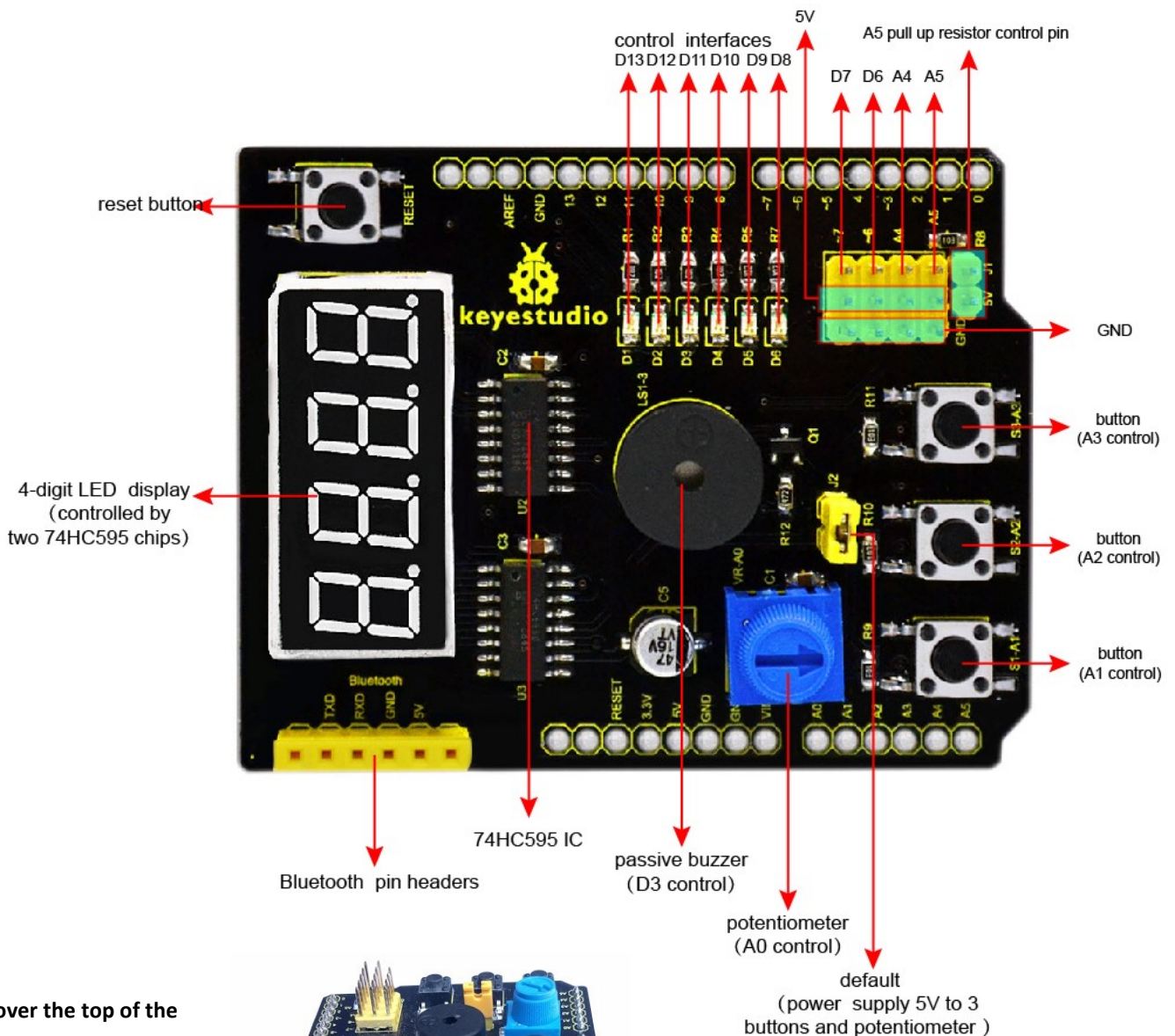


# Keystudio Multi-Purpose Shield V2

Pat McMahon—V2—5/4/2021

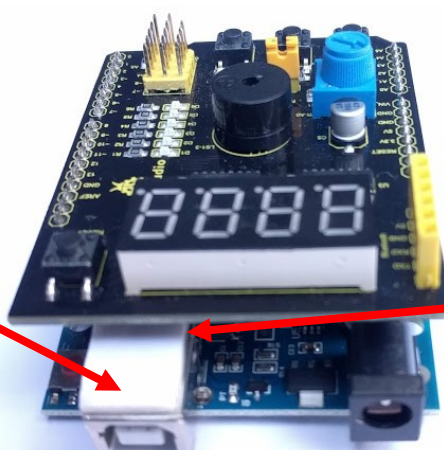
For SCORPIO TECHNOLOGY

Note- We are using the Keystudio KS 0184 V2 Multi Purpose Shield. It piggy backs on top of the Arduino Uno R3.



Cover the top of the Uno USB connector with insulating material ie double sided tape.

**CAUTION** - Before starting, you may need to trim /insulate any legs on the MPS, that may short with the top of the UNO USB connector.



