Core Electronics User Guide

ProtoShield (Arduino MEGA 2560 /1280 Compatible)

SKU: 018-01-MEGA2560-PS

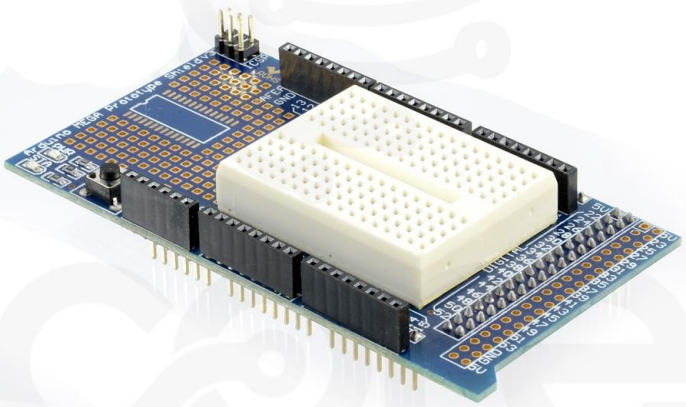
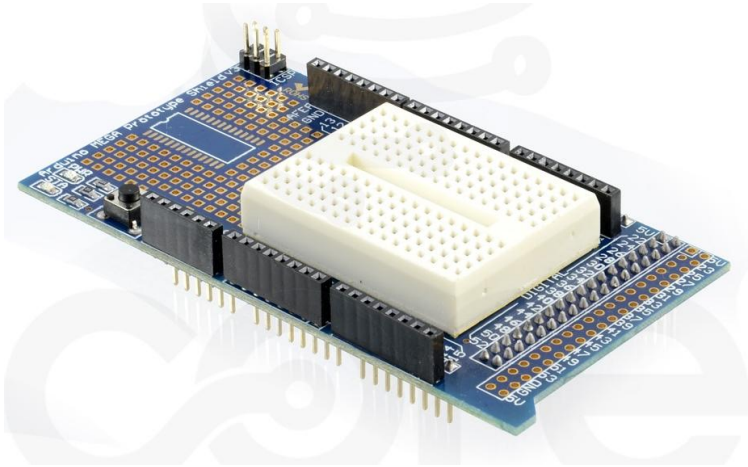


Table of Contents

1. Introduction....3
2. Technical Specification....3
3. Application Circuit....4
Using Mini-Breadboard for the wiring the 8-LED running lights. 4
4. Getting Started 6
Getting Started With Arduino® Uno Board 6
5. Example Code....6
Code Example for Arduino®....6
6. Reader Feedback....9
7. Disclaimer....9
8. Use of Trademarks....9

1. Introduction

This is a Prototype Shield with a mini breadboard which can be used with Arduino® MEGA2560 or MEGA 1280 boards compatible boards.



It is great for development and prototyping small circuits. It features two onboard LEDs, a reset switch, stackable headers and a breadboard.

