



Yosun SX9513

Touch Reference

Design



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Revision History

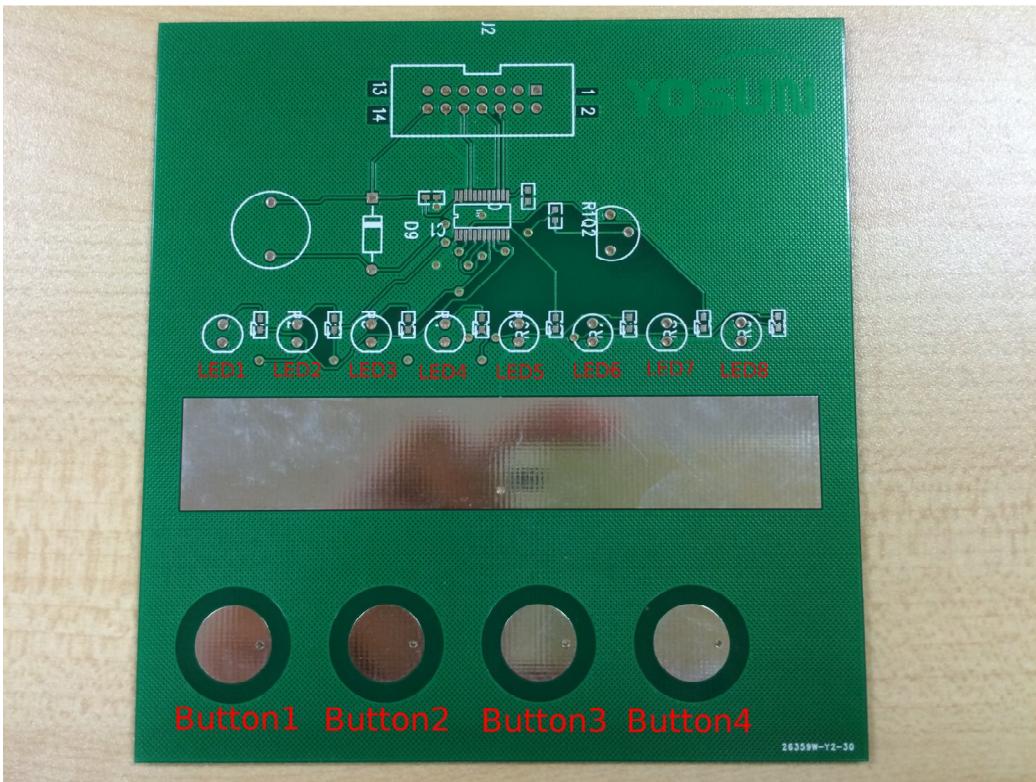
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22/09/2014	1.0	MA LIYU	Creation



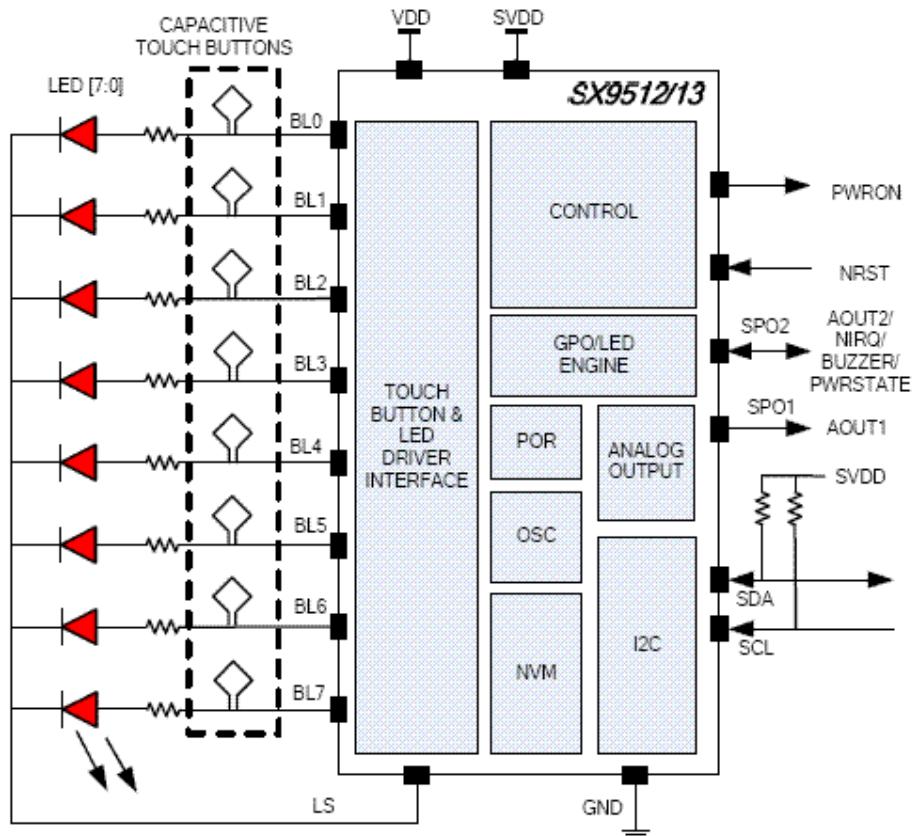
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1 Introduction

