

M5Stack Unit Byte Switch I2C Protocol

V1 (FW Version)

6/19/2024

note

REG MAP (Addr:0x46)		0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F			
Read	Byte of Switch Value (Each switch value is combined into one byte)	0x00 R	Byte of Switch Value														Byte of Switch Value: bit0: switch 0; bit1: switch 1; bit2: switch 2; bit3: switch 3; bit4: switch 4; bit5: switch 5; bit6: switch 6; bit7: switch 7;			
	Switch Value (Each switch value is a separate byte)	0x60 R	Switch0	Switch1	Switch2	Switch3	Switch4	Switch5	Switch6	Switch7								SwitchX: 0-1		
LED	LED Brightness & LED Show Mode	0x10 W/R	LED0 Brightness	LED1 Brightness	LED2 Brightness	LED3 Brightness	LED4 Brightness	LED5 Brightness	LED6 Brightness	LED7 Brightness	LED8 Brightness	LED Show Mode (Can be save to flash)						LED Brightness: 0-255 LED Show Mode: 0: Self define 1: Sys define		
	RGB888 (Self define)	0x20 W/R	LED0_ RGB-B	LED0_ RGB-G	LED0_ RGB-R			LED1_ RGB-B	LED1_ RGB-G	LED1_ RGB-R			LED2_ RGB-B	LED2_ RGB-G	LED2_ RGB-R			LED3_ RGB-B	LED3_ RGB-G	LED3_ RGB-R
0x30 W/R		LED4_ RGB-B	LED4_ RGB-G	LED4_ RGB-R			LED5_ RGB-B	LED5_ RGB-G	LED5_ RGB-R			LED6_ RGB-B	LED6_ RGB-G	LED6_ RGB-R			LED7_ RGB-B	LED7_ RGB-G	LED7_ RGB-R	
0x40 W/R		LED8_ RGB-B	LED8_ RGB-G	LED8_ RGB-R																
LED Self define	RGB233 ^[1] (Self define)	0x50 W/R	LED0	LED1	LED2	LED3	LED4	LED5	LED6	LED7	LED8						RGB233: bit6-bit7:R bit8-bit9:G bit0-bit2:B			
	LED Sys define	RGB888 Switch=0 define (Can be save to flash)	0x70 W/R	LED0_ RGB-B	LED0_ RGB-G	LED0_ RGB-R			LED1_ RGB-B	LED1_ RGB-G	LED1_ RGB-R			LED2_ RGB-B	LED2_ RGB-G	LED2_ RGB-R			LED3_ RGB-B	LED3_ RGB-G
0x80 W/R			LED4_ RGB-B	LED4_ RGB-G	LED4_ RGB-R			LED5_ RGB-B	LED5_ RGB-G	LED5_ RGB-R			LED6_ RGB-B	LED6_ RGB-G	LED6_ RGB-R			LED7_ RGB-B	LED7_ RGB-G	LED7_ RGB-R
RGB888 Switch=1 define (Can be save to flash)		0x90 W/R	LED0_ RGB-B	LED0_ RGB-G	LED0_ RGB-R			LED1_ RGB-B	LED1_ RGB-G	LED1_ RGB-R			LED2_ RGB-B	LED2_ RGB-G	LED2_ RGB-R			LED3_ RGB-B	LED3_ RGB-G	LED3_ RGB-R
		0xA0 W/R	LED4_ RGB-B	LED4_ RGB-G	LED4_ RGB-R			LED5_ RGB-B	LED5_ RGB-G	LED5_ RGB-R			LED6_ RGB-B	LED6_ RGB-G	LED6_ RGB-R			LED7_ RGB-B	LED7_ RGB-G	LED7_ RGB-R
System	Flash write back	0xF0 W	Flash write back															write 1 save to flash		
	IRQ Setup ^[2] (Can be save to flash)	0xF0 R/W	IRQ Setup															0: Disable; 1: Enable need to restart		
	Firmware Version	0xF0 R														Version	Version: firmware version number			
	I2C Address (Can be save to flash)	0xF0 R/W														Address	Address: 1-127			

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[1] RGB888->RGB233
uint8_t rgb888_to_rgb233(uint32_t color)
{
    uint8_t r_led, g_led, b_led, rgb_233;

    r_led = ((color >> 16) & 0xff);
    g_led = ((color >> 8) & 0xff);
    b_led = (color & 0xff);

    rgb_233 = ((r_led & 0xC0) | ((g_led & 0xE0) >> 2) | ((b_led & 0xE0) >> 5));

    return rgb_233;
}

[2] IRQ Setup = 1, SWDIO(PA13) will become IRQ pin. When the switch state changes, the IRQ pin is pulled low. After reading register 0H, IRQ will be pulled high again (high level when idle)
IRQ Setup = 0, IRQ Disable.
```