# 6 Simple & Easy, Fun Activities with your Arduino Uno R3 - Multi Purpose Shield (MPS)

Pat McMahon - V1- 5/4/2021

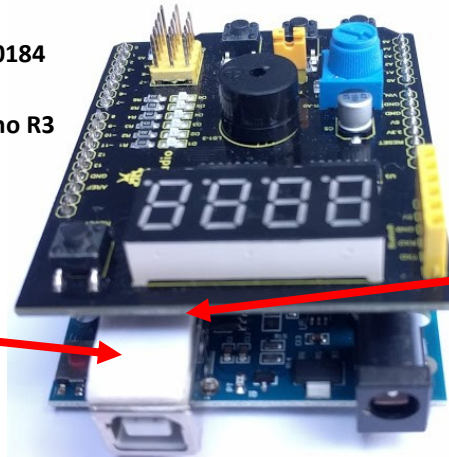
For Scorpio Technology

Note- We are using the Keystudio KS 0184 V2 Multi Purpose Shield.

It piggy backs on top of the Arduino Uno R3

**CAUTION** - Before starting, ensure you trim / insulate any legs on the MPS, that may short with the top of the UNO USB connector.

Cover the top of the Uno USB connector with insulating material ie double sided tape.



Following are 6 Simple and Easy, Fun Activities using a Multi Purpose Shield on your Arduino Uno R3. You can find these and many other Sketch Code examples to try, under Keystudio KS 0184 V2 Multi Purpose Shield on the internet. These examples assume you are familiar with and have the free Arduino IDE installed with the required Libraries on your computer.

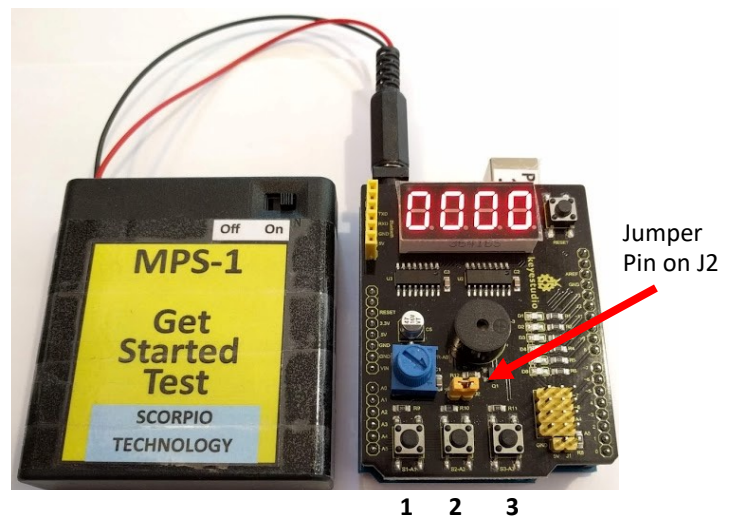
**NOTE**-Switch on the slide switch on the battery pack to start each example, turning it off after trying each one.

## MPS 1 - Get Started Test

Components to Add—Nil

How it Works —

- Push Button 1 gives 0123 on the 7 Segment Display.
- Push Button 2 sounds Buzzer Beeping.
- Push Button 3 scrolls down the 6 onboard LED's.

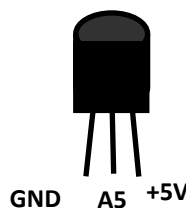


## MPS 2 - Temperature Sensor (using DS18B20)

Components to Add—DS18B20

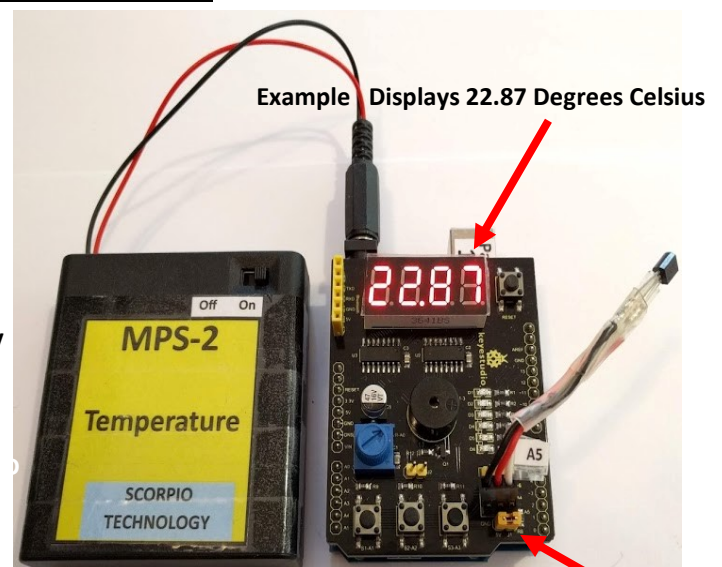
- Left Gnd, Centre A5, Right +5v

Temp  
DS18B20



How it Works —

-It displays the Temperature in Degrees Celsius to 2 decimal places. Holding onto the Sensor, it recalibrates the Temperature every ~ 6 seconds.