The project is developed by Yosun Singapore. The purpose of project is to promote Semtech S9513 cap-touch IC. SX9513 can work with any MCU through I2C interface. In our project we choose STM8Sxxx as MCU.



The SX9513 is 8-button capacitive touch sensor controllers that include 8-channels of LED drivers, a buzzer and analog outputs.



ST's STM8S series of mainstream 8-bit microcontrollers covers a large variety of applications in the industrial, consumer and computer markets, particularly where large volumes are concerned. In our project STM8S Discovery kit is used.

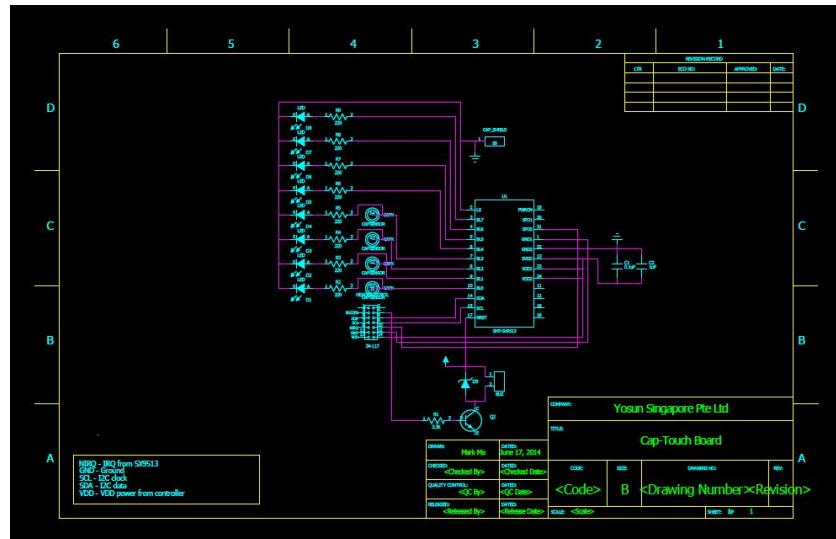


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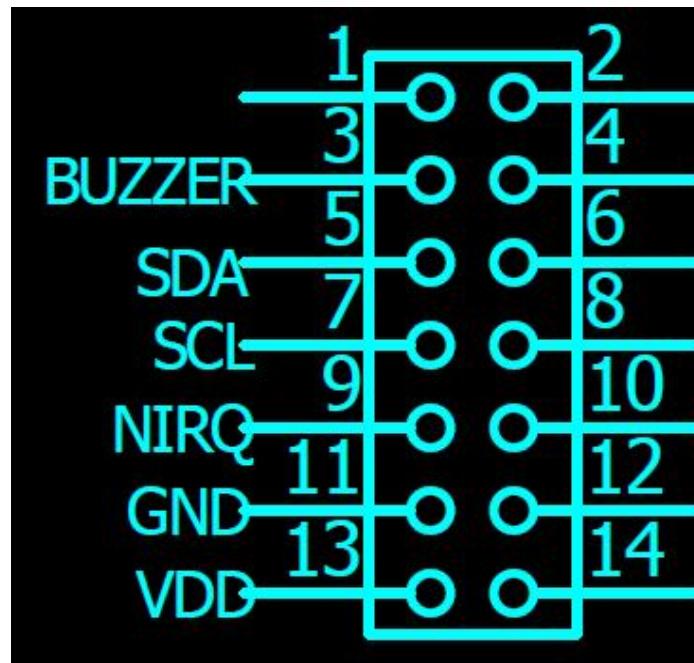


2 Hardware Description

In hardware Yosun draws the schematic & PCB then makes PCBA itself. So customer can quickly develop their application with our schematic and Gerber files.



