IP5305 I2C REG

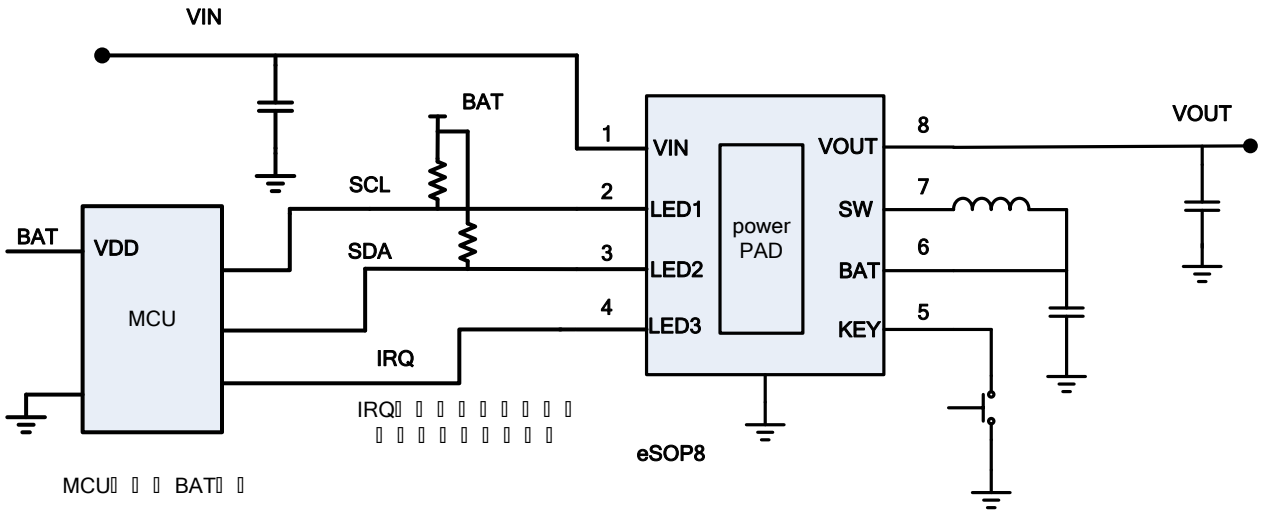


Figure1. IP5305 i2c 典型应用电路

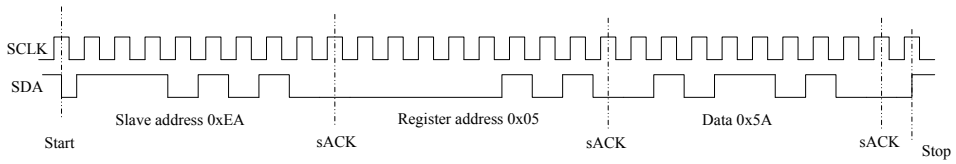
I2C interface

The i2c speed support 400Kbps.Support 8 bit address width and 8bit data width. Transmit and receive MSB first. The default slave address is 0Xea, and support to configure the slave address register to change the slave address by the I2C.

Registers are written to and read from the master through the I2C Interface. The IP5305 I2C acts as slave and is controlled by the master. The SCK line of the I2C interface is driven by the master. The SDA line could be pulled up to BAT by a 1.5Kohm resister and pulled down by either the master or the slave.A typical WRITE sequence for writing 8bits data to a register is shown in below figure. A start bit isgiven by the master, followed by the slave address, register address and 8-bit data. After each 8-bit address or data transfer, the ip5305 gives an ACK bit. The master stops writing by sending a stop bit.

All 8 bits data must be written before the register is updated.

Example: Write 8bit data 0x5a to register 0x05, and the slave address is 0Xea



Note：Sack generated by Slave, Mack generated by Master, and Mnack is a NACK generated by Master

Figure18 I2C WRITE

A typical READ sequence is shown in below figure. First the master has to write the slave address,followed by the register address. Then a restart bit and the slave address specify that a READ is generated. The master

then clocks out 8 bits at a time to read data.