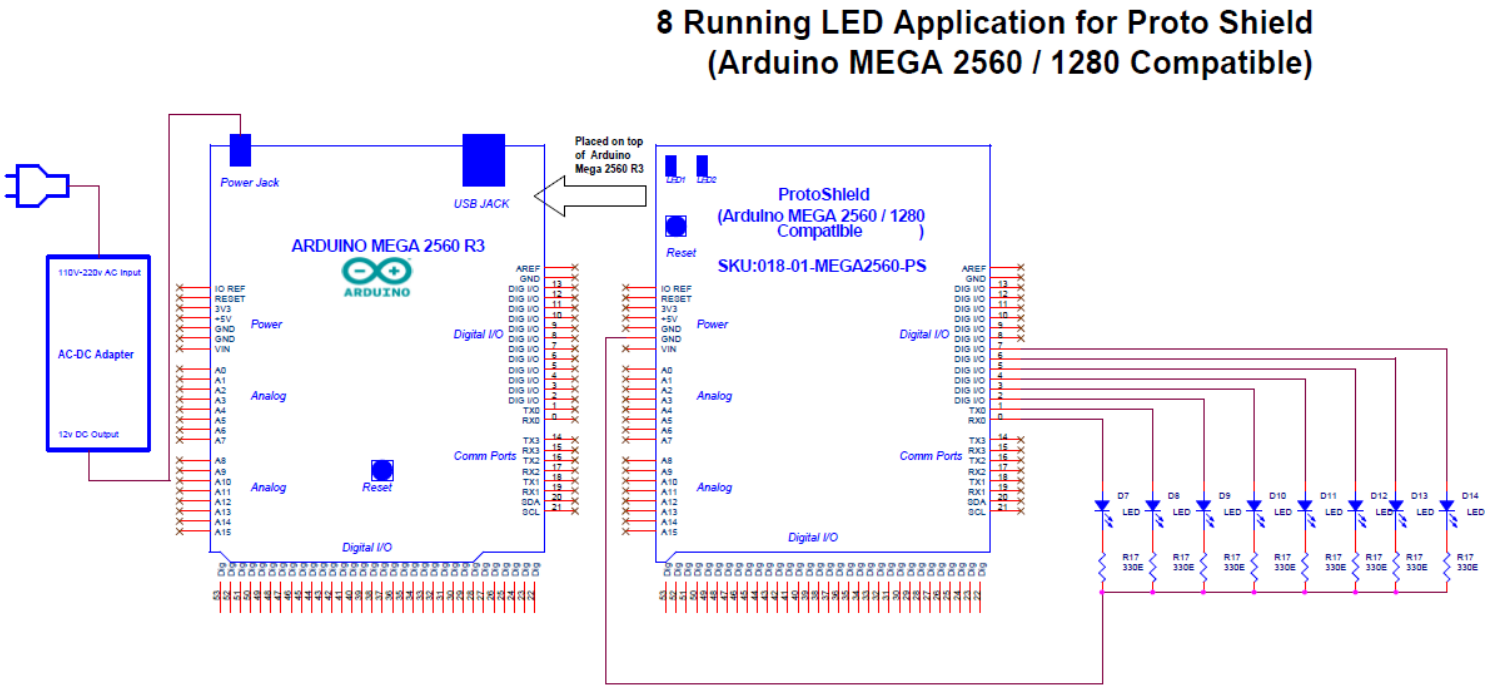
This board along with breadboard can be mounted directly on top of the Arduino® MEGA2560 or MEGA 1280 hardware.

2. Technical Specification

- Arduino Mega 2560 Prototype Shield
- 2 general LEDs
- A reset switch
- Mini Breadboard with self-adhesive tape on the back, easy to stick on the Arduino Mega Prototype Shield
- No soldering required.

3. Application Circuit

Here is an example circuit of the prototype-shield + mini breadboard with running lights, controlled by an Arduino® MEGA2560 or MEGA 1280.