There is 14-pin header on SX9513 Touch Rev0 PCBA. MCU communicates with SX9513 through it.

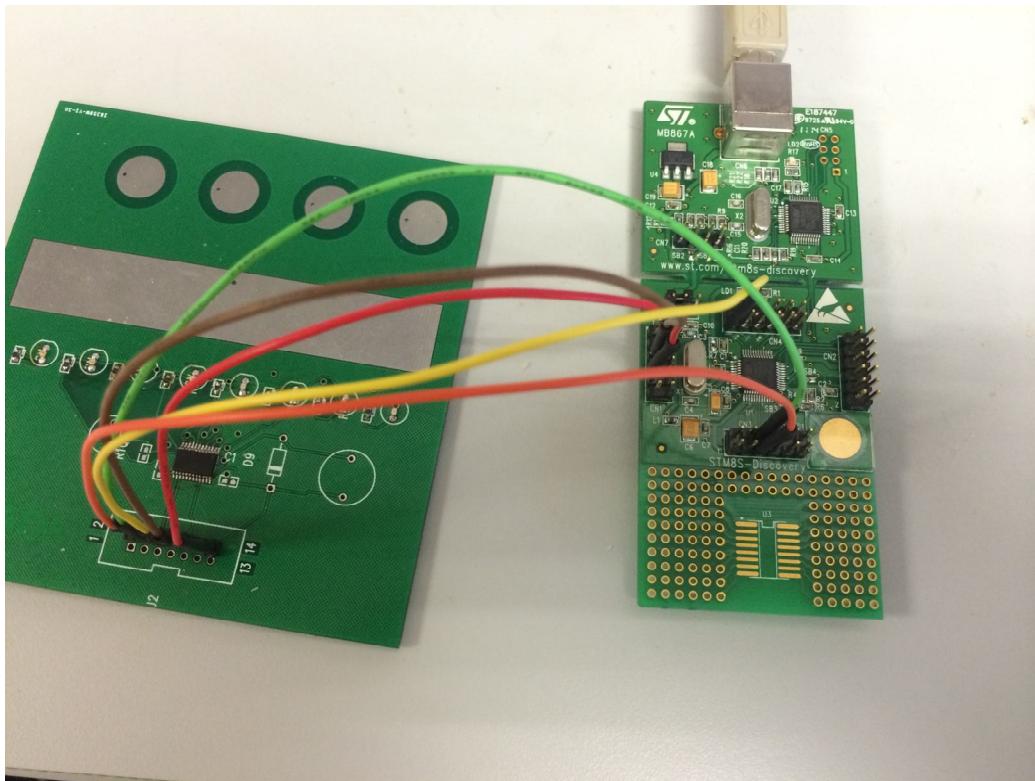


