Codes Explorer

Learn Embedded C, ML, Python, C++, 8051, ARM

🏠

8051   ARM   Verilog   C++   Machine Learning   Python   Java   RTOS
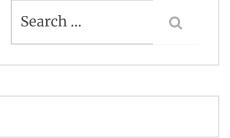
Contact Us

Search …   🔍

September 7, 2017 – 8051

8051 timer Interrupt program to copy data from P0 to P1 ,while simultaneously generating square wave of time period 200 uS at P2^0 .

When it comes to interrupt programming , we have to consider some important registers. For this program the registers used are IE(interrupt enable),TCON(timer control),TMOD(timer mode).

In timer interrupt programming calculating the value to be loaded to the timer is very important.

Recent Posts

- Computing the total storage size of the ADLS Gen1 or Gen2 folder in Pyspark

- Run Databricks Notebooks In Parallel – Python

- Rotate array in the right direction by K steps

- C++ program to demonstrate simple inheritance

Here XTAL frequency i have considered is 11.0592 MHz.If you are using different frequencies,the just divide the XTAL/12.Then inverse the obtained answer.This will be the time required to complete one machine cycle.Hence for my 11.059 MHz the time will be 1.085 uS .

Now the time period of the square wave required is 200 uS .Therefore now we have to calculate the no of cycles required to generate 200 uS of delay so that the output switches between 0 and 1 to generate a square wave.

N=200 uS/ 1.085 uS = 184.33179 = 184

Using timer 0 in 8 bit auto reload mode we can generate the given delay. Value to be loaded to the TH0,TH1 can be calculated as follows

$$255-184=71=0x47$$

We have to load this value to TH0

CODE:

```
#include<REGx51.h>
sbit sqwave=P2^0;
void timer0() interrupt 1
{
    sqwave=~sqwave;   //generating sq wave

}
void main()
{
  TMOD=0x02;   //Timer0 in 8 bit autoreload
  IE=0x82; //enabling intrupt
  TH0=0x47; //loading the calculated value
  TR0=1;       //starting timer
 while(1)
  {
    P1=P0;   //copying data from p0 to P1
  }
}
```

◄ ▬▬▬▬▬▬▬▬▬▬▬▬   ►

Categories

Also generate square
wave of 10 KHz at P2^0
with timer0 in interrupt
mode.Using
XTAL@22MHz »

Leave a Reply

CodesExplorer

Learn Code Execute

COMPANY

About Us

Privacy Policy

Contact Us

CONTRIBUTE

Write an Article

Careers

Become Partner

Blog Zone by ProDesigns