**IMPORTANT**- Put Jumper on J1, as an A5 Pull Up Resistor.

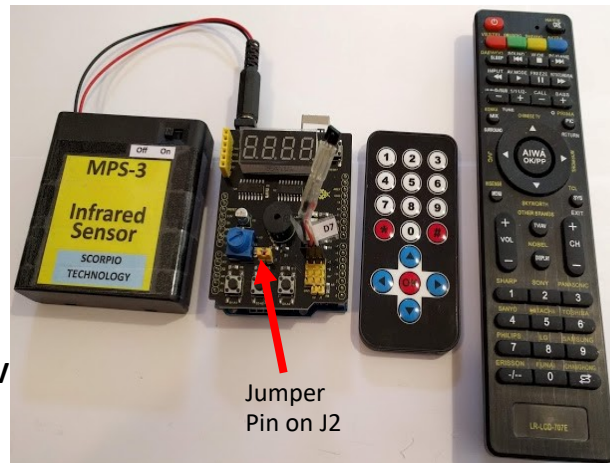
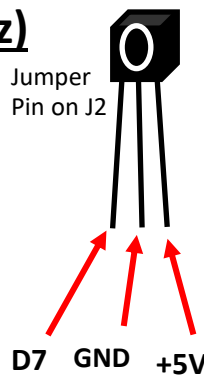
## MPS 3 - Infrared Sensor (38Kz)

Components to Add—38Kz IR Receiver

-Left D7, Centre Gnd, Right +5v

How it Works —

Note – All Numerical Numbers on all 3 IR Remotes will display the number values pushed. Other Buttons pushed will display “L”.



## MPS 4 - Ultra Sonic Distance Measurement Sensor (using HC—SR04)

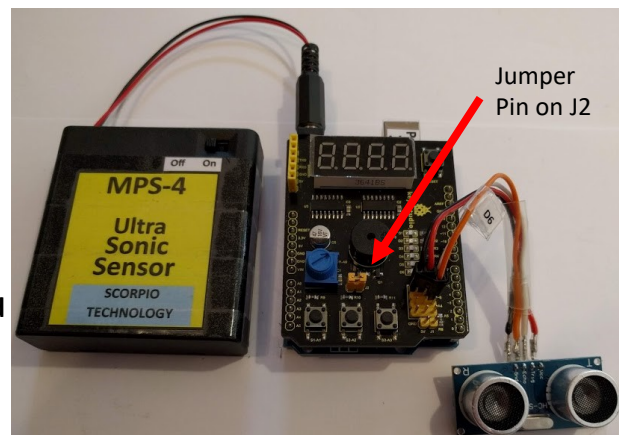
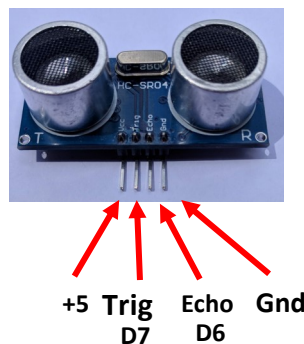
Components to Add—HC-SR04

-Left +5V, Trig D7, Echo D6, Right Gnd

How it Works —

-Moving an object above the Ultra Sonic Sensor will show the gap or distance between them in cm, on the 7 Seg display.

-It recalibrates every few seconds.



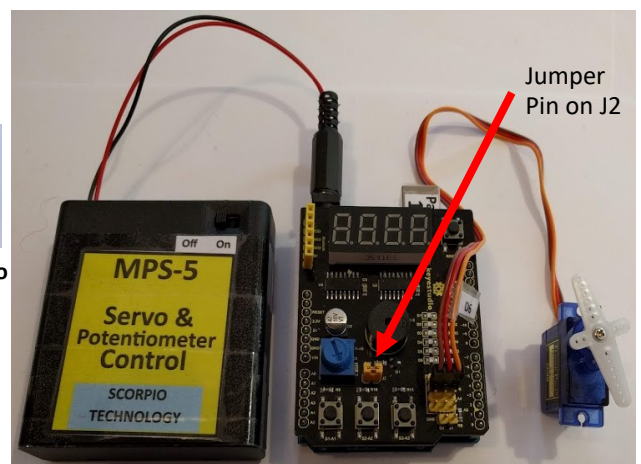
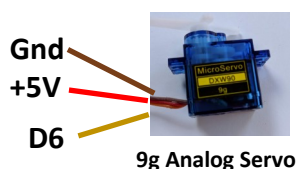
## MPS 5 - Servo Position Controlled by a Potentiometer

Components to Add— Servo motor

-Left Brown/black Gnd, Centre Red +5V, Right Orange /white D6.

How it Works —

Slowly turning the Blue Potentiometer Knob, moves the Servo Arm in either direction.



## MPS 6 - Count Down Timer and Buzzer Alarm

Components to Add— Nil

How it Works—

-Pushing Button 3 increments in 10 Second lots.

-Pushing Button 2 increments in 1 Minute lots.

- A short Push on Button 1 starts or stops the Count Down, the Buzzer will Beep 3 Times when the time is up.

- A longer Push on Button 1 resets the counter to 0.