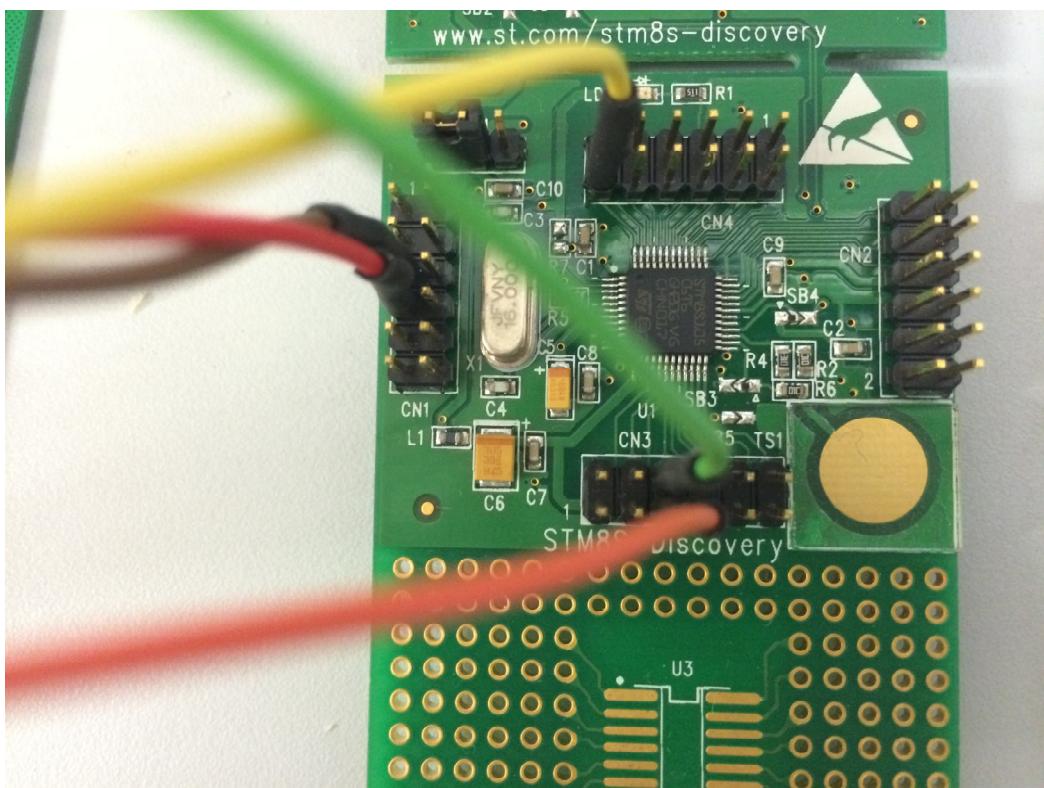
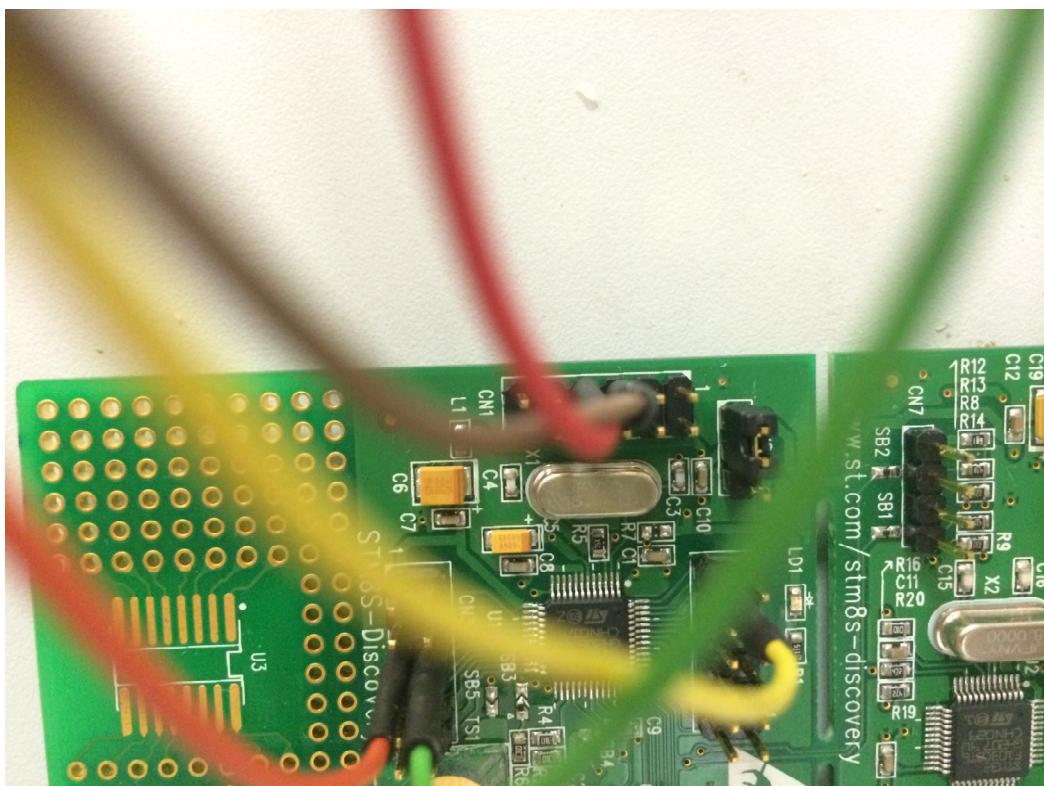
VDD	Digital power from MCU
GND	Ground from MCU