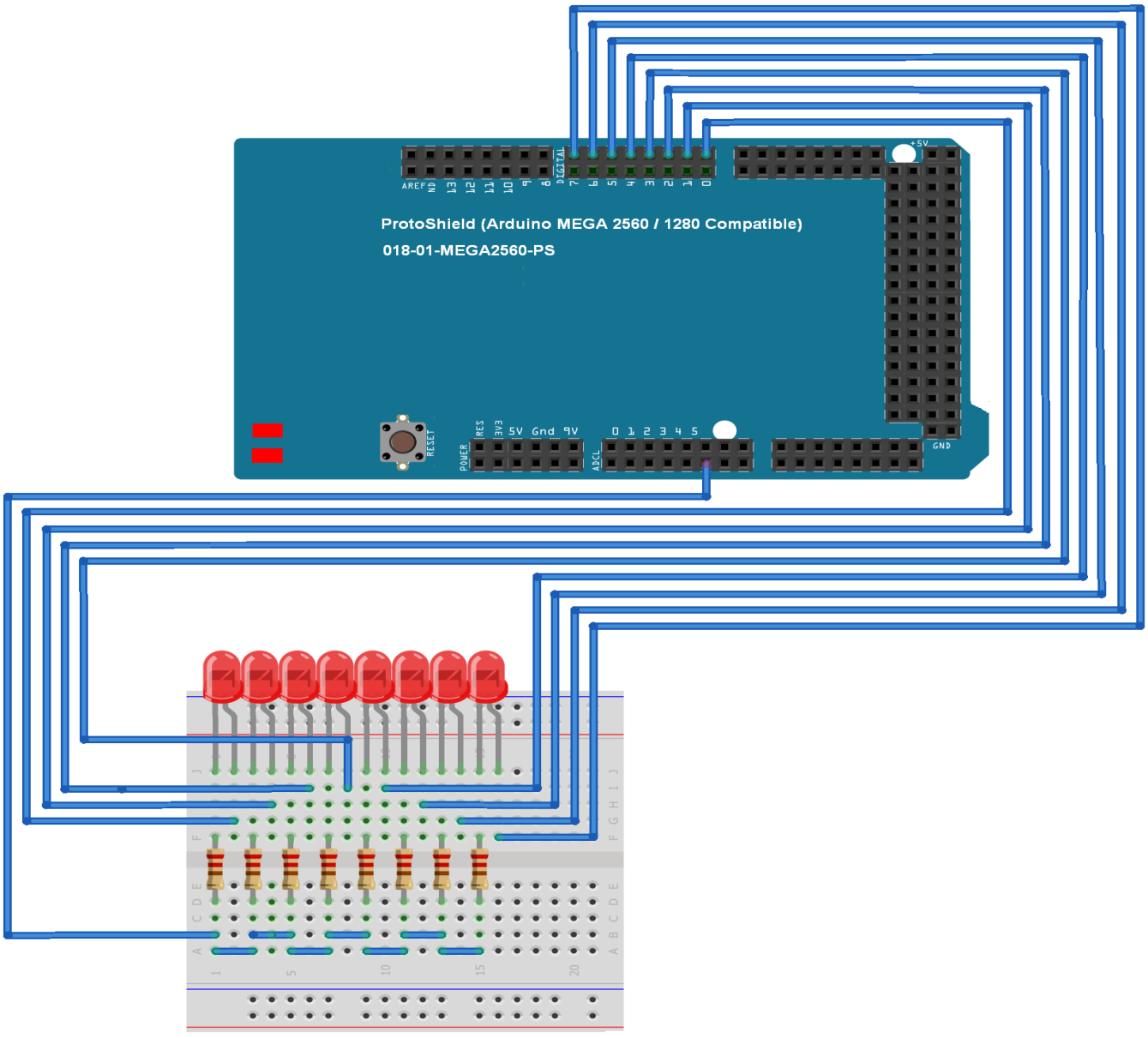


The application example is for 8 Running LEDs mounted on mini bread board and wired to the board. The code sample given will control the LEDs to create the running effect.

Using Mini-Breadboard for the wiring the 8-LED running lights.

Solder less Breadboard Jumper Cable Wires are needed for wiring up the circuit on the Mini-Breadboard. These are available at https://core-electronics.com.au/store/index.php/prototyping/wire/breadboard-jumper-cable-wires-65-pack.html

The wiring of the 8 LEDS and 8 resistors to the proto-shield + mini breadboard is shown below.


ProtoShield (Arduino MEGA 2560 / 1280 Compatible)
018-01-MEGA2560-PS
AREF
GND
13
12
11
10
9
8
DIGITAL
7
6
5
4
3
2
1
0
+5V
RESET
POWER
RES
3V3
5V
Gnd
9V
ADCL
0
1
2
3
4
5
GND

4. Getting Started

Getting Started With Arduino® Uno Board

This section explains how to connect your Arduino® board to the computer and upload your first sketch. Link is provided for detailed procedure of the Arduino® website as below.

1 Get an Arduino® board and USB cable
2 Download the Arduino® environment
3 Connect the Board as shown in the Application circuit
4 Install the drivers
5 Launch the Arduino® application
6 Open the code example (which is shown below)
7 Select your board
8 Select your serial port
9 Upload the program

After upload the sample program you can see the LEDs running from left to right. The speed of running can be adjusted by increasing or decreasing the value.