Example: Read 8bit data 0x5A from register 0x05, and the slave address is 0Xea

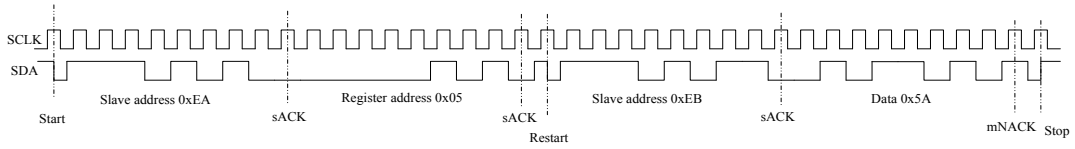


Figure 19 I2C Read

1. Register

REG_READ0

Offset = 0X70

Bit(s)	Name	Description	R/W	Reset
7			R	X
6	tking	涓流充电指示 bit 0：不在涓流充电阶段 1：在涓流充电阶段	R	X
5：4	key_state[1]	状态指示位 00: idle 01：充电充电状态 10：升压放电状态 11：reserved	R	X
3	charge_en	充电使能标志 1：充电开启 0：充电关闭	R	X
2	boost_en	升压使能标志 1：升压开启 0：升压关闭	R	X
1	wled_en	照明使能标志 1：照明开启 0：照明关闭	R	X
0	work_on	工作状态标志 0：非工作态 1：工作态	R	X

REG_READ1

Offset = 0X71

Bit(s)	Name	Description	R/W	Reset
7:5		充电状态指示标志 000: idle 001: TK 010: CC 011: CV 100: 3S 停止充电检测 101: CHGEND 110: TIMER OVER	R	X
4		Chgop 0： 1:	R	X
3		充电结束标志 0: 1: 充电结束	R	X
2		cv_ovtime 0： 1： CV timer over	R	X
1		chg_ovtime 0： 1： CC+CV TIMER over	R	X
0		tk_ovtime 0： 1： tk timer over	R	X

REG_READ2

Offset = 0X78

Bit(s)	Name	Description	R/W	Reset
7				
6				
5				
4		0： 1：电量低于 75%（4 颗灯）或者 66%（3 颗灯）	R	X
3		0：	R	X

		1：电量低于 50%（4 颗灯）		
2		0： 1：电量低于 25%（4 颗灯）或者 33%（3 颗灯）	R	X
1		batlow32 0： 1：BATOCV 低于 3.2v 低电报警电压	R	X
0		batlow30 0： 1：BATOCV 低于 3.0v 关机电压	R	X

REG_READ3

Offset = 0X72

Bit(s)	Name	Description	R/W	Reset
7		reserved		
6		reserved		
5	负载标志位	0: 重负载 1：轻负载	R	0
4:0		reserved		

SYS_CTL1

Offset = 0x02

Bit(s)	Name	Description	R/W	Reset
7：6		Reserved		
5		5V 常开模式使能 0: disable 1: enable Boost 常开使能，Boost 常开使能后，轻载不会自动关闭 Boost 输出，但会关闭 I2C	R/W	
4:3		Reserved		
2:0		111： 关闭轻负载关机功能 011： 开启轻负载关机功能	R/W	011

CHG_DIG_CTL0

寄存器地址=0x23

Bit(s)	Name	Description	R/W	Reset

7：5		Reserved		
4:0		充电电流设置： I=0.05+b0*0.1+b1*0.2+b2*0.4+b3*0.8+b4*1.6A	RW	

Charger_CTL0

寄存器地址=0x20

Bit(s)	Name	Description	R/W	Reset
7：2		Reserved		
1:0		充电充满停止设置 11:4.2/4.305/4.35/4.395 10: 4.185/4.29/4.335/4.38 01: 4.17/4.275/4.32/4.365 00: 4.14/4.26/4.305/4.35 分别对应 4.2V/4.3V/4.35V/4.4V 的充电截止电压 建议使用 01 或者 00 档位	RW	10

Charger_CTL1

寄存器地址=0x21

Bit(s)	Name	Description	R/W	Reset
7:6		电池端停充电流检测 11:600mA 10: 500mA 01:400mA 00:200mA 估算值充饱检测先检测电流再检测电池电压 （0X20bit1：0）	RW	01
5:4		reserved		0
3:2		充电欠压环设定（充电时输出端 VOUT 的电压 11：4.7 10：4.6 01：4.5 00：4.4 注：在充电的时候 IC 会检测输出 VOUT 的电压来自动调整充电电流，当 VOUT 的电压大于设置值时就以最大电流对充电充电，小于设定值时就自动减小充电电流以维持此电压； 如果客户要求边充边放状态下可在输出端加采样电阻检测边充边放状态输出端的负载电流大于	RW	

		100mA 时可把欠压环设置为最高，优先对外部负载充电		

Charger_CTL2

寄存器地址=0x22

Bit(s)	Name	Description	R/W	Reset
7：4		Reserved		0000
3:2		电池电压设定 11：4.4 10：4.35v 01：4.3v 00：4.2v	RW	00
1:0		恒压充电电压加压设置 11：加压 42mV 10：加压 28mV 01：加压 14mV 00：不加压 注：4.30V/4.35V/4.4V 建议加压 14mV； 4.2V 建议加压 28mV；	RW	01