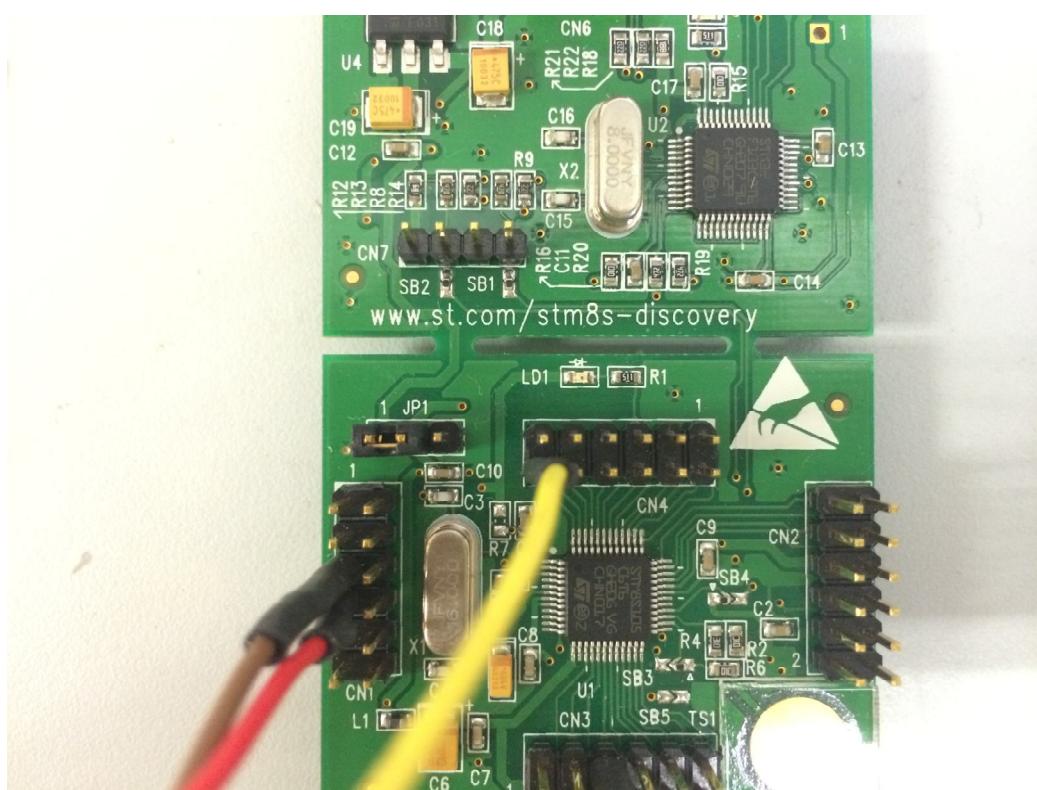
NIRQ	SX9513 interrupt to MCU
SDA	I2C SDA from MCU
SCL	I2C SCL from MCU
BUZZER	Buzzer control from MCU

For STM8S-Discovery I have listed out the connection pin:

SX9513 Touch REV0	STM8S-DISCOVERY
14 – VDD	CN1 – 7 (Vdd)
12 – GND	CN1 – 5 (Vss)
10 – NIRQ	CN4 – 12 (PD7)
8 – SCL	CN3 – 6 (PB4)
6 – SDA	CN3 – 5 (PB5)