5. Example Code

Code Example for Arduino®

```
/*
Prototype Shield + Mini board for Arduino®
Mini-bread boards Circuit wiring for 8 Running LEDs ON OFF
sequential Operation.
The code example will switch On one by one LEDs in forward and
reverse directions. Speed can be adjusted by the delay time
parameter.
ProtoShield (Arduino MEGA 2560 / 1280 Compatible) is  available
from:
https://core-electronics.com.au/store/index.php/arduino-mega-2560-1280-r3-
protoshield.html
 The circuit connected as
 LED1: First LED
 LED2: Second LED
 LED3: Third LED
 LED4: Forth LED
 LED5: Fifth LED
 LED6: Sixth LED
 LED7: Seventh LED
 LED8: Eighth LED
 created 02  Jun 2013
  This example code is in the public domain.
```

```
*/
// These constants describe the pins which switch LED.
const int LED1 = 0;      // LED1 connected PIN of Ardiono
const int LED2 = 1;      // LED2 Connected PIN of Ardiono
const int LED3 = 2;      // LED3 connected PIN of Ardiono
const int LED4 = 3;      // LED4 Connected PIN of Ardiono
const int LED5 = 4;      // LED5 connected PIN of Ardiono
const int LED6 = 5;      // LED6 Connected PIN of Ardiono
const int LED7 = 6;      // LED7 connected PIN of Ardiono
const int LED8 = 7;      // LED8 Connected PIN of Ardiono
const int delay_ms=250;//delay for running-LED in Milliseconds
// Change this variable to adjust the LED running speed

void setup()
{
// digital pins.  This makes it possible to directly
// connect the LED on the mini breadboard to the Arduino UNO.
// The LED PINS are defined as out put.
pinMode(LED1, OUTPUT);
pinMode(LED2, OUTPUT);
pinMode(LED3, OUTPUT);
pinMode(LED4, OUTPUT);
pinMode(LED5, OUTPUT);
pinMode(LED6, OUTPUT);
pinMode(LED7, OUTPUT);
pinMode(LED8, OUTPUT);

// The initial state of leds are  off,  is defined here.
// HIGH on PIN will switch on the LED
// LOW on PIN will switch off the LED
digitalWrite(LED1, LOW);
digitalWrite(LED2, LOW);
digitalWrite(LED3, LOW);
digitalWrite(LED4, LOW);
digitalWrite(LED5, LOW);
digitalWrite(LED6, LOW);
digitalWrite(LED7, LOW);
digitalWrite(LED8, LOW);
}


void loop()
{
// The LEDs are ON   here
digitalWrite(LED1, HIGH);
digitalWrite(LED8, LOW);
```

```
// delay_ms secs delay before next LED On OFF operation:
delay(delay_ms);
// The LEDs are ON   here
digitalWrite(LED2, HIGH);
digitalWrite(LED1, LOW);
// delay_ms secs delay before next LED On OFF operation:
delay(delay_ms);
// The LEDs are ON   here
digitalWrite(LED3, HIGH);
digitalWrite(LED2, LOW);
// delay_ms secs delay before next LED On OFF operation:
delay(delay_ms);

// The LEDs are ON   here
digitalWrite(LED4, HIGH);
digitalWrite(LED3, LOW);
// delay_ms secs delay before next LED On OFF operation:
delay(delay_ms);

// The LEDs are ON   here
digitalWrite(LED5, HIGH);
digitalWrite(LED4, LOW);
// delay_ms secs delay before next LED On OFF operation:
delay(delay_ms);

// The LEDs are ON   here
digitalWrite(LED6, HIGH);
digitalWrite(LED5, LOW);
// delay_ms secs delay before next LED On OFF operation:
delay(delay_ms);

// The LEDs are ON   here
digitalWrite(LED7, HIGH);
digitalWrite(LED6, LOW);
// delay_ms secs delay before next LED On OFF operation:
delay(delay_ms);

// The LEDs are ON   here
digitalWrite(LED8, HIGH);
digitalWrite(LED7, LOW);
// delay_ms secs delay before next LED On OFF operation:
delay(delay_ms);

}
```

6. Reader Feedback

Have a suggestion or discovered an error? Let us know and we will fix it! Please contact us via manuals@core-electronics.com.au and mention the product SKU and your feedback in the message.

7. Disclaimer

Although care has been taken to ensure the accuracy, completeness and reliability of the information provided, Core Electronics assumes no responsibility therefore. The user of the information agrees that the information is subject to change without notice. Core Electronics assumes no responsibility for the consequences of use of such information, nor for any infringement of third party intellectual property rights which may result from its use. IN NO EVENT SHALL CORE ELECTRONICS BE LIABLE FOR ANY DIRECT, INDIRECT, SPECIAL OR INCIDENTAL DAMAGE RESULTING FROM, ARISING OUT OF OR IN CONNECTION WITH THE USE OF THE INFORMATION.

Copyright © Core Electronics
Core Electronics: www.core-electronics.com.au
Email contact: sales@core-electronics.com.au

8. Use of Trademarks

This Product User Guide is an independent publication and is not affiliated with, nor has it been authorized, sponsored, or otherwise approved by the owners of the below trademarks. The use of products associated to the below trademarks has been for demonstration purposes to assist with the promotion of sale.

“Arduino” is a registered trademark of MAGY Now Limited (the Arduino team)
“Firewing” is a registered trademark of Mecanique