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Notes Comments

vivo Y200e 5G

Pune Maharashtra Jul 16, 2024, 15:19

Timer /Counter Mode Control Register (Not Bit Addressable)

Timer 1				Timer 0			
GATE	C/T	M1	M0	GATE	C/T	M1	M0

GATE When TRx (in TCON) is set and GATE =1, TIMER/COUNTERx runs only while the INTx pin is high(hardware control). When GATE=0, TIMER/COUNTERx will run only while TRx=1(Software control)

↳ C/T Timer or Counter selector. Cleared for Timer operation (input from internal system clock).Set for counter operation (input from Tx input pin).

M1 Mode selector bit.⁽¹⁾

M0 Mode selector bit.⁽¹⁾

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Notes Comments

ENG IN

Timer /Counter Mode Control Register (Not Bit Addressable)

M1	M0	Operating Mode
0	0	0 13-bit Timer
0	1	1 16-bit Timer
1	0	2 8-bit Auto-Reload Timer/Counter
1	1	3 Split Timer Mode:(Timer 0)TL0 is an 8-bit Timer/Counter controlled by the standard Timer 0 control bits,TH0 is an 8-bit Timer and is controlled by Timer 1 control bits
1	1	3 (Timer 1) Timer/Counter 1 stopped

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Target 1

Timer0.C.c STARTUP.AS1

```
1 #include<REG51.H>
2 sbit led =P0^2;
3 sbit led1 =P0^4;
4 unsigned char p,q;
5 void delay();
6 void init_timer_0();
7 main()
8 {
9     P0=0X00;
10    EA=1;
11    init_timer_0();
12    while(1)
13    {
14        led=~led ;
15        delay();
16    }
17 }
18 void init_timer_0()
19 {
20     TMOD=0X01;
21     TH0=0XFC;
22     TL0=0XFC;
23     TR0=1;
```

Build Output

InitKnlModel(): using folder "C:\Users\Vaibhavi\AppData\Local\Arm\Packs"
Parsing RTE Files ... failed.

For Help, press F1

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Target 1 Timer0_C.c STARTUP.AS1

```
20 TMOD=0X01;
21 TH0=0XFC;
22 TL0=0XFC;
23 TR0=1;
24 ET0=1;
25 }
26 void isr_t0() interrupt 1 using 0
27 {
28     init_timer_0();
29     led1 =~ led1;
30     delay();
31 }
32 void delay()
33 {
34     for(p=0;p<255;p++)
35     {
36         for(q=0;q<255;q++)
37         {
38     }
39 }
40 }
41
42
```

Build Output

```
InitXmlModel(): using folder 'C:\Users\Vaibhavi\AppData\Local\Arm\Packs'
Parsing RTE Files ...
failed.
```

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Timer /Counter Control Register (Bit Addressable)

TF1	TR1	TF0	TR0	IE1	IT1	IE0	ITO
IE1	TCON-3						
IT1	TCON-2						
IE0	TCON-1						
IT0	TCON-0						

External Interrupt 1 edge flag. Set by hardware when the External Interrupt edge is detected. Cleared by hardware when the interrupt is processed.

Interrupt 1 type control bit. Set/Cleared by software to specify falling edge/low level triggered External Interrupt

External Interrupt 0 edge flag. Set by hardware when External Interrupt edge detected. Cleared by hardware when interrupt is processed.

Interrupt 0 type control bit. Set /Cleared by software to specify falling edge/low level triggered External Interrupt.

Interrupt Enable (IE) Register in the AT89C51

(MSB)

EA	-	-	ES	ET1	EX1	ET0	EX0
----	---	---	----	-----	-----	-----	-----

Enable bit = 1 enables the interrupt.

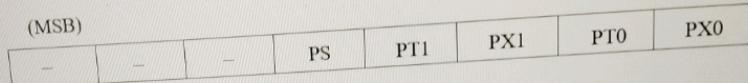
Enable bit = 0 disables it.

Symbol	Position	Function
EA	IE.7	Disables all interrupts. If EA=0, no interrupt will be acknowledged. If EA= 1, each interrupt source is individually enabled or disabled by setting or clearing its enable bit.
-	IE.6	reserved.*
-	IE.5	reserved.*
ES	IE.4	Serial Port Interrupt enable bit.
ET1	IE.3	Timer 1 Overflow Interrupt enable bit.
EX1	IE.2	External Interrupt 1 enable it.
ET0	IE.1	Timer 0 Overflow Interrupt enable bit.
EX0	IE.0	External Interrupt 0 enable bit.

* These reserved bits are used in other Atmel microcontrollers.

IP(Interrupt Priority) Register in the AT89C51

(LSB)



Priority bit = 1 assigns high priority.

Priority bit = 0 assigns low priority.

Symbol	Position	Function
I	IP.7	reserved.*
-	IP.6	reserved.*
-	IP.5	reserved.*
PS	IP.4	Serial Port Interrupt priority bit.
PT1	IP.3	Timer 1 Interrupt priority bit.
PX1	IP.2	External Interrupt 1 priority bit.
PT0	IP.1	Timer 0 Interrupt priority bit.
PX0	IP.0	External Interrupt 0 priority bit.

* These reserved bits are used in other Atmel microcontrollers.

Interrupt Vector Table

INTERRUPT	ADDRESS	
External Interrupt0 IE0	0003h	0000
Timer 0 Interrupt TF0	000Bh	0003 ISR for external interrupt 0
External Interrupt1 IE1	0013h	-----
Timer 1 Interrupt TF1	001Bh	reti
Serial Interrupt SERIAL	0023h	Timer 0 ISR code
	001B	-----
	0023	reti
	XXXX	ISR for serial interrupt

		reti
		Main Code

Internal Code Memory

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