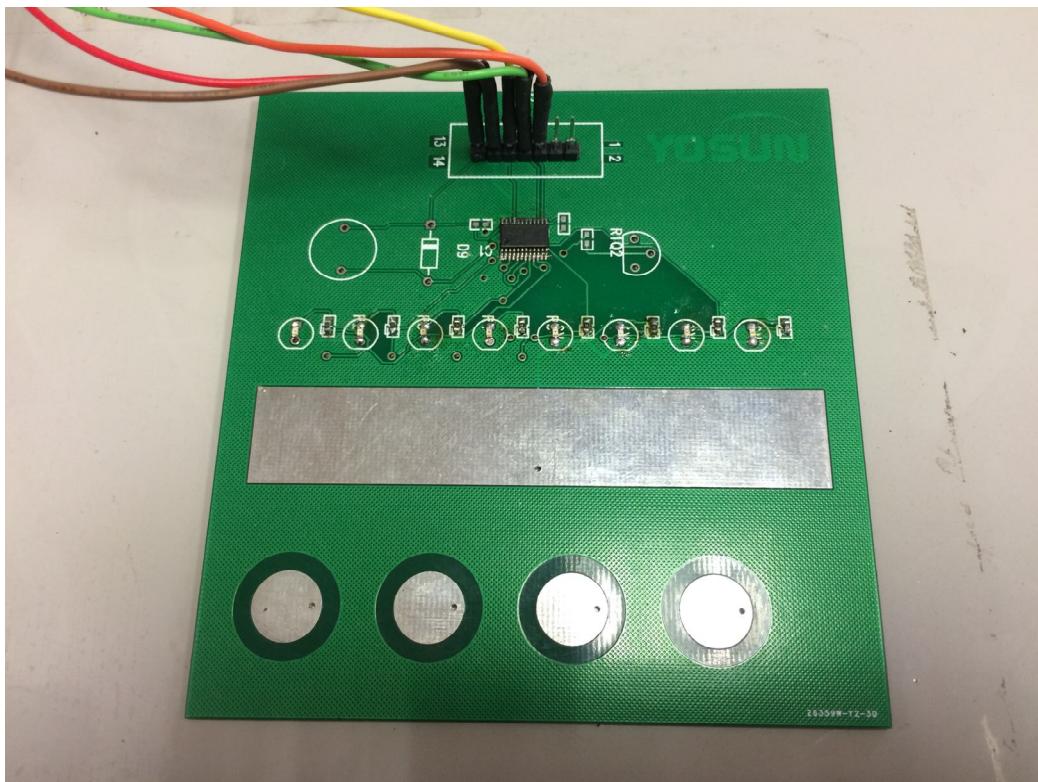


On SX9513 Touch Rev0 there are 4 buttons and 8 LEDs. Below table describes the function of all buttons and LEDs.

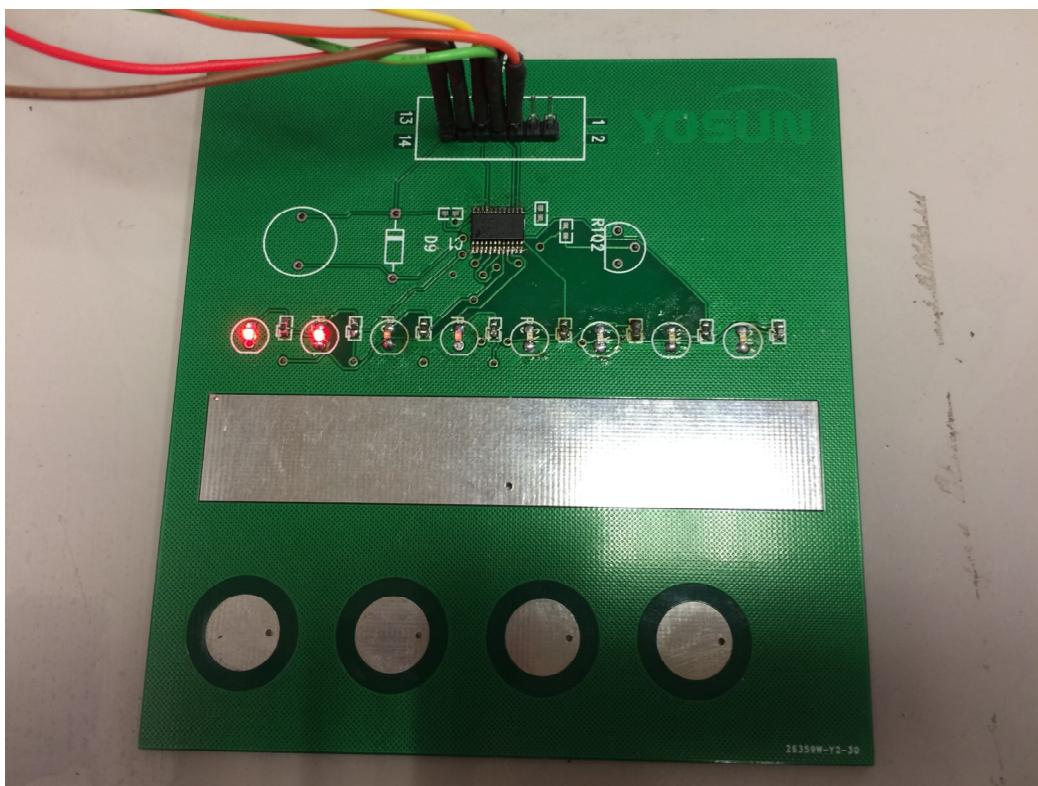
Item	Function	Usage	Indicator
Button1	Power button. It is to control other buttons. Other buttons are disabled without enabling it.	Detail in following section	LED1
Button2	Speed+ button	Detail in following section	LED2 LED3 LED4
Button3	Speed- button	Detail in following section	LED2 LED3 LED4
Button4	Timer button	Detail in following section	LED5 LED6 LED7 LED8

