M5Stack Unit Thermal 2 I2C Protocol

Gray Color Read Only

V0.7 (FW)

9/13/2022

REG MAP (Addr:0x32)	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
register list (0x00~0x0F)	Button status[1]	Temp alarm Status[2]	dev status (reserve)		dev id (0x90)	dev id (0x64)	major version	minor version	I2C addr	I2C addr (bit invert)	function control[3]	refresh rate config[4]	noise filter config[5]	Reserved		
register list (0x10~0x1F)	temp monitor size[6]	Enable temp alarm[2]	buzzer freq-L[7]	buzzer freq-H	buzzer duty[10]	LED-R	LED-G	LED-B	Reserved							
register list (0x20~0x2F)	lowest temp threshold-L[11]	lowest temp threshold-H	Low temp alarm buzz freq-L[8]	Low temp alarm buzz freq-H	Low temp alarm buzzer interval[18]	Low temp alarm led-R	Low temp alarm led-G	Low temp alarm led-B	Reserved							
register list (0x30~0x3F)	highest temp threshold-L[12]	highest temp threshold-H	High temp alarm buzz freq-L[9]	High temp alarm buzz freq-H	High temp alarm buzzer interval[13]	High temp alarm led-R	High temp alarm led-G	High temp alarm led-B	Reserved							
register list (0x40~0x4F)	Reserved															
register list (0x50~0x5F)	Reserved															
register list (0x60~0x6F)	Reserved														data refresh control[14]	subpage information[15]
register list (0x70~0x7F)	Median temperature-L[16]	Median temperature-H	Average temperature-L[17]	Average temperature-H	Most diff temperature-L[18]	Most diff temperature-H	Most differential x position	Most differential y position	Lowest temperature-L[19]	Lowest temperature-H	Lowest differential x position	Lowest differential y position	Highest temperature-L[20]	Highest temperature-H	Highest differential x position	Highest differential y position
Temperature data array(0x80~0x037F)	0x80~0x37F [21]															

※ Temperature value conversion formula: (°C + 64) * 128 = value.

e.g. 0 == -64°C 8192 == 0°C 12032 == 30°C 20992 == 100℃ 65535 == 447.99℃

[1] button status bit4: button holded flag. (500msec keep) bit3: button clicked flag. (short click) bit2: button was released flag. bit1: button was pressed flag. bit0: button is pressed. (current state) ※ bit(4:1) Flag cleared when user writes 1.
[2] alarm bit mask bit7: High temp reached high threshold bit6: Ave temp reached high threshold bit5: Med temp reached high threshold bit4: Low temp reached high threshold bit3: High temp reached low threshold bit2: Ave temp reached low threshold bit1: Med temp reached low threshold bit0: Low temp reached low threshold
[3] bit0: buzzer enable. / bit1: neopixel enable. / bit2: auto refresh enable.
[4] bit(2:0) refresh rate 0=0.5Hz 1=1Hz 2=2Hz 3=4Hz 4=8Hz 5=16Hz 6=32Hz 7=64Hz
[5] bit(3:0) noise filter level 0:off - 15:maximum
[6] bit(3:0) width size / bit(7:4) height size (default: 0xFF)
[7] buzzer frequency. 0~65535 (depends on buzzer duty setting)
[8] Buzzer frequency for lowest temperature alarm. 0 ~ 65535 (depends on buzzer duty setting)
[9] Buzzer frequency for highest temperature alarm. 0 ~ 65535 (depends on buzzer duty setting)
[10] buzzer duty. 0~255 (default:128 : The loudest sound setting; the further away from 128, the quieter the sound.)
[11] Temperature threshold for lowest temperature alarm. (°C + 64) * 128 = value.
[12] Temperature threshold for highest temperature alarm. (°C + 64) * 128 = value.
[13] Alarm buzzer interval in millisecond, the minimum value is 5 (50ms), the actual interval time will be 10 times
[14] data refresh control (0:no new data / 1::available new data) write 0: request new data.
[15] subpage information (0 or 1)
[16] Median temperature
[17] Average temperature
[18] Most differential temperature
[19] Lowest temperature
[20] Highest temperature
[21] Temperature data array (16x24 word) (little endian)