2.1 Button1

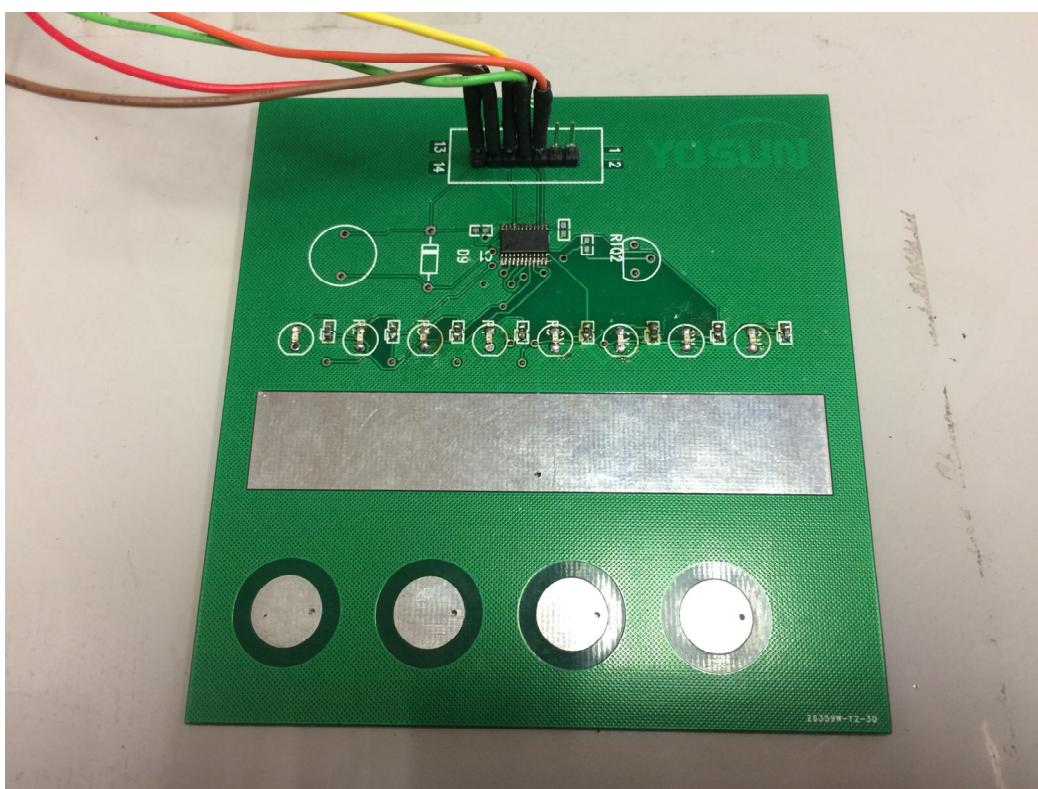
Button1 is main control button. Without it all other buttons are disabled in default. At this moment there is no function for button2, button3 and button4.



LED1 and LED2 are on when button1 is pressed.

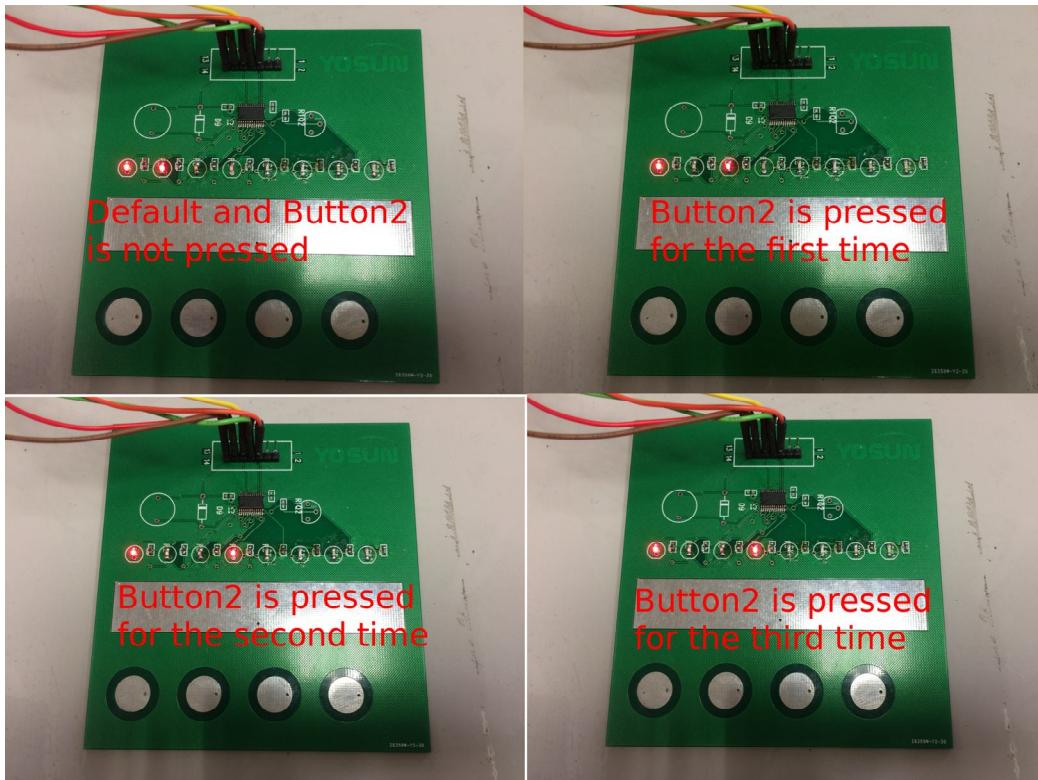


All LEDs are off and other buttons are disabled when button1 is pressed again.



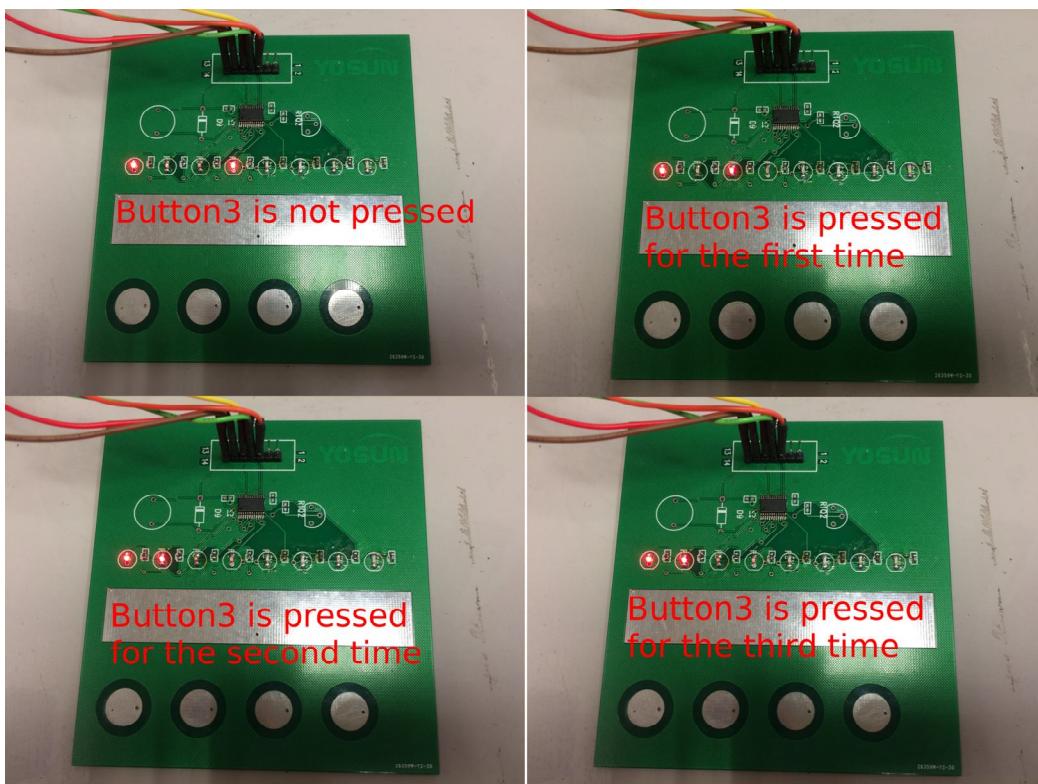
2.2 Button2

Button2 is to control LED2, LED3 and LED4. It will stay on LED4 until Button3 is pressed.



2.3 Button3

Button3 is to control LED4, LED3 and LED2. It will stay on LED2 until Button2 is pressed.



2.4 Button4

Button4 is to control LED5, LED6, LED7 and LED8. It will repeat the cycle by continuously pressing Button4.



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